



AAMC

Tomorrow's Doctors, Tomorrow's Cures®

# 2020 NEGEA Annual Meeting

Abstract Compendium

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## Introduction from the NEGEA Chair

Dear NEGEA Colleagues,

It is my sincere hope that all of you and your families are staying safe and healthy through this unprecedented time. I wish we had a chance to connect in person at our planned 2020 NEGEA Annual Conference at the Robert Larner, MD College of Medicine at the University of Vermont. Like you, I missed engaging with our community of educators, colleagues, and friends. The NEGEA annual conference has always been a time for networking, building connections and sharing ideas, in addition to all the learning from the rich programming. I look forward to the opportunity when our NEGEA community can be together again face-to-face. Meanwhile, we will do our best to remain connected virtually as a community and continue to learn from and with one another. The NEGEA leadership is committed to support you as an educator during these challenging times.



I want to take this opportunity to thank the 2020 NEGEA Annual Conference Committee led by Conference and Host Chair Katie Huggett, PhD, and Chief Administrator, Amanda Broder, the many members of the conference committee and subcommittees, abstract reviewers, and AAMC staff for their incredible work and dedication. Despite the uncertainty in the early months in 2020, they continued to work to plan a superb conference. Thank you to the Robert Larner, MD College of Medicine at the University of Vermont for their willingness to serve as our host school for the 2020 conference. We are hopeful to be able to bring the conference to beautiful Vermont at the first opportunity. Many thanks as well to NEGEA Special Interest Group in Health Humanities Co-Chairs, Alice Fornari, EdD, RDN, and Leigh Ann Holterman, PhD, and their committee members for planning our first pre-conference in Health Humanities as a Teaching and Learning Strategy. We were very happy to be able to convert this pre-conference to a virtual platform and offer it this past May to over 200 participants.

The high quality of our NEGEA Annual Conference is due in great measure to the high-quality work submitted by our community of educators. We are very pleased to present you with this compendium of all the accepted abstracts to the 2020 NEGEA Annual Conference. Many thanks to AAMC staff Stephen McKenzie and Sarah Brown for all their work helping put together this compendium. Please take a moment to look through the wonderful work submitted by your colleagues.

It has been a great honor to serve as your NEGEA Chair. Please email me if you have any questions or suggestions at [janine\\_shapiro@urmc.rochester.edu](mailto:janine_shapiro@urmc.rochester.edu). I am hopeful that all of you will be able to join us for our combined virtual GEA Regional Conference this spring and look forward to the day when we will be able to connect again in person.

With my best wishes,  
Janine Shapiro, MD  
NEGEA Chair

## Message from the 2020 NEGEA Conference Chair

Dear GEA Friends and Colleagues,

When the NEGEA 2020 Conference Planning Committee developed the conference theme "Adaptive Education: Teaching for Learning and the Public Good" we could not possibly have envisioned how significant this theme would be in 2020. Covid-19 and the events that continue to call us to dismantle structures of racial and social injustice have accelerated the pace of change and adaptation for learners and learning organizations.

At the very moment when we most needed to learn from each other to advance the Public Good, we humbly recognized that being together was not in the best interest of the public and our medical education community.



I am deeply grateful for the hard work, patience, and creativity of everyone who served on the NEGEA 2020 Conference Planning Committee and subcommittees. Likewise, I also want to thank my colleagues at the University of Vermont Larner College of Medicine who enthusiastically prepared to host the conference. We will be ready to welcome you to our beautiful city when the time is right.

The deep disappointment in cancelling a special professional development event with respected colleagues is overshadowed by the current crisis. There is some good news of course. First, the inaugural NEGEA Health Humanities Special Interest Group (SIG) Preconference Symposium was held virtually and received great reviews. Second, the abstract subcommittee was able to complete their work this winter, selecting from a diverse and impressive group of submissions. We remain in awe of the expertise and commitment of our NEGEA community members. Thus, I am so pleased that this work can be shared in this 2020 NEGEA Abstract Compendium.

With gratitude,

Kathryn N. Huggett, Ph.D.

NEGEA 2020 Conference Planning Committee Chair and Conference Host

## Special Acknowledgments

The 2020 NEGEA Conference Planning Committee would like to extend our special thanks to Christa Zehle, M.D., Senior Associate Dean for Medical Education at the Larner College of Medicine; Aimee Gale, Business Manager, Office of Medical Student Education; Sue Williams, Coordinator for Facilities Administration; and Nicole Zarillo, Conference Coordinator, University Event Services for their help with planning the 2020 NEGEA Conference.

# Innovation Abstracts

## **“Impact of a Transitions of Care Workshop on knowledge and attitudes of medical students and residents- Results from 3 academic years”**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

Lisa Strano-Paul, Renaissance School of Medicine at Stony Brook University

Kimberly Kranz, Stony Brook University School of Medicine

### **Abstract Body:**

#### **Objective or purpose of innovation:**

To evaluate the effectiveness of a workshop on trainees’ knowledge and attitudes about Transitions of Care (TOC).

#### **Background and/or theoretical framework and importance to the field:**

Ineffective TOC result in poor patient outcomes and readmissions. Education around (TOC) is a priority for trainees recognized by the AAMC and ACGME. Interventions improving patient safety and outcomes at system levels are demonstrated in the literature, but limited data exist on best practices to educate providers. Published teaching methods vary and learner surveys demonstrate preference for combined modality approach. We developed a TOC workshop for 4th year medical students and PGY-1 Internal Medicine residents.

#### **Design: Instructional methods and materials used:**

An interactive case based workshop on TOC was delivered to 4th year medical students and PGY-1 Internal Medicine residents as a small group session with didactic and case based problem solving focused on a geriatric discharge case. The curricular objectives included: defining care transitions, identifying patients at high risk for transitions using specific risk assessment tools, identifying consequences of ineffective transitions, and identifying the importance of safe transitions including discharge planning.

#### **Outcomes:**

41 medical students and 56 interns participated and pre and post workshop questionnaires were administered including confidence and knowledge questions. Post intervention findings included: higher percentage of above average knowledge about TOC and higher percentages of confident and very confident responses in recognizing areas of concern regarding safe transitions, effective communication, identifying high risk patients, formulating management plans to minimize risk, and performing proper medication reconciliation. Correct knowledge questions increased from 50% to 90% including identifying common causes for adverse events and correctly identifying tools evaluating discharge risk.

#### **Feasibility and transferability for adoption:**

TOC education is vital for trainees. A curriculum targeted to 4th year medical students and Internal Medicine PGY-1s showed significant improvements in knowledge and confidence.

**References:**

1. National Transitions of Care Coalition [www.ntocc.org](http://www.ntocc.org)
2. Center for Medicare and Medicaid Services [www.cms.gov](http://www.cms.gov)
3. National Quality Forum (NQF) [www.qualityforum.org/](http://www.qualityforum.org/)
4. Society of Hospital Medicine, Project BOOST [www.hospitalmedicine.org/BOOST/](http://www.hospitalmedicine.org/BOOST/)
5. <https://nursesadvocates.com/ensuring-safe-transitions-care>

For more information about this abstract please contact: [lisa.strano-paul@stonybrookmedicine.edu]



## **“Novel Implementation of an Interactive Health Systems Science Curriculum Capstone within a Fourth-Year Medical Student Boot Camp”**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

Payal Parikh, Rutgers, Robert Wood Johnson Medical School  
Catherine Chen, Rutgers, Robert Wood Johnson Medical School  
Kristen Coppola, Rutgers, Robert Wood Johnson Medical School  
Adrian Balica, Rutgers, Robert Wood Johnson Medical School  
Paul Weber, Rutgers, Robert Wood Johnson Medical School

### **Abstract Body:**

#### **Objective or purpose of innovation:**

To reinforce the longitudinal Health Systems Science (HSS) curriculum thread implemented during pre-clerkship years

#### **Background and/or theoretical framework and importance to the field:**

The AAMC’s Entrustable Professional Activities (EPA) recommend that students be able to identify system failures and contribute to a culture of safety and improvement. Students are not uniformly given the chance to participate in quality improvement (QI) or patient safety (PS) discussions. Fourth year medical student boot camp is a platform where HSS principles can be reiterated before students transition into residency.

#### **Design: Instructional methods and materials used:**

This 3-hour capstone workshop consisted of a didactic review of QI, PS, and Team STEPPS tools, an interactive small group session and a large group report-out session summarizing the cases and findings. Students navigated a real-life adverse patient safety event tailored to their post-graduation specialty. They “interviewed” various healthcare team members via short scripts, created a fishbone diagram, and proposed error prevention strategies using the HSS pillars and Team STEPPS tools.

#### **Outcomes:**

Knowledge and comfort level were assessed pre- and post. Mean knowledge scores increased. Students reported higher confidence in RCA and TeamSTEPPS concepts in the post-survey. The knowledge assessment showed retention or improvement in definition of HSS terminology and concepts.

#### **Feasibility and transferability for adoption:**

Our greatest strength was that the capstone equalized the gap between students who recalled prior experience with HSS concepts with those who did not. Therefore, it serves well as a reinforcing module prior to graduation. We also enhanced engagement by incorporating specialty-specific simulation learning. Limitations centered on our assessment tool which

focused on concepts and comfort, but did not evaluate the application of HSS concepts to ongoing situations; as opposed to simulated cases.

**References:**

1. AHRQ Team STEPPS 2.0 Curriculum website: <https://www.ahrq.gov/teamstepps/index.html>
2. Core Entrustable Professional Activities for Entering Residency: Toolkits for the 13 Core EPAs. AAMC
3. Gonzalo, J. et al. Health Systems Science Curricula in Undergraduate Medical Education: Identifying and Defining a Potential Curricular Framework. *Academic Medicine* (2017). 92(1):123–131.
4. Saltzman, DH. A Mastery Learning Capstone Course to Teach and Assess Components of Three Entrustable Professional Activities to Graduating Medical Students. (2019) *Teach Learn Med.* 31(2):186-194.
5. Shorey, S. Entrustable professional activities in health care education: a scoping review. (2019). *Med Educ.* 53(8):766-777
6. Skochelak, S, Hawkins, R. Health Systems Science. AMA Education Consortium. 1st Edition. Elsevier. 2016.

For more information about this abstract please contact: [drparikhzemse@gmail.com]

## **A Developmental Model for Near-Peer Tutoring in Medical School**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

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Leigh Ann Holterman, Robert Larner, M.D., College of Medicine at the University of Vermont

Timothy Moynihan, Robert Larner, M.D., College of Medicine at the University of Vermont

Lee Rosen, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Objective or purpose of innovation:**

A comprehensive, developmental near-peer tutoring (NPT) program at the Larner College of Medicine (LCOM) offers individualized instruction across all stages of medical school.

#### **Background and/or theoretical framework and importance to the field:**

Evidence suggests NPT programs in medical school produce academic, professional, and personal benefits for tutors and tutees (1–4). Existing NPT programs appear limited in scope - designed for specific academic topics (e.g., physiology[5], anatomy[6], clinical skills[7]) or specific curricular stages (e.g., first-year students[8], second-year students[2]). No tutoring program has yet been described that spans the developmental trajectory of medical school in content and structure.

#### **Design: Instructional methods and materials used:**

LCOM's NPT provides access to tutoring for every student at any stage. Tutors are recruited after Year 1 and tutor, as available, throughout matriculation. M1s are offered tutoring at Orientation and then at each stage of training. Training and support, provided by the Directors of Academic Achievement and Student Well-being, are ongoing and individualized. Tutees complete evaluations of their experience after each course, while tutors complete evaluations each semester.

#### **Outcomes:**

99% of tutors (n = 77), 94% of Year 1 tutees (n = 54), 91% of Year 2 tutees (n = 11), 100% of Step 1 tutees (n = 23), and 96% of Step 2 tutees (n = 4) reported feeling satisfied with their experiences. Tutees felt the tutoring program helped improve academic performance (Year 1: 74%, Year 2: 100%, Step 1: 70%, Step 2: 50%) and would likely ask for tutoring again (Year 1: 83%, Year 2: 100%).

#### **Feasibility and transferability for adoption:**

LCOM's NPT is well-liked by tutors and tutees and perceived to effectively improve academic performance. Because the program spans the curriculum, it can address tutoring needs for the majority of medical students.

**References:**

1. Burgess A, McGregor D, Mellis C. Medical students as peer tutors: a systematic review. *BMC medical education*. 2014;14(1):115.
2. Gottlieb Z, Epstein S, Richards J. Near-peer teaching programme for medical students. *The clinical teacher*. 2017;14(3):164-169.
3. Khaw C, Raw L. The outcomes and acceptability of near-peer teaching among medical students in clinical skills. *International journal of medical education*. 2016;7:188.
4. Lydon S, O'Connor P, Mongan O, et al. A mixed method, multiperspective evaluation of a near peer teaching programme. *Postgraduate medical journal*. 2017;93(1103):541-548.
5. Kibble JD. A peer-led supplemental tutorial project for medical physiology: implementation in a large class. *Advances in physiology education*. 2009;33(2):111-114.
6. Evans DJ, Cuffe T. Near-peer teaching in anatomy: An approach for deeper learning. *Anatomical sciences education*. 2009;2(5):227-233.
7. Bates LS, Warman S, Pither Z, Baillie S. Development and Evaluation of vetPAL, a Student-Led, peer-assisted learning program. *Journal of veterinary medical education*. 2016;43(4):382-389.
8. Morgan KM, Northey EE, Khalil MK. The effect of near-peer tutoring on medical students' performance in anatomical and physiological sciences. *Clinical Anatomy*. 2017;30(7):922-928.

For more information about this abstract please contact: [lholterm@med.uvm.edu]

## **A Medical Student Pocket Guide to Community-Based Resources**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

Jeffrey Lam, The Warren Alpert Medical School of Brown University  
Shreya Ramayya, The Warren Alpert Medical School of Brown University  
Fatima Warsame, The Warren Alpert Medical School of Brown University  
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Julia Noguchi, The Warren Alpert Medical School of Brown University  
Rory Merritt, The Warren Alpert Medical School of Brown Univ.  
Dana Chofay, The Warren Alpert Medical School of Brown University  
Srilakshmi Mitta, The Warren Alpert Medical School of Brown University  
Steven Rougas, The Warren Alpert Medical School of Brown University

### **Abstract Body:**

#### **Objective or purpose of innovation:**

The Warren Alpert Medical School of Brown University (AMS) developed the White Coat Pocket Guide, a state-focused resource that bridges theory and practice for AMS students by connecting patients with psychosocial needs to local resources.

#### **Background and/or theoretical framework and importance to the field:**

Social and behavioral health topics in the preclerkship curriculum focus largely on screening and counseling, with minimal attention paid to connecting patients to community resources. Given that the social determinants of health are attributable to up to 90% of a patient's health, we chose the biopsychosocial model of illness as a framework for developing the guide (1, 2).

#### **Design: Instructional methods and materials used:**

We iteratively designed the guide by consulting community leaders, students, and administrators. A hardcopy tri-fold that fits in the white coat pocket, the guide displays referral information in two-tiers. The first tier is formatted as a flowchart organized by theme. Each flowchart element is linked to an online spreadsheet using QR codes that link directly to additional information and forms (second tier).

#### **Outcomes:**

The first version was implemented for all 144, 3rd year students in the spring of 2019 prior to clerkships. Focus groups were held to iteratively update the guide, which currently addresses seven core areas: access to healthcare, mental health, substance use, intimate partner violence, immigration, housing, and nutrition. A revised version of the guide was implemented in the fall of 2019 as part of a required clinical skills course.

#### **Feasibility and transferability for adoption:**

Introducing the guide in the preclerkship phase allows students to develop a baseline understanding of its functionality before clerkships. Directly linking it to existing curriculum has

embedded it as a longitudinal thread rather than a stand-alone resource. Limitations include the need for frequent updating and interoperability in a non-electronic form.

**References:**

1. Magnan, S. 2017. Social Determinants of Health 101 for Health Care: Five Plus Five. NAM Perspectives. Discussion Paper, National Academy of Medicine, Washington, DC. doi: 10.31478/201710c.
2. Skochelak SE, Richard E. Hawkins, Luan E. Lawson, Stephanie R. Starr, Jeffrey M. Borkan, Jed D. Gonzalo. Health Systems Science. Philadelphia: Elsevier; 2017.

For more information about this abstract please contact: [steven\_rougas@brown.edu]

## **A Near-Peer Teaching Assistant Pilot at the Larner College of Medicine Global Health Program**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

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Ben Clements, Larner College of Medicine at The University of Vermont  
Molly Moore, Larner College of Medicine at The University of Vermont  
Mariah McNamara, Larner College of Medicine at The University of Vermont  
Naomi Hodde, Larner College of Medicine at The University of Vermont

### **Abstract Body:**

#### **Objective or purpose of innovation:**

To develop a teaching assistantship (TA) for the UVM global health first year elective

#### **Background and/or theoretical framework and importance to the field:**

Near-peer teaching provides valuable educational opportunities for both the learner and teacher and is gaining in popularity in medical curricula nationwide<sup>1</sup>. Studies reveal that near-peer teaching and teaching assistants led to equal or better performance by learners on objective measures when compared to resident or faculty-led teaching<sup>2,3,4,5</sup>. Benefits for peer teachers include better understanding of the content and improved confidence in teaching ability<sup>6</sup>.

#### **Design: Instructional methods and materials used:**

Fourth-year students who had participated in global health electives were asked to serve as TAs with students during summer global health experiences. Their role was to aid in pre-departure training, partner with host-site faculty to coordinate learning activities and cultural integration, provide pre-clinical and bedside teaching, and provide feedback and support to first year learners. The pilot was evaluated through reflective essays written by each student, in-person debriefs, and a post-elective survey.

#### **Outcomes:**

Significant bi-directional positive outcomes were noted. First-year students felt supported in unfamiliar settings and reported increased understanding of basic science topics and clinical interactions through facilitation by TAs. They also noted increased cultural competency. TAs gained clinical experience and bedside teaching skill as well as increased confidence in supporting learners and facilitating discussions around ethical dilemmas that arose during the rotation.

#### **Feasibility and transferability for adoption:**

This was a small-scale pilot program with significant costs associated with TA travel and lodging. Additionally, familiarity and lack of anonymity among all participants may limit honest feedback about the program.

**References:**

1. Naeger D, Conrad M, Nguyen J, Kohi M, Webb E. Students teaching students: Evaluation of a “near peer” teaching experience. *Academic Radiology*. 2013; 20(9) 1177-1182.
2. Graziano SC. Randomized surgical training for medical students: resident versus peer-led teaching. *American Journal of Obstetrics and Gynecology*. 2011;204(6). doi:10.1016/j.ajog.2011.01.038.
3. Gottlieb Z, Epstein S, Richards J. Near-peer teaching programme for medical students. *The Clinical Teacher*. 2016;14(3):164-169. doi:10.1111/tct.12540.
4. Tolsgaard MG, Gustafsson A, Rasmussen MB, Høiby P, Müller CG, Ringsted C. Student teachers can be as good as associate professors in teaching clinical skills. *Medical Teacher*. 2007;29(6):553-557. doi:10.1080/01421590701682550.
5. Frearson S, Gale S. Educational opportunities on a ward round; utilizing near-peer teaching. *Future Hospital Journal*. 2017;4(1):19-22. doi:10.7861/futurehosp.4-1-19.
6. Peets AD, Coderre S, Wright B, et al. Involvement in teaching improves learning in medical students: a randomized cross-over study. *BMC Medical Education*. 2009;9(1). doi:10.1186/1472-6920-9-55.

For more information about this abstract please contact: [naomi.hodde@uvmhealth.org]



## **A Novel, Trauma-Informed Curriculum for History Taking from Refugee Patients for Second-Year Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

### **Authors:**

Suzanne Sarfaty, Boston University School of Medicine  
Christina Borba, Boston University School of Medicine  
Kathleen Flinton, Boston University School of Medicine

### **Abstract Body:**

#### **Objective or purpose of innovation:**

We aimed to train future physicians to meet complex healthcare needs of refugee patients through the development of a longitudinal educational program at Boston University Medical School (BUSM).

#### **Background and/or theoretical framework and importance to the field:**

At the end of 2015, the estimated number of displaced people worldwide was 65.3 million. Of these, 21.3 million were designated as refugees. Physicians who care for refugees are often unprepared to address the serious and complex needs because of lack of experience, training and mentorship in their medical education.

#### **Design: Instructional methods and materials used:**

All second year medical students at BUSM participated in curriculum aimed at teaching them how to take a trauma-informed medical history from refugee patients. There were two parts to the curriculum: 1. students watched a play with trained actors taking a medical history from a patient seeking asylum, and participated in a Q&A session with an expert patient panel and 2. students met in small group breakout sessions with facilitators and patient actors where students had the opportunity to practice taking a history.

#### **Outcomes:**

180 evaluation surveys were distributed with an 82.7% response rate. Of those, 75% of students agreed the training would help them take care of refugee patients, 78% of students agreed the training would help them take care of patients with trauma, 79% of students agreed the training will benefit their future patients, and 85% of students agreed the training is relevant to their future career. Overall, 77.1% of students found the training to have enhanced their skills in taking histories from refugee patients. Students found the expert panel to be beneficial since it allowed them to hear about experiences in the real world and ask directed questions.

#### **Feasibility and transferability for adoption:**

Areas for improvement: clearer objectives, demonstrating expert interview, incorporating patient feedback into session. This curriculum equips second year students an introduction to refugee health.

**References:**

1. United Nations. Figures at a Glance. UNHCR. <https://www.unhcr.org/figures-at-a-glance.html>. Accessed April 2, 2019.
2. Bertelsen N, DallaPiazza M, Hopkins MA, Ogedegbe G. Teaching global health with simulations and case discussions in a medical student selective. *Global Health* 2015;11:1e8.

For more information about this abstract please contact: [ssarfaty@bu.edu]

## **A Peer-Led High Value Care Curriculum for Incoming Medical Students: Assessment of a Pilot Learning Activity**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

Maggie Carey, Robert Larner, M.D., College of Medicine at the University of Vermont  
Allen Repp, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Objective or purpose of innovation:**

We sought to teach principles of high value care to matriculating medical students through an interactive activity and to assess perceptions of the lesson.

#### **Background and/or theoretical framework and importance to the field:**

The most effective time for introducing high value care in medical education remains unclear, but some advocate that “sooner is better”. The optimal format has yet to be established, but the Larner College of Medicine utilizes an active learning curriculum designed to maximize student performance.

#### **Design: Instructional methods and materials used:**

We developed an active learning activity modeled on the television game show, “The Price Is Right”. Matriculating medical students in the optional “Jumpstart” course worked in pairs to estimate costs of common healthcare services. The activity was led by a second-year medical student with training from the Choosing Wisely STARS Program. Participants completed an anonymous survey regarding their perceptions of the activity using a 5-point Likert-type scale (strongly agree to strongly disagree).

#### **Outcomes:**

Eight students participated in the activity and completed the survey (response rate 100%). All respondents (100%) agreed or strongly agreed that the session “increased awareness of high value care concepts”. When asked if participating in the session was useful, 87.5% strongly agreed or agreed. Seven of the eight students responded that they would “strongly recommend” continuing the session for future students.

#### **Feasibility and transferability for adoption:**

The initiative was led by a teaching assistant during an optional course to minimize burden on faculty and ensure no time from the medical curriculum was sacrificed. Students’ perceptions of the activity were overwhelmingly positive, but a small number of students chose to participate.

#### **References:**

1. Erath A, Margaret M, et al. The Sooner the Better: High Value Care Education in Medical School. *Academic Medicine*. 2019. doi:10.1097/ACM.0000000000002881.
2. Freeman S, Eddy SL, Mcdonough M, et al. Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*. 2014;111(23):8410-8415. doi:10.1073/pnas.1319030111.

For more information about this abstract please contact: [[maggie.carey@med.uvm.edu](mailto:maggie.carey@med.uvm.edu)]

# **A Reduction in Remediation and Reclassification: Learning Enhancement and Assessment Period (LEAP) at the UConn School of Medicine**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

## **Authors:**

Christine Thatcher, University of Connecticut School of Medicine

Thomas Manger, University of Connecticut School of Medicine

## **Abstract Body:**

### **Objective or purpose of innovation:**

To reduce remediation as well as reclassification in the pre-clerkship stage of the curriculum. Demonstrated gaps in knowledge are addressed closer to the end of a course resulting in lower remediation rates. This allows students an increased opportunity to conduct summer research and pursue other academic interests. A reduction in repeats provides the benefits of tuition savings, improved graduation rates and likely improved match results.

### **Background and/or theoretical framework and importance to the field:**

LEAP, implemented as part of our curricular reform in 2016, enhances student learning by individualizing academic needs based on student results on summative assessments. Students are provided an opportunity to fill knowledge gaps, enhance proficiency and skills, and take part in electives.

### **Design: Instructional methods and materials used:**

The pre-clerkship curriculum consists of five 10-week blocks, each followed by a 2-week LEAP. LEAP begins with an integrative exam. Students are assessed across all courses within the block. Individual course grades are reviewed by committee and, using a standard rubric, failing students are given the opportunity to enhance and reassess specified content during the 2-week LEAP. Depending on student performance across courses, summer remediation may also be required. Enhancing students work directly with faculty on needed content and concepts. Students who pass all courses and who do not require enhancement or reassessment enter a lottery for electives.

### **Outcomes:**

Fewer students require summer remediation and reclassification. Comparative data between LEAP and our Legacy curriculum will be provided on number enhancing, reassessing, and remediating in the summer, as well as number requiring reclassification.

### **Feasibility and transferability for adoption:**

Feedback has been generally positive. Focused and discrete enhancement of content is limited within the timeframe of LEAP. Substantial deficiencies still require summer remediation. Supplying the range of faculty content experts required for enhancement can be challenging.

## **References:**

1. Cooke M I, D.M. and O'Brien, B.C. Educating Physicians. San Francisco, CA: Jossey-Bass 2010.

2. Pugh, D. and Regehr, G. Taking the sting out of assessment: is there a role for progress testing? *Medical Education* 2016; 50 (7): 721-729.

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## **Advancing a Culture of Wellness Through Faculty Development**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

### **Authors:**

Janine Shapiro, University of Rochester School of Medicine and Dentistry

Michael Privitera, University of Rochester School of Medicine and Dentistry

### **Abstract Body:**

#### **Objective or purpose of innovation:**

The purpose of this educational innovation was to improve wellness and reduce burnout among faculty and clinicians.

#### **Background and/or theoretical framework and importance to the field:**

Research demonstrates a high incidence of clinician stress, burnout and depression, with a significant impact not only on the individual clinician but also on the healthcare systems and the quality and safety of patient care. Approaches to improving wellness must include individual and institutional approaches.

#### **Design: Instructional methods and materials used:**

Twenty-nine one-hour long wellness seminars for faculty and clinicians were implemented over a three-year period. Initial need analysis was performed using current literature on factors associated with burnout among clinicians. Additional seminars were planned based on individual need analysis from attendees. Self-reported changes in knowledge, skills and behaviors were analyzed. Written input from participants was analyzed inductively and then clustered into emergent themes.

#### **Outcomes:**

There were 612 participants during the first year of implementation. Seminars were highly rated for content and presentation. Plans to transfer knowledge and wellness tools to existing roles were reported by attendees. Several themes emerged as recommendations to the organizational leadership to help reduce burnout through individual and institutional interventions. These themes also led to the implementation of additional professional development offerings in wellness such as a series on the efficient use of the electronic health record, a series on mindfulness, and a longitudinal program on human factors-based leadership for wellness.

#### **Feasibility and transferability for adoption:**

The wellness seminars have served as an important venue to learn what is important to clinicians to help them in their resilience and for sustaining practice and provide safe places for discussion. They have emerged as an important way of affecting the institutional culture, and have opened the door to continued progress of our wellness efforts.

#### **References:**

1. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. *Lancet* 2009; 374: 1714–211.
2. Epstein RM and Privitera MR. Doing Something about Physician Burnout. *Lancet*. September 28, 2016

3. Shanafelt T, Goh J, Sinsky C. The Business Case for Investing in Physician Well-being. *JAMA Intern Med.* 2017;177(12):1826. doi:10.1001/jamainternmed.2017.4340

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## **Amending the Renaissance School of Medicine Student Honor Code:**

### **Challenges and Insights**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

#### **Authors:**

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Rachel Bright, Stony Brook University School of Medicine  
Nicholas Browne, Stony Brook University School of Medicine  
Brecken Esper, Stony Brook University School of Medicine  
Julie Hong, Stony Brook University School of Medicine  
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#### **Abstract Body:**

##### **Objective or purpose of innovation:**

The goals of this project were to: a) revise the existing Student Honor Code at the Renaissance School of Medicine (RSOM) to support professional identity formation, and b) evaluate the revision process and its early outcomes.

##### **Background and/or theoretical framework and importance to the field:**

Misconduct among medical trainees can lead to patient harm and disciplinary action by medical boards.(1,2) Early identification of unprofessional behavior among trainees is critical for feedback and correction.(3,4) Piloting and evaluating codes of conduct during medical education are vital to professional identity formation. RSOM's Student Honor Code had not been amended for the past 10 years and its utilization among students was minimal.

##### **Design: Instructional methods and materials used:**

We undertook a student-driven process to revise the Honor Code. We evaluated student support for the revision and insights gained during this process. We conducted a survey of the entire student body and followed up with discussions using a convenience sample of students from all classes.

##### **Outcomes:**

Student support was 217-10 (95.6%) in favor, with 67.8% participation. A fully revised Student Honor Code was established August 2019. From discussions, the identified challenges to the revision included voter turnout, student concerns about unilateral changes, and the need for additional debate about stakeholder roles. Since the revision, during a three month period, two referrals were made to the Honor Code Committee in contrast with none during the previous two years.

##### **Feasibility and transferability for adoption:**

The results demonstrated strong student support and increased utilization of the Code since the changes. Long-term effects of the revision remain to be seen.

**References:**

1. McCabe, D.L., et al. (2002). Honor Codes and Other Contextual Influences on Academic Integrity: A Replication and Extension to Modified Honor Code Settings. *Res High Educ.*, 43(3), 357–378.
2. Papadakis, M.A., et al. (2005). Disciplinary Action by Medical Boards and Prior Behavior in Medical School. *NEJM*, 353(25), 2673–2682.
3. Olive, K.E., & Abercrombie, C.L. (2017). Developing Physician’s Professional Identity Through Medical Education. *Am J Med Sci.*, 353(2), 101–108.
4. AAMC (2006). Compact Between Resident Physicians and Their Teachers.  
<https://www.aamc.org/download/49820/data/residentcompactpdf.pdf>

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## **An Hypothesis Driven Data Analysis Workshop to Please Both Curriculum Standards and Biomedical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This workshop is designed as a team-based interactive curricular activity to help fulfill the requirements of LCME Standard 7.3. It guides students to navigate a large dataset, develop a hypothesis, employ an appropriate test, and discuss their findings.

#### **Background and/or theoretical framework and importance to the field:**

It is increasingly important to tailor health-related biostatistical training toward the analysis of massive datasets, where even practical issues such as searching and organizing pose a significant challenge [1]. To develop competency with biostatistics, students must practice applying their skills to authentic examples [2]. When given the tools for self-direction, students are more motivated to learn biostatistics, retain their knowledge, and pursue clinical or translational research [2].

#### **Design: Instructional methods and materials used:**

This workshop is a two-hour, self-directed small group session with computers. Students access an Excel workbook with instructions (including video demonstrations) and a curated National Health and Nutrition Examination Survey (NHANES) dataset containing laboratory, medical, and demographic data. Students complete a worksheet where they explain their choice of variables, rationale behind their hypothesis, appropriate statistical analysis, results, and interpretations. Students also discuss challenges, confounders, and implications of their study.

#### **Outcomes:**

A pilot group of second-year medical students determined whether the levels of creatinine and albumin were statistically different between men and women. Students discussed their findings and implications and reported increased enthusiasm for biostatistics and greater comfort working with large datasets.

#### **Feasibility and transferability for adoption:**

The dataset is small enough to be downloaded easily on students' laptops but large enough to allow for the study of dozens of diseases, medical conditions, and health indicators. While unable to perform higher-level statistical analysis, Excel is available to most students. Thus,

students with minimal experience can receive meaningful exposure to large dataset analysis, preparing them for more advanced lessons.

**References:**

1. Brimacombe, M.B., Biostatistical and medical statistics graduate education. BMC Med Educ, 2014. 14.
2. Sullivan, L.M., L. Hooper, and M.D. Begg, Effective practices for teaching the biostatistics core course for the MPH using a competency-based approach. Public Health Rep, 2014. 129(4): p. 381-92.

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## **AnatomyShare: A novel 'social media' app to promote learning from cadaveric dissection**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To develop a novel iPad application that mimics the look and feel of commonly utilized social media platforms in order to promote student engagement in a first-year anatomy curriculum.

#### **Background and/or theoretical framework and importance to the field:**

The role of dissection in anatomy education is changing, as digital tools emerge as resources that personalize the learning experience(1). Social media platforms can create a supportive community of learners where students actively engage and learn from one another, but peer sharing applications can also enhance how students set goals, monitor performance and reflect on learning(2) and capitalize on test-enhanced learning(3).

#### **Design: Instructional methods and materials used:**

AnatomyShare is a novel iPad application that allows students to share images of their cadaveric dissections (e.g., model features, pathologies, anomalies) within a secure platform and take faculty-created practice quizzes including student-generated images. Important features include photo-taking and annotation, a live NewsFeed, ability to 'like' and search photos, and self-testing with feedback. Surveys and usage analytics were used to examine the app's implementation into a first-year anatomy course.

#### **Outcomes:**

Almost all students enrolled in the course used AnatomyShare (n = 176; 91%). More students used it outside of lab (97.3%) than during lab (85.3%), despite only in-lab use being 'required'. Taking quizzes was the highest rated use; connecting to other lab groups was the lowest rated. App use was associated with beneficial study behaviors, with higher frequency users viewing significantly more cadavers during in-lab study than lower frequency users. Qualitative feedback highlighted how app use exposed students to the diverse appearance of structures.

#### **Feasibility and transferability for adoption:**

We found AnatomyShare to be effective in promoting self-regulated learning and facilitating test-enhanced learning. However, it did not appear to promote communication between users in its current form, pointing the way to needed modifications.

**References:**

1. Ghosh SK (2017). Cadaveric dissection as an educational tool for anatomical sciences in the 21st century. *Anat Sci Educ* 10:286-299.
2. Sandars J, Cleary TJ. 2011. Self-regulation theory: applications to medical education: AMEE Guide No. 58. *Med Teach* 33:875-886.
3. Green ML, Moeller JJ, Spak JM. 2018. Test-enhanced learning in health professions education: A systematic review: BEME Guide No. 48. *Med Teach* 40:337-350.

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## **Building the skills needed for a lifetime of evaluating abstracts in the first year of undergraduate medical education**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Develop the skills first-year medical students need to efficiently identify high- and low-quality abstracts.

#### **Background and/or theoretical framework and importance to the field:**

Information literacy (LCME Standard & Element 6.3) often begins with assessing abstracts, but abstract evaluation skills are not typically taught in a formal learning event at most medical schools. As part of Explorations, the WMed component designed to meet LCME 6.3, we developed an interactive 90-minute session to guide students through the process of distinguishing ‘good’ from ‘bad’ abstracts.

#### **Design: Instructional methods and materials used:**

A medically-relevant topic of interest was selected, and after applying specific filters, searched in the PubMed database. Approximately 300-500 abstracts were initially reviewed then reduced until the final 15 abstracts were selected and deidentified. Three faculty ‘experts’ then privately ranked the abstracts from 1 (good) to 15 (bad). Following a short tutorial outlining common abstract strengths and weaknesses, student groups (5-8 per group) were asked to identify the top 3 and bottom 3 abstracts, respectively. To safeguard against bias, faculty and student rankings were revealed simultaneously.

#### **Outcomes:**

The Class of 2019 evaluated abstracts on ‘obesity’ and all groups (100%) identified the same 2 abstracts identified by the experts as one of the best or worst, respectively. The Class of 2023 evaluated abstracts on ‘chronic pain’ and 57% of the student groups identified three of the ‘good’ abstracts but only 25% of the groups identified 2 of the ‘bad’ abstracts identified by the experts. Results from all 5 classes were similar, suggesting this event teaches students the skills needed to identify high-quality abstracts.

#### **Feasibility and transferability for adoption:**

Students ranked the event highly and indicated the session provided new insights into information literacy. This event is dependent on the topic and diversity of the abstracts selected for evaluation.

**References:**

1. Keator C.S., Dickinson B.L., Lackey W.L., Morris A., Quesnelle K. M., Riddle D.R., Sheakley M.L., Vanden Heuvel G.B., Vandre D.D. Explorations: a new approach to self-directed learning in a competency-based curriculum. *Medical Science Educator* (2016) 26(4):777-785.
2. Keator C.S., Vandre D.D., Morris A. M. The challenges of developing a project-based self-directed learning component for undergraduate medical education. *Medical Science Educator* (2016) 26(4):801-805.

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## **Choose-Your-Own-Path Video Simulation for Measurement of Propensity to Screen for Suicide**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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Johnathan Sataloff, Harvard Medical School  
Justin Chen, Massachusetts General Hospital

### **Abstract Body:**

#### **Objective or purpose of innovation:**

We created a choose-your-own-path video simulation for use in undergraduate medical education that assesses one's propensity to ask about suicidality and models a basic suicide risk assessment.

#### **Background and/or theoretical framework and importance to the field:**

Despite research demonstrating physician education as an efficacious intervention to reduce suicide rates, suicide risk assessment training remains limited at all levels of medical education. Quantitative and qualitative literature repeatedly shows low physician confidence in assessing suicidality, leading to reduced rates of suicide screening and therefore intervention.

#### **Design: Instructional methods and materials used:**

A staged, 15-minute interaction between actors portraying a primary care physician and a patient with multiple suicide risk factors was filmed and edited into a choose-your-own-path computer simulation. Students uncovered different risk factors based on which parts of the history students chose to investigate. Volunteers to assess the simulation were obtained from a post-clerkship Harvard Medical School course. Participants were surveyed pre-simulation regarding their likelihood of screening for suicide and post-simulation to determine whether they screened for suicide and to provide feedback regarding the tool's effectiveness.

#### **Outcomes:**

Of the 73 students in the class, 16 (22%) completed both the simulation and surveys. 4 students (25%) asked follow-up questions about depression and 2 (12.5%) asked about suicide. 10 students (62.5%) felt their post-simulation results disagreed with their pre-simulation stated likelihood of probing suicidality, indicating fewer screened for suicidality than they believed they would. The most commonly identified barriers to assessment were "fear of alienating the patient" and "time pressures." 13 students (81%) found the tool useful for revealing their own tendency to discuss suicide.

#### **Feasibility and transferability for adoption:**

The choose-your-own-path simulation is a customizable, affordable, and effective psychiatric educational tool useful in training future physicians more flexibly and affordably than the

traditional standardized-patient format. Limitations include the requirement for filming equipment, editors, and actors.

**References:**

1. Schulberg HC, Bruce ML, Lee PW, Williams JW Jr, Dietrich AJ. (2004). Preventing suicide in primary care patients: the primary care physician's role. *Gen Hosp Psychiatry*, 26(5):337-45.
2. Villaveces, A., Kammeyer, J., & Bencevic, H. (2005). Injury prevention education in medical schools: an international survey of medical students. *Injury Prevention*, 11(6), 343-347.

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## **Community Partners: Introducing the Role of Physician as Advocate**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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Deborah Tennyson, University of Connecticut School of Medicine

### **Abstract Body:**

#### **Objective or purpose of innovation:**

To help students embrace the role of physician as advocate while developing an understanding of the social and policy issues that impact population health in Connecticut, we designed an out-of-classroom experience involving over 40 community partners

#### **Background and/or theoretical framework and importance to the field:**

This module was intended to strengthen professional identify development of the physician as advocate, and to expose students to the many community-based health advocacy partners serving population needs. The CDC 's resource for addressing SDOH in communities served as theoretical framework.

#### **Design: Instructional methods and materials used:**

Students chose from a curated list of nearly 40 community health advocacy organizations. In small groups students visited an agency they had no prior familiarity with, conducting an interview with leadership there. They received an adapted template of the CDC's case series as a guide.

#### **Outcomes:**

Students presented their organization in poster format to classmates and faculty in symposium. Students discussed advocacy partners active around the state, sharing their own visited organization's mission, targeted population's needs, tools, and progress. They were asked to anticipate ways health advocacy might fit into their future. As a tangible product, students also shared opinion letters to community leaders they had written in advance of the module, and had time to sign each other's letters. The session culminated with a brief talk from a senior medical student on the role of physician as advocate.

#### **Feasibility and transferability for adoption:**

Community mentorship and peer teaching on the needs of different populations around the state helped students enhance their own social accountability. Students appreciated the personal connections and advocacy visions of their visited community partners. Students have the opportunity for future engagement with these partners following this facilitated introduction.

**References:**

1. Bhate TD, Loh LC. Building a Generation of Physician Advocates: The Case for Including Mandatory Training in Advocacy in Canadian Medical School Curricula. *Acad Med.* 2015 vol 90(12):1602-1606.
2. CDC's Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health. <https://www.cdc.gov/nccdphp/dch/programs/healthycommunitiesprogram/tools/pdf/sdoh-workbook.pdf>
3. Pearson D, Walpole S, Barna S. Challenges to Professionalism: Social accountability and Global Environmental Change. *Med Teach.* 2015;37:825-830.

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# **Connecting the Dots: Promoting Longitudinal Integration in a Case Based Learning Curriculum with Recall Learning Objectives**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

Do students perceive use of recall learning objectives (LO) in a case-based learning curriculum (CBL) valuable for learning and integration?

### **Background and/or theoretical framework and importance to the field:**

In 2017, our medical school changed from a traditional lecture-based pre-clerkship curriculum to an integrated case-based curriculum. CBL, a learner-centered, guided inquiry pedagogy, is useful for integrating and promoting meaningful learning [1]. Meaningful learning increases the ability of students to understand and relate medical concepts by linking them to prior knowledge [2]. As students in our new curriculum would pass through each organ system only once, stakeholders expressed concerns regarding long-term retention. Little is known about the impact of utilizing focused recall LOs to promote longitudinal integration of concepts.

### **Design: Instructional methods and materials used:**

We developed a 3-tiered CBL curriculum of 54 cases with content and faculty-derived LOs explicitly including previous core concepts (recall items). These were incorporated as facilitator case prompts and/or specific recall LOs. In Year 1 cases, recall items were solely from the immediately preceding organ system. In Year 2 cases, recall items expanded to concepts from any previous organ system. Finally, a block of complex cases integrated recall material from all organ systems before USMLE Step 1. In 2019, 264 second year students were sent a survey regarding their perceptions on recall items. It included 5 Likert scale questions and 1 comment box.

### **Outcomes:**

116 students (44%) completed the survey. 98% found deliberate incorporation of recall items useful to their learning; 89% found the integration to be at an appropriate level for learning and 71% wanted more content as recall LOs.

### **Feasibility and transferability for adoption:**

Students felt structured recall content and LOs fostered meaningful learning and integration. This novel approach to guided inquiry blends the goals of student-centered inquiry and integration

utilizing deliberate spaced repetition [3]. Limitations are potential response bias and one institution.

**References:**

1. McLean SF. Case-Based Learning and its Application in Medical and Health-Care Fields: A Review of Worldwide Literature. *Journal of Medical Education and Curricular Development* 2016; 3: 39-49.
2. Brauer DG, Ferguson KJ. The integrated curriculum in medical education: AMEE Guide No. 96. *Medical Teacher*. 2015; 37: 312-322.
3. Brown PC, Roediger HL, McDaniel MA. *Make it Stick: The Science of Successful Learning*. Cambridge, MA: Harvard University Press; 2014.

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## **Cookers, Cottons, and Compassion: An immersive medical student curriculum to explore the needs of persons who inject drugs**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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Molly Ingemi, University of Massachusetts Medical School  
Meghan Harrington, University of Massachusetts Medical School  
Olivia Mandile, University of Massachusetts Medical School  
Sarah McAdoo, University of Massachusetts Medical School  
Lauren Meade, University of Massachusetts Medical School

### **Abstract Body:**

#### **Objective or purpose of innovation:**

Medical students are not exposed to community programs or the consumer experience of persons who inject drugs (PWID).

#### **Background and/or theoretical framework and importance to the field:**

On average, 130 Americans die each day from an opioid overdose<sup>1</sup>. Stigma is a barrier to care for this population<sup>2</sup>. Distinct curriculum exposing students to the needs of PWID may be a key to competent future care.

#### **Design: Instructional methods and materials used:**

As part of the Population Based Urban and Community Health Track at UMMS-Baystate, the Population Health Clerkship (PHC) is designed to address the health needs of the community. One component is an immersive, two week learning experience in the second medical school year. During this experience, students work on an inter-professional team with a physician, outreach workers, and PWID. Students interviewed PWID, collaborate with outreach, and provided education about safe injection practices. Tools for learning include a daily photo diary, development of a needs assessment and presentation of outcomes to peers.

#### **Outcomes:**

Themes from photo diaries revealed that students 1. addressed internalized biases, 2. gained an understanding of the role of community programs, 3. defined barriers to care and 4. developed an understanding of the role of outreach workers in establishing trusting relationships with PWID.

#### **Feasibility and transferability for adoption:**

The interprofessional structure of the PHC allowed students to directly experience the role/influence of outreach workers on the health of PWID. A limitation of the PHC is the brevity of exposure. A longitudinal exposure, which is optional, would allow for broader learning and outcomes.

**References:**

1. Wejnert C, et al. Vital Signs: Trends in HIV Diagnoses, Risk Behaviors, and Prevention Among Persons Who Inject Drugs - United States. MMWR Morb Mortal Wkly Rep. 2016 Dec 2;65(47):1336-1342.
2. Paquette CE, et al. Stigma at every turn: Health services experiences among people who inject drugs. Int J Drug Policy. 2018 Jul;57:104-110.

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## **Creation and Implementation of a Global Health Educational Track**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Trainees commonly seek global health programs in the context of their graduate medical education. There are few guidelines for curriculum development or programmatic evaluation in global health, thus existing programs vary widely.

#### **Background and/or theoretical framework and importance to the field:**

Constructivist principles were applied to the creation of our program; specifically, that trainees gain meaning and knowledge around global health by interactive curricular components and field experience.

#### **Design: Instructional methods and materials used:**

We created a multi-disciplinary global health track for post-graduate trainees, which consists of an eighty-hour curricular component and eight weeks of field experience. The curriculum is based around competencies from the Consortium of Universities for Global Health and American Society of Tropical Medicine and Hygiene, and is delivered through didactic sessions, flipped classroom, and case-based study. Field experiences are performed at sites in Namibia, Colombia, Thailand, and with the Indian Health Service, where there is an institutional relationship. Trainees act in the roles of observer in hospitals and clinics or teacher for host-site based learners depending on their chosen sites' needs.

#### **Outcomes:**

We have begun analysis of effectiveness based on Kirkpatrick's Pyramid of Outcomes. Trainee surveys show that the curricular component is well-received. Pre- and post- knowledge assessments show retention of curricular topics. This track has proven valuable for resident recruitment, and in terms of results, three graduates have pursued careers in care of vulnerable patient populations after participation in this track.

#### **Feasibility and transferability for adoption:**

A strength of our evaluation design is demonstrating outcomes at the results level. One limitation is lack of evaluation at the behavior change level.

### **References:**

1. Jogerst. 2015. Identifying Interprofessional Global Health Competencies for 21st-Century Health Professionals, Annals of global health

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## **Curriculum in Transition: Development of a Longitudinally Integrated Telehealth Experience**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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Christopher Mooney, University of Rochester School of Medicine and Dentistry  
David Lambert, University of Rochester School of Medicine and Dentistry

### **Abstract Body:**

#### **Objective or purpose of innovation:**

A longitudinal, developmentally appropriate telehealth curriculum was developed to prepare medical students for an emerging healthcare delivery model as they transition to residency.

#### **Background and/or theoretical framework and importance to the field:**

Telehealth provides healthcare services remotely<sup>1</sup> with the potential to improve access to care, improve continuity, and reduce overall costs of care. Although telehealth is growing nationally, the lack of physician education is a substantial barrier to practice integration,<sup>2</sup> and there is scant literature regarding medical student telehealth curricula.<sup>3</sup>

#### **Design: Instructional methods and materials used:**

Incorporating a longitudinal telehealth curriculum within a Technology in Medicine pillar, Phase 1 provides foundational knowledge in telehealth through a video module, demonstration of a patient-centered telehealth encounter, and a reflective exercise emphasizing Rochester's biopsychosocial model. In Phase 2, problem based learning cases illustrate how providers receive, evaluate, and act upon data exchanged through different telehealth modalities. High value care and interdisciplinary teamwork principles are introduced and applied to telehealth. Phase 3 students participate in telehealth experiences in two clerkships. In Phase 4, specialty-specific telehealth topics, economics, and policy are introduced.

Assessment modalities include written exams assessing foundational knowledge, narrative reflections, and standardized patient encounters that incorporate electronic medical records and remote real time interactions. Student feedback is collected in each phase.

#### **Outcomes:**

Program evaluation data is being collected, including changes in knowledge and attitudes toward telehealth, and incorporation of telehealth modalities into learning clinical reasoning and interdisciplinary teamwork.

#### **Feasibility and transferability for adoption:**

The curriculum focuses on a relevant, emerging mode of healthcare delivery to prepare students for practice in the future healthcare environment. The longitudinal, developmentally appropriate structure and horizontal integration with existing curriculum are designed to facilitate students'

transition to residency. The early curricular stages and ongoing data collection limit our ability to make conclusions regarding overall efficacy

**References:**

1. Dorsey ER, Topol EJ. State of Telehealth. *N Engl J Med.* 2016;375:154-61.
2. Moore MA, Coffman M, Jetty A, Petterson S, Bazemore A. Only 15% of FPs reports using telehealth; training and lack of reimbursement are top barriers. *Am Fam Physician.* 2016;93:101.
3. Waseh S, Dicker AP. Telemedicine training in undergraduate medical education: Mixed-methods review. *JMIR Med Educ.* 2019;5:e12515.

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# **Design and Implementation of an Innovative Modified Team-Based Learning Laboratory Course to Complement a Team-Based Learning Medical School Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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Caibin Zhang, UConn Health

## **Abstract Body:**

### **Objective or purpose of innovation:**

Design and implement a multimodal pre-clerkship laboratory course to complement a TBL-based medical school curriculum.

### **Background and/or theoretical framework and importance to the field:**

Team-Based Learning (TBL), the central pre-clerkship pedagogy in our MA curriculum, is an instructional method that promotes deep preparation, active learning and teamwork<sup>1</sup>. It therefore became paramount to design and deliver a modular small-group laboratory course that employs key elements of TBL, including flipped classroom<sup>2</sup>, active engagement, and peer-peer teaching/learning via application exercises (AE).

### **Design: Instructional methods and materials used:**

Varied laboratory learning environments necessitate customized approaches designed to incorporate principles of TBL pedagogy. In human anatomy lab (HAL), a rotating team leader directs dissections, documents findings and charts progress using a tablet-based handoff system<sup>3</sup>. The handoff between modular learning communities is an early model for clinical handoffs, allowing efficient communication among extended team members. In the Virtual Anatomy Lab (VAL), students perform AE based on cross-sectional anatomy using virtual anatomy tables and de-identified radiology cases in a simulated VAL “reading room” using dual-monitor workstations and a dicom viewer. Additional VAL sessions feature hands-on physiology labs and ultrasound. In histopathology lab, each session begins with a readiness assurance presentation in which randomly selected students describe the cardinal features of relevant organs/tissues. During application exercises, AE are displayed on a large monitor, allowing preceptors to track team progress. Students are randomly selected to debrief the AE while projecting their work to the class.

**Outcomes:**

The change in pedagogy demands individual and team accountability to achieve laboratory competencies. Data demonstrating student performance, narrative feedback and focus group feedback will be presented.

**Feasibility and transferability for adoption:**

The Curriculum Evaluation Committee concluded that the course provides “outstanding learning opportunities with active learning experiences that incorporate critical thinking and problem-solving skills”. Delivery of TBL-style curriculum requires faculty development during the transition to student-centered learning.

**References:**

1. Michaelsen LK, Sweet M. The essential elements of team-based learning. *New Directions for Teaching and Learning* Volume 2008, Issue 116 First published: 16 December 2008 <https://doi.org/10.1002/tl.330>
2. Sharma N, Lau CS, Doherty I, Harbutt D. How we flipped the medical classroom. *Med Teach* 2015;37(4):327-30. doi: 10.3109/0142159X.2014.923821 [published Online First: 2014/06/18]
3. Huggett KN, White MD, Knoop FC, Eno CA, Cullen DM. Team-Based Learning in Anatomy Lab: Promoting Active Learning and Professionalism. 2016 *Med Sci Educ* 26:5–6 doi: 10.1007/s40670-015-0211-x. EPub 2014 Nov 9.

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## **Design, Integration and Evaluation of a Medical Student Breastfeeding Medicine Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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Megha Fitzpatrick, Georgetown University School of Medicine

Karen McDonnell, Milken Institute School of Public Health, George Washington University

Janine Rethy, Georgetown University School of Medicine

### **Abstract Body:**

#### **Objective or purpose of innovation:**

To design, integrate and evaluate a breastfeeding medicine curriculum into undergraduate medical education

#### **Background and/or theoretical framework and importance to the field:**

Breastfeeding improves lifelong health outcomes for both the mother and the infant. However, breastfeeding rates in the U.S. are sub-optimal, disparities are stark, and despite evidence that physicians can have a significant impact on breastfeeding outcomes, medical students receive little education on this topic.

#### **Design: Instructional methods and materials used:**

Faculty in the Division of Community Pediatrics in collaboration with the Pediatric Clerkship Director at Georgetown University developed and implemented a curriculum using the Wellstart International Lactation Management Self-Study Level 1 Modules and supplemental video and reading materials. The materials can be completed in one half day. The curriculum was integrated into the required Pediatric Clerkship and pediatric Community Pediatrics elective. It was evaluated using the Wellstart assessment tool for knowledge and additional questions assessing acceptability and potential for impact on practice.

#### **Outcomes:**

196 students completed the curriculum as part of their required pediatric clerkship and 7 as part of an elective in AY 2018-2019. 76 students took both the pre and post-tests. Mean total scores increased from 19.0 to 24.16 out of 28.0 ( $p < 0.001$ ) as well as in each knowledge category (Anatomy & Physiology, Clinical Assessment & Anticipatory Guidance, Public Health & Policy and Diagnosis, Management & Pathophysiology) ( $p < 0.001$ ). 95% thought the content was at the appropriate learning level, 91% said they are at least sometimes likely to use what they learned, and 56% said it will at least moderately change the way they practice medicine.

#### **Feasibility and transferability for adoption:**

Development and integration of a focused breastfeeding medicine curriculum into clinical rotations is feasible and effective. Adding clinical modules could add strength to this curriculum.

**References:**

1. U.S. Department of Health and Human Services. The Surgeon General's Call to Action to Support Breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2011
2. Labarere J, Gelbert-Baudino N, Ayril A-S, et al. Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventive visit: A prospective, randomized, open trial of 226 mother-infant pairs. *Pediatrics* 2005;115:139–146.
3. Taveras EM, Capra AM, Braveman PA, et al. Clinical support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics* 2003;112:108–115.
4. Gary AJ, Birmingham EE, & Jones LB. Improving breastfeeding medicine in undergraduate medical education: A student survey and extensive curriculum review with suggestions for improvement. *Educ Health* 2017;30:163-168.
5. Ogburn T, Espey E, Leeman L, & Alvarez K. A breastfeeding curriculum for residents and medical students: a multidisciplinary approach. *J Hum Lact* 2005;21(4)

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## **Development and Implementation of a Clinical Skills Workplace Based Assessment in the Pre-Clerkship Setting.**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This study piloted workplace-based assessments (WBAs) in a pre-clerkship clinical skills course as an assessment tool to increase the frequency and quality of preceptor direct observation and formative feedback.

#### **Background and/or theoretical framework and importance to the field:**

Direct observation of trainees by clinical experts is considered key to clinical skills development. We implemented WBAs as part of our Medical Student Home curriculum, in which students are paired with a preceptor in a medical practice for two years, to complement the Objective Structured Clinical Examinations already in place. Limited research exists on the adoption of WBAs in diverse community practices in the pre-clerkship setting.

#### **Design: Instructional methods and materials used:**

We created WBAs to assess communication and physical exam skills taught in our course. Each tool addressed five observable behaviors, and a rubric with behavior descriptors anchored the rating scale of 'meets expectations', 'needs improvement' or 'does not meet expectations'. The narrative section documented specific strengths and areas for improvement. Preceptors completed quarterly WBAs with students. To evaluate the WBA pilot, we conducted a student focus group using semi-structure questions and a faculty feedback survey.

#### **Outcomes:**

The initial WBA completion rate was 86% and dropped to 69% overall. The student focus group revealed they perceived the form as 'another task' for preceptors, though the process did encourage preceptors to provide more robust observation and feedback opportunities. The faculty survey showed that preceptors found the WBAs easy to use and improved their ability to deliver clinical skills feedback to students.

#### **Feasibility and transferability for adoption:**

We found that WBAs provided an appropriate complement to OSCEs as a formative assessment of pre-clerkship clinical skills in an authentic setting. Despite the reported usability of the forms, the completion rate declined over the year.

**References:**

1. Norcini, J, Burch, V. Workplace-based assessment as an educational tool: AMEE Guide No. 31. Med Teacher 2007; 29:855-871.
2. Factors influencing the educational impact of Mini- CEX and DOPS: A qualitative synthesis
3. Lorwald, A. C., et al. (2018). "Factors influencing the educational impact of Mini-CEX and DOPS: A qualitative synthesis." Med Teach 40(4): 414-420.

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## **Development of a Mental Status Exam e-Module**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To create a multimedia e-module to teach the mental status exam.

#### **Background and/or theoretical framework and importance to the field:**

Learning how to perform a mental status exam (MSE) and appreciate findings for diagnostic relevance is fundamental to the psychiatric curriculum. The MSE is a complex exam with many nuanced findings and abstract concepts that are difficult to learn via standard lecture format. E-learning is effective for exposing trainees to complex clinical scenarios(1) and a multimedia format is ideal for teaching the MSE(2,3). Currently, there are no comparable MSE learning modules presently available for widespread use.

#### **Design: Instructional methods and materials used:**

We created a self-study multimedia MSE e-module. The module, built with Articulate Storyline software, includes photographs, film and audio recordings, and artwork to illustrate exam findings. It is based on an existing internal use module whose content was not copyright permissible or not consented for national use. Whenever possible, for the new module, we obtained patient-generated materials to provide a more compelling and authentic learning experience.

#### **Outcomes:**

We anticipate the e-module will be a valuable and accessible resource for psychiatric education across the country. Preliminary data regarding the effectiveness of teaching the MSE with the e-module is being gathered locally and nationally. We are also embarking on peer review to further refine the module's content and organization.

#### **Feasibility and transferability for adoption:**

This will be the first nationally available learning module devoted to MSE teaching. The strengths of our module lie within the use and organization of multimedia and real patient material to teach abstract concepts and illustrate MSE findings. Limitations include ensuring that the quantity of content is appropriate for the stage of learner. Also, incorporating more learner assessments within the module may help to foster retention of new content.

#### **References:**

1. Moran et al. Current Technology in Advancing Medical Education: Perspectives for Learning and Providing Care. Academic Psychiatry. 2018 Dec; 42(6): 796-79.

2. Xie et al. The Effectiveness Of Using Non-traditional Teaching Methods To Prepare Student Health Care Professionals For The Delivery Of Mental State Examination: A Systematic Review. JBI Database of Systematic Reviews & Implementation Reports. 2015 Aug; 13 (7): 177-212
3. Mankey, VL. Using Multimodal and Multimedia Tools in the Psychiatric Education of Diverse Learners: Examples From the Mental Status Exam. Academic Psychiatry. 2011 Fall; 35(5): 335-339.

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## **Direct Observation for Real-time Formative Feedback of 2nd year Medical Students in Clinical Settings**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To assess clinical skills of 2nd year medical students in authentic clinical environments.

#### **Background and/or theoretical framework and importance to the field:**

In traditional 2 (preclinical) + 2 (clinical) medical school curricula, students are generally taught clinical skills in a strictly simulated environment in their preclinical years. They are then expected to demonstrate those skills, much later, in clinical clerkships with real patients.

#### **Design: Instructional methods and materials used:**

In the Shared Discovery Curriculum's (SDC) Middle Clinical Experience (MCE), students spend 30 weeks in a variety of 1-4 week clinical rotations. Students are required to have several direct observation checklists completed throughout the MCE. Some are specific to a rotation while others are more general. Students have the option of having the rotation non-specific checklists completed by clinical preceptors in any rotation or in a simulation lab. We developed a system (JustInTime Medicine, or JIT) for completing these checklists on mobile devices. Progress is tracked and reports generated via a web-based interface. Results are automatically added to the student's portfolio dashboard along with other assessment data.

#### **Outcomes:**

Of 944 general checklists completed by 200 students, 51.5% were done in authentic clinical settings. 47.0% of the checklists were for focused physical exams (PE), with 51% of these completed in authentic clinical settings. With the exception of the Cardiovascular and Pelvic Exams, students completed most of the PE checklists in authentic clinical settings instead of in a simulation lab.

#### **Feasibility and transferability for adoption:**

Students have the opportunity to get real-time feedback on selected clinical skills early in their medical education, allowing plenty of time for improvement before clerkships. Feedback data is available for continual review to assess improvement.

#### **References:**

1. Kogan, J. R., Hatala, R., Hauer, K. E., and E. Holmboe. 2017. Guidelines: The do's, don'ts and don't knows of clinical skills in medical education. *Perspect Med Educ* 6:286-305.
2. Miller G.E. The assessment of clinical skills/competence/performance. 1990. *Acad Med* 65:S63-S67.

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## **Educational scholarship training through learning communities: The Columbia VP&S Medical Education Research Intensive Training Program**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Columbia VP&S has a growing community of physician-educators who are interested in obtaining education research training. In 2018, VP&S sought to address this need by developing a modified version of the AAMC Medical Education Research Certificate (MERC) program, called the Medical Education Research Intensive Research Program (MERIT) run by education specialists.(1) The goals of the program were to 1) develop participants' core skills in research methods, 2) build a learning community of medical education scholars who can work collaboratively on scholarly projects.

#### **Background and/or theoretical framework and importance to the field:**

Clinician-educators, who serve in roles such as course directors, clerkship directors, and program directors are often not provided educational scholarship and research training.(2) Many are not equipped to translate educational interventions into scholarly projects. Furthermore, educational scholarship programs tend to be event-based and lack continuity of learning beyond workshops.(3-4) Increasingly, faculty who are on educator promotional tracks desire more formal training in education research methods, but might the financial resources to attend external trainings.

#### **Design: Instructional methods and materials used:**

25 participants were selected and required to attend 6/8 onsite MERC workshops and 3/4 VP&S-led seminars over the course nine months. Participants engaged with the MERIT learning community and education specialists to develop a research proposal throughout the program.

#### **Outcomes:**

21/25 (84%) participants completed the inaugural program. An end-of-program evaluation showed: 67% are applying for an education grant; 71% are submitting a conference abstract; and 76% are collaborating with a university colleague on an education research project.

#### **Feasibility and transferability for adoption:**

The learning community model fostered a sense of community and continuity of learning at every stage of the program. However, securing the necessary protected time to participate in a longitudinal program may be a barrier for some faculty to apply.

**References:**

1. Association of American Medical Colleges' MERC Program. Program description available from: <https://www.aamc.org/what-we-do/mission-areas/medical-education/meded-research-certificate-program>
2. Leslie K, Baker L, Egan-Lee E, Esdaile M, Reeves S. Advancing Faculty Development in Medical Education: A Systemic Review. *Acad Med.* 2013; 88(7): 1038-45
3. Abigail LKM. Do communities of practice enhance faculty development? *Health Prof Educ.* 2016; 2: 61-74
4. Steinert Y. Faculty Development: From workshops to communities of practice. *Med Teach.* 2010; 32: 425-428
5. Wenger E. *Communities of Practice: Learning, Meaning, and Identity.* New York: Cambridge University Press; 1998

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# **Effect of a Longitudinal Radiology Clerkship Format on Third Year Medical Student Self Perception of Radiology Interpretive Skills, Appropriate Imaging Utilization, and Attitudes Toward the Field of Diagnostic Radiology**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

## **Authors:**

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## **Abstract Body:**

### **Objective or purpose of innovation:**

To evaluate the effect of an innovative Longitudinal Radiology Clerkship at the University of Connecticut School of Medicine on acquisition of skills and on attitudes toward the field.

### **Background and/or theoretical framework and importance to the field:**

A longitudinal Radiology Clerkship was instituted in an effort to present clinically important diagnostic radiology findings and concepts in an integrated manner within the third year clinical clerkships.

### **Design: Instructional methods and materials used:**

The new longitudinal clerkship began with five one-hour interactive case-based sessions focusing on the fundamentals of Diagnostic Radiology. Two-hour small group case-based radiology sessions were then held throughout the clinical clerkships of the third year with one hour of online pre-work. Students were also required to cover one weekend 'virtual on-call' shift with the Radiology Clerkship Director. A case write up and examination contributed to the course grade.

### **Outcomes:**

Sixty-one students completed a voluntary, anonymously matched pre-and-post survey that assessed the effect of the new clerkship format.

Their perceived relative knowledge and comfort level was higher on the post-survey by approximately 1 point on the 5-point Likert scale ( $p < 0.001$ ). Further, students rated Diagnostic Radiology more favorably on the post survey (mean paired differences = 1.08,  $p < 0.001$ ).

However, there was no significant change regarding student likelihood of choosing Diagnostic Radiology as a career. Standard post clerkship evaluations praised the clerkship format and integration. Scores on the final written Radiology examination were consistent with previous years with a traditional clerkship format.

### **Feasibility and transferability for adoption:**

The Longitudinal Radiology Clerkship successfully integrates radiology teaching with the clinical clerkships and enhances knowledge. This longitudinal clerkship format was welcomed

by faculty and students. It may be too early to detect this format's impact on medical students' career choices and examination scores.

**References:**

1. Shaffer K, Ng JM, Hirsch DA. An integrated model for radiology education: development of a year-long curriculum in imaging with focus on ambulatory and multidisciplinary medicine. *Academic Radiology*. 2009; 16(10):1292-301.
2. Di Salvo DN, Clarke PD, Cho CH, Alexander EK. Redesign and Implementation of the Radiology Clerkship: From Traditional to Longitudinal and Integrative. *Journal of the American College of Radiology*. 2014; 11(4):413-420.
3. Bell S, Krupat E, Fazio SB, Roberts DH, Schwartzstein RM. Longitudinal pedagogy: a successful response to the fragmentation of the third-year medical student clerkship experience. *Academic Medicine*. 2008; 83(5):467-75.

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## **Evaluation of the Efficacy of Pathology Self-Directed Learning Modules in a Pre-Clinical Medical School Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

The purpose of this study is to evaluate the effectiveness of self-directed pathology modules in promotion of learning and retention of pathology related course content in a pre-clinical medical school curriculum.

#### **Background and/or theoretical framework and importance to the field:**

At Cooper Medical School of Rowan University, the pre-clinical curriculum is divided into organ-based course blocks that include self-directed learning (SDL) time that students utilize to identify learning needs. SDL was first described by Malcolm Knowles as “a process in which individuals take the initiative, with or without the help of others, in diagnosing their own learning needs, formulating learning goals, identifying human and material sources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes”<sup>1</sup>. SDL helps students develop skills necessary for lifelong learning<sup>2</sup>.

#### **Design: Instructional methods and materials used:**

Self-directed learning modules, including scanned histologic slides and short cases with embedded questions, were created for first (Hematology/Oncology) and second-year (Women’s Health (WH)) courses, and were made available to students through a web-based platform. Percentages of modules completed (enrolled students, WH: n=14; Hematology/Oncology: n=44), and performance on related course examination questions and overall course performance (enrolled and control students, WH: n=28; Hematology/Oncology: n=88) were collected with Institutional Review Board approval. Enrolled students were invited to complete an anonymous survey to assess experiences with the modules.

#### **Outcomes:**

Use of self-directed pathology modules improved performance on related course examination questions in WH ( $p=0.029$ ) but not Hematology/Oncology. Notably, percentage of study students completing all or part of the modules was higher in WH (60%) as compared to Hematology/Oncology (30%).

**Feasibility and transferability for adoption:**

We found that use of self-directed pathology modules improves acquisition and retention of pathology-related course content. This study is limited by the relatively small sample size.

**References:**

1. Knowles M. Self-directed learning: a guide for teachers and learners. Chicago, IL: Follett; 1975.
2. Murad, HM, Varkey, P. Self-directed Learning in Health Professions Education. *Annals Academy of Medicine*. 2008; 37: 580 - 590.

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## **Evidence-Based Stress Management: Tools for Provider and Patient**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This course had two objectives: for participants to learn evidence-based tools to promote their own resilience to stress, and to gain a broader understanding of how such trainings can positively impact patient outcomes.

#### **Background and/or theoretical framework and importance to the field:**

Rising concerns about burnout led the ACGME to include and prioritize resident wellness in its common program requirements. As part of our response to this call, we implemented a two-week, 30-hour elective for 4th year medical students and resident physicians

#### **Design: Instructional methods and materials used:**

We implemented Harvard/MGH's Benson Henry Institute's 12-hour Stress Management and Resiliency Training (SMART). SMART teaches elicitation of the relaxation response, stress awareness, negative automatic thought identification and adaptive coping through material presentation and interactive, experiential learning.

We explored the scientific evidence supporting mind body practice for patients through a student journal club. Students also participated in a narrative medicine activity, a meditation skills workshop, and humanism in medicine activities including the art of observation at a local museum and reflective journal writing.

#### **Outcomes:**

Four 4th year medical students and two resident physicians enrolled in the course. Pre to post testing found statistically significance in:

- Increase in stress management skills (p=.012)
- Improved sense of well-being (p=.002)
- Increased use of mind body practices (p=.027)
- Decrease in anxiety symptoms (p=.041; one tail)

Other outcome variables, though not statistically significant, trended in positive directions:

- Mindful awareness/attention scores increased
- Sleep quality and burnout scores improved
- Depression symptoms decreased

**Feasibility and transferability for adoption:**

This course has potential to mitigate burnout by providing evidence-based tools to help trainees negotiate stress and offers important evidence on patient outcomes for the care of their patients. Limitations include small sample size and potential for reduced generalizability to other medical training environments.

**References:**

- 1.ACGME. ACGME Common Program Requirements (Residency). 2018.
2. Stahl JE, Dossett ML, LaJoie AS, et al. Relaxation Response and Resiliency Training and Its Effect on Healthcare Resource Utilization. PLoS One 2015;10:e0140212-e.

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## **Facilitating Orientation Discussions between Residents and Medical Students on Inpatient Rotations**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To design and implement a Tool to aid residents on inpatient teams in orienting clerkship students.

#### **Background and/or theoretical framework and importance to the field:**

Clerkships are anxiety provoking for students, which can negatively impact cognitive function and learning. This anxiety is caused in part by multiple uncertainties. Many of these uncertainties change not only when switching between different clerkships or services, but also when the members of the resident teams change. One target for intervention to allay some of these causes for anxiety is an early conversation between the residents and students. This study sought to implement a robust tool to facilitate orientation discussions between residents and students, and to assess its impact.

#### **Design: Instructional methods and materials used:**

The Orientation Tool was designed using feedback gathered from interviews with students and residents across specialties. Efficacy was assessed via survey of 3 groups of clerkship students on pediatrics and OB/GYN rotations: (1)end of clinical year students who did not use the Tool, (2)end of the clinical year students who used the Tool, and (3)beginning of the next clinical year students who used the Tool.

#### **Outcomes:**

In groups with Tool use, more key topics were covered and more topics were covered sufficiently. Early clerkship students reported more role clarity with Tool use. Tool use was associated with decreased student anxiety, particularly in the early clerkship group.

#### **Feasibility and transferability for adoption:**

The Tool was only tested at one institution in two rotations, and though Group 1 may be an adequate control to Group 2, it may not be for Group 3, as that group consisted of different students at a different point in the clinical year. N values were small. Nevertheless, the study yielded some statistically significant results.

#### **References:**

1. Surmon L, Bialocerkowski A, Hu W. Perceptions of preparedness for the first medical clerkship: a systematic review and synthesis. BMC Med Educ. 2016;16:89.

2. Soo J, Brett-maclean P, Cave MT, Oswald A. At the precipice: a prospective exploration of medical students' expectations of the pre-clerkship to clerkship transition. *Adv Health Sci Educ Theory Pract.* 2016;21(1):141-62.
3. Hoffman M, Cohen-osher M. The One Minute Learner: Evaluation of a New Tool to Promote Discussion of Medical Student Goals and Expectations in Clinical Learning Environments. *Fam Med.* 2016;48(3):222-5.

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## **Filling a Common Gap in Education Scholarship Productivity: An Internal Grant with an External Mentor**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Our goal was to expand our institutional expertise in educational scholarship at a new medical school by developing an internal grant program utilizing external consultants.

#### **Background and/or theoretical framework and importance to the field:**

Two major challenges facing medical science educators include time for educational scholarship and lack of support and resources. Clinician scientists are more likely to be mentored than clinician educators and mentored clinician educators spend more time on scholarship. Our institution needed to address these challenges to develop faculty skills in educational scholarship within the context of finite mentor availability. We created a two-year educational scholarship grant program that provides grant-writing assistance, seed funding, and pairs each recipient with a renowned educational research/scholarship expert/external consultant.

#### **Design: Instructional methods and materials used:**

We researched grant programs that facilitate early-phase medical education innovations and scholarship to align our structure with these applications. We modified the language to guide the beginning educational scholar, provided an initial grant writing workshop with a leader in the field, and secured funding for two, \$1,500 grants/year and a \$3,000 stipend for each of the two external consultants. We constituted an interprofessional selection committee at our institution with broad experience in educational scholarship and developed selection criteria consistent with our goals. We paired recipients with consultants based upon the consultants' experience and preferences. The consultants agreed to several phone and email correspondences with their assigned grant recipients.

#### **Outcomes:**

Since May 2017, we have awarded grants to six faculty who worked with external consultants from across the U.S. Initial awardees have presented at conferences and submitted manuscripts.

#### **Feasibility and transferability for adoption:**

We learned that faculty need more assistance in early phases of project development and will hold grant workshops annually. We incorporated more specific guidelines for the recipient/consultant relationship, detailed feedback to applicants, and updates for consultants to maintain their investment.

**References:**

1. Dickinson BL, Deming N, Coplit L, Huggett KN, Quesnelle K, Sheakley M, Rosenfeld G, Wragg S. IAMSE Member Perspectives on the Recognition, Reward, and Promotion of Medical Science Educators: An IAMSE Sponsored Survey. *Medical Science Educator* 2018; 28(2):335-343.
  2. Chew LD et al. Junior Faculty's Perspectives on Mentoring. *Acad Med.* 2003;78:652.
- Advancing Educators and Education: Defining the Components and Evidence of Educational Scholarship. Summary report and findings from the AAMC Group on Educational Affairs Consensus Conference on Educational Scholarship. American Association of Medical Colleges 2007.

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## **From 'Show and Tell' to 'Discover and Learn'**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Transform passive learning in gross pathology to active learning

#### **Background and/or theoretical framework and importance to the field:**

The congenital heart disease gross pathology lab was traditionally taught as a “show and tell” model. The lab was taught over multiple small group sessions, requiring repetitive instruction from the instructor, and it is awkward for students who lose interest and get bored quickly. We have designed a new active learning model that will more effectively engage students and improve confidence in gross pathology, while simultaneously improving instructor satisfaction.

#### **Design: Instructional methods and materials used:**

The traditional “show and tell” part of the lab instruction is captured by multiple short videos. The videos are edited and converted to interactive videos using PlayPosit, which allows for embedding a variety of assessment questions. Students’ understanding of the material is assessed as they are watching the videos before coming to the lab. The assessment data consolidated by PlayPosit enables the instructor to pinpoint a student’s knowledge gaps immediately. Once in the lab, the students will be given a new set of unknown surgical specimens to identify first by themselves independently, followed by working in small groups.

#### **Outcomes:**

Students are more engaged in the subject matter. Their observational and reasoning skills are honed as they discover and identify specific lesions. Instructors can focus on facilitating students’ learning without repetitive instruction.

#### **Feasibility and transferability for adoption:**

Here, a traditional “show and tell” gross pathology lab is transformed into an active “discovery and learn” experience. To ensure authentic learning, the specimens used in the videos must differ from the ones explored by students in the lab, which can be a challenge for a medical school that has limited access to a gross organ library.

### **References:**

1. Banilower, E., Cohen, K., Pasley, J. & Weiss, I. (2010). Effective science instruction: What does research tell us? Second edition. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
2. Herreid, C., & Schiller, N. (2013). Case Studies and the Flipped Classroom. *Journal of College Science Teaching*, 42(5), 62-66. Retrieved from <http://www.jstor.org/stable/43631584>

3. Katherine McKnight, Kimberly O'Malley, Roxanne Ruzic, Maria Kelly Horsley, John J. Franey & Katherine Bassett (2016)  
Teaching in a Digital Age: How Educators Use Technology to Improve Student Learning, *Journal of Research on Technology in Education*, 48:3, 194-211, DOI: 10.1080/15391523.2016.1175856

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## **Histology on the Run: Qualitative assessment of 'The 15 Minute Histo Check-Up' online self-assessment tool.**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

We developed an online histology tool tailored to our curriculum to enable MS1 students to self-assess their histology understanding. The tool is adaptively-released following faculty-led lectures and laboratories. It purposely creates a 'safe space' for students to independently self-assess their knowledge base.

#### **Background and/or theoretical framework and importance to the field:**

Learning histology requires students to be able to recognize patterns that constitute the characteristic features of tissues and organs (1, 2). In Human Structure and Function (HSF), an integrated medical school course, students must learn these patterns for examinations that occur every three weeks. We previously presented development of 'The 15 Minute Histo Check-Up' online tool using Articulate Storyline 360 software. This poster summarizes results of a qualitative study analyzing student feedback.

#### **Design: Instructional methods and materials used:**

Six survey questions were included in the anonymous end-of-course HSF evaluation. Response rates were 69% (2017) & 61% (2018). Students could opt to answer or to skip survey questions. The questions included 5 'closed' multiple choice questions and 1 'open' write-in-the-answer question. Key phrases were extracted from the written text and categorized based on results. Constructivist grounded theory (3, 4) is being employed to determine patterns from coded answers asked directly to the population being studied.

#### **Outcomes:**

Students used the tool frequently and reported that it was helpful for developing content mastery. Survey write-in responses provided thought-provoking direction, and recognition for the need to further explore options for serving the three different populations of students targeted with the tool.

#### **Feasibility and transferability for adoption:**

Strengths: Students embrace tool use, and use the tool as a quick self-assessment to tailor their self-devised adult-learning study plans. Modules combining questions have been created for Step-1 review.

Limitations: Time commitment necessary to write and fully vet questions, however, speed of the process increases with practice.

**References:**

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  2. Fields RD (2011). Imaging learning: the search for a memory trace. *Neuroscientist*. 17:185-196.
  3. Lingard L, Kennedy TJ (2007). Qualitative research in medical education. ASME ISBN 978-0-904473 45-2.
  4. Malteraud K (2001). Qualitative Research: standards, challenges, and guidelines. *The Lancet*. 358:483-488.
- The study reported here has been approved by the Univ. Rochester Med. Ctr. Institutional Research Board (IRB).

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# **Implementation of a Novel Hypothesis Driven Physical Examination Session in a Transition to Clerkship Program**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

To implement and evaluate a novel HDPE educational session at an institution that uses a hybrid HTT/HDPE instructional approach.

### **Background and/or theoretical framework and importance to the field:**

The Head to Toe (HTT) approach to teaching the physical examination (PE) focuses on technique and performing a comprehensive PE [1] while Hypothesis-Driven PE (HDPE) integrates clinical reasoning into the performance of a problem focused PE [2]. The two approaches can be complementary and integrated into a longitudinal clinical skills curriculum.

### **Design: Instructional methods and materials used:**

We designed a 3-hour HDPE session as part of a transition to clerkship program. For each of 5 clinical vignettes, students generated a differential diagnosis that they subsequently used to identify relevant PE maneuvers with justification for each maneuver. Students then performed these maneuvers on peers with faculty feedback. After the session, students completed surveys on their retrospective pre- and post-session knowledge and confidence, and satisfaction with the session. We completed quantitative and qualitative analyses on survey data.

### **Outcomes:**

192 students participated in the program and 140 (73%) completed the survey. Students were significantly more likely after the session than before to feel confident generating a differential diagnosis and using it to determine which PE maneuvers to perform for common patient concerns. Over 80% of respondents felt that the session improved critical thinking about patient presentations and felt the session would help them in clerkships.

### **Feasibility and transferability for adoption:**

We designed this curriculum to enable students to take a developmental leap from performing a HTT PE to a focused HDPE and succeeded in increasing student confidence in this aim.

## **References:**

1. Uchida T, Park Y, Ovitsh R, Hojsak J, Gowda D, et al. Approaches to Teaching the Physical Exam to Preclerkship Medical Students: Results of a National Survey. *Academic Medicine*. 2019;94:129-34.

2. Yudkowsky R, Otaki J, Lowenstein T et al. A hypothesis-driven physical examination learning and assessment procedure for medical students: initial validity evidence. *Medical Education*. 2009. 43:729-740.

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## **Including Student Work in a University Institutional Repository: Creating Opportunities for Learning and Collaboration**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Librarians at the University of Vermont collaborate with College of Medicine faculty to include student work in ScholarWorks @ UVM, the university's institutional repository (IR), creating unique opportunities for learning and discussion on open access, copyright and scholarly publishing.

#### **Background and/or theoretical framework and importance to the field:**

Institutional repositories collect and showcase the scholarly work of a university and provide open and free access to research. Students benefit from increased discoverability and the opportunity to access and build on the work of their peers. Knowing that their work will be accessible through Google Scholar may increase students' perception of the value of completing these projects.

#### **Design: Instructional methods and materials used:**

Multiple student projects spaced throughout the curriculum are integrated into the IR. These include Public Health Project posters done by groups in their 2nd year, Family Medicine Clerkship Community Projects that identify a need in the community and create an intervention to address that need, and scholarly project manuscripts completed by 4th year students. Librarians provide instruction during in class sessions and address concerns regarding access and copyright. Tutorials are embedded in the course management system that outline benefits and outcomes of including work in an IR.

#### **Outcomes:**

Since its inception in 2015, Family Medicine Clerkship student projects posted to ScholarWorks @ UVM have been downloaded over 50,000 times. Students can view metrics on how often and from where their work is being accessed, indicating the real world impact of open access scholarship.

#### **Feasibility and transferability for adoption:**

Adding student research to the IR can range from instituting a few simple added steps for students to increase the perceived value of the project, to a more involved effort to educate students on new and developing models of scholarly communication. Limits include lack of access to an IR.

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1. Alexander, L., Colman, J., Kahn, M., Peters, A., Watkinson, C., & Welzenbach, R. (2016). Publishing as pedagogy: Connecting library services and technology. *Educause Review*. <https://er.educause.edu/articles/2016/1/publishing-as-pedagogy-connecting-library-services-and-technology>
2. Association of College and Research Libraries' Working Group on Intersections of Scholarly Communication and Information Literacy, *Intersections of Scholarly Communication and Information Literacy: Creating Strategic Collaborations for a Changing Academic Environment* (Chicago, IL: Association of College and Research Libraries, 2013): 6-10, accessed May 25, 2017, <http://acrl.ala.org/intersections>
3. Fernández-Luque, A. M., Cerdón-García, J. A., & Gómez-Díaz, R. (2017). Digital Competences in the Curriculum of Postgraduate Studies of Health Professionals: The Role of the Librarian As Trainer in Formative Programmes. *Proceedings of the 5th International Conference on Technological Ecosystems for Enhancing Multiculturality*, 34:1–34:6. <https://doi.org/10.1145/3144826.3145384>
4. Kipnis, D. G., Palmer, L. A., & Kubilius, R. K. (2019). The institutional repository landscape in medical schools and academic health centers: A 2018 snapshot view and analysis. *Journal of the Medical Library Association : JMLA*, 107(4), 488–498. <https://doi.org/10.5195/jmla.2019.653>
5. Pelaccia, T., & Viau, R. (2017). Motivation in medical education. *Medical Teacher*, 39(2), 136–140. <https://doi.org/10.1080/0142159X.2016.1248924>
6. Rand, D., & Stager, L. (2018). Promoting and Tracking Institutional Scholarship with Implementation of a Librarian-Curated Digital Repository and Research Information Management System. *Medical Reference Services Quarterly*, 37(4), 375–385. <https://doi.org/10.1080/02763869.2018.1514904>

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## **Incorporating Service-Learning into a Clinical Skills Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

In AY18-19 the Warren Alpert Medical School of Brown University (AMS) piloted a service-learning initiative for students in a second-year clinical skills course in response to the Liaison Committee on Medical Education's (LCME) call to incorporate educational initiatives that combine learning goals and community service in ways that enhance both student growth and the common good in undergraduate medical education (UGME) (1,2).

#### **Background and/or theoretical framework and importance to the field:**

Clinical skills courses are a natural fit for service-learning because of their inclusion of social and behavioral health themes. The LCME's definition of service-learning, which includes: 1) service in activities that respond to community-identified concerns; 2) preparation; and 3) student reflection, served as the guiding framework for the initiative (3).

#### **Design: Instructional methods and materials used:**

We piloted the initiative as a voluntary program in AY18-19 to assess feasibility. Student activities included 1) site-specific preparation in the form of semi-structured group discussions, trainings, or a site-specific orientations; 2) a voluntary hands-on service-learning experience in their choice of community sites; and 3) a reflective field note.

#### **Outcomes:**

Based on student experience logs, 40% (n=58) of students elected to participate. According to satisfaction surveys, 39% of respondents felt that service-learning increased their knowledge of the social factors that impact health, and 44% felt that it broadened their awareness of community health needs in Rhode Island.

#### **Feasibility and transferability for adoption:**

Integration of service-learning into an existing clinical skills curriculum enhanced topics taught in the Doctoring course, simplified tracking, and was not overly time-intensive. However, the minimum four-hour service-learning requirement likely limited the impact on students' learning as well as the benefit to community sites.

**References:**

1. Stewart T, Wubben Z. An overview of infusing service-learning in medical education. *Int J Med Educ.* 2014 Aug 4;5:147-56.
2. Liaison Committee on Medical Education. *Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the MD Degree.* 2016.
3. Fredrick N. Teaching social determinants of health through mini-service learning experiences. *MedEdPORTAL.* 2011;7:9056.

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## **Interprofessional Collaborative Practice Educational Experiences as Foundational Components of a Competency-based Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To provide medical students with experiences designed to develop and enhance skills necessary for interprofessional collaborative practice.

#### **Background and/or theoretical framework and importance to the field:**

Medical schools have largely embraced the World Health Organization's theory that "interprofessional education [IPE] enables effective collaborative practice which in turn optimizes health-services..."(1) and have incorporated IPE experiences into their curriculum.(2) Others have combined strategies behind IPE with interprofessional collaborative practice competencies where medical students learn from a broad array of practicing health professionals.(3-8)

#### **Design: Instructional methods and materials used:**

Michigan State University College of Human Medicine competency-based curriculum utilizes IPE strategies with interprofessional collaborative practice competencies. First year medical students have longitudinal experiences with medical assistants and nurses in primary care outpatient practices. Second year students complete one to four-week rotations with practicing health professionals who are future interprofessional care team partners in both inpatient and outpatient settings. Between the two years, students spend approximately 50 half-days with non-physician health care professionals.

#### **Outcomes:**

Four cohorts of students (approximately 760) have completed interprofessional collaborative practice educational experiences. Practice sites for the first-year students consistently and overwhelmingly (80%) report students were useful members of their teams. At the end of the

second year, 79.4% of students report being motivated and engaged by their clinical time and 70.7% of students agree that these experiences have helped them gain a better understanding of the health professional's role.

### **Feasibility and transferability for adoption:**

Threading interprofessional collaborative practice educational experiences throughout the curriculum solidified their foundational role as a competency for effective physicians. Although the educational experiences met the required learning goals, sites varied in their patient population, practice, and adaptability to active inclusion of students.

### **References:**

1. WHO. Framework for action on interprofessional education & collaborative practice. Geneva: World Health Organization. 2010.
2. Interprofessional Education Collaborative. Core Competencies for Interprofessional Collaborative Practice: 2016 Update. Washington DC: Interprofessional Education Collaborative. 2016.
3. Reiter, Shirley Ann; Rasmann-Nuhlicek, Dale; Biernat, Kathy; Lawrence, Steven. Registered dietitians as problem-based learning facilitators in a nutrition curriculum for freshmen medical students. *Journal of the American Dietetic Association*. June 1994; 94(6): 652-654.
4. Colhoun, Alison; Ahmed, Hamza; Lord, Robert; Miles, Gail. Medical student placement success: a nurse-led unit. *The Clinical Teacher*. 2017; 14:292-294.
5. Noble, Christy; Brazil, Victoria; Teasdale, Trudy; Forbes, Mark; Billett, Stephen. Developing junior doctors' prescribing practices through collaborative practice: Sustaining and transforming the practice of communities. *Journal of Interprofessional Care*. 2017; 31(2):263-272.
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## **Introducing 2nd year medical students to palliative care**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To provide 2nd year medical students with experience to give them a working understanding of the fundamentals of palliative medicine and its role in health care.

#### **Background and/or theoretical framework and importance to the field:**

The concept of improving quality of life for individuals with serious, advanced, or terminal illness is a central principle of medical practice. The increasing focus and integration of palliative care into our medical infrastructure requires that medical school graduates have a working understanding of the essential tenets of palliative medicine and how it relates to traditional health care systems.

#### **Design: Instructional methods and materials used:**

In the Shared Discovery Curriculum's (SDC) Middle Clinical Experience (MCE), students participate in a two-week Palliative Care rotation. During the rotation students complete required readings and videos, participate in clinical experiences with a hospice or palliative care team, and attend rotational small group (RSG) sessions led by a physician. RSG sessions are notable for the interactive nature of the discussions. Students participate in case presentations from their rotational experiences and engage in conversations about their reactions to death and dying, issues in pain and opioid prescribing, and the integration of palliative strategies into mainstream medicine.

#### **Outcomes:**

In end-of-MCE surveys, students ranked the Palliative Care Rotation as the favorite of the seven non-traditional rotations of the curriculum. Students report that they have a greater appreciation for the field after the experience and that, in some cases, are more likely to consider palliative care as a specialty option.

#### **Feasibility and transferability for adoption:**

This experience does not create skilled palliative practitioners or pain management experts. However, students are exposed to the importance of values-based care, honest communication, and opportunities to relieve suffering. These concepts will motivate them to seek optimal resources for the most vulnerable and fragile of their patients as they continue through their training and into practice.

**References:**

1. Dumanovsky T, Augustin R, Rogers M, Lettang K, Meier DE, Morrison RS. The growth of palliative care in U.S. hospitals: a status report. *J Palliat Med.* 2016. 19:8-15.

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## **Linking Social Determinants and Health Care: An Experiential Model for First-year Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

We conducted a pilot exercise for first-year medical students, entitled COMmunity Health Trek, to engage students in exploring health and social needs throughout Vermont by visiting, observing, and reflecting.

#### **Background and/or theoretical framework and importance to the field:**

Public health and social determinants are essential to patient care, but challenging to integrate into medical education. We believe integrating population health experiential concepts early in undergraduate medical education is needed.

#### **Design: Instructional methods and materials used:**

We assigned a Vermont town (used for clinical teaching) to each group of first-year students. Students identified health and social needs of their community using a social determinants framework and county health data. Utilizing a structured reflection form to assess demographics, community health status, and health care sites, groups wrote about factors influencing their community's health. They supplemented reflections with photos and a summary poster. All materials were posted on a Microsoft Teams channel created for this session.

#### **Outcomes:**

All 20 groups visited towns, completed the reflection, and created a poster. Reflections identified 32 distinct health and community-related factors, including access to primary care (85%), hospital-based care (80%), parks/playgrounds (53%), public transportation (50%), walkability (45%) and access to groceries (50%). Students were less likely to document issues around housing (15%), mental health/substance abuse treatment services (10%), pharmacies (5%), ambulance/EMT services (5%) and issues around disability access (5%). Students demonstrated extensive integration of health department, CDC and Census information into their reflections.

#### **Feasibility and transferability for adoption:**

Our curriculum contains second-year public health projects, but prior to this pilot, contained no

earlier mechanism for all students to experience community health and social factors. The pilot reached 5 of 14 Vermont counties, including rural, suburban, and urban locations, but was limited to a single session. Microsoft Teams provided a shared learning platform; a structured assessment was important for assessing the session's impacts on learning.

**References:**

1. Daniel H, Bornstein SS, Kane GC, Carney JK, Gantzer HE, Henry TL, Lenchus JD, Li JM, McCandless BM, Nalitt BR, Viswanathan L, Murphy CJ, Azah AM, Marks L. Addressing Social Determinants to Improve Patient Care and Promote Health Equity: An American College of Physicians Position Paper. *Ann Intern Med* 2018; 168(8):577-578.
2. Artiga S, Hinton, E. Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. Issue Brief. May 10, 2018. Available at: <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
3. National Academies of Sciences, Engineering, and Medicine. 2019. Integrating Social Care into the Delivery of Health Care: Moving Upstream to Improve the Nation's Health. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25467>.

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## **Longitudinal, Cost-Effective Training in Cultural Competence and the Appropriate Use of Medical Spanish for U.S. Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Here, we outline a multi-year Medical Spanish and Latino Health Track (MSLHT) designed for medical schools serving large, underinsured Hispanic populations.

#### **Background and/or theoretical framework and importance to the field:**

Demographic information collected by the U.S. Census depicts a population of 40 million native Spanish-speakers who comprise a substantial portion of the U.S. healthcare-consuming population, >40%; of whom are not “very proficient” in English. [1–3] Despite strong evidence associating improved patient outcomes with language-concordant care in medical practice [4], the makeup of the U.S. physician workforce does not meet the demand for such care from non-English language proficient (nELP) Latinos. (AAMC Diversity Facts & Figures, 2016) To address this gap, most American medical schools have implemented courses/electives in Medical Spanish and Latin culture. These programs, however, are poorly-tracked, provide limited evidence of improved Spanish proficiency and have uncharacterized impacts on patient experience. [5–7]

#### **Design: Instructional methods and materials used:**

In place of lecture, we employ a novel small-group workshop format centered around standardized patient (SP) interactions to develop language- and culture-based critical thinking skills. Licensed interpreters are included in SP scenarios to aid students in avoiding “false fluency” bias. [7] A diverse offering of Latino SPs are inexpensively sourced, trained and coordinated by partner organizations (the Society for Advancement of Chicanos/Hispanics and Native Americans in Science, in our model). Participant comprehension and progression are monitored through biannual Objective Structured Clinical Examination. Finally, trainees are deployed to Latino-serving clinical sites and evaluated for bilingual competency and interpreter collaboration in tandem with ongoing coursework.

#### **Outcomes:**

MSLHT is a two-year pilot program, results pending.

**Feasibility and transferability for adoption:**

MSLHT does not track nELP patient outcomes. However, our novel academic track is culturally-focused, models inexpensive SP sourcing, encourages interpreter collaboration and discourages false fluency derived medical error.

**References:**

1. US Census Bureau. American Community Survey (ACS). [cited 28 Oct 2019]. Available: <https://www.census.gov/programs-surveys/acs>
2. US Census Bureau. Current Population Survey (CPS). [cited 28 Oct 2019]. Available: <https://www.census.gov/programs-surveys/cps.html>
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# **Looking at the Clinical Thinking and Linking Curriculum Three Years In: Using Spiral Integration for Teaching Basic Science and Clinical Reasoning Across Pre-Clinical and Clinical Years**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

This innovation in teaching is meant to act as a method of linking knowledge gained pre-clinical training to the clinical reasoning skills honed during clinical training.

### **Background and/or theoretical framework and importance to the field:**

Integration of basic science and clinical knowledge is a required skill for the practice of medicine and a challenge for clinical educators to teach. Mastering this integration has been linked to successful achievement of clinical reasoning in patient care. With this goal the CTL program was initiated at AMC in 2016.

### **Design: Instructional methods and materials used:**

The program has learners actively link specific clinical cases with one of six chief complaints. A worksheet was created to assist learners in parsing out clinical presentation, pathophysiology, diagnosis, treatment, public health, ethical considerations, and sources used. Learners were then encouraged to use other case presentations to build a cumulative database. The worksheets were uploaded after each organ-based theme for assessment. During clinical training, learners attended case sessions on their Internal Medicine Clerkship. Students, through guided discussions with a preceptor, linked basic science content to currently encountered patients.

### **Outcomes:**

Outcomes of CTL were measured through several measures. Completed worksheets were evaluated for completeness and self-directed learning. Learner's feedback was solicited through surveys. Student performance on clinical skills evaluations and clinical knowledge examinations are being used evaluate the success of the program

### **Feasibility and transferability for adoption:**

This innovation's key strength is promoting self-directed learning using a system of case presentations and worksheets that supplement the existing curricula. Providing meaningful feedback for every worksheet has been a challenge; however, new ways of addressing the workload are being explored.

## **References:**

1. Bowen JL. Educational Strategies to Promote Clinical Diagnostic Reasoning. N Engl J Med 355: 2217-25, 2006

2. Kulasegaram KM, Martimianakis MA, Mylopoulos M, Whitehead CR, Woods NN. Cognition before curriculum: rethinking the integration of basic science and clinical learning. *Acad Med.* 2013;88:1578–85.

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## **Medical Student Elective to Improve Diagnosis in Health Care: Developing Solutions to Reduce Patient Harm**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Using the Institute of Medicine (IOM) report *Improving Diagnosis in Health Care* (2015) as a framework, the Department of Radiology has developed a two-week medical student elective designed to create solutions to reduce diagnostic error.

#### **Background and/or theoretical framework and importance to the field:**

The IOM report estimates up to 80,000 US patient annual deaths from medical errors. Most medical student courses focus on correcting system errors because they are visible and potentially easier to address. Diagnostic errors, accounting for 10-20% of medical errors, may be given less attention for a variety of reasons including less frequent reporting and greater difficulty to fix.

#### **Design: Instructional methods and materials used:**

The elective includes an introduction to the concept of diagnostic error and solutions, readings, facilitated discussion, and creation and presentation of final projects. Radiology mentors assist students in project design, implementation, and presentation. Students identify current barriers and resources needed to implement change and metrics needed to measure success.

#### **Outcomes:**

Six sessions, 3-4 students/session, have been completed. Seven different projects (six group projects) have been created and presented. Projects address such topics as radiology report error, workplace distractions, patient portal use, and improving delivery of the diagnosis. Four student projects were presented at a national meeting.

#### **Feasibility and transferability for adoption:**

With support from mentors, students have developed concrete solutions to address IOM goals. Based on student feedback, there are positive implications for each medical student's learning and future practice as they gain awareness of causes of diagnostic error and identify steps to reduce patient harm in daily work. A weakness is the short duration of the elective. Longer electives might be offered in the future to expand projects and involve more faculty and students.

**References:**

1. Institute of Medicine (2015). Improving Diagnosis in Health Care. Washington. National Academies Press.

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## **Mock Interview Speed Dating – A Multidisciplinary Approach in the Context of Coaching**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

The interview process is crucial to successful medical residency placement. We developed and evaluated a mock interview program for medical students using a speed dating model, spanning multiple specialties and levels of training.

#### **Background and/or theoretical framework and importance to the field:**

Coaches engage with students similarly to athletic coaches, guiding students towards performance improvement and goal attainment. At the UConn School of Medicine (SOM), the coaching program is designed to promote student success by helping students reach their full potential. Our goal is to provide an avenue for interview practice utilizing the heterogeneous backgrounds and experiences of the SOM coaches.

#### **Design: Instructional methods and materials used:**

A mock interview program for fourth year medical students was conceptualized utilizing a speed dating model. Approximately 20 multidisciplinary SOM coaches, residents and fellows participated. Each interviewer was assigned a station where students would spend 5 minutes: 4 minutes to answer 2 questions, and 1 minute for feedback. A variety of questions were provided from interview prep websites. Additionally, 1 station was dedicated to developing a “scholarly activity elevator pitch”, and another to “interview etiquette”. Feedback was solicited from participating students and interviewers.

#### **Outcomes:**

Feedback solicited following the session was overwhelmingly positive. In preliminary responses from students and interviewers, 100% “agreed” or “strongly agreed” that the program was an effective tool in preparing students for residency interviews. Narrative feedback was also largely positive.

#### **Feasibility and transferability for adoption:**

Recurring positive feedback included: ability to obtain immediate feedback from diverse and experienced faculty; excellent practice with quick thinking and honing concise responses. Constructive criticism included: suggesting longer sessions; avoiding repeated questions; providing student resumes prior to sessions; a louder buzzer to switch sessions.

**References:**

1. Wolfgang KW. A novel and comprehensive design of mock residency interviews for fourth-professional year doctor of pharmacy students. *Curr Pharm Teach Learn*. 2019 Sep;11(9):956-960. Epub 2019 May 25.
2. Hueston WJ, Holloway RL. Medical Student Mock Interviews to Improve Residency Interviewing and Match Success. *WMJ*. 2016 Apr;115(2):86-9.
3. Multerer S, Carothers B, Patel PD, Ziegler C, Rowland M, Davis DW. Senior Medical Student Mock Interview Program in Pediatrics. *South Med J*. 2016 Feb;109(2):101-6.

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## **Multimodal Pediatric Education in Early Pre-Clinical Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

### **Authors:**

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This series of workshops introduces pediatric concepts, including pediatric patient assessment, the critically ill child, abnormal child development, and safety and injury prevention utilizing varied educational modalities to encourage student engagement and educational effectiveness.

#### **Background and/or theoretical framework and importance to the field:**

Pre-clinical doctoring courses are variable in length, execution, and extent to which they include pediatric topics. Further, the availability of pediatric-specific resources may be limited, including pediatric patient instructors and specialty-specific educators. Any introduction to pediatric topics in the pre-clinical setting is valuable to medical students.

#### **Design: Instructional methods and materials used:**

This series of small group workshops on common pediatric problems is included in a larger pre-clinical pediatric curriculum. Topics, including pediatric clinical skills assessment, the critically ill child, abnormal childhood development, and safety and injury prevention, are presented in an interactive way using podcasting, patient assessment via videos and live patient instructors, and audience participation through large group discussions and anonymous audience response systems. The workshops are facilitated by senior medical students.

#### **Outcomes:**

Student evaluation data were analyzed. Post-workshop evaluations were completed by 35 students. The majority of students stated they agree (31.4%, n = 11) or strongly agree (57.2%, n = 20) the “the sessions were educationally effective” on Likert scale (1 – strongly disagree, 5 – strongly agree); mean 4.43; median 5. Data were compared to evaluation data from traditional instruction on similar topics in the previous year; 67 students completed evaluations with a mean 4.04 (p = 0.02).

#### **Feasibility and transferability for adoption:**

Small group, interactive workshops are an effective way to teach medical students about common pediatric topics during their pre-clinical curriculum. Classic limitations in specialty education are specialist faculty availability.

#### **References:**

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2. Graziano SC, McKenzie ML, Abbott JF, et al. Barriers and Strategies to Engaging Our Community-Based Preceptors. *Teach Learn Med*. 2018;30(4):444-450.

3. Karras B, Selvaraj S, McConnell A, Andres D, Trinder K, McKague M. Student perceptions of the care of children: impacts of pre-clerkship pediatric and primary care clinical teaching. *Can Med Educ J.* 2014;5(1):e38-49.

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## **Near-Peer Facilitation: Using Small Groups to Self-Reflect on Techniques to Improve Stress Management and Prevent Burnout**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To evaluate student engagement and satisfaction with the use of near-peers to help guide self-reflection of stress-management techniques in a mandatory small-group format in the clerkship year. Additionally, to determine if small groups sessions led by near-peers can facilitate self-reflection on stress-management techniques and burnout prevention methods among medical students.

#### **Background and/or theoretical framework and importance to the field:**

Burnout is prevalent among medical students. Though the literature is robust on the prevalence of burnout, there is limited evidence available to guide meaningful interventions to prevent and address this problem. Near-peer wellness initiatives can be a positive intervention and offer students the autonomy and self-efficacy to lean on their peers. In addition, this focus on peer support may be protective if continued into training and beyond. We developed and implemented mandatory small group sessions led by fourth-year medical students for third-year medical students focused on self-reflection to improve stress management techniques.

#### **Design: Instructional methods and materials used:**

Using a coaching model, fourth-year students facilitated small groups of about 10 third-year students. Students were prompted using a student-designed vignette to reflect on stress management strategies to prevent burnout.

#### **Outcomes:**

Evaluations of the sessions by students were overwhelmingly positive with the most appreciation around the near-peer development and leading of the small groups. Additionally, students were able to identify a variety of stress management techniques.

### **Feasibility and transferability for adoption:**

Small group sessions of third-year medical students led by fourth-year medical students can serve as an ideal opportunity for near-peers to reflect and discuss different stress management techniques. Scheduling can be challenging if students do not have shared time. Additionally, the quality of sessions may vary and is dependent on student participation.

### **References:**

1. Rotenstein LS, Ramos MA, Torre M, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. *JAMA*. 2016;316(21):2214. doi:10.1001/jama.2016.17324
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## **Near-Peer Teaching of Transgender Medicine to Pre-Clerkship Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This Problem-Based Learning (PBL) module was developed to increase the confidence and competence of first-year medical students as they interview transgender patients.

#### **Background and/or theoretical framework and importance to the field:**

Transgender patients report frequent discrimination in the healthcare setting, and early transgender inclusivity education for medical students is a potential avenue to reduce this problem. This PBL module was developed to teach first year medical students to interview transgender patients respectfully through multiple interactive standardized patient scenarios with immediate constructive feedback.

#### **Design: Instructional methods and materials used:**

This 2.5-hour long PBL module for MS1s is administered by upper-year student facilitators during the reproductive health and endocrinology unit. Each student facilitator guides a group of 12 MS1s through interactive reviews of LGBTQ health disparities, strategies to promote inclusive interviewing, and three detailed standardized patient scenarios. MS1s take turns playing the role of physician, while the upper year student facilitators play the part of the patients.

#### **Outcomes:**

MS1s were anonymously surveyed before and after participation in the PBL module about their confidence in their abilities to understand LGBTQ healthcare needs, create a health maintenance plan for a transgender patient, counsel an adolescent with gender dysphoria, and advise the parents of a gender nonconforming child. Their reported confidence level in each of these areas increased after the session.

#### **Feasibility and transferability for adoption:**

Many MS1s anonymously reported that they appreciated the student facilitators because they felt more comfortable asking near-peers questions about gender and sexuality. However, training 18 different upper-year student facilitators yearly creates a potential for inconsistency in the PBL experiences.

**References:**

1. Liang JJ, Gardner IH, Walker JA, Safer JD. Observed deficiencies in medical student knowledge of transgender and intersex health. *Endocr Pract.* 2017;23(8):897–906.
2. White W, Brenman S, Paradis E, et al. Lesbian, gay, bisexual, and transgender patient care: medical students' preparedness and comfort. *Teach Learn Med.* 2015;27(3):254–263.
3. Grant JM, Mottet LA, Tanis J, Herman JL, Harrison J, Keisling M. *National Transgender Discrimination Survey Report on Health and Health Care.* Washington, DC: National Center for Transgender Equality and the National Gay and Lesbian Task Force; 2010.

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## **Orthopedics ambulatory clinic: A surprising opportunity for early exposure to clinical settings**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This paper illustrates how orthopedics ambulatory clinics can provide pre-clerkship medical students with a structured opportunity for early clinical encounters with patients, given appropriate training and on-site support.

#### **Background and/or theoretical framework and importance to the field:**

The importance of early exposure of undergraduate medical students to clinical settings has been recognized and more longitudinal integration of clinical experiences is recommended. The development of appropriate attitudes toward patients and families is among the recognized benefits of early clinical experiences, contributing to the development of professional identity. Early clinical experiences allow students to integrate previous knowledge, develop interpersonal skills, and appreciate the value of patient-centered care, familiarizing students with the clinical setting and making the transition to clerkship less stressful. Common implementation challenges refer primarily to the issue of how to expose pre-clerkship medical students to patients in clinical settings before they are ready to provide patient care.

#### **Design: Instructional methods and materials used:**

Pre-clerkship medical students were recruited and trained to administer the SF-36 Hip and Knee Outcomes Questionnaire developed by the American Academy of Orthopedic Surgeons (AAOS) in an orthopedics ambulatory clinic in the Bronx, New York. Students participated in two 3-hours training sessions encompassing roles and expectations, professional attitudes and behaviors, and role-playing technical skills where different scenarios were enacted. Student and faculty feedback assessments were completed after placement.

#### **Outcomes:**

Preliminary findings suggest that students can successfully perform prescribed tasks in clinical settings during pre-clerkship years. Identified benefits of early exposure encompass the relationships and learning in early encounters with patients, integration of knowledge across the curriculum, aspects of doctoring learned, and students' personal and professional growth. The outcomes of these experiences seem highly dependent on the level of pre-placement training, on-site supervision/monitoring/problem-solving support structure, and the nature of the tasks performed.

**Feasibility and transferability for adoption:**

More research is needed to explore the outcomes of student placement in different clinical settings while performing similarly structured tasks.

**References:**

1. What are the benefits of early patient contact? - A comparison of three preclinical patient contact settings Wenrich M, Jackson M, Wolfhagen I, Ramsey P, and Scherpbier A. BMC Med Educ. 2013; 13: 80. Published online 2013 Jun 3. doi: 10.1186/1472-6920-13-80.
2. Skill Learning Through Early Clinical Exposure: An Experience of Indian Medical School Rawekar A, Jagzape A, Srivastava T, and Gotarkar S J Clin Diagn Res. 2016 Jan; 10(1): JC01–JC04. Published online 2016 Jan 1. doi: 10.7860/JCDR/2016/17101.7022.
3. Promoting excellence in teaching and learning in clinical education AlHaqwi A, Taha W. Journal of Taibah University Medical Sciences. Volume 10, Issue 1, March 2015, Pages 97-101. <https://doi.org/10.1016/j.jtumed.2015.02.005>

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## **Our Opioid Crisis: Humanizing Substance Use and Addiction through Early Medical Training for Newly Matriculated Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Educate newly matriculated medical students about Substance Use Disorder (SUD), the landscape of addiction treatment, opioid overdose prevention, recognition, and naloxone administration.

#### **Background and/or theoretical framework and importance to the field:**

We are facing a substance use crisis and epidemic with 40 million Americans currently suffering from SUDs, and over 72,000 drug-related deaths reported in the U.S. in 2018. Medical education has many deficits in its approach to prepare students to support their future patients in a humanistic and informed manner.

#### **Design: Instructional methods and materials used:**

Seven second-year medical students (MS2) developed a two-hour orientation week educational session exploring substance use and addiction for 35 first-year medical students (MS1). Following an interactive framing by a faculty member, students divided into small groups with MS2 facilitators. MS2 facilitators discussed medication safe disposal, opioid overdose risk factors, and rescue. MS1 students received naloxone rescue kits, drafted 'commitment to act' statements, and completed post-session evaluations to assess knowledge, attitudes and perceived skills.

#### **Outcomes:**

65% of 'commitment to act statements' focused on destigmatizing SUD and normalizing addiction treatment. 35 post-session evaluations were completed. Students reported the most important concept they learned was: a) destigmatizing SUD (n=14); b) administering naloxone (n=13); c) current efforts in healthcare to address the opioid epidemic (n=10); d) importance of SUD training (n=4), and e) how to recognize an overdose (n=3).

#### **Feasibility and transferability for adoption:**

Strengths: Early training will empower the next generation of clinical leaders to motivate shifts in clinical culture regarding SUD and addiction. Interactive small group peer-to-peer education

illustrates relevance of content, as the session was developed by students, for students.  
Limitations: We were unable to demonstrate changes in knowledge, attitudes, and perceived skills. Future sessions will include pre-/post- surveys.

**References:**

1. The National Center for Addiction and Substance Abuse at Columbia University. Addiction medicine: Closing the gap between science and practice. <https://www.centeronaddiction.org/addiction-research/reports/addiction-medicine-closing-gap-between-science-and-practice>. Published June 2012.
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4. D'Onofrio G, Bernstein E, Rollnick S. Motivating patients for change: a brief strategy for negotiation. In: Bernstein E, Bernstein J, eds. *Case Studies in Emergency Medicine and the Health of the Public*. Boston, Mass; Jones and Bartlett: unit IV, chapter 31. 1996.
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6. Rapp RC, Xu J, Carr CA, Lane DT, Wang J, Carlson R. Treatment barriers identified by substance abusers assessed at a centralized intake unit. *J Subst Abuse Treat*. 2006;30(3):227–235. doi:10.1016/j.jsat.2006.01.002

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## **Partnering with Patients in a Quality Improvement Curriculum for Internal Medicine Residents**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Integrate Patient and Family Advisors (PFA) into a Quality Improvement (QI) curriculum for Internal Medicine residents.

#### **Background and/or theoretical framework and importance to the field:**

Patient experience incorporates satisfaction plus the six domains of healthcare quality, including care that is safe, effective, patient-centered, timely, efficient, and equitable.[1] The Accreditation Council for Graduate Medical Education identifies QI competencies for resident physicians,[2] however, QI training during residency may not be adequately preparing residents to improve patient experience, a core component of Institute for Healthcare Improvement Triple Aim.[3]

#### **Design: Instructional methods and materials used:**

We provide a 10-session active-learning QI curriculum for second-year Medicine residents. The goals of the curriculum are to facilitate an understanding of QI concepts and to design, implement, and present a QI project within the focus area of patient experience. The residents use QI tools, including affinity diagrams, process maps, SMART goals, Five Why analyses, and Plan-Do-Study-Act cycles. In 2019, we invited PFA to participate in the curriculum alongside residents.

#### **Outcomes:**

Early qualitative data suggest integrating PFA is feasible. There is active participation and mutual respect between residents and PFA, evidenced by joint completion of curriculum tasks.

#### **Feasibility and transferability for adoption:**

Strengths include addition of patient and family member perspectives, development of respect between residents and PFA and deeper conversations about how real-world QI impacts patients. Limitations include the impact of inconsistent attendance by residents, challenges of PFA participating when domains of patient experience are invisible to patients and limited curriculum time for reflection by both residents and PFA.

**References:**

1. Institute of Medicine (U.S.). Committee on Quality of Health Care in America. Crossing the quality chasm : a new health system for the 21st century. Washington, D.C.: National Academy Press; 2001.
2. ACGME. The Internal Medicine Milestone Project 2015.  
<https://www.acgme.org/Portals/0/PDFs/Milestones/InternalMedicineMilestones.pdf>. Accessed October 11, 2019.
3. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. Health affairs (Project Hope). 2008;27(3):759-69. doi:10.1377/hlthaff.27.3.759.

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## **Practical Tools to Increase Empathetic Behavior in Medical Student Mentors**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To increase empathetic behavior in 4th year medical student mentors

#### **Background and/or theoretical framework and importance to the field:**

Research shows a drop in empathy in the 3rd year of medical school<sup>1</sup>. While this drop is commonly discussed in terms of patient care it also impacts empathy towards peers. Studies have shown that while lack of empathic concern increases the risk of medical student burnout<sup>2</sup>, empathy can positively impact teamwork<sup>3</sup> and is important in healthcare mentoring relationships<sup>4</sup>. Anecdotal evidence suggested that our medical school's 4th year peer mentors are too focused on problem solving and lacking in empathy. In response we designed a brief intervention to increase empathetic behavior in the 4th year mentors.

#### **Design: Instructional methods and materials used:**

The authors developed a workshop covering the decline of empathy in medical students and the importance of empathy in mentoring relationships. Outcomes include learning to avoid phrases that hinder empathic interaction and using brief scripts that quickly establish an empathic connection. All 4th year mentors were invited. Students could attend in person or virtually. Students filled out a pre-session survey and a post-session evaluation. Attendees will be surveyed at a later date to see if they used what they learned in mentoring relationships.

#### **Outcomes:**

40% (32/80) of mentors attended. 53% filled out the post session evaluation. 100% said they would recommend the workshop to others. While most respondents said they already considered empathy important in patient care, many appreciated being given concrete tools to use in establishing empathetic relationships.

#### **Feasibility and transferability for adoption:**

This innovative intervention emphasizes concrete tools for creating empathetic connection that can be used immediately and adapted for many situations. Limitations include the need to find time for the workshop in an already busy schedule and limited attendance.

#### **References:**

1. Hojat M, Vergare MJ, Maxwell K, Brainard G, Herrine SK, Isenberg GA, Veloski J, Gonnella JS. The devil is in the third year: A longitudinal study of erosion of empathy in medical school. *Acad Med* [Internet]. 2009 Sep;84(9):1182-91.
2. von Harscher H, Desmarais N, Dollinger R, Grossman S, Aldana S. The impact of empathy on burnout in medical students: New findings. *Psychol Health Med* [Internet]. 2018 Mar;23(3):295-303

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4. Burgess A, van Diggele C, Mellis C. Mentorship in the health professions: A review. *Clin Teach* [Internet]. 2018 Jun;15(3):197-202.

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## **Promoting Student Awareness and Proficiency of School Resources to Reduce Burnout with an Inaugural Week of Wellness**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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William Weir, University of Massachusetts Medical School

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

1) Design and implement a week-long extracurricular program geared toward three graduate schools; 2) Promote student utilization of wellness resources; 3) Assess program effectiveness using student surveys and attendance data

#### **Background and/or theoretical framework and importance to the field:**

Medical, biomedical doctoral and nursing students exhibit elevated rates of burnout, anxiety and depression relative to the general population.<sup>1-4</sup> Given that wellness-based interventions instituted by medical school administrations are efficacious in reducing psychological distress, we offered a variety of extracurricular events to support student well-being.<sup>5,6</sup>

#### **Design: Instructional methods and materials used:**

In partnership with Student Life, students from three graduate programs developed a week-long wellness program with events established around five pillars of wellness: physical, emotional, community, academic and career. Programs included student panels, exercise classes, nutritional cooking workshops, lunchtime talks and mindfulness-based stress reduction. Student attendance was recorded and post-event surveys were administered to gather feedback on program improvement and continuation.

#### **Outcomes:**

Pre-clinical year students (n=60) comprised the majority of attendees. Activities surrounding physical wellness, such as yoga, self-defense and nutritional cooking workshops, received the highest attendance. The most popular event was the emotionally-themed therapy dog visit (n=143). Common suggestions for improvements included better advertising and planning events around scheduled classes.

#### **Feasibility and transferability for adoption:**

The “Takes Care” programming united three student communities and administrative teams to offer a diverse array of activities surrounding five pillars of wellness. Departmental and community support for the program suggests positive shifts in attitudes toward resilience

promotion. While tri-school in nature, biomedical doctoral and nursing student participation was low compared to medical students. Furthermore, regular wellness programming beyond the initial week necessitates planning team turnover.

**References:**

1. Slavin, S.J., et al. (2014). Medical Student Mental Health 3.0: Improving Student Wellness Through Curricular Changes. *Acad Med*; 89(4):573–577. doi:10.1097/ACM.000000000000166.
2. Rotenstein, L.S., et al. (2016). Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students. *JAMA*; 316(21):2214-2236. doi:10.1001/jama.2016.17324.
3. Nagy, G.A., et al. (2019). Burnout and Mental Health Problems in Biomedical Doctoral Students. *CBE Life Sci Educ*; 18(2):ar27. doi:10.1187/cbe.18-09-0198.
4. Tung, Y.J., et al. (2018). Prevalence of depression among nursing students: A systematic review and meta-analysis. *Nurse Educ Today*; 63:119-129. doi:10.1016/j.nedt.2018.01.009.
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6. Moutier, C., et al. (2012). The suicide prevention and depression awareness program at the University of California, San Diego School of Medicine. *Acad Med*; 87(3):320-326. doi:10.1097/ACM.0b013e31824451ad.

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# **Recognizing Unconscious Bias in the Teaching and Assessment of Clinical Skills**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

Research suggests that one factor that contributes to healthcare disparities is unconscious bias. We recognize the impact of unconscious bias upon the development of medical education curricula and assessments. Therefore, we have taken several steps to combat the potential negative impact of individual and systemic unconscious bias upon our medical students.

### **Background and/or theoretical framework and importance to the field:**

Embedded in the humanistic approach to learning, medical educators who teach and develop medical education curricula must be reflective in accepting and addressing bias..

### **Design: Instructional methods and materials used:**

In 2017, we reviewed our clinical skills teaching sessions, Objective Structured Clinical Examination (OSCE) cases and assessment process with a more critical lens. We applied a three-pronged approach to address: 1) Teaching sessions 2) Assessments and 3) Raters. We identified opportunities for infusing diversity so that we depict the broad population that we serve. . A few examples include: depicting physical exam findings on varied skin tones, creating OSCE cases with a diverse team, and being intentional to represent patients and social contexts that have been under-represented. Additionally, clinical skills faculty, students and standardized patients (SPs) received unconscious bias training.

### **Outcomes:**

OSCEs are becoming more representative of the patients that medical students will care for. In 2017 we went from having one patient out of the 22 unique patients from the LGBTQ community represented on the OSCEs used for first- and second-year medical students to having four. Additionally, patient names (7) and social profiles of the patients in our OSCEs have become diversified to more clearly represent broader populations.

### **Feasibility and transferability for adoption:**

In an effort to develop an awareness of biases, next steps will include reviewing and analyzing rater and faculty grading tendencies, as to produce unbiased scores. Additionally, we will continue to grow our bank of OSCE cases to be more diverse and inclusive.

## **References:**

1. Chapman, E.N., Kaatz, A. & Carnes, M. J GEN INTERN MED (2013) 28: 1504. <https://doi.org/10.1007/s11606-013-2441-1>
2. Feagin J1, Bennefield Z2. Systemic racism and U.S. health care. Soc Sci Med. 2014 Feb;103:7-14. doi: 10.1016/j.socscimed.2013.09.006

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# **Reversing the Script: Peer-Based Teaching of Foundational Concepts in Emergency Medicine Using a FOAMed Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

Our educational innovation sought to provide exposure to core content in Emergency Medicine, offer an alternative to lecture-based didactics, and cultivate self-directed learning and leadership among residents. We strove to create an environment that allowed junior residents comfort with expressing knowledge gaps and provide teaching opportunities for senior residents.

### **Background and/or theoretical framework and importance to the field:**

Crafting a residency conference curriculum is fraught with the challenges of delivering learner-appropriate content to residents in different stages of training, efficient use of faculty resources, and responding to learner preferences. In particular, traditional lecture-based didactics fail to meet the needs of some residents, leading to decreased engagement.

### **Design: Instructional methods and materials used:**

We implemented a modified version of the Foundations of Emergency Medicine (Foundations) curriculum. Foundations is an open-access, peer-reviewed program that employs a case-based, flipped-classroom approach to core concepts in EM. Our innovation places the learner in the teaching role, supplanting a faculty driven program with a peer-based teaching model. During residency conference, we held monthly, two-hour sessions. Interns, a departmental fellow, and two senior residents met in a separate space. Interns were provided teaching resources and alternated guiding peers through oral-boards format cases. Interns acted as a topic “expert” by supplementing their knowledge with suggested reading. Senior residents and the fellow guided learning and provided clinical perspective.

### **Outcomes:**

Learners reported the content of the sessions to be relevant and appropriate, and valued exposure to the EM oral boards format. Residents reported the sessions provide space for wellness check-ins, suggesting a small group setting of peers may have additional benefits.

### **Feasibility and transferability for adoption:**

The lack of pre- and post-implementation quantitative data remains a limitation of our innovation. The utilization of a peer-based model cultivates leadership, foundational EM knowledge, and familiarity with oral boards.

**References:**

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## **Shaping student learning via formative basic science progress exams**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

At Columbia, students take Step 1 after the clinical year. We have been concerned about information retention between the pre-clerkship curriculum and start of dedicated Step 1 studying. We predicted that offering cumulative assessments would help students retain learning over time.

#### **Background and/or theoretical framework and importance to the field:**

The impact of testing and assessment on learning are well-documented(1,2). Implementing progress exams throughout medical school can improve student learning and exam outcomes(3). Further, when students expect a cumulative outcome, they study more continuously over time(4). Interestingly, even when progress exams are designed to be formative, learners can still experience them as summative(5).

#### **Design: Instructional methods and materials used:**

We implemented formative progress exams at each semester end to help students assess and direct their learning. We developed first and second semester progress exams using the NBME Customized Assessment Services (CAS) and provide vouchers for a Comprehensive Basic Science Self-Assessment after the third semester. Individual performance reports were shared with students. We developed a debriefing session to scaffold student reflection and reiterate how test-enhanced learning facilitates progress. Senior students modeled approaching board-style questions and learning from practice questions.

#### **Outcomes:**

Evaluations show 87% of students welcome future progress exams, and 66% agree that they helped illustrate personal strengths/weaknesses; survey comments also show support. Course directors learned about content areas in which students had poor retention of learning.

#### **Feasibility and transferability for adoption:**

We found formative self-assessments provide students with feedback to self-direct their learning and has been a beneficial relatively low-stress intervention. We hope it will decrease student stress and increase preparation for applying basic science knowledge in the clinical year and on Step 1. We will follow this cohort and evaluate whether progress testing improved retention as measured by pre-Step 1 CBSSA and final Step 1 performances compared to prior cohorts.

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## **Standardized approach to natural language processing (NLP) of entrustable professional activities (EPAs) across two distinct medical schools**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

We sought out to work more effectively with unstructured narrative data to extract meaningful insights to improve student advising and self-directed learning/improvement. We have created a natural language processing (NLP) algorithm to understand student performance about EPAs at Columbia, and are expanding its use to Medical College of Georgia. Our aim has been to create a more standardized, efficient, and timely narrative feedback processing system that identifies trends and needs across multiple institutions.

#### **Background and/or theoretical framework and importance to the field:**

Developing meaningful feedback mechanisms that are credible and constructive is essential to learning

1. Assessing medical student progress is often done through faculty narrative comments.

2. It is currently difficult for students, coaches, or Entrustable Professional Activity (EPA) committees to read through years of narrative feedback to understand a student's entrustability.

**Design: Instructional methods and materials used:**

We built a standardized training application for inputting human labeled data into a proprietary algorithm to sort and identify faculty comments into targeted EPA buckets for sentiment/categorical processing. Key phrases were coded for EPA category and given polarity designations as positive/negative.

**Outcomes:**

Standardized input of training data across institutions provided a more efficient automated solution to building individual student dashboards to display overall "score" on various EPA categories.

**Feasibility and transferability for adoption:**

We believe this is an early adaptation of NLP to process faculty comments on EPA performance across varying intuitions that will allow for CQI and interventions. The algorithm will become more robust with additional data and feedback with growing users.

**References:**

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3. Ten Cate O. Nuts and Bolts of Entrustable Professional Activities. *Journal of Graduate Medical Education*. 2013;5:157-158.

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## **Stitches in Time: Using a Crocheted Model Activity to Teach Embryonic Lateral Folding to Medical Students**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

We used dynamic, durable, inexpensive crocheted models for a hands-on activity to teach embryonic lateral folding to incoming medical students, addressing the sequence of events, relative positions of developmental structures, and their mature derivatives.

#### **Background and/or theoretical framework and importance to the field:**

Knowledge of embryology is foundational for understanding normal anatomy and birth defects (1), yet embryology is a notoriously difficult subject for medical students. Our interactive models engage students with a kinesthetic, tactile activity and reveal how three-dimensional structures change over time. This multimodal teaching appeals to a diverse array of learners and strengthens their understanding (2,3).

#### **Design: Instructional methods and materials used:**

Each model includes crocheted pieces to form the trilaminar disc, elongate laterally, and fuse ventrally to simulate lateral folding. We implemented the 20-minute model activity with 18 incoming medical students in a prematriculation course, integrating the activity into an early embryology lecture following the description of lateral folding. One instructor led the activity, and three other faculty helped supervise as the students assembled their own models. Students completed quizzes before and after the activity and subjective evaluations outside of class.

#### **Outcomes:**

Quiz scores increased from  $63\pm 6\%$  before the activity to  $77\pm 4\%$  after the activity ( $p = 0.0495$ , two-tailed paired t-test). Generally, students reported that the activity was helpful and enjoyable.

#### **Feasibility and transferability for adoption:**

This hands-on, approachable activity engages kinesthetic, tactile, active learning using inexpensive, durable pieces, and requires relatively little time to implement. The activity improved understanding regardless of the students' preferred learning modality or subjective enjoyment. The model cannot show all events that occur simultaneously with lateral folding. The lack of a comparison group leaves unclarified whether the students would gain similar benefit from an equal duration of individual study.

#### **References:**

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## **Strategies to Formalize and Enhance the Continuous Quality Improvement Process for the Electives Phase of the Medical School Curriculum**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Our goal is to formalize the continuous quality improvement (CQI) program for the Electives curricular phase to be consistent with other curricular phases at Columbia Vagelos College of Physicians and Surgeons (VP&S).

#### **Background and/or theoretical framework and importance to the field:**

The LCME Standard associated with CQI gives schools discretion to develop locally feasible processes examining efficacy of the curriculum overall, without mentioning individual curricular components. As the Electives curricular phase provides students in-depth exposure to clinical specialties and facilitates residency preparation, CQI in this phase is a significant aspect the broader CQI program.

#### **Design: Instructional methods and materials used:**

The Electives CQI process occurs through the Annual Electives Director Meeting (AEDM) in late spring. AEDM has served as the primary forum for all Electives Directors to discuss overall evaluation data trends across departments/Electives. To implement a more robust Electives CQI process and strengthen this aspect of the curriculum, VP&S has instituted CQI meetings at a departmental level involving representative Electives Directors, Curricular Deans, Curricular/Evaluation Specialists. Consistent with CQI for other curricular phases, using data-driven evaluation dashboards/analytic reports, these meetings enable Departmental Representatives and Electives Directors to reflect on course dynamics, discuss strengths/opportunities/resources, and plan improvements/innovations.

#### **Outcomes:**

The proposal to institute a more robust CQI process was met with enthusiasm by Electives Directors and curricular leadership. Our first CQI meetings are planned for November 2019 when we will begin examining this innovation's efficacy/utility.

#### **Feasibility and transferability for adoption:**

Integrating Electives into the broader institutional CQI structure enhances consistency/continuity in overall curricular review. Given the large number of Electives, consideration should be given to effective management/organization/reporting of evaluation data. Review of data and

development of reports requires collaborative efforts of a strong curriculum and data management/analysis team.

**References:**

1. Liaison Committee on Medical Education. Functions and structure of a medical school: Standards for accreditation of medical education programs leading to the MD degree. Association of American Medical Colleges and the American Medical Association. 2018 Mar.
2. Liaison Committee on Medical Education. Implementing a system for monitoring performance in LCME accreditation standards. Association of American Medical Colleges and the American Medical Association. 2016 Oct.
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## **Student Focused Implementation of an Interactive Metabolism Map for the Teaching of Biochemistry.**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This project explored student use of a compartmentalized, interactive metabolic map, and assessed whether it was a helpful tool for medical students learning metabolism.

#### **Background and/or theoretical framework and importance to the field:**

Within an ever-expanding medical knowledge base, biochemistry of human metabolism remains a core concept that proves challenging for medical students. Keeping track of relationships between pathways and their clinical relevance across a myriad of teaching modalities, each with different degrees of effectiveness and preference, is especially difficult (1). A common unifying source is metabolic maps, but these can be confusing and difficult to manage (2).

#### **Design: Instructional methods and materials used:**

The interactive metabolic map was developed using PowerPoint, and was pilot tested for compatibility by lecturers and students. Next, the map was distributed to medical students during a first-year metabolism course. A post-course survey assessed students' frequency of use, perceived helpfulness, and open-ended feedback. Anonymized survey results were linked with student scores to assess objective measures of improvement.

#### **Outcomes:**

Out of a total class size of 119, there were 44 respondents. Of these students, 24 students (54%) reported not using the module with 20 (46%) reporting some degree of use. There was no significant difference in metabolism question scores for students who used the module compared with those who didn't. On chi squared analysis, a significant majority of students who used the module found it somewhat or very helpful (16/20; 80%;  $p < .01$ ).

#### **Feasibility and transferability for adoption:**

Students reported enjoying the module and finding it helpful. Given the sample size, it is difficult to conclude the module is effective at improving biochemistry retention. Future versions could incorporate the qualitative feedback from students and add regulatory steps and clinical correlation to enzyme deficiencies.

#### **References:**

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## **Summer Enrichment Program: A novel pre-matriculation curriculum for medical students**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Through a novel pre-matriculation Summer Enrichment Program (“SEP”), we sought to prepare medical students coming from Alternative Academic Pathways (“Alt Path”) for their transition to medical school and subsequent first-year coursework.

#### **Background and/or theoretical framework and importance to the field:**

Medical schools are increasingly accepting students from Alt Paths, such as through early assurance programs or after gaps of time following undergraduate education (1-3). Such students may require additional preparation to succeed in medical school (4-6). Exposure to subject matter prior to starting medical school has been shown to improve students’ performance in medical school coursework (7-11).

#### **Design: Instructional methods and materials used:**

Prior to matriculating, students complete a 5-week SEP with an intensive curriculum focused on foundational coursework, including anatomy and cellular/molecular biology. Since 2015, this curriculum has been adapted several times to reflect changes in pre-clinical coursework, course evaluation responses, and focus groups. The SEP involves lectures, labs, review sessions, and assessments to best prepare Alt Path students for first-year coursework.

#### **Outcomes:**

Qualitatively, Alt Path students have positively reviewed the SEP, including the most recent adaptation. Via evaluations and focus groups, students have expressed sentiments of preparedness and confidence with first-year coursework. We plan to evaluate the performance of Alt Path students after completing the SEP as compared to their peers in anatomy and foundational cellular/molecular biology with quantitative methods in the future.

#### **Feasibility and transferability for adoption:**

The strengths of this innovation include: providing incoming students with exposure to first-year course content, opportunities to address knowledge gaps, and time to adjust to medical school. The limitations include: a finite timeframe which limits the amount of curriculum that can be adequately covered.

### **References:**

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## **Teaching Consultation at the Edge of Viability Through Experiential Education: A Randomized Trial**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Counseling parents facing delivery at the edge of viability (perivable consultation) is among the most challenging situations Neonatologists and Obstetricians face. Nonetheless, most trainees report leaving residency/fellowship without formal training in perivable consultation.<sup>1–4</sup> Our goals were to: (1) create a perivable consultation curriculum utilizing the standard format of hour-long sessions common to graduate medical education (GME), and (2) assess which teaching modalities best improved trainee competence/confidence.

#### **Background and/or theoretical framework and importance to the field:**

During perivable consultations, Neonatologists and Obstetricians must provide both critical information and support to help future parents deciding whether to resuscitate infants delivered at the edge of viability. Perivable consultations necessitate complex communication skills, expertise in shared decision-making, and knowledge of neonatal morbidity and mortality at extreme prematurity.<sup>5–8</sup> While knowledge of effective content for perivable consultations has vastly expanded following the 2014 Joint Workshop on Perivable Births, curricula teaching these skills remain limited to lectures or more extensive workshops that are impractical for standard GME didactic formats.<sup>9–11</sup>

#### **Design: Instructional methods and materials used:**

This prospective randomized trial enrolled 48 Neonatology/Maternal Fetal Medicine/Obstetric trainees in a perivable consultation curriculum. Trainees complete an interactive hour-long small group didactic before being randomized to either role-play or standardized patient simulation-based experiential education sessions.

#### **Outcomes:**

Anticipated outcome measures include: (1) trainee competence during observed structured clinical examinations (OSCE) using a novel communication skills measure, and (2) trainee confidence self-assessment surveys.

#### **Feasibility and transferability for adoption:**

Our curriculum allows for wider distribution of perivable consultation skills and demonstrates that dedicated training can be successfully incorporated into standard format didactic sessions common in residencies/fellowships. Additionally, comparing the effectiveness of simulation

using role-play versus standardized patient will help determine ideal modalities for skills practice and aid future curriculum design. While short session lengths limit the cases to be practiced, they allow repeated exposure throughout a 3-5 year training program.

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# **Teaching Gender Identity in the third year pediatric clerkship: Using an interactive personal narrative to enhance student empathy and educational impact**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

We use personal narrative to teach gender identity to increase student empathy towards transgender/gender minority patients and increase the overall impact of the educational session.

### **Background and/or theoretical framework and importance to the field:**

The topic of transgender healthcare is under-represented in the medical school curriculum. In the medical literature, storytelling by patients and their families has been shown to enhance student empathy towards their patients.

### **Design: Instructional methods and materials used:**

During one of the educational sessions in a 6-week pediatric clerkship, a board certified pediatrician who is also the mother of a transgender child leads an interactive session on gender identity using personal narrative. Students complete a standard evaluation at the end of each educational session. At the end of the academic year, students will be asked open-ended questions about their empathy towards transgender patients and the impact this educational session had on them. Evaluation data will be described and responses to open-ended questions will be analyzed qualitatively for themes of empathy towards transgender/gender minority patients and impact of the personal narrative as an educational format.

### **Outcomes:**

Preliminary evaluation scores have been high (ratings of 5 on a 5-point scale by 99% of students thus far) and sporadic comments positive. Data from end-of-year open-ended questions will be gathered and analyzed in March 2020 and presented.

### **Feasibility and transferability for adoption:**

This is an innovative educational format to teach a topic not well covered in the curriculum and often difficult to discuss. Preliminary results demonstrate positive reaction from students (Kirkpatrick level 1) and we hope end-of-year results will demonstrate impact on attitudes (Kirkpatrick level 2). However, future assessments will be needed to demonstrate impact on behavior and patient outcomes (Kirkpatrick levels 3 and 4).

## **References:**

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6. Lee HC et al. Gaining Perspectives on Patient and Family Disease Experiences by Storytelling. Academic Pediatrics Volume 18, Number 4 May-June 2018

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## **Teaching Health Equity by Neighborhood: Exploring the 15 year Life Expectancy Gap at the School of Medicine Doorstep**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Students have clinical rotations in neighborhoods with starkly different life expectancies despite being within the same 10-mile radius. We aim to equip students with skills to assess neighborhood health assets and challenges, through a lens of health equity.

#### **Background and/or theoretical framework and importance to the field:**

The module is framed around the astonishing 15-year life expectancy gap between the neighborhoods of the School of Medicine (SOM) and the socioeconomically vulnerable neighborhoods of the North Hartford Promise Zone (NHPZ). Students explore stakeholders' perceptions of contributing factors and the physician's role in reducing the gap.

#### **Design: Instructional methods and materials used:**

Students receive background material on the history of the NHPZ, and instruction on how to conduct asset mapping using the tools of windshield tours and stakeholder interviews. A tour is followed by a community forum with NHPZ stakeholders from the Mayor's office, the Urban League, local religious, environmental, school and law enforcement leaders, AmeriCorp interns, and other civic leaders. A statistician from the Health Disparities Institute supports the discussion in real-time with a Policy Map as topics arise, such as showing medical debt or housing code violations by street.

#### **Outcomes:**

Students will inventory reasons for the life expectancy gap and be able to capture these challenges in future encounters using social determinants of health ICD coding (Z codes). Students will analyze suggestions from stakeholders on how physicians can address identified challenges, with a goal toward closing the life expectancy gap at their doorstep.

#### **Feasibility and transferability for adoption:**

Early students will have familiarity with the community, and have considered stakeholders' opinions as to how to help. Conversational topics could be uncomfortable for some participants; a plan for debriefing should be in place.

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4. Community Toolbox, Chapter 3, Section 22, Using Small Area Analysis to Uncover Disparities <https://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/small-area-analysis/main>
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## **Teaching novel approaches to the patient with a history of psychological trauma: combining improvisational theater and trauma-informed care.**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This novel curriculum combines improvisational theater (Improv) and trauma-informed care to prepare medical students to effectively work with patients with trauma histories.

#### **Background and/or theoretical framework and importance to the field:**

Humanities are increasingly taught in medical schools, including writing, theater, and cinema. However, there are limited data to support the synergistic integration of studies in the humanities with practical medical training. We present a combined workshop on Improv and trauma-informed care.

#### **Design: Instructional methods and materials used:**

Specific Improv skills were matched to similar clinical skills important to trauma-informed care. The 3-hour curriculum was designed to help students apply Improv skills to the trauma-informed care portion of the workshop. Seventy-five minutes were dedicated to Improv, with a focus on unpredictable encounters and understanding one's internal reactions to specific interpersonal dynamics. Seventy minutes were dedicated to trauma-informed care, which included role-play with a patient refusing pelvic examination. Twenty minutes were used for pre- and post-surveys to evaluate for integration of information and confidence managing patients with trauma histories. Ten minutes were dedicated to discussion. There was a 10-minute break.

#### **Outcomes:**

Ninety-two students attended the workshop in five cohorts. Eighty-five students completed pre- and post-surveys. Seventy-five (91.5%) thought the trauma workshop helped them meet the outlined objectives, and 59 (72.8%) thought the skills learned in the Improv workshop were helpful during the trauma role-play. Pre- vs post-survey analysis showed a statistically significant increase in the number of students reporting Confident or Often across all eleven domains.

#### **Feasibility and transferability for adoption:**

The collaboration, adaptability, and connection skills taught in the Improv portion prove immediately useful in the trauma portion of the workshop, re-enforcing the Improv skills and

making the approach to a challenging clinical encounter less intimidating. The major limitation for generalizability is access to an Improv teacher.

**References:**

1. Watson K. Perspective: serious play: teaching medical skills with improvisational theater techniques. *Acad Med.* 2011. 86:1260–1265.
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## **Teaching Time Management Skills to Fourth Year Medical Students Using the PDSA Cycle**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

This intervention introduces quality improvement (QI) principles to fourth year medical students by having them apply the Model for Improvement to their own time management skills.

#### **Background and/or theoretical framework and importance to the field:**

Organization and efficiency, while not explicitly taught in medical school, are essential skills for interns. Additionally, the LCME and ACGME require trainees to gain skills in quality improvement (QI). Through this intervention, students will learn to be more organized and efficient, potentially resulting in more face-to-face patient care time. As a secondary outcome, students will gain confidence participating in and developing QI projects.

#### **Design: Instructional methods and materials used:**

At the start of their sub-internship, students attend a workshop to learn core principles of the Model for Improvement. They submit a worksheet with their problem statement, aim statement, measures, and change. They spend the next 2 weeks implementing their project. They receive project feedback.

#### **Outcomes:**

Evaluation of the curriculum involves three levels:

1. Behavior: Students complete a worksheet showing their PDSA cycle, including displaying their data on a run chart. This is evaluated using a rubric. Students complete a pre-post retrospective survey assessing change in their time management skills.
2. Change in confidence in their ability to participate in and initiate QI projects.
3. Learning: Students apply their understanding of the Model for Improvement to a QIKAT-R case and to a case generated from a problem encountered during their sub-internship. Data is forthcoming.

#### **Feasibility and transferability for adoption:**

Strengths of the intervention include introducing two simultaneous skillsets in a time-limited course that demonstrate improvement in confidence in QI participation and efficiency. Limitations include finding consistent time for the workshop with varying sub-I schedules and using retrospective self-assessment as the main measure.

**References:**

1. Accreditation Council for Graduate Medical Education (ACGME). Common Program Requirements (Residency). Revised: June 10, 2018. Effective: July 1, 2019. Accessed: October 30, 2019.  
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7. Rosenbluth G, Burman NJ, Ranji SR et al. Development of a Multi-Domain Assessment Tool for Quality Improvement Projects. *J Grad Med Educ.* 2017; 9(4): 473-478.
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## **Telehealth 101: Educating the Clinicians of the Future**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

### **Authors:**

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

We aim to explore the integration of technology and distance-based medicine. Learners will acquire the basic skills to understand how technology is becoming an important part of healthcare interactions and identify the proper role for Telehealth encounters.

#### **Background and/or theoretical framework and importance to the field:**

Telemedicine training is recognized by the AMA as it is an important component of healthcare delivery. With rapid changes in technology, policy and laws, clinicians will have more opportunities to deliver quality healthcare via telemedicine. Clinicians must develop skills in line with the highest standards of medicine while introducing telehealth practice.

#### **Design: Instructional methods and materials used:**

We employ a mixed-learning environment with didactic and active-learning sessions comprised of group discussions, readings and practicums for material applications. We utilize our simulation center with interactive scenarios to enhance our learner's education. We incorporated our Interprofessional Telehealth team to allow the learner to understand the value of telehealth beyond direct patient-clinician communication, to care coordination, specialist consultation and acute decision making.

#### **Outcomes:**

A 15 question post-course survey was completed that assessed improvement in knowledge of basic course objectives and clinical practices. Learners felt engaged throughout and that they gained a higher level of understanding of how technology and its integration will be a major vehicle for the delivery of modern medicine.

#### **Feasibility and transferability for adoption:**

The interactive sessions as well as guest lectures allowed for incorporation of real-world learning and applications. The "theme" weeks we developed allowed for a general progression of learning and education. In the future, there will need to be an improvement in our formalized assessments. We will also be looking into improving our technological capabilities and equipment available.

#### **References:**

1. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health affairs*. 2008;27(3):759-769.
2. Daniel, H. Snyder Sulmasy, L. Policy Recommendations to Guide the Use of Telemedicine in the Primary Care Setting: An American College of Physicians Position Paper. *Annals of Internal Medicine*. November 2015.

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6. Topol, Eric. Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. 2019

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# **The Practitioner's Guide to Global Health: An Interactive, Online, Open-Access Curriculum Preparing Medical Learners for Short-Term Experiences in Global Health**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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Rachel Umoren, University of Washington School of Medicine

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## **Abstract Body:**

### **Objective or purpose of innovation:**

The Practitioner's Guide to Global Health (PGGH) is the first open-access massive open online course (MOOC) preparing learners for safe and ethical global health learning experiences. Global health preparation curricula vary greatly; the purpose of this innovation was to create a free, timeline-based, interactive MOOC available to all.

### **Background and/or theoretical framework and importance to the field:**

Short-term experiences in global health (STEGH) are becoming more common at all levels of US medical education. Despite many documented advantages to participating in a STEGH, ethical concerns remain regarding individuals' motives and impacts on host populations. STEGH may also carry health and safety risks. Learners may navigate high-risk situations involving ethics, personal safety, and cultural sensitivity. Additionally, upon returning home, learners may experience reverse culture shock and associated psychological stress. Robust guidance and preparation for safe and effective STEGH are necessary to mitigate these risks, optimize learning experiences, and increase the chance of making useful contributions to host populations.

### **Design: Instructional methods and materials used:**

PGGH permits flexible and asynchronous learning, is free of charge, and provides proof of successful completion. Global health experts from 8 countries, 42 institutions, and 7 specialties collaborated to create the first course of this kind on the edX platform. The pre-departure and post-return curriculum includes case scenarios, video vignettes, discussion boards, and quantitative evaluation.

### **Outcomes:**

Within its first year, PGGH enrolled 5,935 learners from 163 countries. In a sample of 109

learners, mean post-test scores were significantly improved ( $p < .01$ ). In its second year, 213 sampled learners had significant improvement ( $p < .001$ ).

**Feasibility and transferability for adoption:**

PGGH's is free-of-charge, asynchronous, and timeline-based; however it is currently only offered in English.

**References:**

1. Loh LC, Cherniak W, Dreifuss BA, et al. Short term global health experiences and local partnership models: a framework. *Global Health*. 2015 Dec 18. 11:50.
2. Melby MK, Loh LC, Evert J, et al. Beyond medical “missions” to impact-driven Short-Term Experiences in Global Health (STEGHs): ethical principles to optimize community benefit and learner experience. *Acad Medicine: Journal Assoc Am Med Colleges*. 2015 Dec 1.
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## **The use of deliberate practice and multi-source feedback to develop residents' feedback skills**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

The purpose of this innovation is to develop psychiatric residents' skills in providing feedback to medical students.

#### **Background and/or theoretical framework and importance to the field:**

Psychiatry residents are entrusted with providing feedback to medical students on their psychiatric interviewing skills. However, few residents enter postgraduate training with well-developed teaching skills or the understanding of their role in medical student education.<sup>1</sup>

Although residents-as-teachers interventions have been studied, very few studies have used video-recorded encounters to assess the acquisition of feedback skills.<sup>2</sup>

#### **Design: Instructional methods and materials used:**

A "Residents As Teachers" program was implemented with second year Psychiatry residents to develop their feedback skills. The resident observes a psychiatric interview performed by a medical student during their psychiatry clerkship. The resident's feedback encounter with the medical student is videorecorded. After the feedback encounter, the resident is sent a link of the videorecording and completes a self-assessment. A faculty member also views the videorecording, completes an assessment, and meets with the resident to provide feedback on the resident's feedback skills. In addition, students evaluate the residents' feedback skills. The exercise is repeated three time points during residents' second year to promote deliberate practice.

#### **Outcomes:**

The faculty-of-resident, student-of-resident, and resident self-assessments were modified from a validated feedback scale.<sup>3</sup> Pre and post surveys of resident self-assessment of their skills, confidence and attitudes are gathered. We will measure individual and group performance over time, and compare accuracy of self-assessment. Data will be used to determine the number of feedback sessions necessary to reach optimal performance.

#### **Feasibility and transferability for adoption:**

The use of videorecorded feedback encounters as a tool for developing feedback skills promotes deliberate practice. One potential limitation is faculty time to review videorecordings and meet

with residents. However, the investment in important feedback skills may have a multiplicative impact, both for current and future learners.

**References:**

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2. Bree KK, Whicker SH, Fromme HB, et al. Residents-as-teachers publications: what can programs learn from the literature when starting a new or refining an established curriculum? *J Grad Med Educ*. 2014: 237-248.
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## **The Virtual Reality-Guided Meditation Project: Mindfulness for Medical students on Demand**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

To foster medical student wellness through virtual reality-guided meditation on demand.

#### **Background and/or theoretical framework and importance to the field:**

Medical student burnout is a well-documented phenomenon. Enhancing mindfulness through meditation can promote wellness but providing mindfulness opportunities in an enticing, easily accessible way is a challenge. The VR Guided Meditation Project is a novel approach to offer students a de-stressing mindfulness experience when they need it.

#### **Design: Instructional methods and materials used:**

We recruited first-year medical students and assembled 4 toolkits that contained the following: 1) VR headsets, with software to transport users to an immersive, tranquil experience (e.g., the beach) 2) Muse EEG biofeedback headbands. Two tool kits were housed in a meditation locker located in the student lounge and library, for easy student access. The two meditation lockers were secured with a wireless lock that tracks and timestamps usage. We gave participants a tutorial on how to use the tool kits and provided them with unique barcodes to open the meditation lockers.

#### **Outcomes:**

We are measuring the following variables: frequency of use, demographics, pre-post mindfulness scores using the Freiberg Mindfulness Survey (FMI) and student experience through a focus group at the end of the study. Thus far, the first cohort (n=10) were 7:3 (female: male); 60% white; mean baseline FMI score = 43 (range: 31-48; 56 = maximum possible mindfulness score).

#### **Feasibility and transferability for adoption:**

The on-demand and brief nature of the VR Guided Meditations (5-10 minutes) is tailored to intense student life. However, some students may not be open to this approach to wellness.

#### **References:**

1. Aherne, D., Farrant, K., Hickey, L., Hickey, E., McGrath, L., & McGrath, D. (2016). Mindfulness based stress reduction for medical students: optimising student satisfaction and engagement.(Report). BMC Medical Education, 16(1), 209. <https://doi.org/10.1186/s12909-016-0728-8>
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## **There Will Be Blood: An Integrative CBL on Viral Hemorrhagic Fevers**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Objective or purpose of innovation:**

Infectious disease in UME is often relegated to tables of bugs-and-drugs; for this, the real-world complexities of infectious disease are often lost. This course used hemorrhagic fevers as a vehicle to explore the multifaceted perspective needed to truly understand outbreaks as they occur.

#### **Background and/or theoretical framework and importance to the field:**

Few diseases inspire panic like hemorrhagic fever viruses: international disease control continuously searches for the next great outbreak. This course explored the major hemorrhagic virions at the intersection of medicine, anthropology, and epidemiology. Themes included geopolitical (in)stability, culture, and the intractable host-pathogen-environment relationship. The course is structured to be broadly applicable and provide a framework for critically assessing epidemics.

#### **Design: Instructional methods and materials used:**

Students divided into five departments: Epidemic Intelligence, Environmental Science, Cultural Anthropology, Clinical Science, or Epidemiology. Departments were then given unique information, requiring students to work together as a team under time pressure to piece together a cohesive “narrative arc” that explained the outbreak. All evidence are from primary sources and ranged from ancient artwork to animal migration charts. All outbreaks are based off of real-life historical hemorrhagic fever epidemics; only after solving the case was the pathogen revealed, which followed a group discussion about the virus.

#### **Outcomes:**

The course was rated 5/5 for enjoyment and 4.7/5 for overall quality, with students specifically commenting on how much they appreciated the collaborative nature of the class and their excitement to learn more about infectious disease.

#### **Feasibility and transferability for adoption:**

##### Strengths

- 1) Each session is modular and can be applied to any infectious outbreak.
- 2) Every student has significant contributions to add to the overall case.
- 3) The scenario and time pressure requires students to work as a team.

##### Limits

- 1) The instructor needs to be able to ask leading questions to direct the conversation at times.

**References:**

N/A

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# **Validating Entrustable Professional Activity-Based Assessment to Determine On-Call Competency in Pathology Residents**

*Submission Type: Innovations Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

Validate entrustable professional activity (EPA)-based assessment in pathology residency training for common on-call activities.

### **Background and/or theoretical framework and importance to the field:**

Entrustable professional activities (EPAs) evaluate a resident's performance of a specific activity and link to competencies, which can inform decisions about assigning graduated responsibilities (e.g. taking call). At the University of Vermont (UVM), the Clinical Competency Committee (CCC) decides whether a resident is competent to take call, but it is currently operating with limited data (personal communication with CCC chair).

### **Design: Instructional methods and materials used:**

The proposed use of the EPAs in this study is to provide data to the CCC to inform decisions about a resident's competency to take call. This validation study follows the Kane Framework (scoring—generalization—extrapolation—implication) by providing multiple pieces of evidence for the CCC to review. Residents' performance of intraoperative consultations during their surgical pathology rotation will be evaluated by multiple EPA-based formative assessments (scoring). Residents will be assigned an entrustment level at the end of the rotation (generalization). Formative and summative assessments will be reviewed by the CCC (extrapolation, implication) to determine readiness to take call. (UVM IRB review: Exemption Category 1: Educational Setting).

### **Outcomes:**

The impact of EPAs will be assessed by periodic surveys to all participants. EPAs should provide objective data to the CCC, and should benefit residents by setting clear expectations and increasing resident confidence in performing intraoperative consultations.

### **Feasibility and transferability for adoption:**

Entrustment is an intuitive, but novel, anchor for assessment. EPAs will promote direct observation of trainees, allowing faculty to provide more specific and timely feedback. Given the small number of residents in this program, there may be insufficient survey data to demonstrate an impact.

## **References:**

1. Ten Cate O. Nuts and bolts of entrustable professional activities. *J Grad Med Educ.* 2013;5:157-158.
2. Ten Cate O, Hart D, Ankel F, et al. Entrustment Decision Making in Clinical Training. *Acad Med.* 2016;91:191-198.

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# **Weighing the Options: The Effects of Compensatory vs. Conjunctive Weighting on Performance and Grading in Clerkships**

*Submission Type: Innovations Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Objective or purpose of innovation:**

Our purpose was an innovative examination of the implications of two systems of clerkship grading on medical student perceptions, learning, and behavior (1).

### **Background and/or theoretical framework and importance to the field:**

Schilling (2019) recommended reconsidering how clerkship grading is conducted, suggesting that cut scores on NBME subject exams not be used as conjunctive criteria for determining grades (2).

Other literature argues that medical student motivation can be moderated by factors within the control of the institution (3). We hypothesized that clerkship performance and perceptions are impacted by the ways that grades are awarded.

### **Design: Instructional methods and materials used:**

Clerkship grades include three sub-components: an NBME subject exam, a standardized patient encounter including a Gap-Kalamazoo communication skills assessment (4), and clinical assessments conducted by preceptors. Grades of Honors, High Pass, Pass, and Fail are awarded. During the pilot, three clerkships used compensatory scoring summing sub-component scores to calculate the final grade. Students could perform poorly on one sub-component but compensate by performing well on another. Three other clerkships used conjunctive scoring with performance thresholds in all sub-components to earn Honors or High Pass. Student performance and perceptions were compared.

### **Outcomes:**

T-tests identified significant differences between compensatory and conjunctive scoring in all three domains. In clerkships with conjunctive scoring, students scored in lower on NBME subject exams, but higher on communication skills and on preceptor assessments. There were no differences in student perceptions of the learning environment.

### **Feasibility and transferability for adoption:**

This innovation identified fluctuations in scoring between two types of grading: one that equally values and communicates proficiency in three competency domains versus one that can overvalue a single domain.

A limitation is that only two clerkship periods were compared. Future analyses will examine whether these differences are retained.

**References:**

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# Research Abstracts

# **“How Do We Stay Safe?” A Multi-Institutional Simulation-Based Qualitative Study of Challenges and Barriers for Trainees in the Care of Agitated Patients**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

Aim 1: Explore trainee factors and behaviors impacting team-based behavioral emergency care and workplace violence using a qualitative approach.

Aim 2: Develop a novel framework to iteratively improve educational programs by integrating qualitative data collection within an immersive simulation curriculum.

Aim 3: Demonstrate feasibility of the novel program development framework by employing experiential simulations of violent patient encounters to prime participants for engagement in a qualitative study of behavioral emergency care.

### **Background and relevance of the study:**

Violent patients physically and verbally assault physician trainees across clinical settings. Current training practices focus heavily on individual provider behaviors and unprofessional strategies. However, a team-based approach has resulted in reduced workplace violence in healthcare settings. To address this need, we previously developed and implemented a pilot interprofessional education (IPE) curriculum to improve teamwork and behavioral emergency care. This study uses an immersive simulation experience that activates prior knowledge and experiences followed by a scripted focus group for participants in the form of structured debriefing to improve and adapt our IPE intervention.

### **Design and Methods:**

We started with a 30-minute didactic lecture followed by two 15-minute simulation scenarios of common ED violent patient encounters with standardized actors. At the completion of each simulation, participants proceeded to a focus group session.

### **Results:**

We found four main interconnected themes: perceived complex patient motivations; a patient care paradox between professional duty and personal safety; discordant interprofessional dynamics mitigated by respect and trust; logistical challenges impeding care delivery and long-

term outcomes. (PMID 29759261). In addition, two broad themes emerged regarding the IPE experience: (1) a team-based agitated patient simulation addressed dual safety of staff and patients simultaneously, and (2) the experience fostered interprofessional discovery and cooperation. (PMID 29613919)

## **Conclusions:**

A simulation-based IPE strategy was successful in iterative refinement and expansion for a curricular intervention to improve team-based behavioral care in emergency medicine trainees.

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## **“I think i will try both”: Discourse analysis of anonymous online peer-to-peer advice and motivation**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Exploring online peer-to-peer USMLE Step 1 advice giving discourse

#### **Background and relevance of the study:**

Increasingly high USMLE Step 1 stakes, proliferation of third-party study resources, and perceived dearth of definitive guidance from schools are driving students to seek out and provide one another with anonymous online study advice. However, how these suggestions support long-term fund of knowledge development, alleviate/create emotional and financial burdens, or align with recommendations made by learning specialists remains unclear. Understanding peer-to-peer advice could prompt more targeted, equitable, and effective Step 1 support, simultaneously meeting student need while retaining focus on preparing knowledgeable, entrustable, humanistic professionals.

#### **Design and Methods:**

This discourse analysis study examined medical school subreddit messages from July-October 2019. Since Reddit's Step 1 message board retains +/-3 months of posts, this represents the complete information available to students seeking advice. Initial analyses included tallying frequencies of information and resources requested/offered and constant comparative coding for emergent themes within the posts.

#### **Results:**

Results reveal resource selection/prioritization and seeking/advising trends. UWorld (n=25) and Anki-related flashcards (n=18) were most referenced, followed by Boards&Beyond (n=10), Sketchy (n=7), First Aid (n=7), and Pathoma (n=6). Peers advised blending multiple third-party, mostly-paid resources, with only n=1 recommendation of school-curricular materials. Preliminary thematic coding suggests advice seeking was concern-driven—concerns around goal score achievement (n=25), using ‘correct’ materials (n=18), using materials ‘correctly’ (n=11), and matching (n=7). Two requests expressed desire to increase fund of knowledge, and four advice-giving comments stressed its importance.

#### **Conclusions:**

Peer-advised Step 1 preparation comes at seemingly high cost to students—financial cost of multiple third-party resources, emotional cost, and cost associated with funds of knowledge constructed by and narrowed to boards-driven concern. Our subsequent research will build from

these initial findings, exploring how schools can assist students in successfully, efficiently, and confidently approaching and preparing for Step 1 while enacting the broader visions for compassionate care, learning, and professionalism schools espouse.

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# **“Insulted, [I] have to prove myself and then take care of the patient” Gender Bias in Internal Medicine Residency: A Mixed-Methods Approach**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To explore gender bias experienced by female internal medicine residents during residency training at the University of Rochester Medical Center.

### **Background and relevance of the study:**

The American College of Physicians outlined contributors to the lack of women leaders in medicine including discrimination, and cultural environment (Butkus et al., 2018). Residency training is a formative time that influences career choice and trajectory. Little is known about the lived experience of gender bias from the female resident's point of view.

### **Design and Methods:**

The study utilized a mixed-method, feminist approach to address the research aim. A survey of all categorical internal medicine residents (n=69) from a single institution was conducted in the spring of 2019. In parallel, two focus groups (n=11) and individual in-depth, semi-structured interviews (n=3) were conducted with female residents. Open coding was used and discussed with the research team to establish consensus. Thematic analysis was completed using an inductive approach.

### **Results:**

24 of 49 survey respondents identified as female: 9 (38%) reported experiencing microaggressions at least “sometimes” from patients/families, with 5 (55%) reporting nurses and 3 (33%) reporting faculty as additional sources. Focus groups found female residents commonly experienced bias, ranging from microaggressions to sexual harassment, from patients/families, nurses, and faculty. Emergent themes included individual-level responses to bias through inaction, reflection, indirect action, and/or direct action. Reflection and direct action were identified as helpful responses. Facilitators to helpful responses included program support, mentorship, faculty modeling, and supportive co-residents. Barriers included fear of others' negative perceptions, lack of faculty awareness, and lack of reporting mechanisms. Recommendations for improvements included continued efforts to raise awareness, increased modeling of responses, and an anonymous reporting system.

## **Conclusions:**

Female internal medicine residents experience gender bias in multiple forms from several sources. Efforts to empower residents to utilize helpful responses and a transparent reporting system may be beneficial for programs to implement.

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# **A Scoping Review of Medical School Initiatives that Develop Students' Teaching Skills**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

What is the scope of the literature on medical school initiatives that develop students' teaching skills?

### **Background and relevance of the study:**

Proficiency as a physician requires teaching - teaching patients, teaching trainees, and teaching colleagues. Faculty development programs develop physicians' teaching competence; however, it is naive to assume that physicians only learn these lessons in formal settings. Instead, they informally learn and implement teaching skills as they progress from medical school through residency and into independent practice.

### **Design and Methods:**

Building upon the previous reviews we searched PubMed, ERIC, Embase, Web of Science and PsycINFO in consultation with a librarian. Two authors judged all retrieved citations for fitness with inclusion criteria. The authors then extracted relevant data from all included citations.

### **Results:**

Of 1253 identified citations, 40 articles were included and analyzed. We found various types of teaching initiatives with junior and senior medical students, instructors with diverse backgrounds, varied content taught and methods used; and efforts at program evaluation. This review provides insights into the facilitators and barriers of teaching programs, ensures the broader characterization of programs are reviewed, and captures programs that may have been developed, but have not been disseminated into the literature. Programs were differentiated based

on three areas 1) feedback provided to the medical student, 2) repeated opportunities to improve teaching, and 3) substantiated programmatic evaluation efforts.

**Conclusions:**

Subjective improvements in teaching indicate the need for more rigorous program evaluation and further analysis of teaching content and methods to identify what works, in what contexts, and for whom. Without this kind of analysis, we fail to develop medical students' identities as both physicians and teachers. We ought not leave the lessons learned--like teaching strategies--to chance.

**References:**

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## **Academic Performance Impact by Clerkship Enrollment Sequence: Prerequisite for Emergency Medicine Core Clerkship**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

The director of Emergency Medicine core clerkship (EMED) at Johns Hopkins School of Medicine (JHU SOM) wanted to know if clerkship enrollment sequencing would influence students' academic performance on EMED. The question was raised because of the EMED NBME subject exam. The director of EMED believes that the EMED NBME subject exam would be appropriate for 4th-year medical students due to the advanced contents (NBME, 2017) and that the scoring would give students at JHU SOM disadvantages who enrolled in EMED at the early stage of clerkship sequences since the reported scores are norm-referenced (NBME, 2015).

#### **Background and relevance of the study:**

Many literatures in medical education studied the impact of clerkship sequencing in the students' academic performance or national exams (Doyle, Wilkerson, & Wimmers, 2013; Keis, Roth, & Rowland, 2010; Ouyang, Cuddy, & Swanson, 2015).

#### **Design and Methods:**

A study is conducted to find supportive evidence that students would perform better if they complete Medicine, Surgery, or both clerkships before they enroll in EMED. The study compares students' academic performance based on EMED's grading results. Students are divided into two groups depending on whether or not the completion of a selected clerkship or clerkships. Non-parametric tests and independent group t-test are applied between the groups for the equality of the mean scores.

#### **Results:**

According to the statistical tests, EMED students perform significantly better if they completed Medicine, Surgery, or both clerkships before they enroll in EMED. Approximately 20% or more students achieve higher final grades (Honors, High Pass, Pass, or Fail) for EMED, as well.

#### **Conclusions:**

The results suggest that students would achieve higher performance if they study either Medicine, Surgery or both clerkships first before enrolling in EMED. However, there is no noticeable difference in which clerkship completes first before EMED.

**References:**

1. Doyle, C., Wilkerson, L., & Wimmers, P. F. (2013). Clinical clerkship timing revisited: Support for non-uniform sequencing. *Medical Teacher*, 35, 586-590.
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## **An Interactive Lifestyle Medicine Curriculum for Third Year Medical Students to Promote Student and Patient Wellness**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

We aimed to determine whether a Lifestyle Medicine curriculum improved students' knowledge, skills and attitudes regarding the impact of behavior change on the health of both their patients and themselves.

#### **Background and relevance of the study:**

Though lifestyle intervention and behavior modification are effective in the prevention and treatment of chronic disease, few medical schools provide specific training in stress management, nutrition, or physical activity. While the prevalence of chronic disease rises, medical students and physicians themselves lack sufficient knowledge and skills to promote their patients' as well as their own wellness across these domains.

#### **Design and Methods:**

We developed three, one-hour long workshops delivered to third-year medical students. These sessions, framed by the pillars of Lifestyle Medicine, focused on knowledge and skills to advance lifestyle counseling and behavior modification interventions with patients. Concurrently, with collaborative activities and reflective practice, students considered opportunities to promote their own wellness. We assessed satisfaction with each session as well as their self-perceived knowledge, skills and attitudes towards lifestyle medicine and behavior change before and after the curriculum.

#### **Results:**

The sessions received high ratings with an overall mean of 4.17/5 on a Likert scale. Participating in this curriculum significantly enhanced students' understanding of the connection between lifestyle factors and the health of patients and improved their confidence around counseling for behavioral change. In terms of their own health, there was a non-significant improvement in their confidence around making their own positive changes.

#### **Conclusions:**

Lifestyle Medicine provides an evidence-based framework for teaching students about the impact of lifestyle modification on the treatment and prevention of chronic disease. While imparting students with knowledge and skills to advance patient care in the domains of stress

management, nutrition, and physical activity, students who completed this curriculum also had the opportunity to reflect upon their own well-being and health promotion, which could mitigate professional burnout.

**References:**

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# **An investigation to determine if bias existed in the admission screening process during the inaugural admissions cycle of a three-year US medical school**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

The primary objective of this study was to examine whether bias existed in the admission screening process in an inaugural admissions cycle. A secondary objective was to determine the most influential factors for screeners in deciding whether to recommend or reject an applicant for an admission interview.

### **Background and relevance of the study:**

Currently, 61% of the US population identifies as non-Hispanic White, 18% as Hispanic/Latino, 13% as Black/African American, 6% as Asian, 2% as Native Hawaiian/other Pacific Islander, and 1% as American Indian and/or Alaskan Native (US Census, 2018). However, Blacks/African Americans comprise 6.35%, Hispanic/Latinos 5%, and American Indians just 0.25% of enrolled medical students (kff.org, 2018). Previously, Capers and colleagues (2017) found that faculty awareness of their implicit racial bias led to the matriculation of the most diverse class in the history of Ohio State College of Medicine. This suggests that implicit bias may play a role in the lack of diversity in medical school admissions.

### **Design and Methods:**

One-hundred-fifteen faculty, including admissions screeners, participated in a 90-minute workshop that included a ten-minute introduction to implicit bias given by one of the authors (CF). Screeners were blinded to applicants' demographic information; however, application materials were not deidentified. Thus, screeners could theoretically infer demographic information from applicants' names, undergraduate institutions, organization memberships, personal essays, and letters of recommendation.

### **Results:**

Using a multivariable logistic regression model, we found no bias for race/ethnicity in the admissions screening process. However, there was a significant bias for women over men. Additionally, screeners' overall composite score and screeners' scores on letters of recommendation were the strongest predictors in determining who was recommended to be invited for interview.

**Conclusions:**

As this was an inaugural, truncated admissions cycle, a future study should be conducted during a full admissions cycle. At that time, it would be important to capture screeners' demographics, which were not captured in this study.

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## **Are Introverts Disadvantaged by Active Learning?**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

To examine associations between Big Five personality factors and academic outcomes in active learning.

#### **Background and relevance of the study:**

Our institution has transitioned to a predominantly active learning pedagogy. Active learning relies on group work and peer teaching; thus, faculty and students were concerned about the potential negative impact on academic outcomes for introverted students. The “Big Five Inventory” (BFI) is a validated assessment of five personality traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness.<sup>1</sup> Our goal was to evaluate associations between these factors and academic outcomes within our preclinical curriculum, with a primary focus on extraversion.

#### **Design and Methods:**

We distributed the BFI electronically to the classes of 2020 and 2021. We chose Step 1 scores for academic outcomes given its national prevalence and generalizability. We also examined curricular outcomes in a 2nd year course that had transitioned to teaching using 100% active learning. Pearson correlations and independent samples t-tests were used to examine associations.

#### **Results:**

The overall response rate was 61.5%. There were no personality differences between the class years. Extraversion was not associated with passing or failing Step 1 (Mean Extraversion scores: 27 (passing) vs. 29 (failing),  $p = .44$ ). Higher levels of agreeableness were found for students who failed Step 1 (Mextraversion = 40.67) than those who passed (Mextraversion = 34.9,  $p < .01$ ). Conscientiousness was positively associated with academic outcomes in the 2nd year course ( $r$ 's ranged from 0.17-0.26), while the other four personality factors were not, including extraversion ( $r$ 's ranged from -0.05-0.03)

**Conclusions:**

Findings suggest that a curriculum taught with active learning does not place introverted students at risk for lower academic outcomes. We found additional relationships between personality within Step 1 and in one course. This preliminary study was limited to one institution. Future research will include additional curricular outcomes, class years, and institutions.

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## **Beyond hysteria and hearsay: How much do first year students actually know about USMLE Step 1**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Does knowledge about USMLE Step 1 influence study behaviors and anxiety?

#### **Background and relevance of the study:**

The USMLE Step 1 is commonly taken after completion of the preclinical years and the score is frequently used as a screening device to sort the gradually increasing number of applicants for residency.<sup>1,2</sup> Given the perceived importance of Step 1 and the gradual rise in average scores over the past decade, students have raised concern over the impact of the “Step 1 Climate” on the cognitive-emotional environment in medical school.<sup>3</sup> The current study examined whether knowledge about USMLE Step 1 influences anxiety and study behaviors as early as the first year of medical school.

#### **Design and Methods:**

One hundred twenty RWJMS first year students (participation rate 70%, 57% female) responded to an online survey that examined Step 1 knowledge (e.g., What is the passing score for USMLE Step 1?), perceptions (e.g., anxiety about Step 1), and study behaviors (e.g., use of Step specific study aids). In addition, participants indicated their desired medical specialties which were classified as “highly competitive specialties” (HCS), “moderately competitive specialties” (MCS) and “less competitive specialties” (LCS).

#### **Results:**

Overall, participants had low levels of knowledge about USMLE including the purpose of the exam, current passing score, content, and length, although were more accurate about scores needed for specific specialties. Knowledge was unrelated to perceptions and study behaviors. Differences were found for desired specialty, perceptions, and study behavior. Participants who desired HCS used more Step review resources earlier in their first year than others. Anxiety was highest for those who desired MCS. Anxiety was also higher for women, although study behaviors did not differ by gender.

#### **Conclusions:**

Our results suggest that Step 1 does in fact impact first year students' study behaviors. Earlier

education about the exam could potentially relieve anxiety. Future research should evaluate educational efforts targeted at first year students.

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## **Career planning for junior faculty on a clinician educator track**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

To determine the faculty development needs of junior faculty members on a clinician educator (CE) track.

#### **Background and relevance of the study:**

Appointments, reappointments and promotion of faculty on a CE track includes high performance in each of the areas of clinical skills, educational roles and research efforts. Given the triple aim of this track, faculty members may be at significant risk for career dissatisfaction, burn-out and poor performance if they are not provided with the necessary skills, knowledge, and support. The exact faculty development needs, however, of these faculty members is unknown.

#### **Design and Methods:**

All faculty members within 3 years of initial appointment on the CE track were invited to participate in an onboarding faculty development program. Faculty self-identified in terms of whether or not they would benefit from such a program. All were asked to complete an initial survey to determine their individual career planning needs using validated tools measuring professional identity, career planning, career self-efficacy, career interest and factors associated with retention.

#### **Results:**

21 (43.8%) of the 48 invited faculty members opted to participate. A minority of the participants (n=4; 19%) were non-clinical (PhD) faculty members. Approximately half (n=11; 52.4%) had previously served at least one year as an instructor, whereas 5 (23.8%) had previous faculty appointments as an assistant professor elsewhere. Of the 27 non-participating faculty, 24 (85.2%) and 9 (33.3%) previously had instructor and assistant professor appointments, respectively. All 21 participants and 7 non-participants completed the initial survey. There were no statistically significant differences in terms of professional identity, career self-efficacy, career interest or core factors associated with retention between the groups. The participants had significantly lower mean career planning scores (4.74/7 SD 0.90 versus 5.6/7 SD 0.53, p-value=0.03).

#### **Conclusions:**

A subset of junior faculty members within 3 years of appointment on a CE track identified a need for faculty development focused on career planning.

**References:**

N/A

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## **Challenges of Ambitious Teaching for Clinician-Educators in Academic Settings**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

The purpose of this qualitative study was to identify the challenges CEs face when trying to implement ambitious teaching in academic settings.

#### **Background and relevance of the study:**

In MSU's new Shared Discovery Curriculum, clinician-educators (CEs) are asked to facilitate weekly small groups of UME students with a goal of developing students' collaborative problem-solving and clinical reasoning skills while integrating basic, social, and clinical sciences. Facilitating such groups requires ambitious teaching skills, different from lecturing or facilitating PBL groups.<sup>1,2</sup> While the CEs have a wealth of clinical expertise, they are often not trained as teachers.<sup>3,4</sup> We provided coaching support for CEs as they learned, implemented, and reflected on practices of ambitious teaching.<sup>5</sup>

#### **Design and Methods:**

Two instructional coaches with teacher education expertise each coached a CE teaching 7 to 8 second-year medical students. Coaching included co-planning, observing, and debriefing every 1-2 weeks over four months. Data sources included email conversations, audio-recorded co-planning and debriefing sessions, and observation notes. The two researchers analyzed the data and identified common themes.

#### **Results:**

Challenges CEs faced when trying to implement ambitious teaching were time constraints, communication, and teaching complexity. When CEs felt constrained by the allotted time to cover the content, they reverted back to more comfortable, less ambitious, teaching practices. CEs showed difficulty communicating clearly and explicitly when giving directions and purpose to students for complex activities. Lastly, CEs reflected that it was hard to simultaneously pay attention to complex tasks of ambitious teaching: content, student understanding, student engagement, etc.

#### **Conclusions:**

The challenges CEs face when learning to teach in interactive and ambitious ways require more support than one-time workshops provide.<sup>6,7,8,9</sup> Developing teachers need intensive coaching to help them attain and retain ambitious teaching skills.<sup>6,7,8,9</sup> By identifying and addressing

instructional challenges CEs face, instructional coaches can provide individualized, focused, and sustained support needed for ambitious teaching.

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# **Cultural Sensitivity Training at The Warren Alpert Medical School of Brown University: A Needs Assessment**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To determine (1) where Alpert Medical School students receive cultural sensitivity education; (2) assess perceived efficacy of existing curriculum by students, faculty, and administrators; (3) identify gaps in curriculum; and (4) identify opportunities for curricular development.

### **Background and relevance of the study:**

Health disparities are well documented across patient races, gender, income, religions, etc. In response, medical schools have been called upon to incorporate cultural sensitivity training into curriculum, but this varies widely. Rapp's framework, which is based upon Giroux's theory of Insurgent Multiculturalism, provides a lens for curriculum incorporation.

### **Design and Methods:**

Student perception of cultural sensitivity education was assessed through a web-based anonymous survey administered to all four medical school classes between August 2017-January 2018. Faculty and administrator perceptions were gathered via eight, semi-structured one-on-one interviews and focus groups, respectively. Quantitative data was analyzed with Excel and was compared via Mann-Whitney U tests via STATA. Using both grounded theory and constant comparative approach, interview and focus group transcripts were analyzed thematically.

### **Results:**

The survey yielded 308 responses. There was a statistically significant difference between self-reported level of cultural sensitivity at time of survey (Mdn=4) versus entering medical school (Mdn=3); ( $z = -9.183, p = 0.0000$ ). Level of preparedness from required curriculum was statistically different from non-required curriculum for several patient populations. Qualitative analysis indicated continued, clinical based interactions are a key thread to cultural sensitivity training (as outlined in Rapp's framework). A foundation of theory and power structures in medicine was viewed as critical as was an institutional culture supporting diversity among students, faculty, and administrators. Role modeling in the hidden curriculum was a common thread that could both promote and inhibit cultural sensitivity education.

## **Conclusions:**

Students report increased comfort with cultural sensitivity topics as they progress through medical school. Students perceive non-required curriculum to better prepare them with skills to provide culturally sensitive care to diverse patients.

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# **Demographics and Career Intentions of Graduating Medical Students in Combined Baccalaureate-MD Programs 2010-2017: An Analysis of American Association of Medical Colleges Graduation Questionnaire Data**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

Are students in combined baccalaureate-MD programs (CPs) disproportionately from historically underrepresented groups, more likely to intend to care for underserved patients and/or more likely to intend on entering a primary care specialty?

### **Background and relevance of the study:**

The U.S. hosts over 80 CPs offering conditional acceptance to medical school for entering or early undergraduates. CPs have arisen to narrow the physician diversity gap, promote primary care careers, address regional physician shortages and meet the needs of underserved patients. Little is known about the demographics or career intentions of graduating CP students.

### **Design and Methods:**

De-identified data from 2010-2017 were analyzed from the American Association of Medical Colleges Graduation Questionnaire. The data were re-categorized as traditional MD program or CPs. Demographics, specialty choice and intention to work with underserved populations were analyzed using descriptive statistics. Logistic regression on the two primary outcomes (medical specialty choice and intention to work with underserved patients) was conducted to estimate odds ratios for the effects of age, gender, URM group membership and type of degree program (traditional versus combined).

### **Results:**

Students in CPs were more likely to be younger (age at graduation  $\leq 29$  98.8% vs 84.7), female (57% vs 49%) and less likely to be from an URM group (8.7% vs 13.9%); they are also less likely to identify as White (35.4% vs 63.1%). In an adjusted logistic regression model, graduating from a CP, identifying as female and intending to work with underserved patients predicted significantly greater odds of primary care specialty choice, however, graduating from a CP was not a significant predictor of intention to work with primarily underserved patients.

### **Conclusions:**

Students graduating from CPs are significantly more likely to intend on a future career in primary care specialties but are not more likely to intend working with underserved patient populations.

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# **Development of Constructivism-Informed Interactive Web-Tools for Increasing Biostatistics Competence in First-Year Medical Students**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

We investigated how supplemental, interactive web-tools affected M1 student learning of sensitivity, specificity, negative/positive predictive values, and prevalence.

### **Background and relevance of the study:**

Statistical reasoning is an important clinical skill that informs evidence-based medicine and is desirable for 21st-Century practice [1-3]. Yet many physicians are unable to apply biostatistical techniques correctly, potentially undermining patient care decision-making, and adversely affecting outcomes [4,5]. The overarching concepts of foundational biostatistics and probabilistic reasoning can be challenging to teach and hard for students to internalize given time constraints, lack of intrinsic motivation, and varied pre-existing knowledge [6,7].

### **Design and Methods:**

Web-tool design was informed by constructivist theory and sought to have learners 1) build conceptual representations by connecting new information to existing knowledge, 2) interact with primary sources of biostatistical data, and 3) begin with whole concepts then explore component parts [8,9]. n = 72 M1 students provided informed consent and were provided access to the web-tools alongside the existing curriculum. Participants were assigned randomly to two cohorts (n = 36 each) that had access to the web-tools before or after in-class teaching. Individual access data (link clicks), summative scores from a 10 case-based multiple-choice question (MCQ) assessment, and qualitative data on student motivation, perceptions, and usage style from three n = 6 focus groups were collected.

### **Results:**

Mean MCQ scores were  $90.7 \pm 2\%$  and  $87.5 \pm 2\%$  for the before and after cohorts (independent t-test;  $p = 0.28$ ). Students repeatedly accessed the web-tools: mean before = 5 (range 1-10) and after = 2.5 (range 1-6). Qualitative data showed increased learner comprehension, application, analysis, and contextualization: “Now I could explain this to my family”; “they sped up getting to applying and being able to conceptualize”; “they encouraged using reasoning skills to figure it out.”

### **Conclusions:**

In conclusion, interactive learning web-tools facilitate a constructivist learning model and are valued by physicians-in-training.

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# **Do demonstrated Interpersonal Communication Skills on an Objective Structured Clinical Exam predict student selection for Gold Humanism Honor Society?**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

Is peer-based selection for Gold Humanism Honor Society (GHHS) membership associated with interpersonal communication skills (IPS) independently assessed in an Objective Structured Clinical Examination (OSCE)?

### **Background and relevance of the study:**

To ensure clinical competence and IPS in practicing clinicians, passage of Step 2 Clinical Skills (CS) of the United States Medical Licensing Examination is required to qualify for licensure.

Over 90% of US medical schools have reported utilizing OSCEs to assess clinical skills and IPS and ensure readiness for CS examination. Over 150 schools have GHHS chapters and many use a validated peer nomination tool to identify students who exhibit integrity, clinical expertise, collaboration, compassion, altruism, respect, empathy, and service. Studies exploring the relationship between IPS competence and student selection for GHHS have not been reported.

### **Design and Methods:**

A 9-station OSCE was administered to 3rd year students in Spring of 2017 (n = 180) and 2018 (n = 181) to certify students for graduation and prepare them for successful CS completion. Total scores across stations were computed for history-taking, physical examination, note writing, and overall IPS. IPS was further scored in two categories: Language Skills (LS) and Empathy and Patient Centered Care (EPCC).

### **Results:**

Mean scores were compared between GHHS awardees and all other students using Student t tests. Significant differences were observed only for EPCC in 2017 (Mean + SD; 87.8 + 4.5 vs. 85.9 + 5.7, p = 0.04) and for both overall IPS (90.0 + 4.0 vs. 87.8 + 5.5; p = 0.01) and EPCC (87.7 + 5.4 vs. 84.2 + 8.2; p = 0.01) in 2018.

### **Conclusions:**

Observed associations between GHHS selection and OSCE-based IPS assessments, replicated across academic years, provides evidence validating use of OSCE to assess competencies underlying compassionate, patient-centered care. Further, OSCE-based IPS assessments may

help to operationally define competencies students consider in recognition of peers for excellence in these areas.

**References:**

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# **Do Surgical Fellows Increase Productivity? A Retrospective Analysis of a Vascular Surgery Fellowship Program**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

As institutions grapple with limited Graduate Medical Education (GME) federal funding, many have tried to determine the costs and benefits of hosting residency and fellowship training programs. In this study, we answer the question: Do surgical fellows add operating room productivity and increase revenue for surgical services?

### **Background and relevance of the study:**

In 2016, our institution implemented a 5+2 year vascular surgery fellowship program, providing graduates of general surgery residencies two years of advanced training in open vascular and endovascular surgery. In this study, we use statistical process control to evaluate the clinical performance of the vascular surgery service, before and after implementation of the fellowship program, within an operating room (OR) block utilization framework.

### **Design and Methods:**

Using WiseOR, we extracted monthly vascular surgery operating room utilization data for the fifteen months before and after the implementation of the fellowship. Monthly block productivity was calculated:  $\text{Productivity} = (\text{workload}) / (\text{allocated hours} + 1.75 * \text{over-utilized time})$ . From financial reports, we obtained monthly work Relative Value Units (wRVUs) and clinical Full Time Equivalents (FTEs) for faculty of the vascular surgery service for the same 30-month study period. I-control charts were used to analyze changes in productivity and wRVU/FTE ratio across implementation of the fellowship.

### **Results:**

The vascular surgery service saw a significant increase in both normal-hours and after-hours case time after implementation of the fellowship. Under-utilized OR block time decreased ( $p = 0.002$ ) and over-utilized time increased ( $p < 0.001$ ) after implementation of the fellowship. The fellowship implementation coincided with an upwards special cause variation in both clinical productivity and faculty wRVU/FTE ratio for the vascular surgery service during the study period.

## Conclusions:

Implementation of the fellowship training program marked an upward shift in block productivity and revenue generation of the vascular surgery service, with the additional workload compensating for an increase in over-utilized block time.

## References:

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## **Does performance on weekly formative assessments (WFAs )predict performance on progress examinations?**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Are students completing the WFAs performing better in the comprehensive progress examinations?

#### **Background and relevance of the study:**

The Shared Discovery Curriculum (SDC) integrates science with clinical skills using a variety of methodologies organized by patients' Chief Complaints and Concerns rather than systems or disciplines. To assess progress students take Comprehensive Necessary Science Exams (CNSE) twice a semester instead of the discipline-based unit exams. CNSE utilize the NBME question banks; each follows a similar blueprint but contain unique questions. It is a challenge to provide frequent, regular summative feedback to students. Depending on the frequency of progress testing, it can also be difficult to identify students at risk for poor performance on board examinations early in the curriculum. Formative assessments are an alternative to provide feedback.

#### **Design and Methods:**

The WFAs are deployed weekly using a web-based course management system; it is open-book, completed during independent study time, and voluntary. We used the Generalized Estimating Equation (GEE) Model to identify associations between performance on WFA, and CNSE over time. WFA completion were grouped into 6-week increments preceding each of 4 CNSEs. We used two different cohorts of students in their first year.

#### **Results:**

For the 2017 cohort, first 12 weeks' WFA completion didn't significantly correlate with progress test results. In weeks 13-18, completion of WFA is positively correlated with the CNSE ( $p < 0.04$ ). The number of students completing the WFAs decreased from 2017 to 2018. For the 2018 cohort, in weeks 7-12, it is found WFA attendance is negatively correlated with CNSE results. No significant associations between WFA attendance and CNSE were found in other weeks.

**Conclusions:**

The different WFA/CNSE relationships among cohorts suggests that the WFAs scores do not provide useful information at the programmatic level. We are exploring ways to modify WFAs to be better predictors of future student performance, such as timed or proctored administration.

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# **Early Outcomes from Entrustment Committees of the Association of American Medical Colleges' Core Entrustable Professional Activities (EPAs) Pilot**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

How do Entrustment Committees (ECs) make decisions about graduating students' readiness to perform Core EPAs under indirect supervision?

### **Background and relevance of the study:**

EPAs, proposed as an important element of competency-based medical education,<sup>1</sup> orient curriculum and assessments to advance learners through progressive entrustment towards performing clinical-workplace tasks with decreasing supervision. Core EPAs Pilot schools, testing feasibility and effectiveness of implementing curricula for 13 Core EPAs, convened ECs for a subset of Class of 2019 graduating students.<sup>1-3</sup> ECs' determinations were examined for patterns in interpretation of assessment data and in making entrustment decisions (EDs).<sup>3</sup>

### **Design and Methods:**

ECs<sup>2,3</sup> made three EPA-specific determinations for each student: ED ("progression away from readiness", "progression towards readiness", "ready to be entrusted", "indeterminate"); EC confidence in ED (1=none to 4=high); and workplace-based assessments (WBAs) considered (0- $\geq 15$ ). Individual-level data were de-identified and merged into a multi-school database; Chi-square and correlations tested between-group differences.

### **Results:**

Among 249 students, % "ready to be entrusted" (RE%) ranged across EPAs ( $p < .001$ ), from 0% (EPA11 "Obtain informed consent"; EPA13 "Identify health systems failures/contribute to culture of safety and improvement") to 88% (EPA5 "Document clinical encounter in patient record"; EPA9 "Collaborate as member of interprofessional team"). Between-school differences in RE% (each  $p < .001$ ) were observed for EPA1 ("Gather history & perform physical examination) and EPA6 ("Oral presentation of clinical encounter"). EPA1 RE% was



associated with RE% (each  $p < .05$ ) in EPA5, EPA6 and EPA8 (“Give or receive patient handover to transition care responsibility”). Decisions toward RE correlated with EC confidence and were of greatest magnitude for EPA1 (.42,  $p < .001$ ); # WBAs across EPAs were generally low.

### **Conclusions:**

ECs made RE decisions with caution, informed by data quantity and quality. Some variations in EDs and data availability were institutional-specific; other variations found across all institutions likely reflect differences in implementation feasibility among the 13 Core EPAs.<sup>4</sup>

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## **Effectiveness of JEFFDOT- A direct observation tool**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Using a competency-based curriculum, Entrustable Professional Activities for Entering Residency framework, and Transitional Year Milestones we developed and implemented a mobile direct observation tool. We describe this tool's effectiveness for tracking faculty observations and bedside assessments.

#### **Background and relevance of the study:**

The paradigm of competency-based pedagogy and assessment is rapidly changing the landscape of medical education. The adoption of competency-based assessment is challenging because it requires a longitudinal approach, connecting competencies to practice. To address this challenge, we have developed and implemented a workplace assessment instrument, Jefferson Direct Observation Tool (JeffDOT), which documents observation of skills at the bedside.

#### **Design and Methods:**

JeffDOT is a mobile phone-based tool designed to be used at the bedside, encouraging frequent micro-assessments (10 minutes or less), tracking student progress across the medical school curriculum. This assessment app includes checklists which, in aggregate, are designed to stratify the learners' skill level into five categories: cannot perform, requires direct supervision, requires indirect supervision, can perform independently, or can teach junior medical students.

#### **Results:**

The direct observation tool was launched in April 2019 for 272 learners during the core clerkships. During first 6 months of use, 5,656 skill checklists were completed. Multiple skills were assessed including the core skills of history taking (942), physical exam (500), oral presentation (952), and counseling and discharge (538). At least 62% of students were rated at the level of "Can perform independently" for each of these four skills.

#### **Conclusions:**

This bedside direct observation tool enabled effective collection of a large number of brief workplace-based student assessments. Due to the ease of use, we hope this tool will facilitate a shift in institutional culture from static faculty-centered to learner-centered "in the moment" assessments. In aggregate, these micro-assessments allow longitudinal workplace-based

assessment throughout the curriculum to provide evidence of students' progress towards competence.

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## **Effects of Preclinical Active Learning on Clinical Performance**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

What are the effects of a preclinical active learning curriculum on medical students' success in clinical clerkships and as future physicians?

#### **Background and relevance of the study:**

Active learning (AL) is a progressive education technique which focuses on problem-based learning and group collaboration, unlike the traditional top-down didactic methods of lecturing. However, measuring the effects of AL on medical education have proven difficult and controversial. Efforts to study the effects of AL curricula have traditionally relied on standardized exam performance, which is not a holistic measure on a student's potential as a physician.

#### **Design and Methods:**

This study analyzed faculty ratings of students across six core competencies during the pediatrics, surgery, and inpatient internal medicine clerkships at the Larner College of Medicine at the University of Vermont after transitioning to an AL-based curriculum. Mean ratings were compared using a one-way analysis of variance and correlated with the percentage of AL experienced by each class of medical students in their respective preclinical curricula.

#### **Results:**

There was a significant difference in mean ratings between classes for the surgery clerkship ( $P < 0.001$ ), but there were no significant differences between classes for inpatient internal medicine ( $P=0.65$ ) or pediatrics ( $P=0.33$ ). Levels of preclinical AL correlated positively with faculty ratings in the surgery clerkship ( $r=0.7741$ ), correlated negatively in pediatrics ( $r=-0.8991$ ), and did not correlate in inpatient internal medicine ( $r=-0.2724$ ).

#### **Conclusions:**

The beneficial effects of preclinical AL on student performance may vary across different clerkships. This may be due to differences in the alignment of the AL classroom environment with that of the clerkship. Small group, problem-based AL may best simulate surgical experiences, where there is a team-based approach to isolated and acute problems. Additional research should be conducted longitudinally to study performance of practicing physicians with differing preclinical backgrounds.

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# **Effects of Self-Directed Learning on Knowledge-Based Performance in a Maternal Fetal Medicine Clinical Rotation**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To determine whether a novel Maternal Fetal Medicine (MFM) curriculum based in self-directed learning (SDL) influences knowledge-based performance during medical students' OB GYN clinical rotation.

### **Background and relevance of the study:**

Given the overwhelming number of resources to which current medical trainees have access (including but not limited to textbooks, podcasts, question banks and online resources), self-directed learning (SDL) plays an integral role in today's medical training.

### **Design and Methods:**

A randomized controlled trial was conducted at a single academic institution (Albany Medical College) through the 2019-2020 academic year. Students in their clerkship year were randomized to the control arm consisting of the standard OB GYN rotation or the standard OB GYN rotation plus the MFM SDL experience. The SDL experience included high-yield worksheets, videos, and clinical exposure. Pre- and post-tests regarding student satisfaction and MFM knowledge were administered to each student.

### **Results:**

The two groups performed similarly on the OB GYN NBME exam (MFM average = 78, non-MFM average = 76.8,  $p=0.45$ ). Both groups had overall improvements in pre- to post-test scores with no significant change in improvement from each other (MFM improvement = 2.7%, non-MFM improvement = 7.14%,  $p=0.42$ ). Both groups had an overall increase in anticipated to actual satisfaction rate of the clinical rotation with no significant differences (MFM increased satisfaction rate = 12.5%, non-MFM increased satisfaction rate = 10%,  $p=0.78$ ).

### **Conclusions:**

A preliminary analysis of student rotations in the 2019-2020 academic year revealed no statistically significant difference in NBME scores, MFM based knowledge, or rotation satisfaction amongst students participating in a novel SDL MFM curriculum during their OB GYN clerkship.

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# **Efficacy of Podcast-Based Laboratory Learning Modules for First Year Medical Microbiology Course: A Randomized Controlled Trial**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

We were interested in exploring the role of podcasts as a learning tool for the laboratory-related material covered in M1 microbiology. We were also interested in collecting student feedback on the effectiveness of using podcasts, and whether students felt more confident in their understanding of lab procedures after utilizing the new learning tool.

### **Background and relevance of the study:**

Previous studies show that students find podcasts helpful in increasing confidence with materials, and students have typically rated them favorably as a learning tool (1,2,3,4,5). We devised podcasts outlining basic scientific principles in our microbiology laboratory course. Our study plans to determine whether the podcasts we designed will help first year medical students deepen their understanding of the theory and practice behind laboratory exercises.

### **Design and Methods:**

The M1 Microbiology Course contains four bacteriology wet labs. Our project is to assign video podcasts for 2 of the 4 lab exercises for students to watch prior to coming to lab. These podcasts will preview the laboratory methodology as well as the foundational scientific principles. We will also be administering quizzes to student cohorts who received the podcasts as well as those who did not. Moreover, we distributed a questionnaire at the end of the course to students to receive qualitative and quantitative feedback to assess the efficacy of the podcasts as a learning tool.

### **Results:**

We did not find any significant differences in quiz performances between the two groups of students who either viewed the podcasts or did not. The results of the questionnaire overall suggest a positive response to using podcasts to supplement lab exercises.

### **Conclusions:**

We designed podcasts to help first year medical students learn the techniques and scientific principles behind their mandatory laboratory curriculum. Overall, students rated the podcasts favorably as an important teaching tool in the microbiology curriculum.

### **References:**

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# **Evaluating the Effectiveness of a Test-Enhanced Learning Collaborative Feedback Process for Clerkship Students: A Randomized Controlled Trial**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

We explored if a collaborative feedback process with faculty-facilitated small group discussions improved clerkship students' medical knowledge acquisition and perceptions of feedback effectiveness compared to a non-collaborative feedback process.

### **Background and relevance of the study:**

Test Enhanced Learning (TEL) has shown positive effects on learner memory retrieval in health professional education. Learners also receive feedback on responses, however the effect of feedback on learning in TEL has not been well evaluated. It is important to explore the effectiveness of TEL feedback approaches.

### **Design and Methods:**

In a randomized controlled trial in 2018-2019, 55 medical student volunteers were randomly assigned to one of two small groups for eight 60-minute sub-topic based didactic sessions during their 4-week neurology clerkship at the Geisel School of Medicine. The two simultaneously-occurring sessions included a TEL component where students individually took the same multiple choice test at the beginning of each session (eight 10-item tests). The control group (N=27) received their scores with correct and incorrect answers right after the test and received detailed written explanations of all the answers after each session. The collaborative feedback group (N=28) spent about 20 minutes discussing their responses during each session based on their anonymous answers and also received the written explanations. Outcomes were compared using final neurology National Board of Medical Examiners shelf exam scores and student responses to a 5-point end of clerkship survey on their TEL feedback effectiveness.

### **Results:**

The exam scores for the two groups were not significantly different. However, 57% of the collaborative feedback participants rated their TEL feedback as very effective or extremely effective (4 or 5), while none of the non-collaborative group members did ( $p < 0.001$ ).

### **Conclusions:**

Students perceived collaborative feedback in TEL as an effective feedback approach immediately after individually completing weekly tests. There was no difference in final exam scores between collaborative and non-collaborative feedback groups.

**References:**

1. Larsen DP, Butler AC, and Roediger HL III (2009). Repeated testing improves long-term retention relative to repeated study: a randomized controlled trial. *Medical Education* 43, 1174-1181.
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## **Experienced Physician Skills- Managing the inefficiencies of practice**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Which strategies have experienced physicians developed to manage the difficulties of clinical practice?

#### **Background and relevance of the study:**

Primary care doctors that work directly in patient care have a high rate of burnout. To address this, the reciprocal domains of physician well-being have been established. Current literature extensively explores two domains: culture of wellness and personal resilience. Less data exists for the third domain, the efficiency of practice. Through experience, physicians develop strategies that help minimize the difficulties of clinical practice. This research project seeks to identify these strategies so they may be taught to trainees, and decrease future burnout.

#### **Design and Methods:**

This is a qualitative descriptive written study. A total of 4 open ended questions exploring information pertaining to the skills that manage the most challenging aspects of medicine were queried. A total of 96 primary care doctors with more than 10 years of experience were contacted. They self-selected as not burned out, and a total of 14 responses were received. Using the grounded theory, results were coded by two reviewers. Saturation was achieved. The following categories were identified as protective: direct patient skills, indirect patient skills, self-care skills.

#### **Results:**

Direct patient skills include good communication, employing empathy, agenda setting and kindly setting boundaries. Indirect patient skills include EMR techniques, setting expectations with support staff, prioritization of the “inbox” and utilization of available resources. Self-care skills include mindfulness and reflection on patient encounters. Experienced physicians learn from their patients, reflect on their mission, and are able to incorporate their new knowledge into their personal lives.

#### **Conclusions:**

In conclusion, experienced physicians have developed a specific skill set to manage the inefficiencies of clinical practice. The development of these skills has yet to be identified, let alone taught to residents in any meaningful way. Instruction in these skills will likely yield a more fulfilling and lasting career in primary care.

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# **Feedback for Early-Career Emergency Medicine (EM) Physicians on Patient Care Quality: A Needs Assessment**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

What are the experiences and needs of early-career Emergency Medicine (EM) physicians regarding feedback about the quality of their patient care?

### **Background and relevance of the study:**

Feedback is an essential aspect of learning and growth, and is also tied to career satisfaction and ultimately to engagement and burnout [1]; improving patient care outcomes requires effective feedback on patient care quality [2,3]. In EM, physicians commonly receive feedback on operational metrics (CT utilization, admission rates) [4] and patient satisfaction [5]; evaluative feedback focuses on remarkably unexpected/negative outcomes. EM physicians miss opportunities to learn from the outcomes of the vast majority of their episodic patients [6].

### **Design and Methods:**

Columbia University EM faculty who completed residency training in 2017 or 2018 were surveyed. Quantitative responses were analyzed for mean and variance; qualitative responses were analyzed using grounded theory with a constructivist perspective, to identify themes via discussion by the authors.

### **Results:**

10/17 responded. 80% expressed dissatisfaction with feedback on patient care quality. Respondents described current feedback as self-driven, informal, sporadic, and irregular; they described their current learning from patient outcomes as self-directed and solitary. Respondents felt barriers to learning about patient outcomes included inadequate time, a cumbersome electronic medical record, lack of mechanism for following up on discharged patients, and lack of formal follow-up process. Respondents expressed desire for more formal regular feedback driven by the department, including follow-up on critically-ill patients and time-sensitive emergencies, deaths, emergency department revisits, and diagnostic dilemmas. They expressed desire for more group learning environments fostering discussion of case management.

### **Conclusions:**

Early-career EM physicians express a need for more formal, regular feedback on their patient care quality. This needs assessment can serve as a foundation for a variety of improved feedback mechanisms as well as educational interventions utilizing group case discussions, which could

ultimately impact learner satisfaction, clinical practice behavior change, and improved patient outcomes.

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# **Formative Quiz Performance Correlates with Final Examination Scores in an Infectious Diseases Course for First Year Medical Students**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

We examined the correlation between formative quizzes (FQ) and course performance in a first year Infectious Diseases (ID) course for medical students.

### **Background and relevance of the study:**

At our institution, preclinical undergraduate students engage in: (1) six hours of didactic lecture per week; (2) weekly active learning exercises (case-based (CBL) and team-based learning (TBL)); and (3) voluntary weekly FQ [1]. Despite broad use of FQs in our program, their value remains unclear, and this study aims to clarify their contribution to course performance.

### **Design and Methods:**

The ID course reviews the application of microbiology and virology to human disease. At the end of each week students receive access to FQs with 16-22 questions each. We compared performance on weekly FQs and: (1) course final examination; (2) CBL scores for preparation, participation, completion of learning objectives and teamwork; and (3) TBL-iRAT scores.

### **Results:**

The completion rate for FQs was 99%. The FQ average was 86.26 (standard deviation: 0.15, n=95). FQ scores were strongly correlated with final examination scores ( $r=0.4666$ ,  $p<0.01$ ), CBL scores ( $r=0.3008$ ,  $p<0.01$ ), and iRAT scores ( $r=0.1759$ ,  $p<0.01$ ). Additionally, FQ scores correlated with CBL scores for preparation, participation, completion of learning objectives and teamwork ( $r=0.1891$ ,  $p<0.01$ ;  $r=0.2449$ ,  $p<0.01$ ;  $r=0.2147$ ,  $p<0.01$ ;  $r=0.229$ ,  $p<0.01$ ).

Subpopulation analysis revealed that FQ scores correlated with final examination and CBL scores only in students performing in the lower 33rd percentile on the final examination (n=31;  $r=0.3711$ ,  $p<0.01$ ;  $r=0.4480$ ,  $p<0.01$  for final examination and CBL scores, respectively). No significant ( $p>0.05$ ) positive correlations were found for students performing in the upper or middle 33rd percentile on the final examination.

### **Conclusions:**

FQ scores are predictive of student final course examination, CBL, and iRAT scores, verifying the use of these quizzes to provide formative feedback regarding course content mastery and identification of additional areas for further development as well as identify “at risk” students for early intervention.



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# **Getting from “How am I doing?” to “How do I get to where I plan to go?”**

## **How students process and act on feedback**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

This study is part of a larger project that examines how students seek and apply feedback during clerkships. We focus specifically on how students act on the feedback, with the goal of helping both students and supervisors better navigate the feedback process.

#### **Background and relevance of the study:**

Feedback is an essential component of student development. Studies have explored how students seek feedback during clerkships,(1-3) and recommendations to supervisors on how to give feedback exist in the literature.(4) However, less is known about how students process and act on the feedback received.

#### **Design and Methods:**

We report our preliminary focus group findings of the larger mixed-methods study conducted in a medium-size medical college in an urban area. Students who had completed their core clerkships participated in focus groups, which were recorded, transcribed and analyzed for emerging themes. Two co-investigators examined the data through a constant comparative approach to achieve consensus.

#### **Results:**

Data from three focus groups (twelve students) were analyzed. Students described four actions after receiving feedback: 1) Assess quality of feedback; 2) Accept and implement; 3) Reject or ignore; 4) Follow up after implementation. In addition to what is known about good feedback (timely, specific and based on observations), students consider meaningful relationships, perceived investment of supervisors, alignment with self-perception and future career, and consistency with prior feedback as important factors in deciding how to act on the feedback. Additionally, whether feedback impacts final grades contributes to this decision. Finally, students reported few opportunities to follow up on feedback. They cite lack of specificity, longitudinal relationships with supervisors, and alignment with their careers as reasons they do not follow up on the feedback they receive.

#### **Conclusions:**

Our data helped clarify how students process and act on feedback. Building longitudinal relationships, eliciting prior feedback, aligning feedback with students' goals, and having plans for follow-up may help supervisors individualize feedback to students.

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# **Harnessing the moments of vulnerability in educators through the lens of self-determination theory**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

What are the relationships between shame, guilt and intrinsic motivation as explained through self-determination theory (SDT)? How can moments of vulnerability in the faculty teaching medical students and residents be harnessed to promote intrinsic motivation, while preventing shame which can in turn reduce compassion?

### **Background and relevance of the study:**

Self-determination theory states that there are three key fundamental factors to promoting intrinsic motivation and to self-improve: competence, relatedness, and autonomy. It's also well described that educators often feel insecure and/or ill-prepared when teaching. A well-crafted feedback from learners, colleagues, and senior faculty during these moments of vulnerability as experienced by the educator, may lead to increased sense of competence, autonomy, and provide a sense of connectedness or relatedness to the profession and trainees. Sub-optimal feedback may instead introduce doubt in the educators' abilities, lead to disengagement, and accelerate compassion fatigue. This literature review examines the role of vulnerability, shame, and guilt through SDT in the educators.

### **Design and Methods:**

We reviewed the current literature on SDT and the educators' responses to feedback, with a focus on shame, vulnerability, intrinsic motivation, and compassion-fatigue.

### **Results:**

This review focuses on our understanding of vulnerability and intrinsic motivation within the SDT framework in medical education from the educator's perspective. Feedback characteristics, as well as inherent characteristics of the individuals that may lead to self-efficacy and professional/personal growth were identified.

### **Conclusions:**

Literature suggests that skillful guidance for the faculty during moments of vulnerability can steer the educator towards a fulfilling educational trajectory, as explained through SDT. Faculty development and mentoring process should incorporate the key elements which impact the

educator's sense of autonomy, competence and relatedness to harness their intrinsic motivation and spur growth.

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## **Hawks and Doves: Perceptions and Reality of Clerkship Grades**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Do faculty perceived as “hard graders” truly give lower evaluation scores and final grades?

#### **Background and relevance of the study:**

Clerkship grades are an important factor for residency selection<sup>1</sup>. However, the clerkship grading process is subjective<sup>2</sup>, and students have concerns about grade accuracy and fairness.<sup>3</sup> At our institution, a grading committee assigns Internal Medicine clerkship grades based on standardized assessments and faculty evaluation. The stringency reputation of faculty is often considered in the process. We investigated whether perception of evaluator stringency was associated with the grades they assigned.

#### **Design and Methods:**

Standard clerkship evaluation form consists of a list of 8 skills with a 3-point Likert scale rating and a final grade. Evaluators rate each skill as above, below, or at the expected level. A Grading Committee reviews all evaluations students receive and assigns the final grade for the clerkship based on consensus. Faculty who commonly work with students in Internal Medicine Clerkship were rated as a “hard”, “neutral”, or “easy” grader by the members of the Grading Committee; 877 faculty evaluations were analyzed. Logistic regression was used to determine if actual assigned ratings and grades varied based on perceived faculty stringency.

#### **Results:**

“Easy graders” consistently awarded the highest rating, and hard graders the lowest for questions that evaluated medical knowledge and ability to incorporate feedback. Final grade distribution shows more high grades from “easy” graders than “neutral” [OR=1.54 (0.69-3.43)] or “hard” graders [OR=2.04 (0.81-5.14)], and “hard” graders gave lower grades than “neutral” graders [OR=0.753 (0.34-1.67)] but none of these differences were statistically significant.

#### **Conclusions:**

Despite perceived differences in faculty grading “toughness”, final grades awarded by each did not differ in distribution. Perceptions of “hawks” and “doves” appear to be more lore than reality.

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## **Impact of an active learning Wilderness Medicine Curriculum for fourth year medical students on ACGME competencies.**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

The purpose of this study is to gather data of the impact of our Wilderness Medicine course curriculum to improve ACGME competencies for fourth year medical students.

#### **Background and relevance of the study:**

Smith et Al. established that inter-professional collaboration can be achieved through simulation in social wilderness environments. Padaki et al. were able to show that medical knowledge and confidence significantly improved in a simulation based curriculum for medical students on in-flight medical Emergencies. The WM curriculum challenged students to learn and practice leadership and communication as a unifying thread throughout the course.

#### **Design and Methods:**

Medical education active learning strategies were extracted from the classroom, clinic and hospital and applied in the remote, low-resource, and varied wilderness environments. The curriculum goals and objectives aligned with the established college of medicine and ACGME competencies. This follow up survey of the course participants assessed the impact of the course on patient care, medical knowledge, interpersonal and communication skills.

#### **Results:**

21 students over 2 annual courses 2018-2019, participated in the exit survey, with a universally very positive experience. Students concluded that scenario-based simulations increased leadership skills, communication, and information retention. Many students, unprompted, reported that they learned more in these two weeks than in any other course in medical school, particularly related to Medical Knowledge and Interpersonal and Communication Skills. Medical knowledge on topics not otherwise covered in the standard curriculum, particularly hypothermia, hyponatremia and lightning pathophysiology were commonly reported. Leadership skills and teamwork skills were also frequently described.

#### **Conclusions:**

Through active scenario-based learning, students acquired competency in patient care, medical knowledge, hard skills, and team dynamics. Students developed proficiency in wilderness medicine medical knowledge, backcountry operational skills such as situational awareness, risk management, and communication strategies. We hypothesize that application of competencies can extrapolate to the student's performance in the hospital setting.



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# **Implementing Association of American Medical Colleges (AAMC) Core Entrustable Professional Activities (EPAs): the role of workplace-based assessments**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

What is the medical student perspective on EPA-specific Workplace-based Assessments (WBAs)?

### **Background and relevance of the study:**

Core EPAs articulate essential tasks graduating students should be able to perform under indirect supervision. Core EPA Pilot schools introduced EPA-specific WBAs; important stakeholders are students, whose engagement is essential to successful WBA-based feedback systems.

### **Design and Methods:**

We examined responses to a third year-student questionnaire administered in 2019 for (among other items) statements about satisfaction (“I am satisfied....”; responses 0=strongly disagree to 3=strongly agree) with WBA feedback quality, quantity, and comfort in asking supervisors for EPA-specific WBAs. We also calculated an implementation impact score (IIS; sum of responses [0=strongly disagree to 3=strongly agree, to statements that “use of Core EPAs at my school” 1) “positively contributed to my confidence in my clinical abilities”, 2) “helped me understand what will be expected of me at the start of residency”, and 3) “positively contributed to the quality of my education”). ANOVA and Pearson correlations tested between-group differences; regression analysis identified IIS predictors.

### **Results:**

Among 429 respondents at 8 schools, satisfaction with WBA-feedback quality (mean, 1.49 [standard deviation 0.90]), quantity (1.50 [0.91]) and comfort in asking supervisors for WBAs (1.72 [0.92]) varied across schools (each  $p < 0.05$ ). IIS (4.54 [2.50]) was associated with (each  $p < 0.05$ ) satisfaction with WBA-feedback quality (corr=0.67), quantity (0.57) and comfort in asking supervisors for WBAs (0.47). IIS also varied by school (2.95-6.56;  $p < 0.05$ ). In multilevel (nested by school) linear regression analysis, satisfaction with WBA-feedback quality (beta coefficient [ $\beta$ ] 1.32; [95% confidence interval 1.05-1.59]) and comfort in asking supervisors to complete WBAs ( $\beta$  0.48 [0.27-0.69]), but not satisfaction with WBA quantity, independently predicted IIS.

**Conclusions:**

Across schools, key aspects of Core EPAs implementation are provision of high-quality feedback on WBAs and learning environments that encourage students to ask supervisors to complete WBAs.

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## **Intimate Partner Violence: Are First Year Medical Students Prepared?**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Defined as physical, sexual, psychological harm, and/or stalking caused by a partner (CDC), Intimate Partner Violence (IPV), is a major societal problem. We sought to assess the self-reported competency of first-year medical students in regards to their ability to screen for, identify, and support patients experiencing IPV.

#### **Background and relevance of the study:**

Physician intervention has been shown to benefit victims of IPV in a multitude of ways(1-4). Multiple studies assessing the barriers to IPV screening, however, consistently find that physician factors; mainly feelings of inadequacy in regards to preparation, education/ training, and general competency in dealing with IPV, are the main impediments to care(5-6). Additionally, studies have shown that physicians who are educated/ trained to deal with IPV perform more appropriately both in simulated as well as actual clinical execution(7-9) and that IPV education/ training has a positive impact on students' attitudes and comfort level in dealing with IPV patients(10-11).

#### **Design and Methods:**

First-year medical students (n=136) were administered a modified version of the validated survey tool-PREMIS (Physician Readiness to Manage Intimate Partner Violence Survey- 2015 version)(12). Using a 7-point scale, students responded to each prompt by stating whether they were 'not prepared' (1) to 'quite well prepared' (7).

#### **Results:**

A majority of the students did not perceive themselves as being knowledgeable about IPV or feel prepared to address IPV issues with patients. Specifically, more than one-third of students did not feel prepared to document domestic violence history and physical exam findings, help patients assess his/her danger, create a safety plan, and make appropriate referrals.

#### **Conclusions:**

Our findings demonstrates a need to increase IPV competency. We plan to implement a longitudinal IPV curriculum that includes case-based discussions and clinical scenario activities with standardized patients to address these deficiencies. We will collect follow up data by administering the modified PREMIS again post-intervention on the same sample group to assess curricular effectiveness.

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# **Lessons from the AAMC Core Entrustable Professional Activities (EPAs) for Entering Residency Core EPA Pilot Project: Qualitative Analysis of the M3 Survey**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

The purpose of this study was to understand students' perspectives on the Core Entrustable Professional Activities (EPAs) pilot that broadly inform other current and future EPA-based curricular development and assessment approaches.

### **Background and relevance of the study:**

The Association of American Medical Colleges' Core EPAs were developed to promote a shared understanding of essential tasks graduating students should be able to perform under indirect supervision upon entering residency.(1) Students at the 10 schools participating in the Core EPAs Pilot Project (2) are important stakeholders in these schools' Core EPAs implementation efforts.

### **Design and Methods:**

An online questionnaire administered to M3 students at the 10 pilot schools in Spring 2019 included two open-ended questions at the end of the survey: "What aspects of EPA implementation at your school" a) "have been most helpful to you as a learner?" (HELPFUL), and b) "could be improved or altered?" (IMPROVE). The data were independently analyzed for themes by two study team members (LS and KM); iterative analysis was performed until consensus was reached.(3)

### **Results:**

Of 687 M3-student respondents, 335 (49%) provided narrative comments. Across schools, predominant HELPFUL themes included: EPAs created common expectations for learners and faculty; and the culture of feedback was positively impacted by EPA implementation; predominant IMPROVE themes included: the detrimental impact of a lack of general awareness of EPAs among all stakeholders (particularly assessors); and a lack of shared understanding of assessment and feedback of EPAs particularly in relation to grades.

### **Conclusions:**

Students identified the Core EPAs framework as useful in helping them to both understand what is expected in their clinical performance, and to obtain frequent, quality feedback on their

clinical skills. Substantive and ongoing-faculty development efforts, communication about curricular and assessment practices, and user-friendly workplace-based assessment systems are warranted for effective implementation of Core EPAs.

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## **Medical Faculty's Perception of the Use of Altmetrics**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

This study examined the perceptions of medical faculty regarding their use of altmetrics and how factors such as career focus and social media use influence their opinions.

#### **Background and relevance of the study:**

Alternative metrics (altmetrics) are non-traditional metrics that capture the impact of research outputs through downloads, social media shares, and other measures.<sup>1</sup> The use of altmetrics as indicators of scholarly/societal impact has garnered increased attention over the last decade.

However, the degree to which faculty demographics, career stage, professional roles, and areas of research focus influence perceptions and use of altmetrics has yet to be characterized.

#### **Design and Methods:**

Medical faculty responded to a Qualtrics survey distributed through social media platforms and organizational listservs. The survey collected demographic information and data on social media usage, the likelihood of disseminating altmetric outcomes in academic documents (e.g., CV), and perceptions on the value/utility of altmetrics.

#### **Results:**

Of the 48 respondents, 23 were male and most were from North America or Oceania (81%). All age groups and career levels were represented. While only 17% indicated their institution endorses altmetrics, slightly more than half (54%) indicated altmetrics were 'moderately' to 'extremely valuable'. A Pearson's correlation revealed that frequent social media usage was strongly and positively correlated with favorable perceptions of altmetrics ( $r=0.512$ ,  $p<0.001$ ). Neither age range, career level, nor years of experience explained one's level of social media usage ( $p>0.402$ ) or one's favorable perceptions of altmetrics ( $p>0.200$ ). Irrespective of respondents' primary professional roles, areas of research focus, or whether their institution endorsed altmetrics, no significant differences ( $p>0.05$ ) in social media usage or altmetric perceptions scores were detected.

#### **Conclusions:**

This study suggests that more favorable perceptions of altmetrics are associated with higher social media use. These results also indicate that favorable perceptions of altmetrics traverse



career level or experiences. Next, this study will interview faculty for a richer understanding of their perceptions of altmetrics.

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# **Medical Student Evaluations of Teaching: A Window into Professional Identity Formation**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

What do medical student evaluations of teaching reveal about students' developing professional identities as physicians?

### **Background and relevance of the study:**

Cruess et al. (2014, 2015) define a physician's professional identity as "a representation of self, achieved in stages over time during which the characteristics, values, and norms of the medical profession are internalized, resulting in an individual thinking, acting, and feeling like a physician" (p. 1447). Achieving a professional identity as a physician is a formal goal of medical education, but it is also a "dynamic process shaped by and intertwined with the development of that person's larger adult identity" (Lewin et al., 2019, p. 1299). In this work, we seek to shift the analysis of medical student end-of-semester evaluations of teaching away from their content (i.e., what students thought about an instructor or a course) to what they reveal about medical students' developing professional and personal identities, using Kegan's (1982, 1995) model of adult development as a foundation.

### **Design and Methods:**

Our dataset consisted of all 389 open-ended comments written anonymously by first-year medical students in end-of-semester evaluations of mandatory workshops during one academic year. Using a grounded theory approach, we began by open coding a randomly selected subset of comments, then iteratively comparing and organizing our codes to obtain a shared codebook, and ultimately using an axial coding process to identify relationships between the codes.

### **Results:**

Our analyses revealed implicit and explicit tensions between first-year medical students' intertwining identities as young adults, learners, consumers, newcomers, community members, and (future) physicians. Individual concerns and desires tended to predominate, indicating an earlier stage of professional identity formation.

### **Conclusions:**

Medical student evaluations of teaching are a rich source of information about students' identities and values. The results of this study also indicate curricular needs and opportunities for assisting students in incrementally developing professional identities as physicians.

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# **Medical Student Perceptions of Wellness and Communication & Learning Outcomes of a Dissection Handoff Procedure in the Gross Anatomy**

## **Laboratory**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

The Wayne State University School Of Medicine curriculum has many contact hours limiting time for student self-directed learning, impacting wellness. To address this problem and give pre-clinical students opportunities to practice communication and teamwork, a handoff curriculum was introduced into anatomy dissection lab.

#### **Background and relevance of the study:**

Preclinical medical curricula should provide students opportunities to practice teamwork and communication that the integrative model of care demands. First-year medical students learn a process vital to patient care in a low risk environment while receiving increased opportunity for self-directed learning and improving wellness.

#### **Design and Methods:**

Students were briefed on how to complete handoffs and their fundamental role in future patient care. Each anatomy group was divided in two — alternating as “dissecting-team” and “receiving-team.” A handoff tool was developed with written (standardized checklist designed to ensure dissection) and verbal (the dissecting-team demonstrated structures to the receiving-team) components. The handoffs trial took place over 10 dissections. Students completed a pre-survey (n=176) and a post-survey (n=185).

#### **Results:**

Most students agreed that anatomy was time consuming: 71.6% (pre-survey), 64.9% (post-survey). Post-survey, 83.2% agreed that handoffs provided students with more time to study, 8.7% disagreed. Students performed better on exam questions covering content they dissected with 69.4% correct compared to receiver-team’s 65.1% ( $P < 0.0001$ ). 61.1% felt handoffs improved wellness. 41.6% felt the handoff process facilitated teamwork, while 28.1% felt neutral. 42.2% agreed handoffs helped them develop skills necessary for patient handoffs while 29.2% were neutral.

**Conclusions:**

Students scored significantly lower on exam questions regarding structures they did not dissect, but perceived they had more time to study and improved wellness. The handoff protocol could be improved to better address student perceptions of teamwork and preparation for future patient handoffs. Dissection handoffs continue to be employed in the gross anatomy labs and will be analyzed further.

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## **Medical students' satisfaction, preparedness, and perceptions in nutrition: a mixed-methods study**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

In order to identify gaps and areas for improvement in nutrition education in the medical curriculum, we aimed to assess students' 1) satisfaction with nutrition education in the Frank H. Netter MD School of Medicine curriculum, 2) confidence and preparedness to provide appropriate nutrition care, and 3) perceptions of nutrition in practice.

#### **Background and relevance of the study:**

It is well-recognized that nutrition is central to a healthy lifestyle, yet nutrition education in many U.S. medical schools remains a low priority. Medical students report inadequate and poorly integrated nutrition education in the medical school curricula, and feel unprepared or lack confidence to provide nutrition care.

#### **Design and Methods:**

Medical students (Y1-Y4) within the 2018-19 academic year were invited to complete a 24-item online survey from March to April 2019. Of the 115 students who completed the survey, 14 Y2 students were randomly selected to participate in one of two 1-hour focus groups. The survey and focus group questions explored satisfaction, preparedness and perceptions of nutrition.

#### **Results:**

Overall, 23.4% of students were dissatisfied with the integration of nutrition in the curriculum, particularly during clinical years (50%), and 28.8% were dissatisfied with skills learned for nutrition counseling. The majority of students perceived nutrition as an important area of medical education (92.8%) and 49.5% felt confident in their ability to provide appropriate nutrition care. Though not statistically significant, clinical students and students with prior nutrition education had greater confidence to provide nutrition care. Qualitative analysis revealed several themes for each construct, such as pedagogic strategies to improve nutrition education in the curriculum and low confidence in skills to provide nutrition counseling.

#### **Conclusions:**

The evidence indicates a need to improve vertical integration of nutrition in the curriculum, with

emphasis on counseling skills and innovative curriculum initiatives to improve satisfaction and increase preparedness of our medical students for nutrition care.

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## **More than the sum of its parts: the complexity of assessing interprofessional collaboration**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

The objective of this project was to determine whether a reductionist approach to identify variables of highly functioning interprofessional teams would lead to a successful assessment strategy for interprofessional collaboration (IPC).

#### **Background and relevance of the study:**

Teamwork is essential to delivering high quality patient care in today's complex health care delivery system. Currently, there is no tool available to assess IPC in the clinical learning environment.

#### **Design and Methods:**

A team of experts across multiple health professions was assembled to review existing frameworks of IPC. Using a reductionist approach, the team of experts then created a list of necessary attitudes, skills and knowledge for effective IPC based on these frameworks. Additional items were added using a Delphi method for consensus. The final items to be included were obtained using a content validity ratio.

#### **Results:**

Experts from the professions of advanced nurse practitioners, nursing, occupational therapy, pastoral care, pharmacy, physical therapy, physicians, physician assistants, respiratory therapy and social work identified 38 items (attitudes, skills and knowledge) using existing frameworks of IPC. Using a content validity ratio, 21 items were rated as essential by the team of experts. Three items showed complete agreement focusing on patient centered care, communication and ethical standards of the profession. The team was asked to test the items when observing highly collaborative teams and concluded that even if all 21 items were observed, collaboration between team members may have been rated low.

#### **Conclusions:**

A reductionist approach was able to break the competency of IPC into individual tasks. Experts across diverse health professions agreed on the essentials items. However, a reductionist approach may not be the best approach when developing an assessment strategy for IPC.

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# **Pediatric Residents' Perspective on Residency Education and Role of the EHR in Addressing Tobacco Smoke Exposure**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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Rachel Boykan, Stony Brook University School of Medicine

## **Abstract Body:**

### **Research Statement/Research Question:**

To determine how pediatric residents are trained to address tobacco use (TU) and tobacco smoke exposure (TSE) and the role of the electronic health record (EHR) in facilitating clinical practice.

### **Background and relevance of the study:**

Pediatricians should address TU/TSE with patients/families, but may not be trained to do so. EHRs may improve evidence-based practice in this area.

### **Design and Methods:**

Between 5/2019-7/2019 U.S. pediatric residents (11,860) were sent an IRB-approved electronic survey, on education, training and practice regarding TU/TSE.

### **Results:**

Of 595 participants, 31% were from small, 34% medium, 20% large programs; 76% were female, 23% male; 40% PGY-1, 27% PGY-2, 29% PGY-3. The majority felt addressing TU/TSE was very important (63.5%) or important (21.2%); a minority identified being effective at counseling patients (23.2%) or parents (19%).

Residents learned most effectively about TU/TSE with clinical supervision (39.5%), motivational interviewing (MI) (35.6%) and active-learning workshops (ALW) (35.6%). Other educational venues included Grand Rounds, small groups (SG), web-based modules (WBM). Residents reported more perceived effectiveness (PE) in counseling parents when they were taught in SG (OR 1.82, CI 1.05-3.17), and ALW (2.46, 1.04-5.82). SG (2.4; 1.43-4.02), ALW (3.18, 1.41-7.21), MI (1.99, 1.14-3.49) and WBM (2.04, 1.14-3.67) were associated with PE in counseling patients.

The majority (85.9%) had no EHR prompts regarding TU/TSE. Of those with prompts, 8.4% used them always; 35% never. Having certain EHR features was associated with PE in counseling parents: TSE-vehicles (2.47, 1.34-2.56), TSE-other settings (2.40, 1.31-4.4), offering NRT (2.63, 1.36-5.11). Having prompts re TSE-other settings (1.84, 1.03-3.28) and quitline referral (1.76, 1.03-2.99) was associated with PE in addressing TU/TSE in patients. 89% of residents planned to use these skills post-residency.

### **Conclusions:**

Most residents believed addressing TU/TSE is important; few felt effective all/most of the time.

Most EHRs had no prompts re TU/TSE; certain EHR prompts were associated with increased PE, suggesting opportunities for improved practice in residency training.

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## **Peer discussion decreases practice intensity and increases certainty in clinical decision-making -among internal medicine residents**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Does working in peer groups decrease practice intensity of internal medicine residents?

#### **Background and relevance of the study:**

High value care (HVC) education is a priority in internal medicine (IM) residency training(1). Optimal methods for developing HVC decision-making skills are unknown, however team-based decision-making has been shown to reduce diagnostic error and increase confidence(2,3), which are closely related to HVC. Therefore, we aimed to assess the impact of peer discussion on resident practice intensity and certainty in decision-making.

#### **Design and Methods:**

We adapted a previously validated, vignette-based electronic instrument(4) to calculate practice intensity (PI) and certainty. The instrument was administered at seven IM residencies near Philadelphia. Participants formed groups of two or more and completed each item of the instrument individually and then as a group.

Predicted group PI scores (mean of individual PI scores of group members) were compared with measured group PI scores using paired t-testing. This analysis was repeated with predicted and measured group certainty scores.

#### **Results:**

Sixty-nine groups participated in the study, with average group size of 2.88 (median 3). Fifty-six percent of respondents identified as male and 64% of groups were gender-mixed.

We found that the measured group PI score (2.29, SD 0.23) was significantly lower than the predicted group PI score (2.33, SD 0.22) with a mean difference of 0.04 (SD 0.10, 95% CI 0.02-0.07,  $p=0.0002$ ).

The measured group certainty score (0.493, SD 0.164) was significantly higher than the predicted group certainty score (0.475, SD 0.136), with a mean difference of 0.018 (SD 0.073, 95% CI 0.0006-0.0356,  $p=0.022$ ).

#### **Conclusions:**

In this multi-center, vignette-based study of resident practice intensity, working in peer groups

reduced practice intensity and increased certainty more than would be expected from averaging group members' individual scores. This suggests that group decision-making exercises could be an important educational strategy to encourage high-value practice in residents.

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## **Performance on individual readiness assurance tests to predict performance on progress examinations**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Can we use weekly individual readiness assurance tests to predict student performance on comprehensive progress examinations?

#### **Background and relevance of the study:**

The Shared Discovery Curriculum (SDC) integrates science with clinical skills using a variety of methodologies organized by patients' Chief Complaints and Concerns rather than systems or disciplines. To assess progress students take Comprehensive Necessary Science Exams (CNSE) twice a semester instead of the discipline-based unit exams. CNSE utilize the NBME question banks; each follows a similar blueprint but contain unique questions. It is a challenge to provide frequent, regular summative feedback to students. Depending on the frequency of progress testing, it can also be difficult to identify students at risk for poor performance on board examinations early in the curriculum. Formative assessments are an alternative to provide feedback.

#### **Design and Methods:**

We evaluated the use of individual readiness assurance test (iRAT) to predict student performance on CNSE. iRATs are used weekly in large group activities (LGA) as closed-book tests completed independently with supervision by proctors. iRAT questions are aligned with the LGA learning objectives and materials posted in advance of the session. We used the Generalized Estimating Equation (GEE) Model to identify associations between performance on the iRAT, and CNSE over time. iRAT scores were grouped into 6-week increments preceding each of 4 CNSEs.

#### **Results:**

There was no association between iRAT scores and CNSE performance in the first 12 weeks of the curriculum. In weeks 13-24, average iRAT scores correlated positively with CNSE test scores ( $p < 0.01$ ). Specifically, scoring 10% above average on the iRAT in weeks 13-18 was associated with a 1.52 point higher CNSE score and in weeks 19-24, 1.12 points higher CNSE score ( $p < 0.01$ ).

**Conclusions:**

iRATs associated with CNSE performance in weeks 13-24 of our medical school's curriculum and may be used to identify academically at-risk students.

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# **Preparing Faculty for a New Medical School: A Single-Site Feasibility Project**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

Our project aim was to examine the feasibility of noontime education on teaching preparedness and readiness to lead in a newly created medical school. Teaching preparedness was operationalized as application of active learning and readiness to lead was operationalized as performing behaviors related to administrative and leadership roles, such as deans and directors.

### **Background and relevance of the study:**

Although noontime sessions existed at our hospital, they were seldom focused on preparation for new educators and leaders. The theoretical framework of our project was the menu approach and sequencing, affirming that items are more appealing when displayed alongside others [1] and content should be revisited to increase retention [2].

### **Design and Methods:**

Longitudinal, voluntary noontime education was offered from September 2018 to June 2019, where 60 to 90 minute sessions were conducted by either internal or external speakers on topics under 3 categories: Administrative, Teaching-skills, or Student-success. After ethical approval from our IRB, an anonymous survey was sent to 104 learners who attended any educational session, yielding a response rate of 56% (n = 58).

### **Results:**

After data cleaning and removal of missing data, 40 responses were included for analysis. Descriptive statistics (frequencies and percentages) were calculated for all categorical questions on the survey. All analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, NC). Our hypotheses were supported; 75% of respondents (n = 30) stated application of content from the noontime education. Findings also revealed self-reported increased utilization in 3 areas: active learning, curriculum development, and best practices in communicating feedback.

### **Conclusions:**

It is feasible to conduct noontime education for teacher preparedness and new leadership service at our institution as we transition faculty from hospital teaching to medical school educators. The menu approach and sequencing aided the design of our educational intervention. Next steps will build upon this effort to explore sustained knowledge and skills gained among faculty.

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## **Prevalence of food insecurity in matriculating medical students**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Our objective was to better understand food insecurity at Yale School of Medicine (YSM) by assessing our baseline rate of food insecurity. We hypothesized that there is food insecurity among matriculating students.

#### **Background and relevance of the study:**

Food insecurity is defined as lack of money or resources limiting access to adequate food. Among undergraduates, food insecurity creates disparities in academics, health, and success. Food insecurity is well studied in undergraduates but rarely studied in medical students. At YSM, food insecurity is of particular interest to the Offices of Student Affairs and Financial Aid in regard to program and policy development.

#### **Design and Methods:**

During orientation for the matriculating class of 2019, students were invited to participate in an anonymous survey containing the USDA's 10-question Food Security Survey Module and questions about demographics. In this pilot project, the association between demographic variables and food insecurity were explored via chi-square and t-tests.

#### **Results:**

91/103 students (88% of the class) responded. Of these respondents, 19.1% were food insecure. Age, race, gender, citizenship status, and having dependents at home were not significantly associated with food insecurity. However, being Hispanic/Latino was associated with greater food insecurity ( $p=0.02$ ), and having parental contribution to educational funds was associated with less food insecurity ( $p=0.01$ .)

#### **Conclusions:**

The baseline rate of food insecurity at YSM is higher than that observed in the general population (11.1%). The reasons behind this discrepancy are unknown but may be in part due to high cumulative educational costs. Additionally, underrepresented in medicine students were more food insecure, a factor that must be considered when shaping institutional policies and interventions.

This pilot study provides key data and paves the way for addressing the problem of food insecurity among YSM students. Further research will identify additional risk factors for food insecurity, assess longitudinal changes in this measure, and inform policies providing effective support our food insecure students.

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## **R2C2 in the moment, coaching on the fly**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Coaching in medical education has shown promise as an approach that facilitates learner achievement of clinical competence. The feasibility of employing evidence based coaching tools to coach learners when faculty/learner interactions are brief and episodic is unclear.

#### **Background and relevance of the study:**

The research-based four-phase R2C2 feedback and coaching model draws on performance data to build Relationship, explore Reactions, determine Content and Coach for change to co-create an action plan. While successfully used for progress meetings, it had not been studied in settings in which brief feedback conversations occur after learner experiences. The purpose of this study was to explore how supervisors adapted R2C2 for in-the-moment feedback and coaching, and develop a guide for its use in this context.

#### **Design and Methods:**

We interviewed 11 purposefully selected clinical supervisors to explore when they used the model, how they adapted it for in-the-moment conversations, and phrases they used in each phase that could guide design of an R2C2-in-the-moment model. We used framework analysis to synthesize interview data and conducted two research team consensus meetings to confirm findings.

#### **Results:**

Participants readily adapted the model to varied feedback situations across several disciplines and clinical environments. They identified phase-specific phrases that could enable effective coaching conversations in a limited amount of time. Results facilitated revision of the original R2C2 model for in-the-moment feedback and coaching conversations, design of an accompanying trifold brochure, and website information (<https://medicine.dal.ca/departments/core-units/cpd/faculty-development/R2C2.html>).

#### **Conclusions:**

The R2C2-in-the-moment model offers an approach to feedback and coaching that builds on the original model while addressing time constraints and the need for an iterative conversation between the reaction and content phases, while enabling the supervisor to coach and work with the learner to co-create an action plan to improve performance. This represents phase one of a two part research NEGEA funded study. The modified approach is now being analyzed in use with learners.

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# **Reducing Bias Toward Obese Patients: A Program for First-year Medical Students**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To design and measure the outcomes of a program of museum-based visual arts training and physician lectures to decrease medical student bias toward overweight/obese patients.

### **Background and relevance of the study:**

Two-thirds of the US population is overweight; many healthcare providers are negatively biased to provide healthcare. Although there are resources for healthcare professionals to raise awareness of weight bias, few are targeted for trainees. This is noteworthy as medical students are susceptible to worsening explicit bias and diminished empathy. Visual art when used to analyze the human form integrates aesthetics, anatomy, culture, and context. Discussion of art is known to facilitate perspective-taking and increase empathy.

### **Design and Methods:**

First-year students from Rutgers Robert Wood Johnson Medical School volunteered to participate in three art museum sessions with a curator who educated about displayed works of art and facilitated discussion. Students also attended an interactive session with a physician with expertise in nutrition/obesity and another with a physician experiencing personal struggles with obesity. Student participants and a matched control group completed a demographic survey, pre-/post- validated measurements assessing weight bias, and rated their comfort and knowledge in working with overweight/obese people.

### **Results:**

All participants were similar in background, baseline bias scores, and comfort with overweight/obese patients. Pre-test scores indicated an overall slight/moderate preference for thin people. On the post-test, all had reduction in weight bias; those who participated had significantly greater improvement in comfort counselling overweight/obese patients. Despite modest findings, student evaluations were strongly positive.

### **Conclusions:**

All participants reduced weight bias over their first training year perhaps due to relevant curricular exposure e.g., nutrition, metabolism, social determinants of health, and normalization of obesity with implications for counseling. We wish to repeat activities and measure effects of training on bias after clinical rotations. It is imperative that the medical community approach overweight patients without bias to provide high-quality care.

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## **References to Clinical Reasoning in Narrative Evaluations of Faculty are Associated with Teaching Effectiveness Ratings**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Are references to clinical reasoning in faculty evaluations associated with higher teaching effectiveness scores?

#### **Background and relevance of the study:**

A critical task of the clinical teacher is to facilitate development of trainee clinical reasoning skills. While there have been multiple studies examining characteristics of ideal clinical teachers(1,2), and the relationship between attributes and teacher ratings(3), no studies have explored whether references to clinical reasoning teaching skills are associated with teaching effectiveness ratings.

#### **Design and Methods:**

We performed mixed-methods retrospective analysis of evaluations of medicine faculty members at a single large academic medical center, consisting of 7,424 unique evaluations. We first performed qualitative analysis to sort comments based on whether they contained positive, negative or no reference to clinical reasoning. Coding was performed by three coders in an overlapping design, and interrater reliability was assessed with kappa testing. As the primary analysis, multivariate logistic regression was performed to test for association between positive and negative references to clinical reasoning and perfect scores on numeric ratings of teaching effectiveness, controlling for faculty gender, trainee gender, and level of training.

#### **Results:**

Positive and negative references to clinical reasoning were identified in 1037 (14%) and 96 (1.3%) of evaluations, respectively, with substantial agreement between raters ( $k=0.796$ ). In our multivariate logistic regression controlling for trainee and faculty gender and training level, positive references to clinical reasoning were positively associated with perfect teaching effectiveness score (OR=1.89,  $p<0.001$ , 95% CI 1.55 - 2.31). Negative references to clinical reasoning were negatively associated with perfect teaching effectiveness scores (OR=0.58,  $p<0.001$ , 95% CI 0.032 - 0.106).

#### **Conclusions:**

Our single-center, mixed-methods study of clinical teaching evaluations demonstrated a

significant relationship between references to clinical reasoning in narrative comments and teaching effectiveness scores. This suggests that ability to demonstrate and teach clinical reasoning is a valued skill for clinical teachers, and represents a target for faculty development efforts..

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# **Reliability analysis for work-place based assessments of AAMC core EPAs in the IM Clerkship**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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## **Abstract Body:**

### **Research Statement/Research Question:**

This study was conducted to determine the reliability of an entrustment scale (modified Ottawa Score) assessing four EPAs among medical students during their internal medicine clerkship.

### **Background and relevance of the study:**

The AAMC recently codified a set of 13 Entrustable Professional Activities (EPAs) that a student should be expected to perform with indirect supervision by graduation (1). Supervisors assess these EPAs by direct observation in authentic clinical settings using entrustment scales, among other instruments. The reliability of entrustment scales in undergraduate medical education remains unknown. Generalizability theory has been used to assess this in the GME setting (2,3).

### **Design and Methods:**

Beginning in January 2019, IM Clerkship students were required to be directly observed, assessed with a modified O-Score (4), and given formative feedback on EPA1 (1a history/1b physical) 2, 5 and 6. Observations were logged using a mobile survey system for 6 months. Using G-theory analysis (5), we determined the reliability coefficient of the modified O-Score data and the proportion of variance attributable to other facets, including EPA, supervisor identity, supervisor type (resident vs attending), and case complexity. We used D-theory analysis to determine the number of observations required achieve a reliability of 0.7 (5,6).

### **Results:**

A total of 1040 observations were submitted for 73 students over the study period. Applying D-theory to the calculated g-coefficients 6-10 observations were required to achieve a reliability of 0.7. EPA 5 demonstrated the greatest score variance and EPA1a had the lowest score variance (figure 1). The portion of variance attributable to student and other facets will be presented.

### **Conclusions:**

This reliability analysis suggests there is a feasible number of WBAs achievable during a core clerkship. Schools considering methods of documenting entrustment in the core EPAs should consider performing this analysis as part of quality assurance. Further work is needed to assess whether ongoing faculty development efforts will change the number of observations necessary.

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# **Reliability of a Screening, Brief Intervention, and Referral to Treatment tool to assess first year medical students**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To assess reliability of the Clinical SBIRT Proficiency Checklist (CSPC) during a simulated patient Objective Structured Clinical Encounter (OSCE) for first year medical students.

### **Background and relevance of the study:**

Alcohol and drug use are significant sources of morbidity and mortality among users<sup>1</sup>. The Substance Abuse and Mental Health Services Agency recommends Screening, Brief Intervention, and Referral to Treatment (SBIRT) as a comprehensive approach in identifying individuals with or at risk of developing substance use disorders<sup>2</sup>. Medical schools and other healthcare programs are more regularly incorporating SBIRT into their curricula<sup>3</sup>. While research supports SBIRT utilization in the clinical setting<sup>4</sup>, few studies have explored tools for assessing student competencies of SBIRT.

### **Design and Methods:**

First-year students were trained in SBIRT which involved a one-hour introductory lecture on approaches to behavior change counseling, as well as three additional hours of small group-based practice sessions utilizing simulated patient scenarios. The curriculum culminated with a 20-minute OSCE with a standardized patient who presented with substance use. Six trained members of our research team reviewed OSCE videos utilizing the CSPC.

### **Results:**

One hundred and forty medical students were assigned to this OSCE, with twenty-two videos not retrievable, leaving 118 videos for scoring. Inter-rater reliability was Cohen's kappa of 0.89 for the presence of SBIRT skills and 0.39 agreement for the absence of skills. Across the videos the most commonly observed skill was screening for alcohol use (75.4%, 95%CI: 66.5, 84.3), while organizing referral for treatment was infrequently observed (36.4%, 95%CI: 22.0, 50.8).

### **Conclusions:**

The CSPC is a reliable tool for assessing medical student SBIRT skills from an OSCE. The tool demonstrated a high degree of interrater reliability when detecting the presence of SBIRT skills

and demonstrated sensitivity in detecting differences in SBIRT skill performance. These findings provide insight on medical student SBIRT training and provide a practical tool for delivering early clinical feedback of these skills.

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## **Supporting the well-being of pediatric healthcare professionals: Do Schwartz Rounds help?**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Examining the impact of Schwartz Rounds.

#### **Background and relevance of the study:**

Schwartz Rounds provide healthcare professionals a venue to openly share social and emotional issues that arise in patient care.<sup>1</sup> The goal is to focus on the humanistic aspect of medicine and discuss non-clinical challenges of their work. It is emphasized that the purpose is not to solve problems but to reflect on the stories told with the hope that by sharing personal experiences of patient care will reduce anxiety, facilitate peer engagement, thereby improving the ability to provide compassionate care to patients.

#### **Design and Methods:**

Since the inaugural Schwartz Rounds conducted at our institution in July 2015, a total of 26 sessions have occurred. Attendees completed a post-session survey including written feedback on the perceived impact the round will have on how they relate to or communicate with patients and/or colleagues in the future. We analyzed 821 surveys.

#### **Results:**

Attendees represent all disciplines of healthcare including physicians (32%), nurses (23%) and medical students (19%). Almost all (98.9%) indicated that the session they participated had discussed challenging social and emotional aspects of patient care. A majority felt that the discussion gave them new insights into the perspectives of their co-workers (96.2%) as well as of patients and/or families (92.5%). Seventy-eight percent felt better prepared to handle tough or sensitive patient situations after attending the Schwartz Rounds. Emergent themes from the comments consist of recognizing personal biases, the importance of asking questions, listening more, and setting clear expectations early on.

#### **Conclusions:**

Overall Schwartz Rounds was a positive experience for all who attended. They helped them become more self-aware, enhance their understanding of how colleagues feel, and gain insights on how to improve patient care. When burnout is an increasing concern, it is imperative that

opportunities contributing to individual well-being, such as the Schwartz Rounds, are available for all healthcare providers.

**References:**

1. Lown BA , Manning CF . The Schwartz Center Rounds: evaluation of an interdisciplinary approach to enhancing patient-centered communication, teamwork, and provider support . Acad Med . 2010;85:1073 – 81 .

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## **Survey Assessing the Implementation of a Social Medicine Curriculum at a US Medical School**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

We assessed student and faculty reactions to an innovative integrated preclinical curriculum in social medicine (SM).

#### **Background and relevance of the study:**

Many medical schools are developing curricula to train students to recognize and redress the social determinants of health but no standard model for curriculum content and implementation has been defined.

#### **Design and Methods:**

We surveyed students and faculty for quantitative and qualitative responses to the SM curriculum at the University of Vermont's Larner College of Medicine (LCOM). Basic descriptive statistics were tabulated for all outcome variables, and qualitative analyses of text responses employed techniques borrowed from ground theory.

#### **Results:**

Respondents included 75 students and 43 faculty members. Among students, 90.1% were aware of the SM curriculum with 25.8% finding the curriculum 'very helpful' and 64.5% 'a little helpful.' Among faculty respondents, 52.5% were aware of the SM curriculum with 50% of faculty respondents finding the curriculum 'very helpful' and 50% finding it was 'a little helpful.' Students and faculty rated depth of coverage of various SM topics similarly, with both students (47.5%) and faculty (55.8%) reporting 'too little' content on race, sex & gender (41.8% and 51.9% respectively), LGBTQ content (37.3%; 44.4%), and poverty (34.3%; 44.4%). Qualitative analyses of surveys responses concerned curriculum structure, content and pedagogy, and approaches to curriculum delivery. Key student messages included examples of best practices and the need for improved integration of content across curriculum. Faculty respondents emphasized processes that would enhance cross-curricular integration, including

heightening faculty awareness of curriculum context of their own teaching and the need for expert guidance as well as a formal curricular leadership role.

**Conclusions:**

Students and faculty were strongly supportive of a novel SM curriculum and provided well-aligned suggestions for improvements over time. These data provide a roadmap for future curriculum development at LCOM and around the country.

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# **The Generalizability of a Progress Clinical Skills Examination for Assessing the Growth in Clinical Skills**

*Submission Type: Research Abstract*

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## **Abstract Body:**

### **Research Statement/Research Question:**

To assess the psychometric characteristics and challenges of implementing a progress clinical skills examination (PCSE) program.

### **Background and relevance of the study:**

Progress testing uses broad-based examinations that are given at regular intervals over a course of study to assess end of curriculum objectives.<sup>1</sup> While widely used in a written exam format, there are few examples of PCSE programs in the literature.<sup>2</sup> Medical curricula are increasingly including early clinical experiences.<sup>3</sup> In addition, the expectations for medical school graduates are being operationalized through Core Entrustable Professional Activities (EPAs)<sup>4</sup> that often do not lend themselves to being assessed via written examinations. PCSE provides a standardized evaluation tool for addressing these changes in the educational structure and expectations for medical students.

### **Design and Methods:**

An eight station PCSE that assesses patient interaction, history, physical examination, counseling, safety and a post encounter tasks is given twice a semester for MS1-2 students and once a semester for MS3-4 students in our medical school. We assessed the generalizability of the examination in MS-1 and MS-2 students for making longitudinal assessments of the growth in clinical skills and cross-sectional assessments of students at different levels of training.<sup>5</sup>

### **Results:**

A total of 183 MS-1 and 170 MS-2 students participated in the study. The generalizability coefficients were low but consistent with the literature on other clinical skills examinations<sup>6,7</sup> Physical exam scores had the highest generalizability at about 0.50 and safety the lowest at 0.08.

### **Conclusions:**

As has been found for other clinical skills examinations, our PCSE as configured is not reliable enough for high stakes assessments. Swanson and Norcini suggest addressing this issue by

focusing on pass/fail decisions and using sequential testing.<sup>6</sup> Our medical school uses a similar approach of setting passing criteria for specific levels of training and allowing students two assessment opportunities to achieve a passing grade for each semester.

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## **The path to medical school: Experiences of Asian American medical school matriculates.**

*Submission Type: Research Abstract*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Describe the pre-med experiences of students who self-identify as of Asian-American background.

#### **Background and relevance of the study:**

Though literature exists regarding pre-medical school perceptions of under-represented minorities (1) and Asian American medical students' perceptions of future career prospects, (2) none appears to focus on experiences of Asian American students during and prior to medical school. This study attempts to fill this void.

#### **Design and Methods:**

Through a mixed-methods approach, data was obtained from three northeastern US medical schools following IRB approval from Albany Medical College. All currently enrolled medical students from each campus were invited to participate by completing a brief survey on their experiences and perspectives about applying for and matriculating to medical school. Students who indicated interest were contacted to partake in a semi-structured interview. Codes and themes emerged through inductive qualitative analysis.

#### **Results:**

Survey data showed that 193/644 (30%) of the respondents identify as Asian American. Though the majority of Asian American students (75%) had above average MCAT scores, certain findings were concerning. 85% of Asian American students said their ethnicity impacted them at medical school, and one particularly troublesome finding is that 39.9% of Asian American students in this study met WHO-5 criteria for recommended depression screening. Some concerns brought up by Asian American students in interviews were fear of "blending in"

amongst other Asian American students as well as dealing with stereotypes and microaggressions both during application to and in medical school.

**Conclusions:**

Though Asian Americans are not an underrepresented group in medicine, (2) this itself may pose certain challenges, such as a perceived difficulty in standing out amongst peers or the notion that there is no need for a support system for this specific ethnic group, among others. Specific support systems may need to be put in place in addition to further research to better serve this population of students.

**References:**

1. Hadinger, M. A. (2017). Underrepresented Minorities in Medical School Admissions: A Qualitative Study. *Teaching and Learning in Medicine*, 29(1), 31-41. doi:10.1080/10401334.2016.1220861
2. Zhang, L., Lee, E. S., Kenworthy, C. A., Chiang, S., Holaday, L., Spencer, D. J., . . . Sánchez, J. P. (2019). Southeast and East Asian American Medical Students' Perceptions of Careers in Academic Medicine. *Journal of Career Development*, 46(3), 235-250. doi:10.1177/0894845317740225

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## **The path to medical school: Experiences of first generation and continuing generation medical school matriculates**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Describe the path to medical school for students and determine whether wellbeing varied by generation status (First-Generation (FG) or Continuing-Generation (CG)).

#### **Background and relevance of the study:**

Although differences in medical school matriculation rates exist between FG and CG pre-medical students,<sup>1</sup> there is little research on why this gap may exist. This pilot study is a first step in understanding this phenomenon.

#### **Design and Methods:**

Data was collected from three northeastern US-medical schools using a mixed-methods approach following IRB approval from the Albany Medical College. All currently enrolled medical students from each campus were invited to participate by completing a brief survey on their experiences and perspectives about applying for and matriculating to medical school. A subset of interested respondents was contacted for a follow-up, semi-structured interview. Inductive qualitative analysis was used to develop codes and themes.<sup>2</sup>

#### **Results:**

Survey data indicate that 136 (21%) of the respondents identified as FG and 508 (79%) as CG. Though considerable variation existed between FG/CG responses to many questions, WHO-5 wellness scores were comparably low among both, with 37.4% of students overall fitting criteria for recommended depression screening. Overarching themes from the interviews were: Support, financial considerations, overall experience, and diversity, with clear similarities and differences between FGs/CGs. Both expressed remarkable stress and anxiety throughout the pre-/post-application phases. Differences existed in access to support, the perception of the impact of identity on the application process, and financial implications.

**Conclusions:**

While the overall application process for FG/CG students is stressful, in many cases, CG students are better prepared to manage the challenges of the process. Providing more support to FG-students during the pre-application phase could provide a stronger foundation for success during the post-application phase. Providing systems that help applicants navigate the financial, social, and emotional aspects of the process could result in reduced stress and anxiety.

**References:**

1 D., Garrison, G., Jolly, P. Diversity of U.S. Medical Students by Parental Education. Association of American Medical Colleges, Analysis in Brief 2010; August.

2 J., Creswell. Research Design: Qualitative, quantitative, and mixed methods approaches. Sage Publications. 2nd ed. Thousand Oaks (CA); 2003.

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## **Third year medical students are hesitant to “name names” when providing negative upward feedback to clinical faculty**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Do medical students name clinical faculty/residents when describing negative and positive experiences with the same frequency? When provided with explicit instructions to do so, does the number of students who use specific names increase?

#### **Background and relevance of the study:**

Upward feedback in medical education is provided to clinical faculty from medical students in anonymous evaluations written at the end of clinical clerkships. Although this provides students with a safe space to be candid about their experiences, students do not entirely trust that what they write about faculty will remain anonymous leading them to be less forthcoming about negative experiences (1).

#### **Design and Methods:**

Third-year medical students completed an end of clerkship evaluation for each of the 6 core clerkships in the 2018-19 academic year. They were asked to evaluate their experience and answer two open-ended questions about what worked well and what could be improved. Midway through the year, an additional instruction to provide full names when describing faculty/residents was included (i.e., “name names”). We used the theory of politeness (2) as a framework to evaluate the language used to describe faculty/residents in the evaluations. We coded language for impersonalizing and performed chi square analyses to evaluate code frequencies.

#### **Results:**

Five hundred fifty-three positive and 444 negative comments were analyzed. Without the explicit instruction to name faculty/residents, students were less likely to use full names when describing negative experiences than positive (3% vs. 19%,  $p=0.002$ ). After the instruction to “name names,” both positive and negative comments included more names ( $p$ -values  $< 0.001$ ), but the number of negative comments with names was still significantly lower than positive (13% vs. 55%,  $p < 0.001$ ).

#### **Conclusions:**

Students are more likely to provide full names of faculty/residents when providing feedback if

given explicit instructions to do so, however they are still hesitant to “name names” when providing negative feedback.

**References:**

1. Willett, R. M., Lawson, S. R., Gary, J. S., & Kancitis, I. A. (2007). Medical student evaluation of faculty in student–preceptor pairs. *Academic Medicine*, 82(10), S30-S33.
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## **Time is of the essence: Do student and faculty pre-work make active learning tick?**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

What preparation time is required for active learning sessions? How is faculty compliance to pre-work standards related to student preparedness?

#### **Background and relevance of the study:**

A significant challenge in designing a curriculum delivered with active learning (AL) is determining appropriate amount of session pre-work for a modality. Research has explored attitudes toward preparatory work, but not completion time(1-4). Our first aim was determining average time spent on pre-work for AL sessions. Our second aim was investigating associations between faculty compliance to pre-work standard operating procedures (SOPs) and student-reported preparedness.

#### **Design and Methods:**

Medical students in three pre-clinical courses (Fall 2018 to Spring 2019) were surveyed about time preparing and preparedness. Faculty compliance scores were based on 6 weighted criteria. Mean preparation time was calculated for each AL modality in and across all courses. Spearman's rank correlations determined the association between student preparedness and SOP compliance.

#### **Results:**

Average preparation time ranged from 74.38 to 151.92 minutes. Average time spent across courses for case-based learning (CBL) was 95.47 minutes (SD = 70.57), for team-based learning (TBL) was 142.4 minutes (SD= 106.05), and for workshops was 109.5 minutes (SD = 85.53). Significant or marginally significant positive correlations between compliance and preparedness were found for CBL, TBL, and workshops, though findings were inconsistent across courses. Collapsed across courses, compliance was associated with preparedness in CBL ( $\rho = 0.31$ ,  $p < .01$ ), workshops ( $\rho = 0.32$ ,  $p < .05$ ) and all modalities together ( $\rho = 0.27$ ,  $p < .01$ ).

#### **Conclusions:**

These findings provide evidence of average preparation time needed for AL modalities, filling a gap in the literature. Results indicate that increased faculty adherence to SOPs is positively associated with student-reported preparedness. The inconsistent findings indicate there are additional factors involved in student-reported preparedness that need further investigation.

Limitations of the study include use of retrospective self-report and self-selection bias in student respondents.

**References:**

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## **Trainee Satisfaction with VA Clinical Learning Experience**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

In what aspects of the VA learning experience are trainees most satisfied and dissatisfied and how does this inform continuous program improvement?

#### **Background and relevance of the study:**

The Department of Veterans Affairs (VA) coordinates the largest health professions training program in the country; during the academic year 2018-2019, VA provided clinical learning opportunities to more than 124,000 trainees. The Office of Academic Affiliations (OAA) oversees these training programs and continuously seeks to provide a robust learning environment for trainees and quality care for our nation's Veterans. The VA Trainee Satisfaction Survey (TSS) was developed to measure trainees' satisfaction with the VA clinical training experience, identify areas for improvement, and create a national performance measure for VA's Statutory Education Mission.

#### **Design and Methods:**

Health professions trainees were invited to provide feedback on their VA experiences through a short online survey examining five domains: Onboarding/Inprocessing; Clinical Faculty/Preceptors; Clinical Learning Environment; Physical Environment; and Working Environment. For those items rated as dissatisfied, trainees were asked to comment on the reasons for the negative response. Exploratory analyses were conducted at the national level.

#### **Results:**

Approximately 18,600 trainees completed the survey which included nearly 10,000 qualitative responses across the five survey domains. Preliminary findings demonstrated high overall satisfaction and satisfaction with four of the five domains; although onboarding received the lowest ratings, three-fourths of trainees reported a positive experience. Open-ended responses identified systemic issues that could be addressed through widespread program improvement. Resolving issues involved both short-term effort (e.g., more structured orientation) and long-term initiatives (e.g., updating facility infrastructure).

#### **Conclusions:**

Trainees provide a new and unique perspective on the clinical learning and working environment. More positive and effective clinical learning experiences at VA in turn leads to improved healthcare delivery for current and future patients of these trainees wherever they provide care and may increase the likelihood of choosing a career in VA.

**References:**

N/A

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## **Uncovering patterns of uncertainty across clinical reasoning tasks**

*Submission Type: Research Abstract*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

What is the relative frequency of markers of uncertainty across framing, diagnostic, management, and reflection tasks as clinicians think aloud through their reasoning process?

#### **Background and relevance of the study:**

Limitations in clinicians' clinical reasoning--encompassing framing, diagnostic, management, and reflection tasks<sup>3</sup>--have been linked to diagnostic error.<sup>1</sup> One challenge associated with clinical reasoning is uncertainty. While every clinical encounter inherently entails uncertainty, examining when it arises may help us better understand its role in clinical reasoning. Although research has begun to explore uncertainty's effect on clinical reasoning outcomes,<sup>2,3</sup> we understand little about the role of uncertainty across specific clinical reasoning tasks.<sup>4</sup> In order to eventually mitigate the detrimental effects of uncertainty and reduce diagnostic error, we must first examine precisely where it emerges in the clinical reasoning process. That is the purpose of this exploratory study.

#### **Design and Methods:**

This qualitative study examined how 20 practicing physicians reasoned as they "thought aloud" towards a diagnosis and management plan while watching a videotaped clinical encounter. The think alouds were coded for a) markers of uncertainty (e.g. "maybe," "probably," "could"),<sup>5,6,7</sup> and b) clinical reasoning tasks.<sup>8</sup> We looked for overlap between these markers and tasks.

#### **Results:**

Analysis revealed 220 uncertainty markers overlapping with clinical reasoning tasks. Of these

220 overlaps, approximately 29% (63) fell within framing, 60% (131) in diagnosis, 9% (20) in management, and 3% (6) in reflection.

### **Conclusions:**

These findings suggest that physicians may treat framing, diagnosis, management, and reflection tasks differently. While uncertainty may function as a “cognitive space” for physicians to reconsider and double-check their judgments, future research should examine uncertainty’s role in these four task categories and whether they hinder or facilitate patient care.

### **References:**

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## **Using Reflection to Promote Professional Identity Formation in Third Year Medical Students**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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Wei-Hsin Lu, Stony Brook University School of Medicine

Lisa Strano-Paul, Renaissance School of Medicine at Stony Brook University

### **Abstract Body:**

#### **Research Statement/Research Question:**

We sought to examine how Reflection Rounds promoted professional identity formation (PIF).

#### **Background and relevance of the study:**

The 2010 Carnegie Foundation Report on medical education states that more attention should be paid to PIF in medical students.<sup>1</sup> Professional identity can be classified as three subcategories: individual identity, relational identity and collective identity according to Chandran et al.<sup>2</sup> Focus on Individual identity relates to how experiences shape the way a student identifies with the medical field, while relational identity addresses patterns between clinical experiences and non-clinical personal experiences. The goal of reflection rounds is to promote collective identity which reflects how students view themselves as a member of the medical profession.

#### **Design and Methods:**

Prior to participation in reflection rounds, medical students were asked to write a reflection about a clinical case that raised emotional, spiritual or ethical issues and describe how it affected them. They then discussed their experiences in a small group setting which included peers and a faculty facilitator. Using a thematic qualitative data analysis approach, the students' written reflections were reviewed and coded by the study researchers.

#### **Results:**

Based on the reflections (n=80), collectively students made observable strides in growth in each of the three developmental components of PIF: individual, relational and collective identity. Students largely referenced experiences that reflected growth in individual identity, with fewer references to relational identity and collective identity referenced the least. However, there was a tendency towards expression of the impact of clerkship experiences on how students planned to practice medicine as physicians.

#### **Conclusions:**

Third-year clerkships are a key window for shaping the initial professional identity of medical students as they begin the transition to the role of a physician. Reflection rounds are a key component of PIF.

**References:**

1. Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. *Acad Med.* 2010;85(2):220–7
2. Chandran, L., Iuli, R.J., Strano-Paul, L., Post, S.G. Developing “a Way of Being”: Deliberate Approaches to Professional Identity Formation in Medical Education. *Acad Psychiatry* 2019;43: 521-7 doi:10.1007/s40596-019-01048-4.

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# **Visual intelligence education as a tool for enhancing medical students' self-perception of communication skills and interpersonal interactions**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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Amy Burke, Georgetown University School of Medicine

## **Abstract Body:**

### **Research Statement/Research Question:**

The study specifically investigated the impact of interactive art sessions at the National Gallery on Art in Washington, DC on second-year medical students' perception of communication skills.

### **Background and relevance of the study:**

Effective communication between physician and patient is a core clinical skill to achieve meaningful, trust-based relationships enabling accurate decision making, improved outcomes, and patient satisfaction.<sup>1</sup> Studies have shown that physicians often overestimate their communication skills.<sup>2</sup> Even with formal education in this area, students must become aware of their own attitudes and perceptions. Conversations about art can help enhance physician communication by creating insight into emotions, life experiences, and implicit and explicit bias. It can improve medical students' abilities to reflect on how they process the world and think.<sup>3</sup> For the last 20 years, top-rated medical institutions have primarily focused on the effects of visual art instruction to improve observation skills.<sup>4,5</sup>

### **Design and Methods:**

This study examined a six-week, interactive course specifically designed to enhance students' skills of observation, communication, empathy, and recognizing biases by critically analyzing original works of art. Before and after the intervention, students and control group members completed a Visual Intelligence Assessment Tool (VIAT) designed to evaluate a student's perception of his/her communication and observation skills<sup>6</sup> and a validated medical student specific, Communication Skills Attitude Survey (CSAS).

### **Results:**

The results pre- and post-assessment for VIAT showed six items with significant changes including: "I always trust my first impression," and "I always consider alternative views." Per CSAS, there was no statistical significance, although students did trend towards increasing awareness of the need for improvement and importance of communication skills.

### **Conclusions:**

Visual intelligence education does impact medical students' perception of their first impressions,

observation skills, abilities to see objectively, and ways to consider alternative perspectives. Additional data with a larger sample size is required to solidify a relationship between communication and visual art education.

**References:**

1. Ha JF, Longnecker N. Doctor-patient communication: a review. *Ochsner J.* 2010;10(1):38
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## **Was that teaching, feedback, or both? A qualitative study of internal medicine resident and attending perspectives**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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Kristina Dzara, Harvard Medical School

Arabella Simpkin, Harvard Medical School

Madeleine Matthiesen, Harvard Medical School

### **Abstract Body:**

#### **Research Statement/Research Question:**

Given the nuanced differences between feedback and teaching, we aimed to explore resident and attending perceptions of both reasons for difficulties perceiving feedback in the setting of teaching and specific interventions to address them.

#### **Background and relevance of the study:**

Feedback is critical to resident education (1–4). Feedback involves providing information related to learner performance intended to guide future thinking and behavior (3). Residents and faculty agree on the importance of feedback (5). However, while supervisors often report providing feedback, learners do not perceive receiving it, notably in the context of teaching (6).

#### **Design and Methods:**

Five semi-structured focus groups were conducted by a medical educator to investigate identification and perceptions of teaching and feedback in clinical settings (two with internal medicine residents, N=13; three with hospital medicine faculty, N=20). Transcripts were independently coded by two study authors. Codes were iteratively discussed with all authors; codebooks were finalized and applied to all transcripts. Codes were grouped into categories and themes.

#### **Results:**

Most codes were present in both resident and attending codebooks and reinforced expert opinions about quality feedback. However, there were notable discrepancies between residents and attendings. While attendings felt that feedback was frequently provided, residents saw these interactions as primarily teaching. Both residents and attendings identified possible explanations for feedback being challenging to identify in clinical situations including: the vulnerable learner position, delivery of feedback in a group context, co-occurrence of teaching and feedback, and the use of impersonal language when delivering feedback.

#### **Conclusions:**

Our study identified some barriers to learner feedback identification that may be challenging to address, such as the vulnerable learner position. However, other identified explanations such as using impersonal language when delivering feedback (“we” instead of “you”), and delivering

feedback in a group context (instead of to an individual) may be more readily addressed and are targets for future intervention.

**References:**

1. Ende J. Feedback in clinical medical education. *JAMA*. 1983;250(6):777-781. <http://www.ncbi.nlm.nih.gov/pubmed/6876333>. Accessed October 30, 2019.
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## **What Do Clerkship Directors Think about Clinical Reasoning?**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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Jennifer Christner, Baylor College of Medicine

David Manthey, Wake Forest School of Medicine of Wake Forest Baptist Medical Center

### **Abstract Body:**

#### **Research Statement/Research Question:**

What are the expectations of clerkship directors across specialties regarding medical student education in clinical reasoning?

#### **Background and relevance of the study:**

Clinical reasoning lies at the core of clinical practice, but until recently little attention has been given in the medical education literature to formal instruction of medical students on this topic. A 2015 survey of internal medicine clerkship directors found that while most clerkships dedicated some time to teaching clinical reasoning, they felt more teaching was needed prior to and during the clerkship.<sup>1</sup> Questions remained, however, regarding whether this single-specialty study was representative of medical educators as a whole, what teaching was needed, and when it should be introduced.

#### **Design and Methods:**

A survey was developed as a collaborative effort between the Alliance for Clinical Education (ACE) Research Committee and the Directors of Clinical Skills Courses (DOCS) Clinical Reasoning Workgroup. The survey covered seven common clinical reasoning topics including illness scripts, semantic qualifiers, cognitive biases and others. Surveys were distributed to listservs for clerkship director organizations for obstetrics and gynecology (APGO), family medicine (STFM), neurology (AAN), and Emergency Medicine (CDEM) and collected between March and September of 2019.

#### **Results:**

Seventy surveys were completed. Most respondents (77.1-98.5%) thought that all seven clinical reasoning topics were either moderately important or very important to cover during the clerkship curriculum. However, 26.5% estimated that less than one hour was spent in total on these topics during the clerkship curriculum and 44.9% estimated that between 1 and 4 hours was spent. Major perceived barriers to delivering this content included lack of curricular time and lack of available faculty expertise.

#### **Conclusions:**

While most clerkship directors across a range of specialties view clinical reasoning instruction as

important, little curricular time is expended. Faculty development and restructuring of curricular time may help address this potential gap.

**References:**

1. Rencic, J., et al. (2017). "Clinical Reasoning Education at US Medical Schools: Results from a National Survey of Internal Medicine Clerkship Directors." *Journal of General Internal Medicine* 32(11): 1242-1246. PMID: 28840454.

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## **What Do You Want to Learn? Student's Goals in a Second Year Emergency Medicine Rotation**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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JM Monica van de Ridder, Michigan State University College of Human Medicine

### **Abstract Body:**

#### **Research Statement/Research Question:**

During an early clinical Emergency Medicine rotation, what goals do students formulate, what is the quality of their strategy for goal achievement and to what do they attribute success and failure?

#### **Background and relevance of the study:**

Exposure to Emergency Medicine (EM) is a crucial aspect of medical student education yet has historically been absent from training until 3rd or 4th year rotations. Michigan State University offers a new curriculum with EM as a mandatory rotation in the 2nd year. Research has been limited to determine what students want to learn from this type of early experience. Goal setting helps students take ownership of their learning process (Lee 2016).

#### **Design and Methods:**

We analyzed learner's short essays (n=97) using a qualitative conventional content analysis with an inductive approach (Hsie 2005, Ello 2008). We used open, axial and selective coding to identify and categorize the goals that students set. Content experts identified if the strategies that students described were sufficient to reach their goal. Constant comparison was used to determine how students attributed their success and failure (Locus of Control). Discrepancies were resolved through a process of deliberation until consensus was achieved.

#### **Results:**

In total 302 goals were identified. Categories most frequently mentioned were differential diagnosis (n=67), physical examination (n=58), history taking (n=34) and ED practice (n=34). According to content experts (CB, MS), student's strategies were useful (n=87), moderately useful (n=42) or not useful (n=21). Success or failure was most often attributed to an internal locus of control (i.e. "I took initiative" "I performed" "I asked").

#### **Conclusions:**

In general students are good at goal setting and identifying strategies for achievement. The frequently mentioned goals aligned with the Core Entrustable Professional Activities. The fact that success or failure was mostly attributed to an internal locus of control shows that they tried to take responsibility for their learning process.

**References:**

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2. Hsie, H.-F., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15, 1277-1288.
3. Lee E, Hannafin MJ. (2016). A design framework for enhancing engagement in student-centered learning: Own it, learn it, and share it. *Educational technology research and development*, 64(4):707-34.

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## **What preferences do students have about practicing the physical exam with a peer of the same or different gender identity.**

*Submission Type: Research Abstract*

*Accepted as: Oral Abstract Presentation*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

This study describes student gender-pairing preferences related to practicing the physical exam.

#### **Background and relevance of the study:**

Students often practice physical exam skills with same-gender peers matched together. Exam models are typically used for highly sensitive exams. Some students are uncomfortable allowing peers of a different gender to practice other parts of the exam, e.g., cardiac exam or palpating femoral arteries. Understanding student preferences about these issues could help guide decision-making about student pairings. Others have reported on this topic, but preferences are likely influenced by prevailing local cultural beliefs, which may change over time.(1)(2)

#### **Design and Methods:**

The Michigan State University College of Human Medicine's curriculum includes >200 hours of clinical skills training in the first two years. Annual student surveys about this training includes three questions about preferences: do students prefer a same-gender partner, would they like to occasionally work with an opposite-gender partner, and would an opposite-gender partner make them uncomfortable. Data for 2016-2018 were analyzed. In 2019, "gender identity" replaced the word "sex". We analyzed overall response patterns, changes from students' first to second year, and the impact of the wording change.

#### **Results:**

55.8% agreed that working with a student of the same gender is best, but 50.5% indicated would prefer to sometimes work with an opposite-gender partner. 19.3% would be uncomfortable working with an opposite-gender partner. Second-year students more often selected the "not sure" response for all three questions. Changing to "gender identity" changed response patterns only for the question about being uncomfortable with an opposite-gender.

#### **Conclusions:**

Student preference on gender-matching of partners is mixed. While most students prefer a same-gender partner most of the time, many would also be interested in working with an opposite-gender partner for at least some activities.

**References:**

1. Burggraf, M., Kristin, J., Wegner, A., Beck, S., Herbstreit, S., Dudda, M., ... Kauther, M. D. (2018). Willingness of medical students to be examined in a physical examination course. *BMC Medical Education*, 18(1).
2. Reid, K. J., Kgakololo, M., Sutherland, R. M., Elliott, S. L., & Dodds, A. E. (2012). First-Year Medical Students' Willingness to Participate in Peer Physical Examination. *Teaching and Learning in Medicine*, 24(1), 55–62.

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## **You asked, we answered: A social media campaign aimed at improving perceptions of responsiveness to student feedback**

*Submission Type: Research Abstract*

*Accepted as: Poster*

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### **Abstract Body:**

#### **Research Statement/Research Question:**

Social media is a norm of society today and increasingly, medical educators are asking questions about how it might be used inside and outside of the classroom. In this study, we utilized a social media campaign, #ZSOMInMotion, as an intervention to advertise continuous quality improvement (CQI) initiatives and outcomes using Instagram, Twitter, Facebook and LinkedIn. In doing so, in addition to measuring usage statistics, we asked the question: How effective is a social media campaign in improving student satisfaction regarding responsiveness of an administration to student feedback?

#### **Background and relevance of the study:**

Continuous quality improvement is an important part of any medical education program in the current era. It is expected that measurement of all aspects of an educational program occur in a comprehensive manner; after data is collected, medical educators respond. At our school, a challenge we faced was helping students recognize the changes made as a result of their feedback. To address this issue, a social media campaign entitled “#ZSOMinmotion” was created and implemented. It utilized the phrase, “You asked, we answered” as the core message.

#### **Design and Methods:**

We created a multi-pronged campaign in which a single curricular change was advertised weekly via Instagram, Facebook, Twitter, and LinkedIn.

#### **Results:**

Engagement rates are reported by SproutSocial (Instagram), Rival IQ for Facebook and Twitter, and Buffer for LinkedIn. #ZSoMInMotion engagement on Instagram was 2.91% compared with 1.73% as a standard; 5.25% on Facebook compared with .12%; 1.60% on Twitter compared with .079%; and 1.24% on LinkedIn compared with a standard of .54%. The number of users across the institution increased 15.5% and student satisfaction regarding responsiveness of the institution to student feedback increased 9%.

#### **Conclusions:**

Social media offers simple and effective tools that medical educators should consider when communicating CQI initiatives to students.

**References:**

n/a

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# Small Group Discussion, Workshop and Panel Discussion Abstracts

## **Antiracism in Action: Clinical Documentation for Preclinical Learners**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

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Steven Rougas, The Warren Alpert Medical School of Brown University

Dana Chofay, The Warren Alpert Medical School of Brown University

Srilakshmi Mitta, The Warren Alpert Medical School of Brown University

Julia Noguchi, The Warren Alpert Medical School of Brown University

### **Abstract Body:**

#### **Rationale:**

Medical students urgently need concrete ways to address racism and anti-racism for their future patients. Medical record documentation training offers a practical opportunity for students to incorporate an antiracism framework into their preclinical education. Why should educators care? First, racial and ethnic minority groups continue to experience disparate health outcomes. Second, racism contributes to poor health outcomes. Students also expect educators to engage deeply with these topics; anti-racist clinical documentation offers an opportunity to teach a tangible skill that can directly impact patient care.

In this interactive workshop designed for medical educators to non-judgmentally improve their understanding of racism in clinical case documentation, participants will practice several skills for incorporating an antiracist approach to clinical documentation training.

#### **Learning Objectives:**

1. Define racism, anti-racism and structural competency
2. Recognize the potential effects of racism in medical documentation
3. Incorporate antiracist ideas into clinical documentation
4. Reflect on how antiracist clinical documentation training could be incorporated into their own preclinical programs

#### **Session Methods and Format:**

1: Overview (Chofay) - 5 minutes

- Provide introductions and set agenda for the workshop.

2: Introduction to Anti-Racism in Medicine (Rougas) - 15 minutes

- Dr. Rougas will define critical terms: racism, antiracism and structural competency. Allowing for shared understanding of terms minimizes discomfort discussing a challenging topic like racism.

3: Documenting the Medical Record (Mitta & Noguchi) - 15 minutes

- Workshop participants will review a brief video-recorded standardized patient encounter and write the History of Present Illness. Participants will be provided with required materials and encouraged to document in either their usual manner or the way in which they train medical students to do it.



4: The Effect of Documentation on Patient Care (Rougas & Chofay) - 20 minutes

- First, Dr. Rougas will provide a brief primer of the literature on the effect medical documentation can have on patient outcomes. Next, Dr. Chofay will review the importance of patient-centered language and its effect on patient care. Participants will work in small groups to review a patient case write-up and practice identifying the conventional approach to documentation and suggest patient-centered, anti-racist replacements. Small groups then will review their proposed changes to the medical record as a large group.

5: Reflection (Merritt and Rougas) - 20 minutes

- Dr. Merritt will guide workshop participants on a structured reflection of their previously drafted patient write-ups in Part II. Given their new understanding of an anti-racist, patient-centered approach to documentation what changes would participants make to their original document? Dr. Rougas will engage with participants to brainstorm an action plan for how elements of antiracist clinical documental training could be implemented at respective institutions.

**Experience:**

Dr. Rougas, MD, MS is the Director of the AMS Doctoring Program and has successfully led a similar workshop for AMS faculty and students.

Dr. Merritt, MD, MEHP is the Assistant Course Leader for Year II Doctoring at AMS.

Dr. Chofay, MD is the Course Leader for Year I Doctoring.

Dr. Mitta, MD is the Assistant Course Leader for Year I Doctoring.

Ms. Noguchi, MA, MPH is the Director of Service Learning at AMS.

**References:**

N/A

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## **Always, Sometimes, or Never: The Art and Science of Survey Design**

*Submission Type: Workshop*

*Accepted as: Poster*

### **Authors:**

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Ariel Frey-Vogel, Harvard Medical School and Massachusetts General Hospital

### **Abstract Body:**

#### **Rationale:**

Are you working to develop a high-quality survey on a medical education topic? Have you previously utilized a survey only to discover the answers were not as meaningful as intended? Perhaps only a handful of people responded?

While surveys are an excellent means of collecting information from a large group of participants quickly, a poorly designed or executed survey can jeopardize a medical education research project. Fortunately, there are best practices which can help improve results. In this workshop, we will discuss evidence-based methods for developing a medical education survey. Participants will write survey questions and conduct a mini-cognitive interview to aide in the development of a survey on a topic of their choosing.

#### **Learning Objectives:**

- Objective #1: Create survey questions which align with best practices to address a research question.
- Objective #2: Receive feedback on survey questions through a cognitive interviewing experience.
- Objective #3: Articulate the necessary steps for and challenges in survey design and execution.

Participants will leave with the tools and resources necessary to create a survey. Participants are should bring a medical education questions they would like to study using survey research methods.

#### **Session Methods and Format:**

All participants will be asked to provide a question they have about survey research to activate prior learning. Facilitators will provide relevant background information including the 7 stages of survey development. Low-quality survey questions will be provided and participants will work in groups to determine what makes these questions problematic. Participants will then develop their own survey questions for their topic and will engage in a cognitive interviewing experience, to both give and receive feedback. Participants will reflect by creating three brief survey “pearls,” shared among the group to solidify learning.

Session Outline:

0-10 minutes: Objectives and assessing prior knowledge (Slides & Poll Everywhere to solicit questions about survey design; participants write their survey research question on a notecard)

10-15 minutes: Reasons to utilize survey research (Large group discussion/slides)

15-20 minutes: Encouraging participation and improving response rate (Large group discussion/slides)

20-25 minutes: Systematic 7-step survey design process (Artino et al, AMEE guide 87) (Slides)

25-45 minutes: Methods of developing strong survey questions (Small groups review a worksheet of poorly worded survey questions and discuss; large-group discussion with key points and improved questions on slides)

45-55 minutes: Development of individual surveys (Participants write 3 survey questions to answer their research question)

55-65 minutes: Cognitive interviewing (Slides to introduce concept; participants work in pairs to cognitively interview partner on own survey, then partners switch roles)

65-75 minutes: Pitfalls and take home points (Large group discussion/slides)

### **Experience:**

Kristina Dzara is a PhD sociologist with a master's in Medical Education from Harvard Medical School, comprehensive survey research training, and 12 publications involving survey research methods. Ariel Frey-Vogel is a physician with advanced training at Harvard Medical School on quantitative and qualitative research, and 2 publications using survey research methods. Together, they comprise MassGeneral Hospital for Children's Pediatric Education, Innovation, and Research Center.

### **References:**

1. Artino AR. AM last page: Avoiding five common pitfalls of survey design. *Acad. Med.* 2011;86(10):1327.
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9. Sullivan GM & Artino AR. How to create a bad survey instrument. *JGME.* 2017;9(4):411-415.

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## **Assessment for Learning: How to Incorporate the Clinical Decision Making Assessment Approach into Instructional Cases**

*Submission Type: Workshop*

*Accepted as: Workshop*

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Leslie Fall, Geisel School of Medicine at Dartmouth

### **Abstract Body:**

#### **Rationale:**

Clinical cases are ideal starting points for teaching and assessing clinical reasoning. However, limited educational time means educational leaders need to craft the teaching around these cases to provide the highest yield learning. The clinical decision assessment (CDA) approach focuses on the key clinical decisions, also known as the key features, which are critical to identifying and resolving the clinical problem, and the decisions where learners tend to struggle.

The CDA approach has been used for high stakes exams in Canada for decades, and research has correlated performance on CDA with performance in practice. The CDA approach has also been used to develop a summative exam for medical students and has been adapted for instruction within virtual patient cases and other curricula.

This workshop will introduce participants to the CDA approach, including the underlying theory, evidence base, and examples of its use in developing case-based assessment-for-learning. Then participants will engage in the process of identifying and prioritizing the key clinical decisions for a common clinical problem, and discuss how this process can impact the rigor and relevance of teaching around clinical cases.

#### **Learning Objectives:**

1. Describe the framework for the clinical decision making approach
2. Develop the key clinical decisions for a common clinical problem through a structured consensus process
3. Identify ways to adapt the clinical decision assessment approach into teaching cases as assessment-for-learning

#### **Session Methods and Format:**

5 minutes: Introductions, goal-setting

20 minutes: Didactic introducing the clinical decision assessment framework and providing a brief overview of the evidence supporting its use.

15 minutes: Breakout session 1: Small groups will be arranged by specialty. In each small group, participants will identify and achieve consensus on the key clinical decisions for a common clinical problem in their field. Common problems in different fields will be provided as starting points. Speakers will circulate and provide feedback on their work.

10 minutes: Didactic on writing the key clinical decisions into a teaching case.

20 minutes: Breakout session 2: Using pre-printed cases as a starting point, participants will modify the cases to incorporate the key clinical decisions they identified in the first breakout. Speakers will circulate and provide feedback on their work.

5 minutes: Wrap-up; overview of take-home points.

**Experience:**

Dr. Lang oversaw the national implementation of a summative clinical decision assessment in internal medicine for medical students, led a multi-institutional validation study, and developed a national training guide in writing clinical decision assessment cases.

Dr. Fall led the development of a national medical student curriculum integrating core basic science concepts into clinical learning using the clinical decision assessment approach.

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1. Tamblyn R, Abrahamowicz M, Duphinee D, Wenghofer E, Jacques A, Klass D, Smee S, Blackmore D, Winslade N, Girard N, Du Berger R, Bartman I, Buckeridge DL, Hanley JA. Physician scores on a national clinical skills examination as predictors of complaints to medical regulatory authorities. *JAMA*. 2007;298(9):993-1001.
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## **Bridging the digital divide - identifying the value of supplying student hardware in medical education**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Laurie Gelles, Robert Larner, M.D., College of Medicine at the University of Vermont  
Jill Jemison, Robert Larner, M.D., College of Medicine at the University of Vermont  
Gordon White, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

With the notion of equity and access in mind, we will explore the issue of technological disparity (the digital divide) and how it contributes to digital redlining of medical students. While many medical schools have looked to a Bring Your Own Device (BYOD) model in order to lessen the institutional cost of purchasing hardware, some question whether that best serves socio-economically disadvantaged students. Similarly, laptop requirements often set only a low bar for technology and students who can afford more can achieve more.

#### **Learning Objectives:**

- 1) Define equity and equal access in medical education;
- 2) Define the digital divide and digital redlining;
- 3) Identify the implications of BYOD and laptop requirements on social stratification and the learning environment;
- 4) Identify the curricular benefits of an integrated and fully-supported infrastructure;

#### **Session Methods and Format:**

This presentation will focus on four models of technology integration in medical education, and the costs (social, educational, and financial) that go along with each.

- PRESENTATION OF FOUR MODELS, 20 minutes:

Presenters will provide information on equity and inclusion as they relate to technology in medical education. Information focused on the digital divide, redlining, and the multi-facted implications of those topics will be examined. Presenters will share four different models of technology integration currently found in medical education.

- GROUP DISCUSSION AND RELATED ACTIVITY, 20 minutes:

Participants will work in groups to develop a project plan and pitch to their leadership. Each group will pick one of the four models presented earlier, and use that model to build a strategy for their institution in order to help bridge the digital divide and prevent social stratification among medical students.

- GROUP REPORTING, 15 minutes:

Each small group will identify an individual to share their work with the larger audience in order to promote discussion and constructive feedback.

- DISCUSSION, 15 minutes:

Presenters will review the Larner College of Medicine model, and explain the efforts around equity and increased access. Participants will work together to discuss technology integration as it relates to their institution and the steps that can be taken to level the playing field and ensure greater success for all students across the continuum of their path to becoming medical professionals.

**Experience:**

- 1) Laurie Gelles, Ph.D. is the Educational Technology Team Lead at the Larner College of Medicine, and has extensive experience in education, technology, and instructional design;
- 2) Jill Jemison is the Chief Information Officer of Health Sciences at the Larner College of Medicine;
- 3) Gordon White is the Technology Support Manager at the Larner College of Medicine.

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4. <https://dlinq.middcreate.net/digital-literacy/digital-detox-2-2-data-and-digital-redlining>

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## **Bridging the Divide: Engaging Student and Faculty Perspectives to Build an Inclusive Learning Environment**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Luke Higgins, Robert Larner, M.D., College of Medicine at the University of Vermont  
Richard Brach, Robert Larner, M.D., College of Medicine at the University of Vermont  
Sheridan Finnie, Robert Larner, M.D., College of Medicine at the University of Vermont  
Nikkole Turgeon, Robert Larner, M.D., College of Medicine at the University of Vermont  
Shaden Eldakar-Hein, Robert Larner, M.D., College of Medicine at the University of Vermont  
Rebecca Wilcox, Robert Larner, M.D., College of Medicine at the University of Vermont  
Melissa Davidson, Robert Larner, M.D., College of Medicine at the University of Vermont  
Nathalie Feldman, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

Historically, medical education has been an exclusive and segregated space. Learning environments arising from historical inequity have played a central role in shaping the culture of medicine and medical pedagogy. Although many factors contributing to exclusion in the learning environment are unconscious and unintentional, they remain ingrained in everyday practice. As institutions make strides towards the inclusion of historically underrepresented persons, experiential diversity, and intellectual diversity, the learning environment must evolve in parallel to ensure student success and well-being. Methods of promoting inclusion in the classroom environment, however, is an area in which there is often a misalignment between student and faculty expectations.

At the University of Vermont Larner College of Medicine (UVMLCOM), a coalition of students and faculty developed and delivered a collaborative workshop dedicated to inclusion in the classroom. The workshop emphasized strategies aimed at bridging the understanding of inclusion, addressing incongruence between intent and impact, supporting both student and faculty well-being, and fostering an environment of equitable opportunity for engagement. We propose a modified workshop for the NEGEA conference centered on both proactive and reactive strategies to promote inclusion in the learning environment. The workshop is intended for all faculty, regardless of knowledge and experience with inclusive teaching practices.

#### **Learning Objectives:**

- Define equity, diversity, and inclusion in the context of medical education learning environments.
- Reflect on challenges that may affect students' ability to engage in the learning environment.
- Develop awareness of personal barriers to anticipating and responding to incongruence between intent and impact in the learning environment.



- Create a toolkit of proactive and reactive strategies designed to cultivate an inclusive learning environment.

**Session Methods and Format:**

(5 minutes) Facilitator introductions and learning objectives.

(10 minutes) Opening pair share activity: Participants share experiences and barriers they have encountered related to equity and inclusion at their respective institutions, as well as initiatives designed to address them.

(5 minutes) Report out common challenges. Facilitators will note themes.

(35 minutes) Facilitators will introduce innovative methods and tools used to engage faculty and students in an inclusive learning environment. Interactive components will include role play and audience participation. Strategies will include proactive (“setting the stage” for an inclusive environment) and reactive (“unexpected” teaching moments) applications.

(20 minutes) Participants will engage in small group discussions to apply strategies to challenges identified during pair share.

(10 minutes) Summary, closing, and Q&A

A supplemental “toolkit” handout of strategies discussed and/or generated will be provided to participants.

**Experience:**

Luke Higgins (MSII) has a B.S. from the University of Michigan.

Rich Brach (MSII) has a B.A. from Middlebury College.

Nikkole Turgeon (MSII) has a B.S. from the University of Rhode Island.

Sheridan Finnie (MSII) has a M.P.H. from Yale School of Public Health.

Dr. Shaden Eldakar-Hein is Assistant Dean for Students at UVMLCOM.

Dr. Rebecca Wilcox is Associate Professor and Course Director of Nutrition, Metabolism, and Gastrointestinal System (NMGI) at UVMLCOM.

Dr. Melissa Davidson is Associate Dean for Graduate Medical Education at UVMLCOM.

Dr. Nathalie Feldman is the Director of the Learning Environment at UVMLCOM.

**References:**

1. Attiah, M. (2014). The New Diversity in Medical Education. *The New England Journal of Medicine*, 371(16), 1474-1476.
2. Beverly, E., Díaz, S., Kerr, A., Balbo, J., Prokopakis, K., & Fredricks, T. (2018). Students' Perceptions of Trigger Warnings in Medical Education. *Teaching and Learning in Medicine*, 30(1), 5-14.
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# **Challenging “in-the-moment” feedback and coaching conversations in the era of CBME and workplace-based assessment**

*Submission Type: Workshop*

*Accepted as: Workshop*

## **Authors:**

Marygrace Zetkolic, Hackensack University Medical Center

Elizabeth Koltz, Hackensack Meridian School of Medicine at Seton Hall University, Nutley, NJ;

## **Abstract Body:**

### **Rationale:**

Feedback is a dynamic and co-constructive interaction in the context of a safe and mutually respectful relationship for the purpose of challenging a learner’s (and educator’s) ways of thinking, acting or being to support growth (Ajjawi & Regehr, 2019). The R2C2 model for feedback and coaching, with four phases in which supervisors and learners build relationship, explore reactions and reflections, determine content, and coach for change to co-create an action plan, was developed as a model to facilitate such conversations. It was based on theory and research related to self-assessment, cognitive domains, humanism, commitment to change and implementation science. It has been tested and found effective for work with physicians in practice, nurse practitioners, and residents across several countries and disciplines. Recently, the researchers have modified the R2C2 model for use with in-the-moment feedback and coaching that occur in the clinical environment. This workshop will provide participants with an opportunity to explore and practice the R2C2 in-the-moment model (<https://medicine.dal.ca/departments/core-units/cpd/faculty-development/R2C2.html>) with a particular focus on the most challenging feedback encounters.

### **Learning Objectives:**

Participants will

1. Understand the cognitive science that supports feedback and coaching in the R2C2 model
2. Tossess coaching strategies to employ when addressing the most challenging feedback and coaching interactions

### **Session Methods and Format:**

Participants will:

1. Share experiences providing “in-the-moment” feedback within clinical settings. (10 minutes)
2. Learn the evidence supporting coaching in medical education (20 minutes)
3. In groups of 3 faculty will practice applying the R2C2 ITM model to case scenarios that are drawn from the most challenging faculty learner interactions (40 minutes )
4. Identify the utility of and barriers to integration of the R2C2 in-the moment (ITM) feedback and coaching model and its application within their work. (10 minutes )

### **Experience:**

Marygrace Zetkolic, MD is Internal Medicine Program director and clinical educator who has

worked for 5 years with an international group of medical education researchers to understand how to improve residents ability to incorporate assessment into performance improvement. Elizabeth Koltz EdM, transitioned from corporate education and training to academics in medical education in order to help improve healthcare through the development of faculty and students. She has extensive experience in developing feedback programs in both corporate and educational environments.

**References:**

1. Ajjawi R, Regehr G. When I say...feedback. *Med Educ.* 2019; 53:652-4.
2. Sargeant J et al., Facilitated Reflective Performance Feedback: Developing an Evidence- and Theory-Based Model That Builds Relationship, Explores Reactions and Content, and Coaches for Performance Change (R2C2). *Acad Med.* 2015; 90(12):1698-706.
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## **Coaching the Coaches: Developing the Master Adaptive Faculty Learner**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Lisa Coplit, Frank H. Netter MD School of Medicine Quinnipiac University

Lyuba Konopasek, Frank H. Netter MD School of Medicine at Quinnipiac University

### **Abstract Body:**

#### **Rationale:**

Coaching is a relatively new method for helping learners succeed in medical education and medicine. Coaching has a statistically significant positive effect on coping, well-being, attitudes, performance/skills, and self-regulation. The role and skills of a coach differs from an advisor, mentor, or faculty teacher who provides feedback. A coach's goal is to help a coachee achieve his/her goals by facilitating repeated cycles of self-assessment, reflection, learning, and goal-setting, thus becoming a master adaptive learner. Faculty coaches must be trained for this new role, and yet few have ever been coached themselves. Being coached is a way for coaches to develop their own growth mindset and increase their effectiveness as coaches. In this workshop, participants will explore key concepts and skills for effective coaching from the perspective of the coachee, in the context of peer coaching.

#### **Learning Objectives:**

By the end of the session, participants will be able to:

1. Describe the master adaptive learning model in the setting of coaching
2. Identify mindsets & behaviors needed to be successfully coached by peers
3. Recognize opportunities for coaching for a growth mindset in their teaching practice

#### **Session Methods and Format:**

##### 1. Introduction (5 minutes)

- a. Introductions
- b. Participants complete a growth mindset questionnaire and score themselves

##### 2. Brief presentation (15 minutes)

Description of the concepts of the master adaptive learner (including growth mindset and deliberate practice), and their role in coaching

##### 3. Application Exercises (30 minutes)

Participants will apply these concepts by analyzing a portion of a coaching demonstration and then practice coaching a peer.

- a. Presenters demonstrate a pre-observation discussion between a faculty member and a peer coach.
- b. Participants watch a video of the faculty member teaching
- c. Participants work in pairs to practice coaching using reflective practice questions to reinforce a growth mindset and help their peer create a plan for deliberate practice.

##### 2. Debrief in Pairs (5 minutes)

- a. What is one coaching behavior that was used that worked well?

- b. What is one coaching behavior you might improve? How?
- 3. Large Group Activity (15 minutes)
  - a. What coaching behaviors worked well to:
    - i. Promote a growth mindset
    - ii. Plan for deliberate practice
- 4. Individual Goal Setting (5 min)
  - a. What elements of coaching for a growth mindset could you implement in your teaching practice?
  - b. 1-2 volunteers share their goals

### **Experience:**

Lisa Coplit, MD is the Associate Dean for Faculty Development at the Frank H. Netter MD School of Medicine and Co-Director of an interprofessional peer coaching program within her institution.

Lyuba Konopasek, MD is the Senior Associate Dean for Education at the Frank H. Netter MD School of Medicine who has delivered workshops nationally and internationally on coaching, feedback, and physician well-being. She has also written about coaching in the context of a formative assessment system.

### **References:**

1. Aronson L. Twelve tips for teaching reflection at all levels of medical education. *Med Teach* 2011; 33: 200–205.
2. Ericsson KA. Acquisition and maintenance of medical expertise: a perspective from the expert-performance approach with deliberate practice. *Acad Med* 2015; 90:1471–1486.
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# **Creating/Revising Clinical Cases for Teaching and Assessment of Structural Social Determinants of Health: Mitigating Bias**

*Submission Type: Workshop*

*Accepted as: Workshop*

## **Authors:**

Felise Milan, Albert Einstein College of Medicine

Katharine Yamulla, New York Medical College

Janice John, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell

## **Abstract Body:**

### **Rationale:**

For decades, much has been written identifying the need for training health care professionals to be culturally competent. Frameworks have been published and most medical schools and residencies have developed training programs for their learners to effectively communicate with patients of varying ethnicities, cultures and socioeconomic groups. Additionally, Social Determinants of Health have been well documented as the source of many patients' health problems. Unfortunately, research has shown that the pedagogical focus on cultural competence has not had an effect on making patients healthier. Despite efforts to incorporate these topics into medical curriculums, teaching and modeling often doesn't reflect best practices. There is a paradigm shift that recommends a focus on structural competency which incorporates the structural vulnerability of patients and a level of accountability of clinicians.

To fully embrace this framework, we must also ensure that our educational materials, including lecture content, reading materials, MCQs, case vignettes or OSCE materials, are void of bias and that they recognize the structural challenges our patients face. This workshop seeks to describe this new paradigm and to empower participants with tools that will address their educational materials to mitigate bias.

### **Learning Objectives:**

By the end of this workshop, participants will be able to:

1. Compare and contrast: cultural competence and cultural vulnerability; structural competence and structural vulnerability and structural humility.
2. Apply key concepts for addressing bias when creating and revising clinical cases for teaching and assessment
3. Critically appraise and revise clinical cases and curricular content to promote inclusion and mitigate bias

### **Session Methods and Format:**

Overview 10 min

- Terminology
- Definitions
- Story of Aquifer project

Pair & Share 10 min

- What are the challenges for medical educators?

Introduction: Tool 10 min

- Discussion: Caruso Tool components
- Instructions for activity

Small Group: Interactive Activity 20 min

- Participants break into 3 groups
- Each group will apply the Caruso Tool to one of three curricular materials (MCQs/case vignette/ OSCE case)

Large Group: Debrief Activity 15min

- Discuss challenges
- Lessons learned

Large Group: Share Ideas to take back to institution 10 min

- Share solutions
- Promote collaboration
- Reflect on take-away points

### **Experience:**

Felise Milan, MD, is a Professor of Medicine at Albert Einstein College of Medicine, Director of the Clinical Skills curriculum, member of the HRSA funded NCEAS (The National Collaborative for Education to Address the Social Determinants of Health) and Internal Medicine Clinician Support Team Member for Aquifer Clinical Science Initiative.

Katharine Yamulla, M.A, CHSE, Senior Director of Competency Based Assessment and Clinical Skills Education and Director of the Clinical Skills Center at New York Medical College, has presented numerous peer reviewed workshops at IMSH, ASPE, STFM and DOCS on the topics of Collaborative Feedback, Student Wellness, and Advanced Standardized Training Techniques.

Janice John, DO, MS, MPH, Assistant Professor of Science Education and Pediatrics, is Co-director of Clinical Skills at the Zucker School of Medicine at Hofstra/Northwell. She provides faculty development on topics such as unconscious bias, inclusion and belonging. She helps oversee the health equity component of the school's curriculum.

### **References:**

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6. Krishnan, A. R. (2019). Addressing Race, Culture, and Structural Inequality in Medical Education. *Academic Medicine* , 94 (4), 550-555.
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## **Developing Effective Narrative Evaluations for the MSPE**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Lisa Strano-Paul, Renaissance School of Medicine at Stony Brook University

### **Abstract Body:**

#### **Rationale:**

Short Session Description: A GSA/GEA Constituent Collaborative Project: Writing Narrative Feedback for the MSPE convened a working group in early 2019 to consider the current state of narrative feedback used to compose the MSPE. The intent of the working group is to build upon the work done by the MSPE Task Force that developed the MSPE Guidelines furthering their work to enhance the transmission of useful information from UME to GME in the residency application process.<sup>1</sup> This work will contribute to move the focus from primarily quantitative measures to more qualitative measure of student performance and to find ways to explicate student's professional characteristics. This interactive workshop will provide foundational information on writing a high quality narrative evaluation, showcase the work product of the working group - a faculty development module to assist clerkship directors in supporting the work of the clinical faculty and residents, and provide resources for the clerkship directors or student affairs deans in assisting clerkship directors complete effective narrative evaluations for the MSPE that follow the AAMC MSPE Guidelines. This is an early presentation of the information and feedback from the group in attendance is anticipated and will be appreciated.

#### **Learning Objectives:**

After participating in this session, attendees should be able to:

1. Describe the core components of an effective narrative evaluation
2. Compose a faculty development session for clinical faculty and residents using the module developed by the working group
3. Construct a summative narrative evaluation for the MSPE that is consistent with the MSPE Guidelines

#### **Session Methods and Format:**

Duration: 75 minutes

Detailed Session Description:

00:00 – 00:10 Introduction of workshop facilitators and participants

00:10 – 00:30 Brief review of the MSPE Guidelines; description of the components of effective narrative evaluation and presentation of the faculty development module

00:30 – 00:55 Workshop participants will evaluate narrative evaluations (as part of a faculty development session) and then draft an evaluation based on a case scenario; participants will review and critique each other's evaluations

00:55- 00:65 Presentation on the development of summative clerkship evaluations

00:65 – 00:75 Wrap up discussion and next steps; the materials developed by the working group will be disseminated at the end of the workshop

### Instructional Strategies:

Participants will be actively engaged in assessing and drafting narrative evaluations and will receive feedback throughout the process. At the of the session they will receive the products of the working group which will include a PowerPoint for the faculty development module accompanied by a facilitator's guide and instructions for completing the final clerkship narrative.

### Experience:

Dr. Strano-Paul is the assistant Dean for Clinical Education at the Renaissance School of Medicine at Stony Brook University.

She is a member of the GSA/GEA Constituent Collaborative Project: Writing Narrative Feedback for the MSPE working group, and will be the lead speaker at the regional presentation at the NEGEA meeting. Additional members of the working group will be recruited to facilitate this workshop if accepted. The working group aims to promote effective narrative evaluations by promoting faculty development at all the regional GEA meetings.

### References:

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For more information about this abstract please contact: [lisa.strano-paul@stonybrookmedicine.edu]

## **Developing master adaptive learners in medical school**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Heather Laird-Fick, Michigan State University College of Human Medicine

Migdalisel Colón-Berlingeri, Michigan State University College of Human Medicine

Dianne Wagner, Michigan State University College of Human Medicine

### **Abstract Body:**

#### **Rationale:**

The rapid pace of change in medicine requires physicians to access, evaluate, and apply new information on nearly a daily basis. Traditional medical school curricula, with their emphasis on course packs and multiple-choice question examinations, have not always prepared students to be such nimble learners.

In 2016, the College of Human Medicine launched its new Shared Discovery Curriculum, based on constructivist learning theory and featuring early clinical experiences integrated with scientific learning and competency-based assessment. Two of the college's core competencies – Rationality and Transformation – establish expectations for student reflection, ability to appraise and assimilate evidence from scientific studies, and self-directed lifelong learning. Each of these has been further described by milestones anchored to courses across the curriculum.

The skills we described align well with Cutrer et. al.'s model of the master adaptive learner, published in 2017. In their model, learners use self-directed learning skills to assess, adjust, plan, and learn in response to changing needs for knowledge and skill.

The purpose of this workshop is to allow participants to deconstruct the skills of the master adaptive learner into observable milestones within the context of their institution's existing curriculum, and to strategically identify opportunities to integrate experiences and assessments to reinforce these behaviors across the continuum.

#### **Learning Objectives:**

1. Describe the knowledge, skills, and attitudes of a master adaptive learner;
2. Draft milestones for a developing adaptive learner within their institutions;
3. Describe formative experiences to support adaptive learning;
4. Describe approaches for assessing students' adaptive learning skills.

#### **Session Methods and Format:**

10 minutes	Overview of the Master Adaptive Learner
5 minutes	Participants: Inventory current experiences and assessments
10 minutes	Identifying milestones for becoming a Master Adaptive Learner
5 minutes	Participants: Draft learning milestones for your institution
10 minutes	Creating formative experiences to support adaptive learning
5 minutes	Participants: Pair and share ideas for adoption
10 minutes	Assessing students' adaptive learning skills
10 minutes	Participants: Group discussion of ideas for adoption

10 minutes    Wrap up Q&A

**Experience:**

Heather Laird-Fick, MD, MPH is professor of medicine at Michigan State University College of Human Medicine, Director of Assessment for the medical school's Shared Discovery Curriculum, chair of the Alliance for Academic Internal Medicine Education Committee, and a former residency program and clerkship director.

Migdalisel Colon-Berlingeri, PhD is assistant professor of physiology at Michigan State University College of Human Medicine and Director of the Early Clinical Experience, the M1 year of the Shared Discovery Curriculum.

Dianne Wagner, MD is professor of medicine at Michigan State University College of Human Medicine, the acting Senior Associate Dean for Academic Affairs, and the college's lead member of the AAMC's Core EPAs for Entering Residency pilot group.

**References:**

1. Cutrer WB, Miller B, Pusic MV, Mejicano G, et al. Fostering the Development of Master Adaptive Learners: A Conceptual Model to Guide Skill Acquisition in Medical Education. *Acad Med*.
2. Shared Discovery Curriculum. Michigan State University College of Human Medicine. <https://curriculum.chm.msu.edu/educators>. Accessed October 26, 2019.
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For more information about this abstract please contact: [lairdhea@msu.edu]

## **Elaboration of Necessary Science: Modifying Problem-based Learning for a New Generation**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Jonathan Gold, Michigan State University College of Human Medicine

Migdalisel Colón-Berlinger, Michigan State University College of Human Medicine

Angela Thompson-Busch, Michigan State University College of Human Medicine

Robin DeMuth, Michigan State University College of Human Medicine

### **Abstract Body:**

#### **Rationale:**

Problem-based learning (PBL) has developed as a common and popular alternative to traditional lecture-based medical education over the last fifty years. Based on constructivist principles, PBL emphasizes self-directed learning and cross-disciplinary approach to knowledge attainment. In its pure form, PBL begins with a problem (usually a clinical case) from which students glean learning issues. The students then research these issues independently and return to discuss their research.

Challenges to this model include the immediate availability of information on any topic, potentially short-circuiting the independent research phase of the process. In addition, the looming threat of high-stakes standardized examinations discourage true constructivist approaches to learning, limiting discussions to what will be on the (ultimate) test.

We have developed a modification which retains the case structure and student-centered learning of PBL but introduces a flipped-classroom component, allowing student objectives to align with knowledge deemed important by students and freeing students to use any and all resources to address these objectives. We call this method modified PBL (mPBL).

#### **Learning Objectives:**

Attendees will be able to:

- 1) Describe the educational advantages of integrated learning objectives and elaborated knowledge for the early learner.
- 2) Identify the key elements for the design and implementation of the mPBL methodology.
- 3) Create a modified PBL (mPBL) learning activity for a topic in their own educational setting
- 4) List faculty development strategies for dissemination of teaching and knowledge expertise around mPBL cases.

#### **Session Methods and Format:**

After a brief ice-breaker, participants will discuss their experience with PBL and other constructivist teaching methods and then share with the larger group. The workshop leaders will then review the educational evidence for PBL and other teaching strategies, as well as their

experience with mPBL at their home institution. Attendees will then participate in an mPBL case. Workshop leaders will then assist attendees in applying these principles in creating cases, learning objectives and teaching materials for their own institution. The workshop leaders will then demonstrate various methods that have been used in training faculty to lead these discussions.

- Icebreaker: preparation for mock mPBL session (5 minutes)
- Discussion about small group teaching experience: (10 minutes)
- Presentation---evidence base for PBL: (10 minutes)
- Practice —mPBL session: (15 minutes)
- Create a mPBL: (15 minutes)
- Presentation—faculty development strategies (10 minutes)
- Wrap-up (5 minutes)

**Experience:**

Jonathan Gold, MD is a pediatrician and Director of the MSU CHM Academy, a learning community of faculty educators. He has extensive experience creating and implementing mPBL experiences for first and second year medical students.

Migdalisel Colon-Berlinger PhD is a basic scientist and the Director the Early Clinical Experience, the integrated medical school experience for first-year for medical students at MSU College of Human Medicine. She has extensive experience creating mPBL experiences for first year medical students.

Angela Thompson-Busch MD, PhD is the Community Assistant Dean for MSU CHM in Grand Rapids. She has extensive experience creating mPBL experiences for first and second year medical students.

Robin DeMuth, MD is the Assistant Dean for Clinical Experiences at MSU CHM. She has extensive experience applying core learning objectives to mPBL cases.

**References:**

N/A

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## **Facilitating competency-based handoffs from UME to GME**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Heather Laird-Fick, Michigan State University College of Human Medicine  
marygrace Zetkulis, Hackensack University Medical Center

Sara Fazio, Harvard Medical School

Paul Hemmer, Uniformed Services University of the Health Sciences F. Edward Hebert School of Medicine

### **Abstract Body:**

#### **Rationale:**

Competency-based education and training (CBET) shifts educational outcomes from measures of process (e.g. time in role) or proxies for performance (e.g. multiple-choice examinations) to performance of authentic physician tasks (e.g. evaluating and managing a sick patient). Competence-based educational systems must provide learner-centered support for the attainment of goals. Doing so requires information about students' strengths and opportunities for improvement. Traditionally, medical schools have not communicated this information across the boundaries of courses because of concerns of the effects of "forward feeding". Communication between medical schools and residency programs has traditionally been limited to the Medical Student Performance Evaluation (MSPE) at the end of third year and program director surveys during internship. Neither fulfills the need for data to inform learner-centered educational design. The CBET Task Force of the Alliance of Academic Internal Medicine (AAIM) conducted a qualitative study of leaders in medical education to explore barriers to educational handoffs from undergraduate medical education (UME) to graduate medical education (GME), and potential best practices or remedies. Preliminary themes were used to lead further discussion among participants in a workshop at the 2019 National Residency Match Program (NRMP) meeting. Insights and questions from both endeavors will be used to guide an interactive discussion among attendees of this session to explore: 1) current strategies for communicating students' competence in the MSPE, at graduation, and during internship; 2) success of these efforts, including barriers and facilitating factors; and 3) best practices or aspirational levels of communication. The discussion will be used to refine the task force's work and future reports to the medical education community at large.

#### **Learning Objectives:**

1. Describe current strategies used for competency-based handoffs between UME and GME.
2. Describe current barriers these handoffs.
3. Identify potential strategies for enhancing the quality and quantity of handoffs.

#### **Session Methods and Format:**

15 minutes      Background and overview of meta themes from interviews and prior workshop  
15 minutes      Small group work: Current strategies, barriers and facilitators



- 15 minutes Report out to large group
- 10 minutes “25/10” exercise to crowd source and evaluate potential solutions
- 15 minutes Report-out top 10 ideas
- 5 minutes Wrap up Q&A

**Experience:**

Marygrace Zetkolic, MD is internal medicine residency program director at Hackensack University Medical Center and founding faculty member for Seton Hall University’s medical school, with expertise in educational research and assessment.

Heather Laird-Fick, MD, MPH is chair of the AAIM Education Committee, professor of Medicine and Director of Assessment at Michigan State University College of Human Medicine.

Sara Fazio, MD is past chair for the board of directors of AAIM, past president for the Clerkship Directors in Internal Medicine (CDIM), associate professor and Advisory Dean at Harvard Medical School, with leadership in curricular design and assessment in UME.

Paul Hemmer, MD, MPH is a past president of CDIM, member of the GEA, and professor of Medicine at the Uniformed Services University of the Health Sciences, with leadership in curricular redesign and assessment in UME.

**References:**

n/a

For more information about this abstract please contact: [lairdhea@msu.edu]

## **Finding efficiencies in collaboration: Learn to use technology to promote effective collaboration in medical education**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Laurie Gelles, Robert Larner, M.D., College of Medicine at the University of Vermont  
Raj Chawla, Robert Larner, M.D., College of Medicine at the University of Vermont  
Jan Carney, Robert Larner, M.D., College of Medicine at the University of Vermont  
Stephen Everse, Robert Larner, M.D., College of Medicine at the University of Vermont  
Thomas Delaney, University of Vermont Larner College of Medicine  
Pamela Gibson, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

With our recent accelerated integration of active learning methods in the undergraduate medical curriculum, we are also experiencing additional needs for more efficiency and effective collaboration. As instructors make the shift from didactic sessions to those that require small group discussion and project-based learning, educational technologists often offer pedagogically appropriate technological solutions to help mitigate institutional or instructional barriers which would otherwise hinder student learning.

#### **Learning Objectives:**

- 1) Define collaboration in the learning environment.
- 2) Identify inefficiencies or institutional infrastructure issues that hinder collaboration in the learning environment.
- 3) Understand how the Teams tool was used to facilitate collaboration at the Larner College of Medicine (LCOM).
- 4) Identify ways technology could help increase collaboration in the learning environment at other institutions.

#### **Session Methods and Format:**

We propose demonstrating the use of Microsoft Teams to enable and enhance collaboration in a medical school curriculum by first leading grouped participants through the exercise of finding a non-Teams solution to a learning activity challenge.

- CASE INTRODUCTION, 10 minutes:  
Each group will be asked to find a solution for a specific curricular case/learning activity challenge. They will receive an overview of each case and instructions on how to proceed. Learning Activity challenges will include: community observations, reflections, and posters; group research collaboration; clinical case-based learning example.
- -COLLABORATION SESSION, 20 minutes:  
Participants will work in groups to develop solutions to one of three learning activity challenges with the goal of designing an approach that provides efficient information sharing, enhanced communication, and delivery of the final product. Each group will

have a faculty facilitator who will fill the role of Recorder to enable the group to share and suggest their proposed solutions. Each of the cases is an actual example at LCOM that both required group collaboration and featured the use of Microsoft Teams to deliver a dynamic and efficient collaborative learning experience.

- -GROUP REPORTING, 15 minutes:  
Workshop leaders will lead the group reporting phase of the session using the collaboration tool Microsoft Teams.
- -DISCUSSION, 20 minutes:  
Workshop leaders will demonstrate how LCOM used Microsoft Teams to approach and solve each of these challenges while revealing how the tool was used live during the workshop.
- -EXAMPLES FROM LCOM, 10 minutes:  
Workshop leaders will describe how each of these collaboration challenges were handled at LCOM and provide examples from each case.

**Experience:**

- Jan K Carney, MD, MPH is Associate Dean for Public Health and Health Policy, and Distinguished Educator in the Teaching Academy;
- Raj Chawla, MPH, is the Faculty Technology Liaison in the Educational Technology group at LCOM;
- Thomas V. Delaney, PhD, is an Assistant Professor of Pediatrics, Teaching Academy Member, and teaches in medical and graduate curriculum;
- Stephen Everse, PhD is an Associate Professor of Biochemistry, Teaching Academy Master Teacher, and teaches in our medical, graduate and undergraduate curriculums;
- Laurie Gelles, PhD is the Educational Technology Team Lead at LCOM, and has extensive experience in education, technology, and instructional design;
- Pamela Gibson, MD, is an Associate Professor of Pathology and Laboratory Medicine, and is a Distinguished Educator in the Teaching Academy;

**References:**

N/A

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## **Finding Solutions for Equitable Access to Test Preparation Resources**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Paul Bain, Harvard Medical School

Michelle Bass, Harvard Medical School

### **Abstract Body:**

#### **Rationale:**

Performing well on USMLE and shelf examinations are significant stressors for medical students as they affect not only their success in medical school but their residency match and subsequent career trajectory. However, in deepening and enriching the content of the curriculum, medical schools are not preparing students for optimal performance on these examinations. Hence, many students use commercial test preparation products, in many cases purchasing access out of pocket (Atluru, 2016). A recent examination of study practices at one medical school revealed that students overwhelmingly preferred using third-party preparation tools, including review books and question banks, over notes and materials from classes when preparing for the Step 1 examination (Burk-Rafel, et al., 2017). These findings are consonant with experience and anecdote at our institution where students recently petitioned en masse for better and more affordable access to preferred exam preparation materials.

In this session we will share our experience in working with our student body and with faculty in selecting and providing access to preparation materials. We will discuss solutions for providing equitable access for all students and how libraries and their schools can make decisions regarding which products to purchase, from which budget should the funding be drawn, and optimal methods for delivering access to these materials. Furthermore, we will consider the role of third-party preparation tools in the curriculum as a whole. Is relying on third party, commercial products to provide adequate test preparation an appropriate strategy to cope with the importance of these examinations in the careers of our students?

#### **Learning Objectives:**

Participants will:

1. Understand the pressures that lead medical students to purchase access to commercial examination preparation tools.
2. Identify and compare the features of tools commonly licensed either by medical schools or purchased by students (e.g. Board Vitals, AMBOSS, Osmosis, UWorld)
3. Appreciate the cost for individual subscriptions to the tools and review which are known to offer institutional subscriptions
4. Discuss student considerations important in choosing preparation tools.
5. Consider how preparation for the USMLE and other standardized examinations fits into the overall medical curriculum

#### **Session Methods and Format:**

5 minutes: Introduction to the problem

10 minutes: Commonly licensed tools feature review  
10 minutes: Individual subscription costs, licensing, and access issues for tools  
10 minutes: Narrative description of Harvard case study  
25 minutes: Survey and discussion of the current practice from participants  
15 minutes: Group discussion of the role of test preparation materials in the overall medical curriculum

**Experience:**

Paul A. Bain, PhD, MLS, a research and instruction librarian and liaison to Harvard's medical students, has been involved in collection decisions regarding educational materials throughout his career.

Michelle Bass, PhD, MSI, the manager of the research and instruction team and liaison to Harvard's dental medicine students, is engaging in the financial and political decision-making process with collections concretely for the first time in her career.

**References:**

1. Atluru, Anu. (2016). Medical schools have competition from other teaching tools. It's time they acknowledge it. Stat. <https://www.statnews.com/2016/09/16/medical-schools-licensing-exam-competition/>
2. Burk-Rafael, J., Santen, S.A., & Purkiss, J. (2017). Study Behaviors and USMLE Step 1 Performance: Implications of a Student Self-Directed Parallel Curriculum. *Academic Medicine*. 92, 67-S74. 10.1097/ACM.0000000000001916

For more information about this abstract please contact: [michelle\_bass@hms.harvard.edu]

## **Finding Success in Failure Best Practices for Remediation of Students in Difficulty**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Anton Alerte, University of Connecticut School of Medicine

Jennifer Koestler, New York Medical College

Mary Brown, Tufts Medical School

Patricia Joyce, University of Connecticut School of Medicine

Melissa Held, University of Connecticut School of Medicine

Mariann Kelley, University of Connecticut School of Medicine

Amy Fleming, Vanderbilt University School of Medicine

Joanne Crowley, University of Connecticut School of Medicine

Melanie Rudnick University of Connecticut School of Medicine,

Antoinette Spoto-Cannons, University of South Florida

### **Abstract Body:**

#### **Rationale:**

A failing student requires the activation of a system of inter-related faculty and resources to help the student successfully remediate their deficiencies. “Successful” failing, failure that ultimately leads to improvement, is dependent on timely identification, assessment, collaborative planning, and follow-up. The process for this, however, is not standardized across institutions. Clerkship directors can have a vital role in not only supporting a struggling student but also advocating for individualized processes that address the student’s needs. This workshop is designed to give faculty the tools to best facilitate clinical remediation of students.

#### **Learning Objectives:**

This workshop will provide faculty with a framework for helping the student who has failed or is failing.

Participants will:

- List tools useful for early identification and categorization of the student with difficulty
- Identify best practices in remediation and remediation planning that is individualized
- Identify assets or processes useful in a remediation system
- Identify strategies to motivate the student for success in remediation
- Identify strategies to create an atmosphere of support during remediation

#### **Session Methods and Format:**

We will use case scenarios to facilitate participant interaction as we discuss the critical “decision points” in managing a failing student. After introductions and outlining the workshop, we will ask participants to identify where and how learners struggle using pair/share and large group discussions. We will then break into small groups to identify tools to help educators proactively identify at risk students during a clerkship. Using case-based vignettes we will work in small groups to walk through diagnosing the problem learner and review best practices in remediation,

including motivating and supporting the struggling student. We will conclude the workshop with an action plan development exercise, so that participants can leave with deliverables to use at their own institutions.

- Introductions/Objective/Organization 5 minutes
- Context/description of problem with (large group) 5 minutes
- Identification of At Risk Students (large group) 15 minutes
- Best practices in Remediation (small group, facilitated) 20 minutes
- Motivating and Supporting the Student (small Group, facilitated) 10 minutes
- Report out discussion/ action plans (large group) 20 minutes

**Experience:**

Anton Alerte-Doctoring Course Director for ten years

Patricia Joyce-Clerkship director for twenty years

Melissa Held-Dean of Students, Clerkship Director

Amy Fleming-Dean of Students

Mariann Kelley-Director of Simulation

Antoinette Spoto-Cannons-Clerkship Director

Mary Brown-Clerkship director

Jennifer Koestler-Dean of Medical Education

Joanne Crowley-Clerkship Director

Melanie Rudnick-Clerkship Director

**References:**

N/A

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## **From Callous to Constructive: Transforming Anonymous Written Evaluations to Improve Engagement**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Melissa Davidson, Robert Larner, M.D., College of Medicine at the University of Vermont  
Nathalie Feldman, Robert Larner, M.D., College of Medicine at the University of Vermont  
Bridget Marroquin, Robert Larner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

Faculty, residents and medical students are all required to complete evaluations, including written feedback. Evaluations are upward (student-of-resident and faculty, resident-of-faculty) and downward (faculty-of-resident and student, resident-of-student). Upward evaluations are generally anonymous to protect learners from perceived threat of possible retaliation. In the public sector, anonymous social media applications have increased cyberbullying, slander, and other less desirable behaviors. Likewise, concerns were recently raised at our institution regarding increased numbers of anonymous student-of-resident and student-of-faculty evaluations that were considered unprofessional, or even malicious. While numbers were relatively small, residents and faculty expressed concern about the negative impact of these hurtful comments on their willingness to teach and promotions deliberations. An educational approach was undertaken to train students (at 3 curricular points) and residents (in Residents as Teachers curriculum) on how to write constructive upward evaluations.

#### **Learning Objectives:**

1. Distinguish between upward and downward evaluation feedback, including logistics, challenges, and risks associated with each.
2. Reflect on impact, both personal and professional, of receiving unprofessional evaluation feedback from learners.
3. Apply “Anatomy of an Effective Evaluation Statement” framework to reconstruct real-life examples of statements that range from unhelpful to unprofessional.
4. Develop a sample curriculum on provision of effective evaluation feedback using the workshop model, to train medical students and residents as both learners and teachers.

#### **Session Methods and Format:**

Participants will learn by experiencing the same training as students and residents, with debrief focusing on generalizability and instructor training.

#### **Speaker 1:**

Introduction - Participant personal self-reflection, using 2 pre-set questions (most unhelpful positive and worst evaluation feedback ever received). [3']



Pair/share – In small groups, participants will either share the impact of personal examples of narrative evaluations they have received or reflect on examples of real life narrative evaluations provided by the facilitators. [5’]

Group speakers will report their group’s most poignant examples. [5’ (5 groups of 6, 1’/group)]

Speaker 2 (Presenter, Facilitator):

Will provide short presentation on “Anatomy of an Effective Evaluation Statement”. [8’]

Breakout: Small groups will work together to restate the evaluation feedback using the “Anatomy of an Effective Evaluation” framework. [5’]

Groups report out to the larger group. [8’ (1.5’/ group)]

Speaker 3:

Large group facilitated discussion of need for and potential impact of this session on participants’ organizations. [8’]

Breakout: Small groups will propose skeleton curriculum to train medical students and residents, using the workshop as a model. [10’]

Speaker 1:

Large group facilitated discussion of recommendations for a curriculum, focusing on anticipated target audiences (students, residents, and/or faculty); ideal timing of training (in medical student curriculum, as component of Residents as Teachers program); outcomes measures; and role of facilitator(s). [15’]

Speaker 2:

Debrief/Q&A: Participants’ reflections (facilitated) on the workshop and future directions. [8’]

### **Experience:**

Nathalie Feldman – UVM LCOM Director of Learning Environment, Learning Environment & Professionalism (LEAP) Committee Co-Chair, and co-creator/facilitator of this training at LCOM.

Melissa Davidson – UVM LCOM Associate Dean for GME, LEAP Committee Co-Chair, and co-creator/facilitator of this training at LCOM.

Bridget Marroquin – Director of Anesthesia Education and Teaching Academy Master Teacher, UVM LCOM.

### **References:**

1. Zhou A, Baker P. Confounding factors in using upward feedback to assess the quality of medical training: a systematic review. *J Educ Eval Health Prof* 2014; 11: 17 • <http://dx.doi.org/10.3352/jeehp.2014.11.17>.
2. Kost A, et al. A Proposed Conceptual Framework and Investigation of Upward Feedback Receptivity in Medical Education. *Teaching and Learning in Medicine* 2015; 27(4):359-61
3. Willett RM, Lawson SR, Gary JS, Kancitis IA. Medical student evaluation of faculty in student-preceptor pairs. *Acad Med* 2007; 82(10 Suppl):S30-3.
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5. Mahler J. Who Spewed That Abuse? Anonymous Yik Yak App Isn’t Telling. <https://www.nytimes.com/2015/03/09/technology/popular-yik-yak-app-confers-anonymity-and-delivers-abuse.html>, accessed 10/15/19.

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## **It's time to talk about Basic Needs insecurity among Medical trainees.**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Hyacinth Mason, Albany Medical College

Mytien Nguyen, Yale School of Medicine

Michele Cerasani, Albany Medical College

Enxhi Rrapi, Albany Medical College

Ryan Barrette, University of Massachusetts Medical School

### **Abstract Body:**

#### **Rationale:**

Data from the 2018 US Government Accountability Office report shows that basic need insecurity undermines the post-secondary educational experiences of many students<sup>1,2,3</sup>. Published data on the experiences of medical trainees is virtually non-existent. Solutions are needed as it is likely that basic need insecurity will worsen on medical campuses as education and living costs continue to rise. The purpose of this discussion group is to discuss practical responses to what many medical school administrators, faculty, staff and students know: basic needs insecurity exists among medical trainees and institutional responses are possible and necessary. Cross-department approaches to understand the scope and scale of the issue, destigmatize and find ways of addressing it will be discussed.

#### **Learning Objectives:**

- Define the term “basic needs insecurity”
- List effective practices and policies that have been implemented at medical schools to address learners’ basic needs including nutrition insecurity, housing insecurity, and emergency aid
- Outline programs that may be implemented at their own institution to identify and support medical students experiencing basic needs insecurity

#### **Session Methods and Format:**

5 minutes:

Presenter and attendee introductions and discussion session overview

15 minutes:

- Brainstorm basic need challenges that may be faced by medical trainees such as lack of access to ample nutrition, adequate housing, transportation, financial, dependent care resources etc.
- Define the terms “basic needs insecurity”, “nutrition insecurity”, “housing insecurity”, “emergency aid” and other related terminology.
- Discuss basic need supports (e.g. Federal Supplemental Nutrition Assistance Program) accessible to medical trainees

20 minutes:

Small group case study work using pre-prepared case studies will focus on each of the 3 main areas of basic need insecurity – nutrition insecurity, housing insecurity and emergency aid.

20 minutes:

Small groups report their plans and selected resources

5 minutes:

Participants pair and share plans for identifying and supporting students with basic need insecurity in their own institutions

5 minutes:

1-2 volunteers share their individual action plans related to alleviating nutrition insecurity, housing insecurity and emergency aid needs on their campuses. Contact information for presenters and discussion group attendees will be provided to encourage continued discussion and collaboration.

5 minutes:

Workshop evaluation

### **Experience:**

Hyacinth Mason, PhD, MPH, CHES Dr. Mason is Assistant Dean of Student Support and Inclusion at Albany Medical College and Associate Professor in the departments of Medical Education and Family and Community Medicine.

Mytien Nguyen is a fourth year MD/PhD student at Yale School of Medicine. She is a co-founder of the Yale First-generation college and/or low-income student affinity group (YFLI), and of the national First-generation college graduate and/or low-income in medicine student's alliance.

Enxhi Rrapi is a first-year student at Albany Medical College. She is President-elect of the Albany Medical College 1GMD student club.

Michele Cerasani is a second year student at Albany Medical College. She is the 2019-2020 President of the Albany Medical College first-generation college graduate (1GMD) student club.

Ryan Barrette is a third-year medical student at University of Massachusetts Medical School. He is a former co-president of the medical school's Student Body Committee, and founder of the Max Baker Resource Center.

### **References:**

1. U.S. Government Accountability Office. (2018). Food insecurity: Better information could help eligible college students access federal food assistance benefits. (GAO Publication No. 19-95) Washington, D.C.
2. El Zein, A., Shelnut, K., Colby, S., Olfert, M., Kattelmann, K., Brown, O., & Mathews, A. (2017). The prevalence of food insecurity and its association with health and academic outcomes among college freshmen. *Advances in Nutrition*, 8(1), 4;
3. Broton, K. M. & Goldrick-Rab, S. (2017). Going without: An exploration of food and housing insecurity among undergraduates. *Educational Researcher* 47(2). 121-133

For more information about this abstract please contact: [masonh1@amc.edu]

## **Medical Education Leadership: Tips and Tricks for the Developing Leader**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Jennifer Findeis-Hosey,  
Mary Brown, Tufts Medical School

### **Abstract Body:**

#### **Rationale:**

Involvement in medical education allows for, and requires, the development of strong leaders. As educators take on leadership roles, they are likely to encounter numerous challenges and stumbling blocks. This session will focus on identifying tips and tricks for how to potentially avoid and, when they do occur, deal with these challenges. This small group discussion session will include initial anchoring of the concepts of leadership styles and the management of change through short presentations by the faculty leaders, followed by ample time for the audience to ask questions, discuss their leadership stories (focusing on leadership styles and the management of change), and receive feedback from the discussion leaders and other members of the audience. The lessons learned in this session are timeless, but of utmost importance to all developing leaders.

#### **Learning Objectives:**

1. Define your leadership style.
2. Describe positive leadership behaviors.
3. Discuss strategies to manage change.

#### **Session Methods and Format:**

This session will focus on practical application of theoretical models in leadership. The session will be divided as follows:

05 minutes – Introductions

10 minutes – Discussion of leadership styles (Findeis-Hosey)

10 minutes – Discussion of strategies to manage change (Brown)

50 minutes – Audience discussion. This section will be focused on allowing the audience to discuss (1) their leadership styles, (2) their approaches to managing change, and (3) times that they have had challenges as a developing leader and how they dealt with, and learned from, these issues. Depending on the level of audience engagement, the presenters will have 4 example cases of leadership challenges available that can be used to help guide the audience discussion. (Findeis-Hosey and Brown)

#### **Experience:**

Drs. Brown and Findeis-Hosey have participated in the AAMC's Leadership Education and Development (LEAD) certification program, during which they explored the topic of leadership

within medical education. They serve in the roles of Pediatrics Clerkship Director and Director of UME Pathology Curriculum at their respective institutions.

**References:**

N/A

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# **Novel Ways of Using OSCEs to Develop and Assess Medical Students' Clinical Reasoning**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

## **Authors:**

Benjamin Blatt, George Washington University School of Medicine and Health Sciences

Lynn Kosowicz, University of Connecticut School of Medicine

Katherine Berg, Sidney Kimmel Medical College, Thomas Jefferson University

Anton Alerte, University of Connecticut School of Medicine

## **Abstract Body:**

### **Rationale:**

Diagnostic errors, common in medical practice, are most frequently due to inadequacies in clinical reasoning. Teaching and assessing this complex cognitive process is challenging. OSCEs, effective in developing and assessing medical students' data gathering, counseling and communication skills, are also used to develop and assess clinical reasoning through post station patient notes. Often the National Board of Medical Examiners Step 2CS format is used: A 2-3 item differential diagnosis and plan justified by pertinent history and physical exam. The organizers of this discussion group, educators from the medical schools of George Washington University, University of Connecticut and Thomas Jefferson University, have introduced novel methods to explore the complexities of students' clinical reasoning performance in greater depth. Using a brief description of their methods to begin the conversation, this discussion group aims to share and explore ways to develop and assess medical students' clinical reasoning within the context of an OSCE.

### **Learning Objectives:**

1. Describe 3 novel approaches used by discussion group organizers to develop and assess clinical reasoning within the context of an OSCE
2. Discuss approaches used by participants to teach and assess clinical reasoning within their home institutions
3. Formulate new approaches to clinical reasoning education that participants can apply in their home institutions

### **Session Methods and Format:**

10 m Introductions; why participants chose to attend

30 m Interactive presentations by organizers: description of 3 novel approaches with assessment data (5 min/each presentation followed by 15 min for discussion)

- Reflect-Revisit: In response to reflection triggered by patient notes written after their first visit, students revisit their patients, perform additional history and physical exam and refine their differential diagnoses.
- History-Guided Differential: Students step out after taking a history and construct a differential to guide them in choosing physical exam maneuvers to help rule in/out items on their list.

- Core + Clusters: Students use a Clusters algorithm designed for each patient presentation to guide them in choosing history and physical exam to test diagnostic hypotheses

#### 25 m Discussion Questions

- What approaches to clinical reasoning development and assessment do you use in your OSCEs?
- Reflection is a key element in clinical reasoning. Educators have proposed various methods to enhance it—e.g., cognitive mapping, debiasing schemes, fuzzy logic, think alouds. Have you used these or other methods to enhance clinical reasoning in conjunction with OSCEs and if so, how effective have they been?
- Do you find that your students have different styles of clinical reasoning? If so how do you promote each style?
- How do you remediate clinical reasoning weaknesses discovered in the simulation context?

#### **Experience:**

Dr. Blatt has been involved for over 15 years in using simulation to develop and assess medical student clinical reasoning. Dr. Kosowicz has for over 15 years designed encounters with standardized patients to teach, assess and remediate clinical reasoning skills. Dr. Berg for the last 20 years has led clinical skills and clinical reasoning assessment. Dr. Alerte, has been involved with increasing students reasoning skills for the past fifteen years.

#### **References:**

1. Gowda, J., Blatt, Y., Fink, C., Kosowicz, C., Baecker, C., & Silvestri, C. (2014). A Core Physical Exam for Medical Students: Results of a National Survey. *Academic Medicine*, 89(3), 436–442. <https://doi.org/10.1097/ACM.0000000000000137>
2. Blatt, B., Plack, M., Maring, J., Mintz, M., & Simmens, S. (2007). Acting on reflection: the effect of reflection on students' clinical performance on a standardized patient examination. *Journal of General Internal Medicine*, 22(1), 49–54. <https://doi.org/10.1007/s11606-007-0110-y>

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## **Nuts-and-Bolts: Turning Educational Projects into Successful Submissions to MedEdPORTAL**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Sara Hunt, AAMC

Maria Blanco, Tufts University School of Medicine

Alice Fornari, Donald and Barbara Zucker SOM at Hofstra/Northwell

### **Abstract Body:**

#### **Rationale:**

MedEdPORTAL, the Journal for Teaching and Learning Resources of the Association of American Medical Colleges, peer reviews and publishes educational resources. Its recent acceptance into MEDLINE for indexing solidified its position as a premier venue for health science educators who teach medical and dental learners and wish to publish and disseminate their educational projects.

Because MedEdPORTAL's publications count toward promotion processes, helping NEGEA members understand how to present their educational innovations as scholarship is critical to their career development. The process of submitting to MedEdPORTAL requires an Educational Summary Report (ESR), which is structured like a traditional research manuscript. However, developing a manuscript through the lens of educational scholarship may require more guidance in how the work is presented.

This workshop is designed to provide hands-on experience with evaluating and revising a draft of an ESR to submit to MedEdPORTAL. Participants will be asked to identify a teaching/learning resource potentially submittable to MedEdPORTAL and bring related materials to the conference.

#### **Learning Objectives:**

1. Articulate the ways in which the Educational Summary Report (ESR) is similar to a traditional manuscript.
2. Describe each part of the ESR and how well-written components adhere to standards for scholarship.
3. Identify strategies to refine each component of the ESR for a more scholarly product.
4. Develop a personal "to-do" list to prepare a MedEdPORTAL submission.

#### **Session Methods and Format:**

Review of the aspects of the ESR and how they are comparable to and differ from traditional research manuscripts. – 15 minutes

Introduce the ESR worksheet (prompting questions that provide guidance for preparing an ESR). Participants will have the opportunity to use the ESR worksheet for an educational project they envision submitting to MedEdPORTAL – 15 minutes

Divide the room into groups to review a pre-workshop ESR solicited in advance. Small groups will assess the quality of each section and identify what could be improved. Workshop facilitators will circulate to answer questions. – 30 minutes

Moderate a large group report-out of feedback on the ESR while a facilitator documents effective principles in writing the ESR. – 15 minutes

Conclude workshop by discussing 1) What is hardest to write? 2) What other resources would be helpful? 3) Other questions?

**Experience:**

Maria Blanco, EdD, is an Associate Professor in the Department of Psychiatry at Tufts Medical Center and an Associate Dean for Faculty Development, and she is MedEdPORTAL's associate editor for faculty development and a longtime member of the MedEdPORTAL Faculty Mentor Program.

Alice Fornari, EdD, is a Professor and Associate Dean of Educational Skills Development at Donald and Barbara Zucker School of Medicine, and is also a faculty mentor for MedEdPORTAL, specifically advising junior faculty and trainees on academic scholarship.

**References:**

N/A

For more information about this abstract please contact: [shunt@aamc.org]

## **Practical Approaches to Applying Conceptual & Theoretical Frameworks to Medical Education Research**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Steven Rougas, The Warren Alpert Medical School of Brown University

Rory Merritt, The Warren Alpert Medical School of Brown Univ.

Rebecca Blanchard, Baystate Health

### **Abstract Body:**

#### **Rationale:**

Social scientists and educators use relevant theories and conceptual frameworks when conducting education research. The conceptual or theoretical framework provides a lens through which to identify gaps in the literature, operationalize appropriate constructs, hypothesize relationships, as well as design appropriate methodology. Such frameworks can provide scholars lenses to understand how societies, organizations and people interact in certain ways.<sup>1</sup> Despite what we know about the importance of using frameworks, educators struggle to consistently incorporate them when designing their research studies. Knowing that this puts them at risk for negative peer review and rejection from some of the top medical education journals,<sup>2,3</sup> it is critical for educators to understand the practical application of such frameworks and how they can help situate one's research study in the existing literature.

#### **Learning Objectives:**

At the end of this session, participants will be able to:

1. Describe and give examples of conceptual and theoretical frameworks commonly used in different research paradigms (opening)
2. Examine how the selection of a framework can impact research design (small group activity)
3. Discuss strategies to situate results through the lens of a conceptual or theoretical framework (closing)

Additionally, participants will leave the session with resources that support the identification and use of conceptual frameworks.

#### **Session Methods and Format:**

20 min

An opening role play will illustrate how frameworks can be used early in the planning process of a project. Facilitators will explore their decision-making process and share perspectives on common barriers to identifying frameworks.

30 min

Participants will complete a small group activity using a sample case vignette that tasks them with developing a potential educational research project. Facilitators help participants compare and contrast the various frameworks that could be utilized for this project. Using a worksheet that pulls suggestions from the existing literature, participants will think through the potential implications of various frameworks on the development and design of hypothetical results of the project.

20 min

Facilitators will provide their reflection on common themes that emerged from the small group discussions as a way of illuminating potential barriers. They will also discuss tips and potential pitfalls for incorporating frameworks into research manuscripts, connecting principles discussed in the small group case vignette to examples in the literature and building upon the themes identified by the small group observers. The session will close with a review of a sample publications handout and a list of available resources.

**Experience:**

Dr. Steven Rougas (Director of the Doctoring Program and Assistant Professor of Emergency Medicine and Medical Science) is a member of the Medical Education Scholarship Research and Evaluation (MESRE) group of the AAMC and has experience mentoring in medical education research.

Dr. Rebecca Blanchard (Senior Director of Educational Affairs and Assistant Dean for Education and Associate Professor, University of Massachusetts Medical School – Baystate) is Director of the BERST Academy and has experience mentoring in medical education research.

Dr. Rory Merritt (Assistant Dean of Medicine and Assistant Professor of Emergency Medicine) completed a fellowship in Medical Education Research and a Master's of Education in Health Professions.

**References:**

1. Reeves S, Albert M, Kuper A, Hodges BD. Qualitative research: why use theories in qualitative research? *BMJ* 2008;337(7670):631-634.
2. Bordage G. Moving the field forward: going beyond quantitative-qualitative. *Acad Med* 2007;82(10 SUPPL):S126-S128.
3. Meyer HS, Durning SJ, Sklar DP, Maggio LA. Making the first cut: an analysis of Academic Medicine editors' reasons for not sending manuscripts out for external peer review. *Acad Med* 2018;93(3): 464-470.

For more information about this abstract please contact: [steven\_rougas@brown.edu]

## **Promoting Community Engagement to Address Health and Social Needs**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Jan Carney, Robert Larnar, M.D., College of Medicine at the University of Vermont  
Thomas Delaney, University of Vermont Larner College of Medicine

### **Abstract Body:**

#### **Rationale:**

Public health issues and social health determinants are widespread and essential to improving health outcomes. Employment, housing, transportation, literacy, food security, discrimination, and cultural competency are related to health inequities, barriers to care, and poor health. Firearm violence, vaping, obesity, addiction, and increasing rates of suicide and self-injury further argue for population-based, policy, and systems approaches. Evidence from published literature supports health care systems identifying and intervening in a wide range of health and social needs and faculty integrating these concepts into medical education. However, practical approaches are limited: integrating these concepts in undergraduate and graduate medical education is challenged by competing curricular and time demands. A recent WSJ editorial and resultant debate highlight the timeliness of these discussions. Larner College of Medicine has community-initiated public health projects as a required part of the second-year curriculum, since 2004. Projects cover a health care, public health, and social service needs; the course engages many health care, housing, public health, and social service organizations.

#### **Learning Objectives:**

- Discuss a model for community engagement linking health and social service organizations with the medical school educational program
- Define successful engagement strategies to initiate and sustain such partnerships
- Identify focus areas of the medical curriculum, such as public health, social determinants of health, or health equity that might benefit from this pedagogical approach
- List priority health and social care educational needs in their own academic setting
- Develop strategies to integrate health and social needs in a specific part of the curriculum

#### **Session Methods and Format:**

Presenters include two faculty, a community organization representative, and medical student speaker. The 75-minute discussion session includes three smaller sessions (30, 20, 25 minutes). The first large-group session includes a 30-minute overview. Faculty will discuss literature, curriculum, community engagement model, and types of participating organization. All 4 speakers will present their perspectives within this time.

Depending on the size of the group, a structured process (20 minutes) will create smaller subgroups facilitated by the 4 session presenters, using a one-page template with guided questions to identify goals, learning objectives, community partners, integration strategies, barriers, evaluation of teaching, learning, and successful partnerships. Topic areas might also include identifying specific local public health issues, social determinants, and health equity

challenges. The final 25-minute large-group session will include 20 minutes to compare and contrast discussion themes and 5 minutes for questions and closing remarks. (Alternatively, if the group is too small for subgroups, template questions will be conducted as a Q & A between the 4 presenters and attendees with large-group discussion format.)

**Experience:**

Jan K Carney, MD, MPH is Associate Dean for Public Health and Health Policy, Professor of Medicine, and Distinguished Educator in the Teaching Academy. Thomas V. Delaney, PhD, is an Assistant Professor of Pediatrics, Teaching Academy Member, and teaches in medical and graduate curriculum. Agency Representative (to be confirmed): minimum of 5 years leading a health/social service organization and partnering with the medical school. Student (to be confirmed) who has completed this course.

**References:**

1. Daniel H, Bornstein SS, Kane GC, Carney JK, Gantzer HE, Henry TL, Lenchus JD, Li JM, McCandless BM, Nalitt BR, Viswanathan L, Murphy CJ, Azah AM, Marks L. Addressing Social Determinants to Improve Patient Care and Promote Health Equity: An American College of Physicians Position Paper. *Ann Intern Med* 2018; 168(8):577-578.
2. Artiga S, Hinton, E. Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. Issue Brief. May 10, 2018. Available at: <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
3. National Academies of Sciences, Engineering, and Medicine. 2019. Integrating Social Care into the Delivery of Health Care: Moving Upstream to Improve the Nation's Health. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25467>.

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## **Promoting Faculty Career Development Through Multiple Mentoring Workshop**

*Submission Type: Workshop*

*Accepted as: Poster*

### **Authors:**

Maria Blanco, Tufts University School of Medicine

Nicole Borges, University of Mississippi Medical Center

Alice Fornari, Donald and Barbara Zucker SOM at Hofstra/Northwell

Kathryn Huggett, Larner College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

Mentorship continues to be recognized as a critical approach to support successful careers in academia (1). The rapid advances of technology, the needs of a new generation for work-life balance, and the stress created by ever increasing needs to obtain funding called for a new mentoring model involving more than one individual (2). Multiple mentoring networks, through which faculty identify and depend on several different mentors throughout their careers, has been found to be more appealing than the traditional model of one mentor for an entire career (3).

#### **Learning Objectives:**

By the end of the workshop, participants will be able to: (1) Distinguish approaches to mentoring used in faculty development; (2) Identify the benefits of multiple mentoring networks; (3) Formulate a plan to expand their mentoring approaches at their local institutions.

#### Target Audience

Faculty developers who are leading mentoring programs, and administrators who are seeking promising mentoring approaches. Educators who are seeking mentoring opportunities in their work environment. Beginners to intermediate level.

#### **Session Methods and Format:**

Presenters will introduce the workshop with a quick-start appreciative inquiry activity on participants mentoring experiences (10'). Presenters will then provide an overview of existing mentoring frameworks and describe two multiple mentoring network programs at their institutions (10'). In small groups, participants who are faculty developers will be invited to discuss ideas for implementing multiple mentoring network programs at their institutions and identify challenges they might face in doing so. Participants who are seeking mentoring opportunities will be asked to map potential mentoring networks they need to advance their careers and identify barriers they might face to establish such networks (15'). Small groups will record their ideas and challenges in wallpaper charts and report back to the larger group (15'). Presenters will then lead a discussion to address the challenges by seeking the participants' insights (20'). Presenters will ask participants lesson learned using word cloud (5').

**Experience:**

Maria A Blanco is Associate Dean for Faculty Development at Tufts University School of Medicine (TUSM) and has been leading a successful Mutual Mentoring Program for TUSM faculty career advancement.

Nicole J. Borges is Chief Education Officer, Research and Scholarship at the University of Mississippi Medical Center and is involved with mentoring programs at the institutional and department levels.

Alice Fornari is an Associate Dean at Zucker School of Medicine and Vice President for Faculty Development at Northwell Health, and, is focused on developing opportunities for mentoring among healthcare professionals and leads a successful program for the past 6 years focused on developing humanistic mentoring skills through Appreciative Inquiry.

Kathryn N. Huggett is Assistant Dean and Director of the Teaching Academy at the University of Vermont Larner College of Medicine (LCOM) and leads multiple mentoring programs as well as mentor training workshops.

**References:**

1. Mylona E, Brubaker L, Williams VN, et al. Does formal mentoring for faculty members matter? A survey of clinical faculty members. *Med Ed.* 2016;50(6):670–681.
2. Sorcinelli, MD & Yun, JH. From mentor to mentoring networks: Mentoring in the new academy. *Change: The Magazine of Higher Learning.* 2007;39(6):58-61. doi:10.3200/CHNG.39.6.58-C4.
3. Wasserstein, A.G., Quistberg, D.A., Shea, J.A. Mentoring at the University of Pennsylvania: Results of a Faculty Survey. *SGIM.*2007: 22, 210-214.

For more information about this abstract please contact: [Maria.Blanco@tufts.edu]



## **Promoting first generation college graduate student success in medical school: an online resource toolkit**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Hyacinth Mason, Albany Medical College

Mytien Nguyen, Yale School of Medicine

Jacob Altholz, Uniformed Services University of the Health Sciences

Vicki Sapp, Geisinger Commonwealth School of Medicine

Lisa Coplit, Frank H. Netter MD School of Medicine Quinnipiac University

### **Abstract Body:**

#### **Rationale:**

Medical students who were the first in their families to graduate from college bring unique strengths to medical school. First generation college graduates (FGCG) and others who come from backgrounds with limited exposure to medicine may also have unique needs and face challenges that are not always recognized by their schools. The Association of American Medical Colleges (AAMC) Undergraduate Medical Education (UME) Section of the Group on Educational Affairs (GEA) has convened a work group which is in the process of developing an online toolkit of resources for medical schools to support and celebrate their FGCG students. The purpose of this workshop will be to share resources from the toolkit and to help participants develop strategies for supporting FGCG medical students at their own institutions.

#### **Learning Objectives:**

- Identify challenges FGCG medical students may face during medical school
- List a 5-part framework for supporting FGCG medical students
- State program changes that can be implemented at their own institution to support FGCG medical students

#### **Session Methods and Format:**

5 minutes:

Introductions and development of UME section's online FGCG student resource toolkit

15 minutes:

- Define "first generation college graduate."
- Brainstorm challenges faced by FGCG in medical school
- Introduce toolkit resources categorized into the following areas of support:
  - Academic
  - Institutional climate
  - Professional Development and Career Mentorship
  - Emotional
  - Financial

20 minutes:

Small group case study work will focus on each of the 5 areas of support. Attendees develop a plan to assist FGCG students in each scenario using toolkit resources

20 minutes:

Small groups report their plans and selected resources

5 minutes:

Participants pair and share plans for using toolkit resources to support FGCG students in their own institutions.

5 minutes:

1-2 volunteers share their individual action plans. Contact information provided to encourage continued discussions with each other and presenters

5 minutes:

Workshop evaluation

**Experience:**

Hyacinth Mason, PhD, MPH, CHES is Assistant Dean, Student Support and Inclusion at Albany Medical College and is part of a team supporting medical trainees, particularly those from groups underrepresented in medicine.

Mytien Nguyen is a fourth year MD/PhD student at Yale School of Medicine. She is a co-founder of the Yale First-generation college and/or low-income student affinity group (YFLI), and the national First-generation college graduate and/or low-income in medicine student's alliance.

Jacob Altholz is a third-year medical student at the Uniformed Services University of the Health Sciences. He serves as the National Delegate for Medical Education at AAMC 's Organization of Student Representatives.

Vicki T. Sapp is the director for student engagement, diversity and inclusion and assistant professor at Geisinger Commonwealth School of Medicine. She is responsible for implementing diversity, equity and inclusion initiatives and serves as the chair of the First Generation and Ally Student Support Committee.

Lisa Coplit, MD is the Associate Dean for Faculty Development at the Frank H. Netter MD School of Medicine. She is the chair of the AAMC UME section steering committee which created a working group to create an online FGCG resource toolkit of resources for medical educators.

**References:**

N/A

For more information about this abstract please contact: [masonh1@amc.edu]

## **Reforming the Fourth-Year Medical Student Assessment System**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Anita Rawls, Sidney Kimmel Medical College at Thomas Jefferson University  
Britta Thompson, Pennsylvania State University College of Medicine  
Tasha Kouvatso, Sidney Kimmel Medical College at Thomas Jefferson University  
Katherine Berg, Sidney Kimmel Medical College, Thomas Jefferson University  
Steven Herrine, Sidney Kimmel Medical College at Thomas Jefferson University

### **Abstract Body:**

#### **Rationale:**

Reforming the 4th year medical education curriculum and assessment is an effort undertaken by many medical schools<sup>1</sup>. Sidney Kimmel Medical College (SKMC) at Jefferson University and Penn State College of Medicine (PSCOM) are two schools in the process of reforming assessment in the 4th year of medical school. This small group discussion will explore options and learn from others about best practices in 4th year assessment.

To start the discussion, SKMC will describe their approach to 4th year scheduling to increase the number of opportunities for students to demonstrate mastery of the graduation competencies.

Additionally, SKMC will describe the development of assessment materials that support student readiness for residency.

We will then discuss frameworks and best practices from other institutions regarding grading in the 4th year of medical school. In particular, as schools across the national consider moving clerkships to pass/fail and/or decouple the National Board of Medical Examiners shelf exams with the clerkship grades, how can the 4th year of medical school be used to ensure that students have meet all graduation competencies. In addition, how can schools provide not only strong information to residencies but a “warm handoff” to the residency in which a student matches. The small group discussion will allow for the sharing of ideas in terms of assessment instruments and competency information to support student readiness for residency.

#### **Learning Objectives:**

1. Expand knowledge of assessment reform paradigms for the 4th year of medical school.
  - a. SKMC Evidence-centered assessment design
  - b. Best practices in the literature
2. Generate ideas regarding assessment reform for the 4th year of medical school
3. Develop a forum to facilitate discussion of assessment reform in 4th year of medical school.

#### **Session Methods and Format:**

1. Introductions (5 minutes)
2. Describe SKMCs 4th year curriculum and assessment reform (10 minutes)

3. Describe frameworks and best practices in the literature (10 minutes)
4. Facilitate small group discussion on the approaches to assessment reform (30 minutes):
  - a. Discuss components of evidence-centered assessment design
  - b. Describe implementation of pass/fail scoring
  - c. Describe any challenges (e.g., transition process, faculty development, location, etc.)
5. Large-group discussion (15 minutes)
  - a. Report highlights from small group discussions
  - b. What are some opportunities for collaboration regarding assessment paradigms in 4th year medical school?
6. Questions/Develop contact list for future discussions (5 mins)

**Experience:**

Anita Rawls is a psychometrician with 10 years of experience in assessment, evaluation, and educational measurement.

Britta Thompson, PhD, MS, is Professor of Medicine and Associate Dean for Evaluation and Assessment at Penn State College of Medicine. She has been in medical education for almost 15 years and has extensive experience in assessment.

Tasha Kouvatso, MD is Assistant Residency Program Director, Endocrinology and director of SKMC Phase 3.

Katherine Berg, MD is Co-Director, University Clinical Skills and Simulation Center. She has over 20 years of experience in leading clinical skills and assessment.

Steven Herrine, MD is Vice Dean, Academic Affairs/UME at Sidney Kimmel Medical College at Thomas Jefferson University. He has experience in various aspects of undergraduate medical education.

**References:**

1. Mislevy RJ, Steinberg LS, Almond R. CRESST. On the structure of educational assessments. CSE Research Report 597. [http://cresst.org/publications/cresst-publication-2969/?\\_sf\\_s=On+the+structure+of+educational+assessments](http://cresst.org/publications/cresst-publication-2969/?_sf_s=On+the+structure+of+educational+assessments). Published May 2003. Accessed October 10, 2019.
2. Wackett A, Daroowalla F, Lu W, Chandran, L. Reforming the 4th year curriculum as a springboard to graduate medical training: one school's experiences and lessons learned. *Teaching and Learning in Medicine*, 28:2, 192-201, DOI: <https://doi.org/10.1080/10401334.2016.1146610>

For more information about this abstract please contact: [anita.rawls@jefferson.edu]

## **Strategies for fostering curiosity and self-directed learning skills in medical learners**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Jeremy Richards, Beth Israel Deaconess Medical Center

Morgan Soffler, Beth Israel Deaconess Medical Center

Lauren Yang, Beth Israel Deaconess Medical Center

### **Abstract Body:**

#### **Rationale:**

Developing curiosity, inquisitiveness, and self-directed learning skills is critical for medical students to become physicians who engage in life long learning. The knowledge and practice patterns that medical students and residents learn during training will almost certainly change or become obsolete during their careers, and medical education covers only a fraction of the learning that a physician must engage in over the course of a career. The importance of developing curiosity and self-directed, life-long learning skills is reflected in the standards of the LCME and ACGME. Specifically, these standards reflect the perspective that developing and refining self-directed learning skills during medical school and residency training can serve to establish patterns of inquiry and investigation as trainees progress to independent practice.

#### **Learning Objectives:**

- 1) Define curiosity and self-directed learning as they pertain to medical learners.
- 2) Describe strategies for effectively teaching curiosity and self-directed learning to medical learners.
- 3) Identify challenges to fostering curiosity in medical learners.
- 4) Describe potential evaluation strategies to assess medical learners' curiosity and self-directed learning skills.
- 5) Apply best practices for fostering curiosity and self-directed learning in their own teaching.

#### **Session Methods and Format:**

- 1) Introduction (5 minutes) - setting the stage, reviewing goals and objectives.
- 2) Defining critical thinking, curiosity, and self-directed learning (15 minutes) - in an interactive, large group discussion, faculty will lead the participants through a moderated discussion in which the group will develop definitions of each term.
- 3) Identifying effective strategies for teaching curiosity (20 minutes) - participants will break out in small groups and work through discussion questions regarding how best to teach and foster curiosity to medical learners in different settings. Behaviors or strategies that instructors should avoid will also be discussed. Small group work will be followed by a large group report out, with faculty moderating discussion. A list of 'best practices' will be developed in real-time.

- 4) Teaching self-directed learning skills (10 minutes) - faculty will present conceptual and evidence-based strategies for teaching self-directed learning skills to medical learners.
- 5) Evaluation strategies (20 minutes) - participants will again break into small groups to consider the challenges of effectively evaluating curiosity and self-directed learning skills. Different groups will be given different discussion questions to guide their discussion, and will then report-out their conclusions in a large group moderated discussion. A list of potential evaluation strategies will be generated in real-time.
- 6) Summary and next steps (5 minutes) - faculty will summarize lessons learned and next steps for participants to teach, foster, and evaluate curiosity and self-directed learning in their own teaching.

**Experience:**

Jeremy Richards, MD, MA, has extensive experience in teaching critical thinking and self-directed skills to pre-clinical and clinical medical students, and has published and presented about curiosity and self-directed learning in medical education.

Morgan Soffler, MD, teaches critical thinking skills to medical students, residents, and fellows, and is engaged in research regarding evaluation and assessment of clinical reasoning skills.

Lauren Yang, MD, teaches medical students in an immersive 10 week clinical-pathophysiology course with an emphasis on developing self-directed and life-long learning skills.

**References:**

1. Gandomkar R, Sandars J. Clearing the confusion about self-directed learning and self-regulated learning. *Med Teach*. 2018 Aug;40(8):862-863.
2. Premkumar K, Pahwa P, Banerjee A, Baptiste K, Bhatt H, Lim HJ. Does medical training promote or deter self-directed learning? A longitudinal mixed-methods study. *Acad Med*. 2013 Nov;88(11):1754-64.
3. Dyche L, Epstein RM. Curiosity and medical education. *Med Educ*. 2011 Jul;45(7):663-8.
4. Gruppen, L. Self-Regulated Learning in Medical Education, in *Understanding Medical Education: Evidence, Theory and Practice*. 2010. Wiley.
5. Leggett H, Sandars J, Roberts T. Twelve tips on how to provide self-regulated learning (SRL) enhanced feedback on clinical performance. *Med Teach*. 2019 Feb;41(2):147-151.

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## **Strategies for Teaching Gender Identity and Pronoun Inquiry within a Clinical Skills Course**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Dana Chofay, The Warren Alpert Medical School of Brown University

Rory Merritt, The Warren Alpert Medical School of Brown Univ.

Srilakshmi Mitta, The Warren Alpert Medical School of Brown University

Steven Rougas, The Warren Alpert Medical School of Brown University

Julia Noguchi, The Warren Alpert Medical School of Brown University

### **Abstract Body:**

#### **Rationale:**

Patients who are transgender or gender non-conforming experience disproportionate health disparities such as a higher burden of depression, anxiety, and suicide yet there is no standard approach for educating physicians-in-training about the sociomedical needs of these communities. Lack of physician training in this area contributes to marginalization and unmet care needs, such that The AAMC has emphasized the need for medical schools to address the health needs of this population in a systematic manner.

By introducing an inclusive approach to transgender and gender non-conforming patients in the formative years of medical education, a new generation of physicians will be better equipped to serve this population. This small group discussion will provide medical educators with a forum to discuss approaches that incorporate gender identity and pronoun inquiry into their clinical skills curriculum. Faculty who have implemented these strategies will guide and facilitate the dialogue amongst participants.

#### **Learning Objectives:**

Participants will be able to:

- Define gender identity and sexual orientation
- Recognize the use of pronouns as a key component of inclusive patient care
- Review strategies to incorporate gender identity and the use of pronouns in patient encounters
- Generate modalities for teaching gender identity and pronoun inquiry

#### **Session Methods and Format:**

Part I: Introduction (5 minutes) -- Dr. Chofay

Participants will review the definitions of gender identity, sexual orientation, and use of pronouns. Implications for the use of pronouns within the medical interview and written case documentation will be discussed.

Part II: Background (10 minutes) -- Dr. Rougas

Dr. Rougas will review the current literature on the use of pronouns with respect to gender identity within medical school curricula, and then share our experiences incorporating these topics into our preclinical skills curriculum.

Part III: Small Group Discussion 1 & Debrief (30 minutes) -- Dr. Chofay and Dr. Merritt  
Participants will engage in a case vignette illustrative of why it is important to incorporate gender identity and pronoun inquiry into preclinical training (15 minutes).  
After the case vignette, facilitators will spend 15 minutes debriefing the case.

Part IV: Small Group Discussion 2 & Debrief (30 minutes) -- Dr. Mitta and Julia Noguchi  
Participants will engage in a discussion highlighting the benefits and challenges of three strategies to integrate gender identity and pronoun inquiry in the preclinical setting including medical interview checklists, inclusive visual representation, and focused workshops) (20 minutes). Participants will be asked to share their experiences or anticipated barriers to implementing this curricula at their respective institutions (10 minutes).

**Experience:**

Rory Merritt, MD MEHP is Assistant Course Leader for the second year clinical skills course at Alpert Medical School of Brown University

Dana Chofay, MD FACP is Course Leader for the first year clinical skills course at Alpert Medical School of Brown University.

Steven Rougas, MD MS FAEP is Director of Doctoring at Alpert Medical School of Brown University

Srilakshmi Mitta, MD is Assistant Course Leader for the first year clinical skills course at Alpert Medical School of Brown University

Julia Noguchi, MA MPH is Director of Service Learning and Community Mentoring at Alpert Medical School of Brown University

**References:**

I. Obedin-Maliver, J. Goldsmith, ES. Lesbian, Gay, Bisexual and Transgender Related Content in Undergraduate Medical Education. JAMA. 2011; 306(9); 971-977.

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## **Tell Me More®: A Patient-Centered Approach for Medical Students to Reignite Humanism**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Taranjeet Ahuja, Donald and Barbara Zucker School of Medicine At Hofstra/Northwell  
Alice Fornari, Donald and Barbara Zucker SOM at Hofstra/Northwell

### **Abstract Body:**

#### **Rationale:**

The literature supports a decline in patient-centeredness when students transition from the preclinical to the clerkship years. The hidden curriculum impacts their skills and there is a shift in mindset to focus on disease rather than the person. In a BEME Guide published in Medical Teacher (August 2019), published practice points support the need for Tell Me More® (TMM) to be integrated into the undergraduate medical education curriculum.

- “The expression of empathy and compassion arises from the unique interaction between a medical student and a care recipient.”
- “Educators should consider learners’ professional priorities, emphasize the interpersonal nature of empathy, and encourage students to be genuinely interested in patients.”

The TMM initiative of the Arnold P. Gold Foundation is a program designed to ensure compassionate, patient-centered care by reminding patients of their special strengths and qualities. Students learn about their patients as human beings and craft signs to hang by the patient’s bedside to remind everyone of the unique person occupying each hospital bed. This allows everyone entering the room- physicians, nurses, environmental and dining room services- to connect with the patient on a more personal level and assure the patient feels valued.

### **Learning Objectives:**

The participants will:

1. Discuss the impact of the hidden curriculum on medical students, specifically their ability to maintain a connection to the patient as a person beyond their illness.
2. Practice using the TMM® model to solicit personal information about a “patient” to remind them that the patient is an individual and not just a condition that requires treatment.
3. Debrief the TMM® experience and discuss the impact of sharing a narrative that describes the person as an individual.
4. Discuss how this information impacts the clinical care team.
5. Review the data collected from students’ experiences.
6. Discuss the impact/transferability to UGME.

### **Session Methods and Format:**

- 10 Min Review data on the hidden curriculum.
- 10 Min Introduce the TMM® framework and the bedside poster display.

- 20 Min Experience using the TMM® model in a role-play with a partner at the individual tables. Each person will have the opportunity to play a patient and a medical student.
- 10 Min Each pair will debrief their role-play experience at their small tables.
- 15 Min One person from each table will share their TMM® poster with all participants. The participants will write down and share what resonated with them from each poster. This will simulate the healthcare team experience of viewing the TMM® posters when they enter the patient's room.
- 5 Min Review student data and posters collected during the TMM® summer research project and electives.
- 5 Min Wrap-up with takeaways, specifically impact/transferability.

**Experience:**

Dr. Alice Fornari initiated the TMM® project within Northwell Health over the past 4 years through a collaboration with the Northwell Health Patient Experience Office.

Dr. Taranjeet Ahuja has partnered with Dr. Fornari in the implementation of the student summer research project and MS4 electives as a co-director.

We have mentored students on summer research, national presentations and a publication on their TMM® experiences.

**References:**

1. Charmaine Krishnasamy, Sik Yin Ong, May Eng Loo & Jill Thistlethwaite (2019) How does medical education affect empathy and compassion in medical students?
2. A meta-ethnography: BEME Guide No. 57, Medical Teacher, 41:11, 1220-1231, DOI: 10.1080/0142159X.2019.1630731
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3. Qing, Danielle; Narayan, Anjali; Reese, Kristin; Hartman, Sarah; Ahuja, Taranjeet; and Fornari, Alice (2018) "Tell Me More: Promoting compassionate patient care through conversations with medical students," Patient Experience Journal: Vol. 5 : Iss. 3 , Article 19. Available at: <https://pxjournal.org/journal/vol5/iss3/19>

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# **The “3Rs”: Recognize, Respond, Reflect - Using Narrative Medicine as a Novel Approach to Patient Discrimination in the Clinical Learning Environment**

*Submission Type: Workshop*

*Accepted as: Workshop*

## **Authors:**

Laura Dingfield, Perelman School of Medicine at the University of Pennsylvania  
Farah Hussain, Perelman School of Medicine at the University of Pennsylvania  
Margot Cohen, Perelman School of Medicine at the University of Pennsylvania  
Amber-Nicole Bird, Perelman School of Medicine at the University of Pennsylvania  
Rachel Miller, Perelman School of Medicine at the University of Pennsylvania

## **Abstract Body:**

### **Rationale:**

Physicians-in-training routinely report exposure to harassment in the clinical learning environment (CLE), which negatively impacts educational outcomes and wellbeing. While many reports of mistreatment involve supervisors or other health professionals, recent reports illustrate a concerning rise in harassment from patients and families on the grounds of gender, race, ethnicity, or sexual orientation. A 2017 national survey of health professionals found that 59% of respondents reported offensive remarks from patients regarding personal characteristics. Equally concerning are reports from trainees that faculty intervention and support following witnessed discrimination is inconsistent and limited. Further, trainees may experience unwitnessed harassment, and may not know how to respond or whether to share these incidents with faculty for debriefing. There is need for further faculty development in understanding mistreatment faced by trainees, and in developing skills to support faculty and trainees in navigating these complex scenarios.

This workshop is designed for faculty and trainees to address gaps in knowledge, skills, and attitudes regarding how to address instances of patient discrimination in the CLE. The workshop incorporates narrative medicine to facilitate recognition of the spectrum of discrimination, and to examine personal experiences. Participants will be taught the “3Rs” framework for Recognizing, Responding, and Reflecting on discriminatory scenarios, and will have opportunities to practice implementing the framework in role play using literature and art as clinical scenarios rather than standardized patient scripts. Participants will discuss how narratives can help identify mistreatment, and how to implement the “3Rs” framework in their own practice.

### **Learning Objectives:**

- 1) Recognize patient mistreatment and discrimination in the CLE.
- 2) Reflect on mistreatment and discrimination in the CLE using narrative medicine.
- 3) Apply a framework for approaching and debriefing discrimination using literature and art.

### **Session Methods and Format:**

- 1) Introduction & Background (5 minutes): Facilitators will present slides on prevalence of discrimination in the CLE.
- 2) Narrative Medicine Exercise (5 minutes): Attendees will write down a personal account of when they have experienced or witnessed mistreatment/discrimination in a clinical context.
- 3) Past experience addressing discriminatory patient encounters (10 minutes): Attendees will share experiences in small groups and discuss strategies that they utilized during these encounters.
- 4) Introduction to the 3Rs Framework for Response and Debriefing (10 minutes): Attendees will be introduced to a novel framework which can be used when encountering patient discrimination
- 5) Application of the 3Rs Framework to sample scenarios (15 minutes): Using pieces of literature and art as examples of discrimination, attendees will practice using the 3Rs framework to respond to mistreatment.
- 6) Large group question and answer session (10 minutes)

**Experience:**

Laura Dingfield MD, MEd is the Director of Education for Palliative Care and a Fellowship Program Director.

Margot Cohen MD is a hospitalist and Associate Director of the Medicine Clerkship.

Amber-Nicole Bird MD is the Director of Ambulatory Education and Director of Quality and Safety Education for the Internal Medicine Residency.

Rachel Miller MD, MEd is the Director of Education for the Division of Geriatrics.

Farah Hussain MD is a hospitalist and leads the Narrative Medicine curriculum for the Internal Medicine Residency.

**References:**

1. Tedeschi, B. "6 in 10 doctors report abusive remarks from patients, and many get little help coping with the wounds". STAT News. Retrieved from <https://www.statnews.com/2017/10/18/patient-prejudice-wounds-doctors/>
2. Cowan AN, "Inappropriate Behavior by Patients and Their Families- Call It Out". JAMA Int Med. 2018; 4348.
3. Shankar M, Albert T, Yee N, and Overland M. "Approaches for Residents to Address Problematic Patient Behavior: Before, During, and After the Clinical Encounter." Journal of Graduate Medical Education. 2019; Vol. 11, No. 4, pp. 371-374.
4. Goldenberg, M, Cyrus K, and Wilkins K. "ERASE: a New Framework for Faculty to Manage Patient Mistreatment of Trainees." Academic Psychiatry. 2019; Vol. 43, No. 4, pp. 396-399.

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# **The Scholarly Writing Workshop for Most of Us: Basic & Powerful Strategies for Advancing Your Writing**

*Submission Type: Workshop*

*Accepted as: Workshop*

## **Authors:**

Rebecca Blanchard, Baystate Health

## **Abstract Body:**

### **Rationale:**

Health professions educators are critical thinkers, consistent innovators, and insightful researchers. In order for any of this work to reach a broader audience, however, they must also be skilled authors.(1)

Currently, scholarly writing does not enjoy a consistent spot within the curriculum of undergraduate or graduate health professions students. While teaching and research skills are reinforced across the continuum, the art and skill of writing remains elusive. At best, the skill of rhetoric may have been developed in structured undergraduate college programs or through deliberate practice. At worst, the fear of it may have prevented great ideas from ever being put to paper. Given the vulnerability that health professions educators might feel with writing, considerable attention must be paid to the cultivation of and conversation around these skills. In this workshop, we present a schema for authors to advance their own scholarly writing and to give feedback to others. This interactive session empowers participants by demonstrating simple yet effective strategies that blend the work of prominent rhetoricians in the field (1,2,3) and the facilitator's experience as an author and mentor.

### **Learning Objectives:**

- Describe a schema for giving feedback on scholarly writing
- Apply strategies for editing and improving your own writing

### **Session Methods and Format:**

(5-10 min) Introductions

(7-10 min) Tip #1 - Write. Participants will be given 5 minutes to write freely based on the prompt: "What is an encounter or observation you had at work that taught you something?" The amount that gets written shows the power of uninterrupted time.

(10 min) Tip #2 - Big Editing: Find your purpose. Participants will be asked to write a purpose statement based on what they've written. In groups of 3-4, participants will each: share their purpose statement and then remain silent while their group members each list 1-2 things they would like to know or questions they have about the purpose. This may serve as a framework for the authors. This process highlights the value in sharing your ideas with others early on.

(2 min) Quick debrief: What was that like for you?

(10 min) Brief Lecture: Introduction to the editing process, including Big (structure, story, tone), Medium (paragraph order, sentence structure, verb tense), and Small (word choice, style, voice).

- (13 min) Tip #3 - Medium editing: Verbs and Voice versus Tense (Be active). Overview of voice and tense. Then, participants will be instructed to circle verbs and re-write one sentence; either change into active voice or rewrite a sentence starting with “There are..”
- (10 min) Tip #4 - Small editing: Word Choice (Say what you mean). Participants will be introduced to the power of word choice. Each participant will then find a sentence in which they can insert a new or different word in order to make the sentence more precise. Groups will then share their new sentences with each other.
- (10 min) Debrief & Evaluation

**Experience:**

An associate professor at UMMS-Baystate, Dr. Blanchard publishes in peer reviewed journals about health professions education, mentors investigators on scholarly writing, and withstands copious editing of her work.

**References:**

1. Varpio, L., Driessen, E., Maggio, L. et al. Advice for authors from the editors of Perspectives on Medical Education: Getting your research published. *Perspect Med Educ* (2018) 7: 343. DOI: 10.1007.s40037-018-0483-0
2. Watling, C. & Lingard, L. Giving feedback on others’ writing. *Perspect Med Educ* (2019) 8: 25. DOI: 10.1007.s40037-018-0492-z
3. Watling C. The three ‘S’s of editing: story, structure, and style. *Perspect Med Educ*. 2016;5:300–2.

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## **Towards an understanding of innovation in health professions education scholarship**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Christopher Mooney, University of Rochester School of Medicine and Dentistry

Rebecca Blanchard, University of Massachusetts Medical School – Baystate

Leigh Ann Holterman, Robert Lerner, M.D., College of Medicine at the University of Vermont

### **Abstract Body:**

#### **Rationale:**

Education in the health professions is continually evolving in response to changes in healthcare delivery, technology, learner needs, and insights from educational research. This continual flux fuels new curricula, pedagogical techniques, and assessments on local and national levels.

Sharing developments in education allows educators and institutions to learn from and build upon one another's work as they collectively work to address analogous educational gaps and challenges. However, not all newly developed curricula, pedagogical techniques, and assessments qualify as "innovative." Thus, this workshop will define, provide examples, and discuss opportunities for dissemination of innovations in health professions education.

This workshop is a MESRE sponsored workshop being offered across all GEA regions.

### **Learning Objectives:**

1. Define innovation as it related to health professions education (HPE) scholarship
2. Contrast an "innovation" with traditional research in HPE
3. Using a theoretical model, apply journal editor guidelines to critically analyze HPE innovations report
4. Recognize opportunities to disseminate HPE innovations
5. Reflect on current practices to identify personal innovations

### **Session Methods and Format:**

Introductions and description of workshop objectives (0-10 min):

Large group presentation and interactive discussion (11-30 min):

- Setting the groundwork: Share themes across descriptions of innovations in HPE. Compare and contrast characteristics of local/regional innovations with those of interest to a national/international audience.
- Consider the relationship between innovations and research and program evaluation; explore commonalities and unique features of each

Small group work (31-50 min):

- Review group selected journal guidelines to define the features expected for an innovations report
- Apply guidelines to published works
- Feedback to large group with discussion

Large group discussion (51-60 min):

- Brief overview of journals that currently feature Innovations reports
- Other potential sources for dissemination

Small group work (61-85 min):

- Personal reflection on current innovative practices in healthcare education with a potential for dissemination
- Pair-share to discuss ideas

Wrap up and questions (86-90 min)

### **Experience:**

Christopher J. Mooney, PhD, MPH is Director of Assessment and Education Research at the University of Rochester School of Medicine and Dentistry. He is the NEGEA's MESRE section chair and a member of the AAMC's Medical Education Research Certificate (MERC) group.

Rebecca D. Blanchard, PhD is Senior Director of Education at Baystate Health and Associate Professor and Assistant Dean for Education at University of Massachusetts Medical School – Baystate in Springfield, MA. She is the Chair for the NEGEA Scholars Grants Committee and a member of the NEGEA Steering Committee.

Leigh Ann Holterman, PhD is the Director for Curricular Evaluation and Assessment at the Robert Larner, MD College of Medicine at the University of Vermont. She is a member of the NEGEA Scholars Grants Committee and co-chair of the NEGEA Health Humanities as Teaching and Learning Strategy SIG.

### **References:**

1. Berwick DM. Disseminating innovations in health care. *Jama*. 2003;289(15):1969-75.
2. Blanchard RD, Nagler A, Artino Jr AR. Harvest the low-hanging fruit: strategies for submitting educational innovations for publication. *Journal of graduate medical education*. 2015 Sep;7(3):318-22.
3. Cianciolo A, Regehr G. Learning Theory and Educational Intervention. *Academic Medicine*. 2019 Jan 1.
4. Cook DA, Reed DA, Wayne DB, West CP. From the editors' desk: Renewing the call for innovations in medical education. *Journal of general internal medicine*. 2010;25(9):887-8.
5. Dearnley C, McClelland GT, Irving D. Innovation in teaching and learning in health higher education. The Higher Education Academy, London. 2013
6. Kanter SL. Toward better descriptions of innovations. *Academic Medicine*. 2008 Aug 1;83(8):703-4.
7. Hall AK, Hagel C, Chan TM, Thoma B, Murnaghan A, Bhanji F. The writer's guide to education scholarship in emergency medicine: Education innovations (part 3). *Canadian Journal of Emergency Medicine*. 2018 May;20(3):463-70.

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# **Towards Cognitive Integration: Using Integrated Illness Scripts and Concept Mapping to Improve Clinical Reasoning**

*Submission Type: Workshop*

*Accepted as: Workshop*

## **Authors:**

Todd Cassese, Albert Einstein College of Medicine

Howard Steinman, Albert Einstein College of Medicine

Amanda Beck, Albert Einstein College of Medicine

Robin Ovitsh, State University of New York Downstate Medical Center College of Medicine

Robert Bona, Frank H. Netter MD School of Medicine at Quinnipiac University

## **Abstract Body:**

### **Rationale:**

Cognitive integration is the process by which learners justify clinical reasoning and rationalize medical decision-making by creating causal connections between basic and clinical sciences (1). The cognitive science literature demonstrates that cognitive integration leads to improved retrieval of clinical information and diagnostic accuracy (2,3,4). The educational strategies in these studies incorporate instructional design techniques in which learners build these causal connections using robust mental and visual models that are scaffolds for future clinical learning (5). In this workshop, we will discuss the literature on basic science-clinical integration, engage participants in a learning activity designed through a cognitive integration lens, and then facilitate a discussion on assessing learners' cognitive integration.

### **Learning Objectives:**

By the end of this workshop participants will be able to:

1. Contrast curricular and cognitive integration, analyzing evidence supporting integrated teaching of basic and clinical sciences.
2. Collaborate with interdisciplinary colleagues to specify key clinical features for a disease, basic science mechanisms leading to those features, and create a concept map linking inciting factors to the development of key features.
3. Analyze this curricular strategy's utility and adoptability.
4. Develop strategies for assessing learner cognitive integration.

### **Session Methods and Format:**

Total time: 75 minutes

0-3 minutes: Participants are grouped for one of four diagnoses: Choledocholithiasis, Type 1 Diabetes Mellitus, Ischemic Stroke Left MCA Territory or Deep Venous Thrombosis).

3-13 minutes: Interactive lecture on background and rationale for workshop with participants reflecting on integration at home institutions.

13-20 minutes: Using worksheets, each group determines 4 key clinical features (historical features, PE findings, or labs/studies) for the diagnosis

20-30 minutes: Pairs of participants in each group choose one key clinical feature and research basic science causal explanations for how that key clinical feature develops from inciting factors

30-40 minutes: Pairs return to their disease group and create a concept map visualizing the connections between inciting factor/s, basic science causal mechanisms, and key clinical features.

40-50 minutes: Participants reflect on their experience as learners and compare their maps with answer-key maps.

50-60 minutes: Use of this activity with first-year student learners at AECOM is reviewed.

60-70 minutes: Interactive discussion about assessment of concept maps in this type of learning activity and its alignment with cognitive integration and authentic skills of practicing clinicians.

70-75 minutes: Wrap up and lessons to bring back to home institutions.

### **Experience:**

Todd Cassese- General internist and former ICM Director, Current Transition to Clerkship Director and Assistant Curricular Dean with faculty development expertise in instructional design, cognitive integration, and assessment.

Howard Steinman- Basic scientist and current Basic Science Course Director and Assistant Curricular Dean with faculty development expertise in self-directed learning, cognitive integration, and MCQ design.

Amanda Beck- Veterinary pathologist and current Co-Director of Pathology Course with faculty development expertise in curriculum integration and small group facilitation.

Robin Ovitsh- Pediatrician and current Associate Curricular Dean with faculty development expertise in clinical skills and curricular integration.

Robert Bona- Hematologist and current Director of an Integrated Basic Science course with faculty development expertise in problem based learning, curricular integration, and clerkship curriculum/organization.

### **References:**

1. Association of American Medical Colleges. Physicians for the Twenty-First Century: Report of the project panel on the General Professional Education of the Physicians and College Preparation for Medicine. *J Med Educ* 1984;59, Part 2:1-208.
2. Anderson MB, Swanson AG. Educating medical students ± the ACME-TRI report with supplements. *Acad Med* 1993;68 (Suppl.):S1-46.
3. General Medical Council. Tomorrow's doctors: Recommendations on undergraduate medical education. London: General Medical Council, 1993.
4. Harden RM. The integration ladder: a tool for curriculum planning and evaluation. *Medical education*. 2000; 34 551-7.
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7. Woods NN. Science is fundamental: the role of biomedical knowledge in clinical reasoning. *Med Educ*. 2007;41:1173-1177.
8. Baghdady MT, Pharoah MJ, Regehr G, Lam EW, Woods NN. The role of basic sciences in diagnostic oral radiology. *J Dent Educ*. 2009;73:1187-1193.
9. Lisk K, Agur A, Woods N. Exploring cognitive integration of basic science and its effect on diagnostic reasoning in novices. *Perspectives in Medical Education*. 2016;5:147-53.

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## **Why and How We Implemented a New Curriculum... And What We Learned**

*Submission Type: Small Group Discussion*

*Accepted as: Small Group Discussion*

### **Authors:**

Brian Mavis, Michigan State University College of Human Medicine

Jonathan Amiel, Columbia University Vagelos College of Physicians and Surgeons

Ellen Nestler, UConn School of Medicine

Bernard Chang, Harvard Medical School

Dianne Wagner, Michigan State University College of Human Medicine

### **Abstract Body:**

#### **Rationale:**

According to the 2017-18 AAMC Curriculum Inventory, 96 medical schools (65%) reported that they were in a planning or implementation phase around curriculum change (1). Amid calls for curricular reform (2), over a dozen U.S. medical schools have adopted a new curriculum since 2015. This facilitated panel discussion representing four medical schools with new curricula, focuses on the process of curriculum design and implementation. Discussion, structured using the prompts below, will include lessons learned and unanticipated challenges and adjustments.

#### **Learning Objectives:**

Participants will:

- a. identify factors that promote curriculum change and the principles guiding the development of a new curriculum.
- b. describe at least one source of inspiration and its impact on the curriculum adopted by each medical school.
- c. report on challenges faced in the adoption of a new curriculum and institutional responses to these challenges.
- d. discuss four lessons learned related to implementing a new curriculum.

#### **Session Methods and Format:**

Introduction (5 minutes): The facilitator will introduce the session and the panelists, and then provide a brief overview of the session objectives and structure.

Panel Presentations (20 minutes): Each panelist will have five minutes to describe their new curriculum in terms guiding principles and curricular structures.

Structured Q & A (30 minutes): The facilitator will use prompt questions below to engage panelists and audience in discussion.

- Prompt Question 1: How long has it been since your last new curriculum was implemented? What prompted the development of a new curriculum? What concerns or challenges were driving development and implementation of a new curriculum?
- Prompt Question 2: How long did it take? When did planning start and when did implementation begin? How did you pilot/test the new curriculum? How did you implement it?

- Prompt Question 3: What were the inspirations for your new curriculum? Programs at other schools? Innovations published in the medical education literature? White papers and reports from professional organizations?
- Prompt Question 4: What is your biggest challenge to date in your implementation? How did you meet this challenge? To what extent has your experience so far changed your downstream planning?

Audience Questions (20 minutes): The facilitator will open the discussion to audience questions to the panelists.

**Experience:**

Jonathan Amiel is the Columbia leader and national associate project leader for the AAMC Core EPA Pilot implemented in 2015.

Bernard Chang co-chaired the committee that initially recommended the curriculum reform at Harvard Medical School, and currently leads the governance committee that oversees the new preclerkship phase.

Ellen Nestler is a member the UConn School of Medicine’s Educational Leadership Team which oversaw the curriculum reform process and serves as the Associate Dean for clinical education.

Dianne Wagner has oversight of the new integrated competency-based curriculum initiated in 2016.

**References:**

1. Association of American Medical Colleges. Curriculum Inventory and Reports (CIR). Curriculum Change in U.S. Medical Schools. <https://www.aamc.org/data-reports/curriculum-reports/interactive-data/curriculum-change-us-medical-schools>
2. Cooke M, Irby DM, O’Brien B, Shulman LS. Educating Physicians: A Call for Reform of Medical School and Residency. Wiley Publishing 2010.

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## **Writing and submitting a successful NEGEA grant proposal**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Christopher Mooney, University of Rochester School of Medicine and Dentistry

### **Abstract Body:**

#### **Rationale:**

Clinicians and educators often face barriers when attempting to develop and execute sound educational research(1) . Many of these barriers have been explored in the educational literature including a lack of expertise, time, and money(2). Recognizing the importance of providing funding for researchers to develop and implement necessary research projects, the AAMC and the four regional groups of the Group on Educational Affairs (GEA) all provide funding for education research through an annual grant program. These funds are considered essential as they provide seed money to initiate research projects that seek to answer key educational questions and foster collaboration across individuals and institutions within a region. A key first step in defining high quality education research is improving the quality of proposals submitted to these funding pipelines and providing researchers with ample opportunities to seek guidance and mentorship(3) . Given the recent focus on increasing the quality of education research being conducted and submitted within the US(4) , this workshop is part of a larger national push to enhance the quality of education research projects being submitted to the NEGEA annual grant program using established resources in the existing literature(5).

#### **Learning Objectives:**

At the conclusion of this workshop, participants will be able to:

1. Describe the requirements of the NEGEA grant program
2. Identify the characteristics of a competitive grant proposal
3. Discuss the common pitfalls in grant writing
4. Apply the processes described to begin the development of a grant submission

#### **Session Methods and Format:**

Prior to the workshop, participants will identify a possible project that they would want to submit to the upcoming grant cycle. The workshop will then start with a brief introduction to the NEGEA grant program (5 min). This will include an overview of the intent of the program as well as a history of prior projects that have been funded. Following the introduction, we will introduce a panel of prior grant recipients and reviewers who will share their experience including pitfalls and recommendations (15 min). Next, participants will be broken into small groups and given an example of a grant proposal to review using the review criteria provided to reviewers (15 min). The groups will then report out to the large group (10 min). Next, session facilitators will walk through each component of the call for proposals and provide specific feedback on

each section based on reviews from prior years (10 min). Following this, participants will break into small groups to discuss their individual ideas (15 min). We will specifically focus on problem statement, methodology, and evaluation/outcomes. The session will close with a final Q&A and review of some of the projects discussed in the small groups (5 min). Participants will be provided with a list of resources for grant writing upon completion of the workshop.

**Experience:**

Christopher J. Mooney, PhD, MPH is Director of Assessment and Education Research at the University of Rochester School of Medicine and Dentistry. He is the NEGEA's MESRE section chair and a member of the AAMC's Medical Education Research Certificate (MERC) group.

**References:**

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## **Writing Effective Titles and Abstracts: Making Your Scholarship Stand Out**

*Submission Type: Workshop*

*Accepted as: Workshop*

### **Authors:**

Toni Gallo, Association of American Medical Colleges

Jennifer Campi, Association of American Medical Colleges

### **Abstract Body:**

#### **Rationale:**

Publishing your work in a peer-reviewed journal helps disseminate important findings and ideas to a wide audience. Publications are key criteria for promotion and tenure decisions. Yet most journals receive large numbers of submissions and have low acceptance rates. At the same time, there are increasing numbers of publications (journal articles, conference submissions, reports, etc.) competing for attention. In this workshop, the speakers will draw on their experience as editors for the journal *Academic Medicine* to offer strategies for how participants can make their work stand out to editors and readers.

#### **Learning Objectives:**

- Describe the peer-review process and common reasons for rejection
- Articulate the importance of a strong title and abstract for all types of scholarly publications
- Craft a strong title and abstract that accurately represent their work

#### **Session Methods and Format:**

Both speakers will give an overview of the peer-review and publication processes as well as describe common reasons for rejection (20 minutes). They then will offer strategies for writing effective titles and abstracts for all types of scholarly publications and will lead an interactive discussion with participants regarding published examples from *Academic Medicine* to illustrate the strategies presented (30 minutes). The session will conclude with a title and abstract writing exercise so participants can apply what they have learned (25 minutes).

#### **Experience:**

Toni Gallo and Jennifer Campi are senior staff editors with the journal *Academic Medicine* and have led writing workshops at regional and national meetings.

#### **References:**

N/A

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