Responsible AI in Medical Education Selection:

Implementing AAMC's Principles and Toolkit

April 1, 2025

Association of
American Medical Colleges

AAMC's Strategic Framing & Priorities

AI FOR MEDICAL EDUCATION

Incorporating AI into the work you do

LEARNING & NETWORKING

Learn from experts, share your experiences, and connect with peers. Come together with the academic medicine community to innovate and advance thinking and practice.

CRITICAL RESOURCES

Explore timely, high-quality resources to guide your thinking and practice around integrating AI across medical education.

COMMUNITY COLLABORATIONS

Learn more about how the academic medicine community is working together around the globe to support each other and develop best practices.

AI IN MEDICAL EDUCATION

Teaching AI best practices to learners, faculty, and staff

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What's **Happening** at the AAMC

Convening Learning & Networking

- Monthly Webinar series
- Virtual community
- Presentations, conversations with affinity groups and at conferences

Disseminating Critical Resources

- Principles for the Responsible Use of AI in and for Medical Education (released Jan 2025)
- Principles to Guide the Use of AI in Medical School Admissions and Residency Selection (released July 2024 / New resources April)
- Active Calls for Submissions:
  - Advancing AI Across Academic Medicine Resource Collection (will reopen in April)
  - *MedEdPORTAL* AI Education Collection

Collaborating with the Community

- Surveying the community on AI
- International Advisory Committee for Artificial Intelligence in partnership with AMEE, IAMSE, APMEN, and AAHCI (vision & integration frameworks released Jan 2025)
- AMA, NAM, and Macy Foundation collaborations

Our Speakers

Laurah Turner, PhD
Associate Dean for Artificial Intelligence and Educational Informatics
Assistant Professor of Medical Education
Assistant Professor of Biostatistics, Health Informatics and Data Sciences
University of Cincinnati College of Medicine

Ioannis Koutroulis, MD, PhD, MBA
Associate Dean of MD Admissions
Co-Director, MD Program Clinical and Translational Research Scholarly Concentration
Associate Professor of Pediatrics, Emergency Medicine, Genomics and Precision Medicine
George Washington University School of Medicine and Health Sciences

Derek Mracek, PhD
Manager, Analytics and Evaluation
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Technical Advisory Committee:

- Graham Keir, MD, Neuroradiology Fellow at Weill Cornell Medical Center, New York Presbyterian
- Ioannis Koutroulis, MD, PhD, MBA, Associate Dean of MD admissions at The George Washington University School of Medicine and Health Sciences
- Richard Landers, PhD, John P Campbell Distinguished Professor of Industrial-Organizational Psychology at the University of Minnesota
- Arun Mahtani, MD, MS, Internal Medicine Resident at Richmond University Medical Center
- Fred Oswald, PhD, Professor, Herbert S Autrey Chair in Social Sciences, Director of Graduate Studies at Rice University
- Kelly Trindel, PhD, Chief Responsible AI Officer at Workday
- Laurah Turner, PhD, Associate Dean for Artificial Intelligence and Educational Informatics at the University of Cincinnati

AAMC Staff: Dana Dunleavy, PhD, Rebecca Frasor, PhD, Derek Mracek, PhD, Jayme Bograd

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Purpose

- Build upon the AAMC's Principles for Responsible Use of AI in Medical and Residency Selection
- Learn How to Apply the AAMC's Principles for Responsible AI Use
- Discover Practical Resources to Support AI Implementation

Structure:

Essential AI Terms Guide

AI Readiness Guide

Vendor Evaluation Guide

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AI in Admissions & Selection

Machine Learning/Predictive Modeling

Identifying interview candidates, predicting student success, guiding rank order decisions

Natural Language Processing (NLP)

Analyzing unstructured text data (personal statements, letters, CVs)

Large Language Models (LLMs)

Generating/evaluating application materials, streamlining review processes

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Key Implementation Challenges

- 2023 Supreme Court affirmative Action Decision

- Data Quality & Representativeness
- Model Accuracy & Gaming

- Human-AI Integration
- Technical Infrastructure & Privacy

- Consistency & Fairness

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Principles for Responsible AI in Medical School & Residency Selection

1 Balance Prediction & Understanding

Ensure that AI tools deliver insights that not improve prediction and efficiency while being comprehensible and usable by the institution, aligning with its objectives and needs

2 Protect Against Algorithmic Bias

Rigorously assess and manage biases arising from historical data to ensure fair AI processes and outcomes

3 Provide Notice & Explanation

Maintain transparency by informing applicants how AI is used and how it affects the assessment of their application

4 Protect Data Privacy

Safeguard information with the utmost care, maintaining confidentiality at every step

5 Incorporate Human Judgement

It is crucial to strike the appropriate balance between technology and the irreplaceable value of human judgment and ethical standards

6 Monitor and Evaluate

Assess the outputs and outcomes of the AI system to ensure they remain fair, accurate, and aligned with institutional goals

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From Principles to Practice

Core Principles:
Balance Prediction
Protect Against Bias
Provide Notice
Protect Privacy
Incorporate Judgement
Monitor & Evaluate

Essential AI Terms Guide

Reference Guide for technical AI concepts & selection specific terminology

Institutional Readiness Guide

Self-assess current state, align team understanding, prepare for vendor engagement

Vendor Selection Guide

Structured framework for assessing vendors, standardized questions and rating scales

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Tool 1:

Essential AI Terms Guide

Purpose:
- Bridge technical and practical understanding
- Support effective communication internally and with vendors
- Guide implementation decisions

Structure:

Glossary of over 40 selection specific AI terms

Clear, non-technical definitions of technical concepts

Focus on well-stablished approaches for mitigating bias

Real-world context

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Tool 1:

Essential AI Terms Guide

Example Terms & Definitions

Model cards: Standardized documents providing key information about a machine learning model, including its intended use, performance characteristics, and limitations.

Implementation guide: A comprehensive document outlining the steps and best practices for deploying and using the AI system within an institution.

Partial dependence: A method showing how changing one input variable affects the AI's decision while keeping all others constant. It is similar to seeing how changing just your test score might affect your chances of admission, assuming everything else in your application stays the same.

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Tool 1: Discussion

Essential AI Terms Guide

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Tool 2:

Institutional Readiness Guide

Purpose:
- Self-assess current state and identify gaps for AI in selection
- Align team understanding and priorities
- Prepare internally before engaging in vendors

Structure:

Five readiness dimensions

Compliments the Vendor Evaluation Guide

Focus on collaboration and actional insights

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Tool 2:

Institutional Readiness Guide

Dimensions:
1. Understanding Your Current Selection Process
2. Understanding Your Data and Technology
3. Assembling the Right Team
4. Leadership Support and Resources
5. Ethical Framework and Implementation Plan

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Tool 2:

Example Readiness Dimension

Understanding Your Current Selection Process

- How does your institution currently predict and evaluate student success? What do you see as the main strengths and limitations of your approach?
- In what ways have you identified and addressed potential biases in your selection process? What challenges remain?
- What specific aspects of your selection process do you hope to enhance with AI, and what reservations do you have? At what stage(s) might AI be most beneficial?

After reflecting on these questions, check if you can:

- ☐ **Define and measure student/resident success**
- ☐ **Identify potential sources of bias in the current process**
- ☐ **Determine areas where AI could enhance the process**

Space to provide reflection notes:

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Tool 2: Discussion

Institutional Readiness Guide

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Tool 3:

Vendor Evaluation Guide

Purpose:
- Provide structured framework for systematically assessing AI vendors
- Enable objective comparison across multiple vendors
- Support evidence-based decisions that match institutional needs
- Foster collaborative approach among stakeholders

Structure:

Six AAMC Principles as organizing framework

Cross-vendor comparison table

Standardized questions and detailed rating scales for each Principle

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Tool 3:

Vendor Evaluation Guide

1. Balance Prediction and Understanding

An effective AI system should target characteristics linked to student success, as defined by the institution. It must make accurate predictions based on these characteristics while providing clear explanations of its decision-making process to all users.

Questions

- How do you ensure the characteristics measured align with our institution's definition of an effective student or resident?
- How do you balance the complexity of your tool with the need for interpretable results?
- (Follow-up) How does your AI handle different data sources (e.g., academic, clinical, documents) in its decision making?
- (Follow-up) Can you give an example of making your tool's output understandable to non-technical users?
- (Follow-up) How do you incorporate our SMEs into the model building and interpretation process?

Rating Scale (1-Limited to 3-Comprehensive)

Limited	Moderate	Comprehensive
▫ Uses unclear methods to identify success characteristics	▫ Relies on general industry standards	▫ Collaborates with faculty on program-specific characteristics
▫ Lacks research or analysis specific to institution	▫ Conducts basic analysis but lacks depth	▫ Conducts comprehensive research and analysis
▫ Provides no individual explanations	▫ Only one method used to explain decisions	▫ Multiple methods used to explain decisions
▫ Provides no evidence of reliability/validity	▫ Briefly speaks to reliability/validity	▫ Demonstrates thorough understanding of reliability/validity

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Tool 3:

Vendor Evaluation Guide

Summarize Ratings Table

Use this space to compile ratings across all interviewers and questions and calculate a total for each vendor.

Remember: The total rating and individual rating check boxes are tools for comparison and discussion, not definitive measures of an AI tool's suitability. Your institution should decide how to weigh different *Principles* based on your specific needs and goals.

Principle	Vendor 1	Vendor 2	Vendor 3
Balance Prediction and Understanding	3	2	1
Protect Against Algorithmic Bias	2	3	1
Provide Notice and Explanation	2	2	2
Protect Data Privacy	3	1	2
Incorporate Human Judgment	1	3	2
Monitor and Evaluate	2	2	3
Total Rating	**13**	**13**	**11**

Rating Scale: 1 = Limited; 2 = Moderate; 3 = Comprehensive

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Tool 3: Discussion

Vendor Guide

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Implementing AAMC's Principles and Toolkit

- Resources available on AAMC website
- Join the AAMC's Artificial Intelligence in Health Professions Education Virtual Community:
- COMING SOON – AI Use Cases --- LLM Guide

Structure:

Essential AI Terms Guide

AI Readiness Guide

COMING SOON

LLM Guide

Vendor Evaluation Guide

COMING SOON

AI Use Cases

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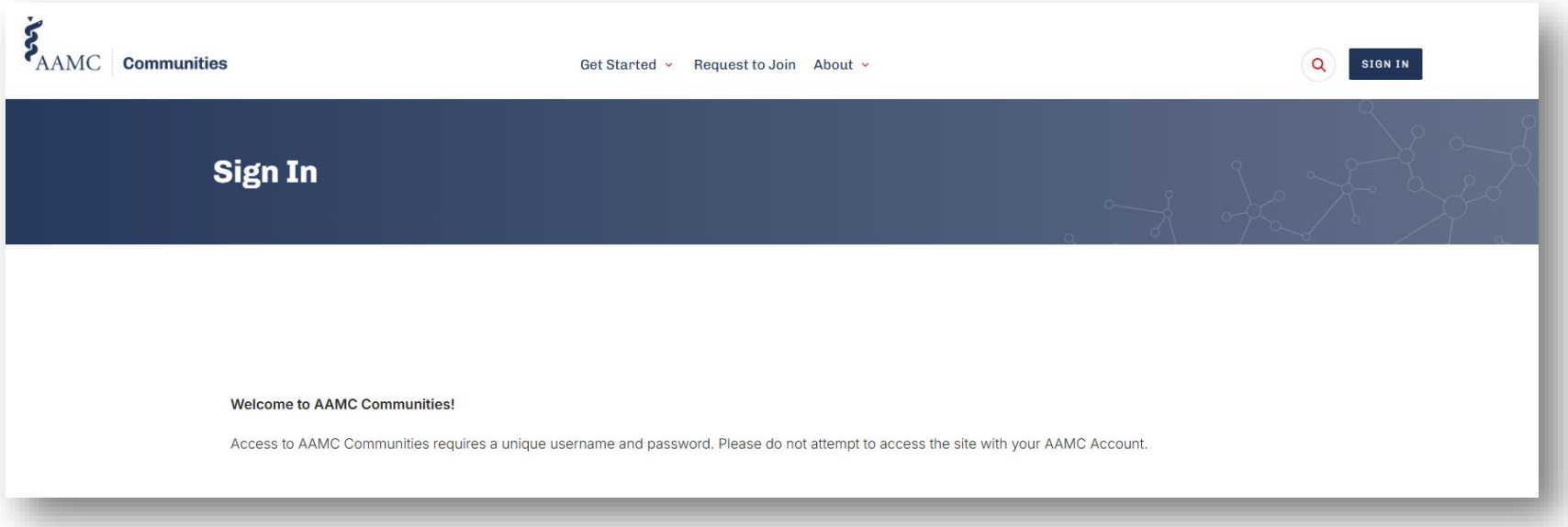
Q&A

Join the AAMC's Artificial Intelligence in Health Professions Education Virtual Community:



Upcoming AAMC AI Webinars

The CARE-AI Study: Creating Accountable and Responsive Ethics for Artificial Intelligence for Healthcare - April 16, 2025, 12 PM - 1 PM ET

AAHCI Ignite! Talks - May 8, 2025, 10 AM- 12 PM ET

Past AAMC AI Webinars

Meeting the Moment: Supporting the Use of AI in Medical Education - Feb. 27, 2025

Recorded episodes are available from our 2024 season of the "AI in Academic Medicine" webinar series.

Register for the monthly series! And find resources from past webinars.

Scholarly Publishing Webinar Series

Improve your writing and learn how to successfully navigate the peer-review and publication processes

- Register for upcoming sessions
- View the recording, slides, and key takeaways from past sessions

Hosted By ACADEMIC MEDICINE Journal of the Association of American Medical Colleges MedEdPORTAL

aamc.org/publishingwebinar

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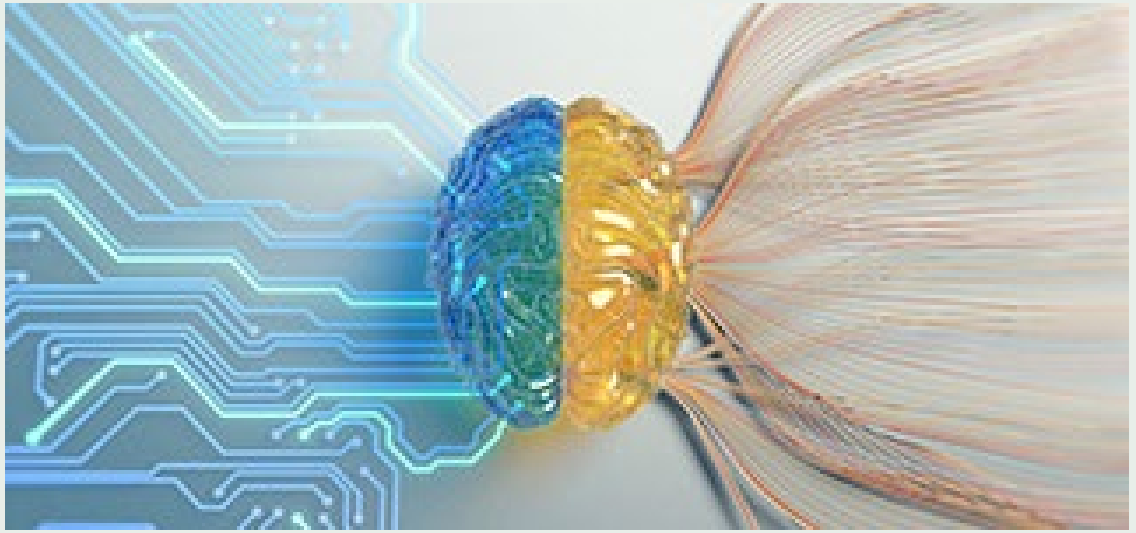


Call for Submissions: Artificial Intelligence Education

MedEdPORTAL invites submissions of responsible and ethical implementation AI tools in teaching, learning, and assessment towards the aim of improved patient care

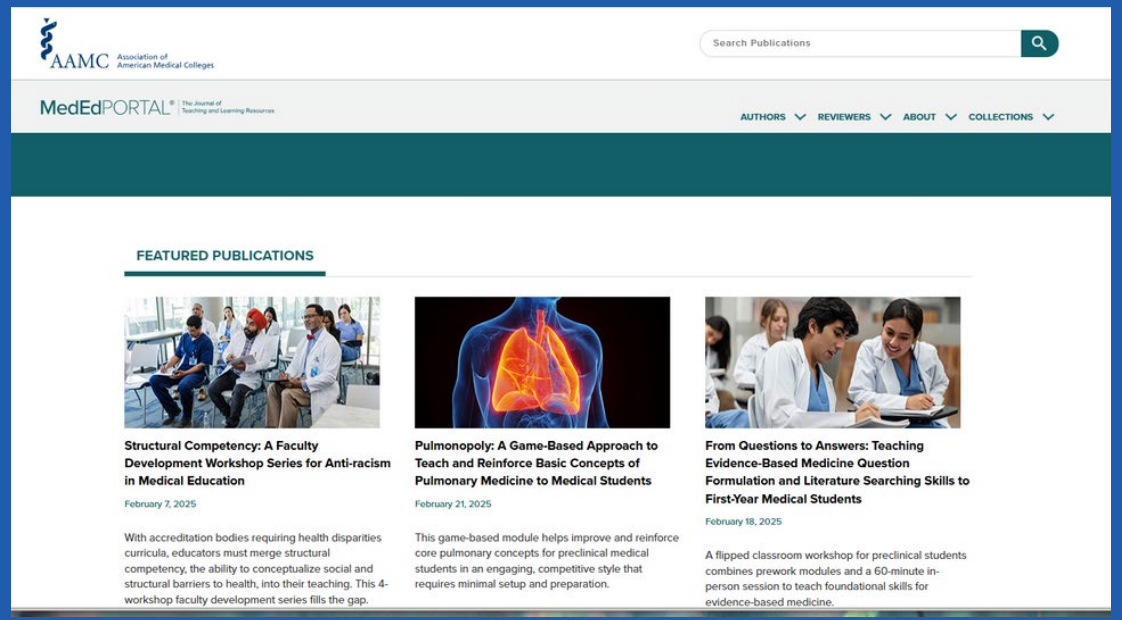
Collection Editors

Cornelius James, MD
University of Michigan Medical School

Elissa Hall, EdD
Mayo Clinic College of Medicine and Science

MedEdPORTAL®

The AAMC Journal of Teaching and Learning Resources



MEDLINE-indexed journal

Open access: No fees to submit, publish, or download. All materials are immediately available upon publication

Author support: Creates access avenues for all scholars, including trainees and faculty historically underrepresented in medicine

Submit, read, and learn more at mededportal.org

MedBiquitous®

THE STANDARDS PROGRAM OF THE AAMC

Register now for this one-day symposium on data standards, edtech, and industry collaboration in precision and competency-based education!

Expert Panels: Participate in discussions with speakers from key educational organizations (AAMC, AMA, ACGME, AACN, AACOM) on using data and standards for innovation in health professions.

Interactive Workshops: Explore modern educational methods, precision education through standardized data sharing, technology in competency-based education, and industry partnerships.

Networking Opportunities: Connect with peers and leaders in AI, educational technology, and data standards to share insights and build collaborations.

Setting Strategic Priorities: Help establish community priorities for advancing data and technology in health professions education, driving proactive actions and innovation.

May 28, 2025 | 8 AM-4 PM CT
Minneapolis, Minnesota

medbiq.org

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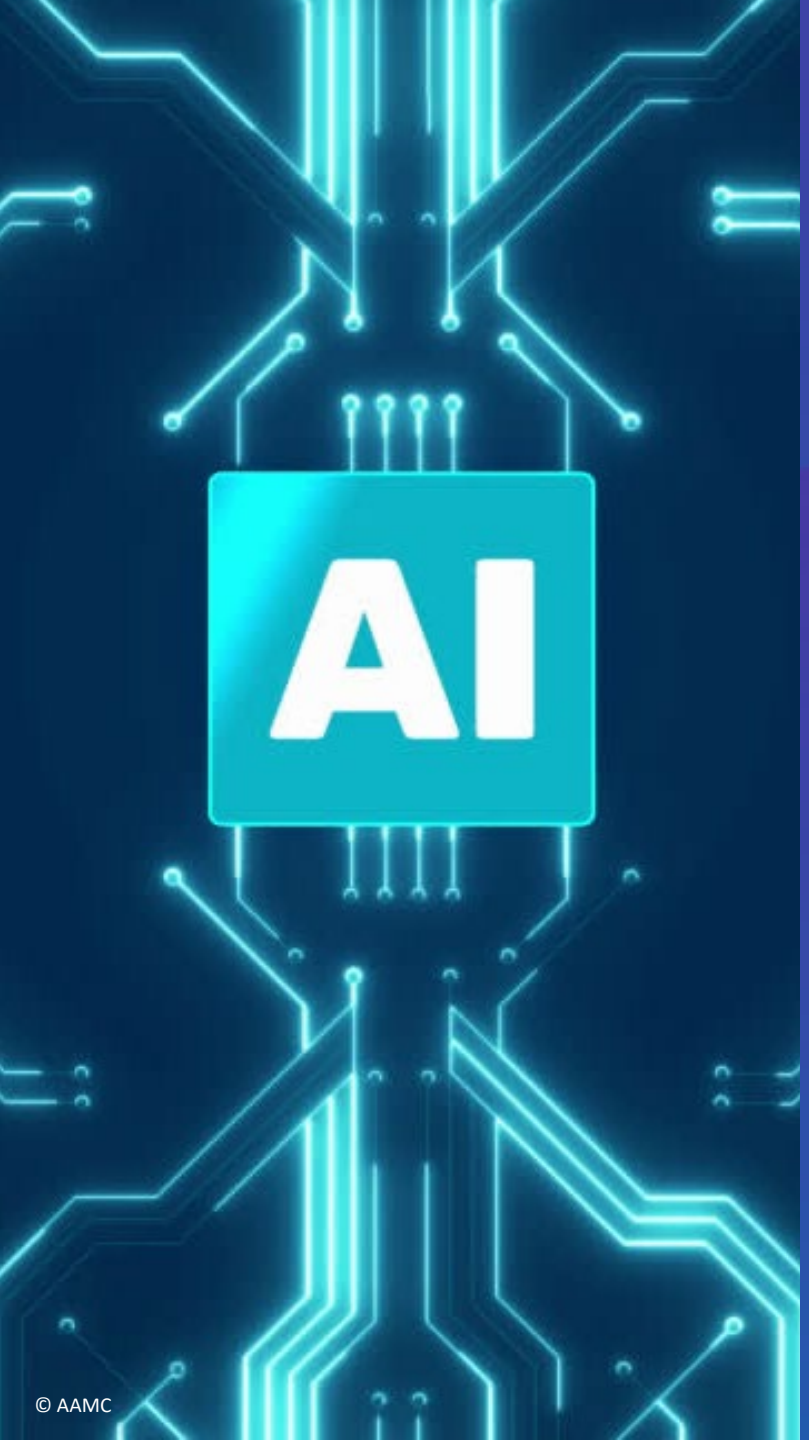

Artifical Intelligence

Check out what the AAMC has to offer!

- Monthly Webinar Series
- Key Resources Collection
- Dedicated Virtual Community
- Principles for the Responsible Use of AI in and for Medical Education
- Principles to Guide the Use of AI in Medical School Admissions and Residency Selection
- Open Calls for Submissions
  - MedEdPORTAL call for submissions on AI education

aamc.org/AI

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GET INVOLVED: CARE-AI STUDY & UPCOMING EVENTS

- CARE-AI Study: Survey Link - https://redcap.link/CAREAI1
  - Scan the QR Code to participate in the Delphi-based CARE-AI survey.

- SAVE THE DATE: Think Tank Workshop
  - Virtual Event: **June 6th, 12–2 pm ET.**
  - Don't miss this opportunity to engage in key discussions!

THANK YOU

EqHSLab.com | EqHSLab@bruyere.org | Equity in Health Systems Lab | @EqHSLab | @EqHS.Lab

Curriculum SCOPE Survey & Data Reports

MD and DO medical schools in the United States and Canada can make evidence-based decisions, inform strategic plans, and conduct program evaluation with:

- Customized visual benchmarking
- National aggregate statistics
- Analyzable deidentified data

Learn more at aamc.org/SCOPE

Connect Beyond the Pages of Academic Medicine

Academic Medicine Journal

BLOG academicmedicineblog.org

Academic Medicine Podcast

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Make the AAMC your

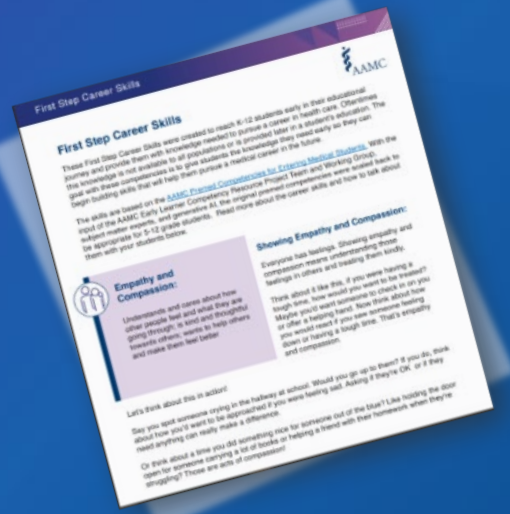
Get involved, advance your career, help move the field of medical education forward

Student & Pathway Initiatives

Pathway Program Consortium Virtual Community

AAMC Educational Pathway Network (AEPN)

The AEPN Provides medical schools and pathway progarms with data on students' educational and professional trajectories. This project will help us understand the pathway program landscape, provide programs with data about past participants, and allow the AAMC to develop earlier relationships with students**. Email us at aepn@aamc.org for more info or to join the pilot!**



First Step Career Skills

Join the AAMC Communities

Engage with colleagues through discussion threads, access useful resources, and network with peers on topics of interest in this free virtual communities network

- AI in Health Professions Eduation Virtual Community
- Curriculum Virtual Community

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Curriculum Keywords

This free resource of approximately 100 terms may be used in mapping and reporting curriculum content. Enhancements include:

- Artificial intelligence
- Environmental health
- Structural competency
- And more!

Learn more at aamc.org/curriculum-keywords

Terms are aligned Liaison Committee of Medical Education (LCME), Commission on Osteopathic College Accreditation (COCA), United States Medical Licensing Examination (USMLE), National Board of Osteopathic Medical Examiners (NBOME), and others.

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Professional Development Initiative (PDI)

ADVANCE YOUR CAREER

Develop professional and leadership skills

PDI OVERVIEW

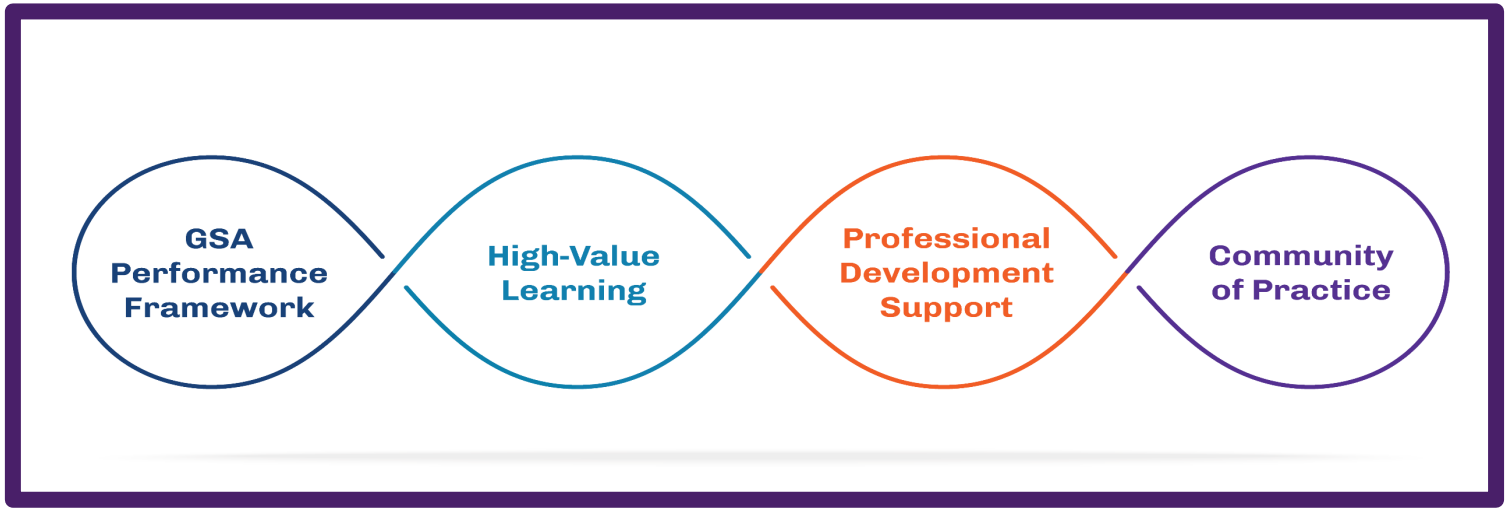
Assess and Identify Your Strengths with the PDI Toolkit

CHOOSE YOUR TOPIC

Join a Discussion to Choose the Topics You Want to See Moving Forward

CAREER SPOTLIGHT

Hear the Journey of a Medical Education Professional



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Educational Methods Terms

A working group has begun to update standardized terms to map curriculum instruction and assessment. This joint effort of the Curriculum Committee and MedBiquitous streamlines curriculum management and facilitates reliable reporting.

Learn more at aamc.org/curriculum-methods