

Table 1

Admissions and Recruitment

There was a wide ranging discussion, as people shared information on practices and approaches at their own institutions. Four primary topics were covered before we ran out of time, and these notes are organized around the main themes.

1) Coordination between the MD-PhD and MD Admissions Process

Summary: Most places have a system that involves coordinating with the MD Admissions Committee/Process, and there are many variations on how this is handled. Some institutions are reasonably satisfied with their working relationships with the MD Admissions Director/Committee and others face difficult obstacles. In a few cases, MD-PhD Admissions is completely independent of the MD process.

Additional details from discussion:

- About 7 or 8 years ago someone did an informal survey of MD-PhD programs and found that most MD-PhD Admissions Committees were serving in some way as a sub-committee of the MD Admissions Committee.
- Several programs described a process in which the MD-PhD Committee must present the candidates they want to accept to the MD Committee before they can move forward. In many cases, this is a very smooth process, with the MD Committee only very rarely raising concerns about a candidate the MD-PhD Program would like to accept. To put it another way, some MD Committees retain veto power of MD-PhD applicants, but seldom use it.
- In some programs the MD-PhD Committee members serve as the Med School interviewers. In some, the members of the MD-PhD Committee are also serving on the MD Committee and doing some interviewing of MD candidates. And in others, the MD-PhD Director/Committee is able to have meaningful input into which members of the MD Committee will interview the MD-PhD candidates.
- Some institutions have a two-day process: one day for the MD interview component and one day organized by the MD-PhD Program. There is variation on the way this is done. In at least one institution, the MD-PhD day is first, and the MD-PhD Program is then able to let the MD Committee know which candidates they are most excited about before the MD day. In others, the MD day is first and the MD-PhD day is second. In all cases these interview days are intended both to evaluate candidates and to help recruit them.
- It is clear that some programs are very unhappy with the flow of information and applications from their MD Admissions Office. Those programs that have direct access to applicant data would recommend this to those that are reliant on the MD Admissions Office to forward the applicant files. It saves time, is more efficient and allows MD-PhD Programs to be certain they are receiving all of the information.

2) AMCAS and supplemental application uses

Summary: MD-PhD programs are pleased with the recent changes to the AMCAS application to include 1) the ability to designate MD-PhD and 2) the MD-PhD essays. However, many programs are dissatisfied with the way research experiences are described in the AMCAS application. A further improvement would be to re-design the Research Experience description format to provide clearer information about the duration and depth of the experience (e.g. dates; info about part-time vs. full-time and numbers of hours; the number of full-time months or equivalent; whether a letter of recommendation is coming from that mentor). This is something that we, as a Section, should consider requesting. There was also discussion of the process for receiving letters of recommendation, and enthusiasm for the possibility that letters will be collected via AMCAS in the near future (2009?).

Additional details from discussion:

- Many programs no longer require an essay on the supplemental and use only the AMCAS essays.
- Some MD-PhD programs continue to request a summary of research experiences in a format that is more complete and easier for the committee to review than the experiences section of the AMCAS.
- Some institutions require the supplemental application be completed by all MD applicants, even if the MD-PhD Program is not interested in this information. There is some concern that there is a tension between a) streamlining the process for applicants by eliminating or reducing the need for a supplemental application and b) the financial interest institutions have in retaining a supplemental application and the attendant application fee.
- About half of the programs represented in the room will accept letters of recommendation electronically through Virtual Evals. Others were less familiar with this option.

3) Recruiting to increase the applicant pool

Summary: There are many different ways that programs recruit applicants to apply. Some of the methods include a) participating in large recruiting fairs, b) giving recruitment talks at undergrad institutions, c) holding open houses at our own institutions, d) participating in open houses at our own institutions that are organized by the MD or PhD programs. Some of these efforts have a higher yield than others. There was agreement that efforts by all of us to increase awareness about MD-PhD programs among pre-health advisors, mentors and potential applicants are critical.

Additional details from discussion:

- Some MD-PhD Directors and Administrators attend ABRCMS, SACNAS, Sigma Chi, and Compact for Faculty Diversity events. Bringing students can be a great strategy, because applicants are most able to envision themselves in a program after talking with their peers. Other institutions are less likely to send their Director or Administrator, but send MD-PhD recruitment materials with other attendees from their institutions.
- Many programs also regularly give talks at undergrad institutions. In some cases, these are events that are piggy-backed on a science talk that a faculty member has been invited to give. (Saving the program the cost of the trip).
- For MSTP grants it is critical to show national recruitment efforts, not just regional ones.
- Pre-health advisors have a conference every year at which we, as a Section, are now regularly represented.
- It is important to do as much education of pre-health advisors and mentors on our own campuses as possible.
- Open houses can be a good tool, but they require a lot of work, and don't always yield applicants that are a good fit for our own programs.
- Current students are sometimes our best recruiters.

4) Interview visit

Summary: There are many variations in the way programs handle the interview visit, but there is consensus on some common principles. Among those discussed at the round table all agreed on a) the importance of requiring applicants to demonstrate their scientific acuity and b) the value of including current students in the interview visit experience.

Additional details from discussion:

- Several people stated that involving current students in the interview visit is absolutely essential to success. The degree and type of involvement varies considerably by program.
- About half of the programs represented have students involved in the admissions process in a formal way, either as interviewers and/or admissions committee members involved in another capacity.
- There are variations on which students are allowed/selected to interview at different programs. Some make this open to any student, others target students in particular years, and others have elections with students choosing who should join the admissions committee.
- Many programs that do not have students participate formally in the process do collect feedback about the applicants informally from the students after social events. In some institutions, the students essentially have veto power and are encouraged to let the administration know if they have serious concerns about an individual.

- In some places, one of the reasons for not having the students involved as formal evaluators is to create a climate in which the applicants are very comfortable being candid with the students.
- Selection of faculty interviewers varies by program. In some of the medium and small size programs, the Director meets with every candidate. Interviewers are hand chosen by the Director in many places. Many institutions also offer the candidates the opportunity to suggest interviewers. All agreed that carefully selecting at least some of the interviewers is critical to evaluating the scientific potential of the applicant.
- A few programs have candidates formally present a 20 minute scientific talk to a small panel of faculty members. There was discussion about the pros and cons of this approach. Benefits include the opportunity for students to demonstrate their scientific ability and communication skills. This format can be somewhat intimidating for the applicant, but one advantage for them is that they do not need to describe their research over and over again as they meet with different interviewers.

Table 2

Tracking/Monitoring of Students

- Have meetings with advisor
- Advisors submit bi-annual and annual progress reports
- At the University of Pittsburgh students are assigned a “*Career Advisor*”
There are 24 advisors who have five students each assigned to them the summer before the students begin. This same advisor follows them throughout their stay in the program. He/she sits on the entire thesis committees. They are all senior tenured professors and a member of the MD-PhD Steering Committee. This advisor is responsible for writing the letter to the Dean that goes out when they are applying for residency. An e-mail is sent in April and October for the students to meet with their career advisor. Their stipend is in jeopardy if they fail to meet with their advisor.
- Secure grade reports annually from the Registrar’s Office.
- Secure board scores.
- Monitor clerkships in the 4th year.
- At the University of Chicago there is an annual Benchmark Progress Report sent to the students. Some of the items they must list and return are: Publications, date of last thesis committee meeting, date of USMLE.

Tracking Graduates

- Google them
- Go to AMA, Pub Med and CRISP Websites
- Send an annual e-mail for an update.
- Send an annual survey that goes to their online record and they update it.
- Invite graduates to the annual retreat – they pay their own way.

- Do a newsletter that updates promotions, new positions, new babies, etc.
- Personal contacts with those in their class.
- Ask their PI if they have been in communication with the graduate.
- Small “reunion” sessions inviting three or four at a time.
- Small “reunion” session (those who are in town).
- Bring alumni in during orientation and have them participate in a panel discussion.

Table 3

Student Activities – General Program and Transitional

Note: Our table focused on student activities and did not discuss curriculum.

UCSF: Activities that provide opportunities for students to transition to medical school include -

- Monthly Grand Rounds. MD students present diseases, PhD students present papers relating to the diseases. Students make the differential diagnosis and plan of treatment.
- Monthly socials are held from 6:30-7:30 p.m. These are not required for third and fourth year students, although all combined degree students are encouraged to attend. Socials are hosted by students, with a different class hosting each month. Socials can be cookouts, dinners, etc. Approximately 1/3 of students attend.
- Mentoring network dinners. Junior and senior faculty on the Advisory Committee serve as mentors. Students are assigned to a mentoring group, consisting of approximately 12 students in each group. Groups discuss science, music, or any subject. The host can select the dinner location. Faculty are prepped in advance regarding appropriate mentoring subjects at these dinners.

University of Chicago:

- Mentor dinners. Students are introduced to a variety of faculty. Attendance is not always consistent.

Duke:

- Off-campus dinners are scheduled. Guests are invited. One of the purposes is to raise the level of excitement about research with other students. Alcohol is permitted, but this can create problems. **Peter Agre** also spoke about the Johns Hopkins Evening Discussions held once in the Fall and once in the Spring at the Hopkins Faculty Club. One faculty member is invited to share with the students his/her career path and how it is possible to be successful in both your professional and personal life.

University of Massachusetts:

- Students make presentations at monthly dinners. Consider inviting other students to dinners.
- Monthly seminars are presented and required of all students.

Wake Forest:

- Discussion centered around the difficulty in holding events for small programs. Suggestion was made to try joint activities with other schools nearby (example: UNC)
- Retreats – consider joining with nearby schools.

Institut Curie, Paris, France:

- Retreats are held yearly. Students must present a poster and talk (5-10 minutes). Multiple universities participate.

Table 4

Mentoring of Students

Skip Brass asked everyone at the table to speak in a round table introductory fashion about the mentoring styles and procedures in their program.

The **UT Houston Program** has an MD-PhD Program Committee of approximately 5-6 members who are matched to incoming individual students and assigned as mentors to these students when they enter the Program. This mentor directs the student on setting up his/her initial lab rotations and later, the choice of an advisor. The hope is that this relationship will develop and continue through graduate school. This mentor should become a member of their PhD thesis committee. It was noted that sometimes this relationship works and sometimes it doesn't. Others around the table agreed that these assigned mentor situations are a good idea, but are completely unpredictable in whether they actually work. Its success really depends on the personalities of both the student and mentor. It was noted that it is important to select these mentors carefully, making sure they understand what it means to be a physician-scientist. Some mentors have a different vision and may ill-advise (dis-mentor) students. MD-PhD trained scientists are often the best advisors because they understand how such programs work and the goal of this training.

Some programs use current students and bring back recent and distant graduates to meet with the students and advise them at their different levels of training, including residency advisement selection. Students are often the ones who know best. The use of students as peer advisors and recent graduates is seen among most as a good source for advisement.

At least one program receives annual reports on students from the mentor once a year, and requires the mentor to meet with their advisees for at least one lengthy meeting each year.

The **Stanford Program** stated that they get their graduate program directors involved. Several of them are really motivated and engage the students early in their training. This works well when the graduate directors are motivated.

UTMB stated that they initially started with a mentor program which they found didn't work because neither the student nor mentor enjoyed it. It was too artificial. They changed to a 14 member advisory subcommittee, 5 of which get to know the students very well. The faculty advisor meets with the student once a year (at least??). These meetings are not forced encounters. The directors also meet with the students, and often direct the students to others who can act as mentors. Subcommittee members also sit on each of the PhD committees for the students, and report back (at least?) once a year. They produce a letter which states the student's progress and what needs work. They also run a big sib program with thesis level student mentors.

Some programs find they do not do a good job of getting clinical mentors and that the burden often falls on the students to find mentors in their specialties of interest. It's advantageous to get younger clinical faculty to be mentors in specialties. **Skip Brass** emphasized that there is no one unique source for mentorship. This needs multiple people and sources to be successful for all. The students have different needs at different times. Students don't often see the trajectory of their career and need direction on this during their graduate years.

At the **Medical College of Wisconsin**, the Director (**J. Barbieri**), mentors students directly. This allows him to get to know the students better, especially their particular aptitudes. This also helps students define their aptitude. They get 4-5 students per year. The M1s meet twice a year -in the Fall and Spring, and are required to identify their interests early. It is important to place M1s in good labs the first summer. All rotation mentors must write letters of reference. Once the student identifies their PhD mentor, this is who they rely on. The Program receives an annual update. The Program Director meets individually with each student each summer. By the 3rd year the Program Director knows them personally. His issues are the clinical years. They assign clinical mentors which is not always the best. The Director meets and finds research-friendly clinical faculty to help in advisement.

It is also good to bring the alumni back. It is helpful for students to see the end product, someone who is at the faculty level (associate or full professor), has established a successful research program and is a good role model. This session is over lunch or dinner with the students.

Skip Brass stated that at **UPENN** they set up a panel with either new residents, older residents, or other graduates and residents to talk about the residency application experience. Although this doesn't tell them much about how to decide on a clinical area.

UPenn builds networks for advisement, and relies on these networks of faculty and student mentors. All students (153 students, 24 new students in 2007) are assigned mentors who are drawn from the physician scientist faculty who are personally known to the Program Director. These mentors will follow students through their entire training. Sometimes this works, sometimes it doesn't. There's no obvious solution. There are other networks to pick up when a relationship doesn't work. Each class of students meets over lunch with the Program Director (one meeting per class) over the summer, and this works well. There is a Big Sib Program as well. During the thesis years students have a "clinical connection" where they are hooked up with physician scientists in their areas of interest. A database of physician scientists in clinical areas is kept to facilitate this program. This provides shadowing and mentoring situations.

These programs allow students to think about the path they'd like and will help them make choices for their future training. They need to think and define themselves along the way. It's important to send them to talk to clinical people who are research friendly. Students and alumni also advise each other.

A student panel which meets once a month was described. It addresses how to choose a lab, residency programs and a mix of other topics. It is comprised of students, recent graduates and selected faculty members. It's important to **carefully** select faculty members in graduate programs who are leaders in those programs.

At **UTMB** students choose little sibs through matched personal interests. The students do a great job and really enjoy each other. The importance of student mentors was reiterated by several programs in a variety of ways, and it was stated that peers were often the most effective advisors and helped students choose the right lab situations. Perhaps because students found it easy to talk to their peers.

The program in **Wisconsin** relied more on graduate mentors.

Skip Brass asked the administrators present to describe their roles in mentoring. One administrator described her position as "hand-holding", the one who keeps all on track, and sometimes acting as too much of a buddy. Another stated that students will share personal information. They are often the first to know and are key for personal issues. They know all of the students.

It was stated that MD-PhD committee members needed to be advocates for students in their training. In another program (**UT**) students do 3 years of medical school first. This sequence of training started in the 1980s and they believe it is the optimal curricular approach. Students then seek out clinical activities for continued exposure during their PhD years.

In summary, the advisement of many students and to divide tasks is important. Directors have the job of over-seeing the entire training of each student in the program and their career. It is important to maintain a perspective that you can share with your students.

David Engman stated that his group discussed that programs need to be responsible and not rely on graduate programs to oversee their own activities. Student mentoring, big sib and peer programs are key. They discussed NIH support, cost sharing with grant support, the rule of no more than 2 students in a lab, and strategies for spreading students out.

U of Iowa – Leslie Harrington

This process is new this year. They are assigning 2 mentors (one MD and one PhD) to each class. The mentors will follow the students through their entire training program. They will hold a social event twice a year with the students to provide continuity.

Northwestern – David Engman

Have one mentor per class.

Report from class advisor and assist with matches.

No more than two students in a lab. They ask the department to back up if an advisor's grant lapses. They ask them to sign a form. (This was a little off the subject).

They have used this mentoring system for the past 10 years.

NIH-Richard Siegel, Director, MD-PhD Partnership Program

Advising Committee of 6 for 35 students.

They have a web-based process for progress reports training plan – an on-line advising system.

John Hopkins University

The Colleges Advisory Program of the JHUSOM was launched in 9/2005 to provide every medical student with a dedicated and longitudinal advisor/mentor. Twenty-eight physicians in the medical school (4 from the MD-PhD Program Committee) hold positions as 'Core College Faculty.' Students and faculty are organized into four colleges (120 students – 30 from each class) and 6 core faculty. These faculty meet with the students regularly during the medical school years. The MD-PhD student's research PI will mentor and advise during the research years and the student will return to the college faculty mentor when he/she returns to medical school.

Stoney Brook University

Has a big brother program. Older students mentor incoming students.

It was discussed that 80% of the students seek out their own role models.

There are mentors that assist in the student's return to medical school, as well as mentoring to assist in choice of a specialty.

Table 5

Survival Tips for Preparing a MSTP Grant

- 1) **Questions fielded from the group**
 - What does the training grant look like?
 - At what point do you apply?
 - What is the "magic" size when applying?
 - How many students should you have?

- Are there tips when preparing the tables?
- Is there a limit you can apply for?
- What type of database does one use?
- How many PI's can be listed?
- What are the financial differences between students?

2) **Helpful suggestions:**

- Contact the Grants Office at your Institution re policies for review, submission and deadlines
- Select faculty participants early and communicate importance of their participation; get as much information ; from faculty as possible – make sure NIH bios are up-to-date
- Communicate with students– make sure all biographical information on students is current
- Check with students and their PIs to make sure all publications are listed; check Pub Med as well
- Minority Recruitment data is crucial – be careful to read NIH requirements and understand the definitions; it's important to have goals/activities in place rather than to wait until the grant is actually due to formulate
- Acceptances without funding are not acceptable by NIH
- Track your graduates and have a database
- Review the career trajectory of your graduates and keep up-to-date as much as possible

3) **When to apply:**

- When the program is running well and you have supported (funded) students
- When your program has at least 2 students in the entering classes
- When your applicant pool contains national competitive applicants and not only internal students
- An ideal competitive applicant pool will have at least 80 students (preferably a national pool)
- When you have obtained financial support from your Dean

4) **Be sure to answer the 6 NIH requirements and keep up-to-date on changes in policies:**

- Mission
- Overall Training Program
- Collaboration
- Special features
- Quantitative graduate training
- Success of students receiving combined degrees

Absolute musts when preparing a MSTP grant:

- Contact your NIH Grants Management Specialist
- Call other Program Administrators
- Make a “timeline”
- Prepare spreadsheets and tables to collect the data and information requested
- Put data in correct format for NIH data tables after collecting information
- Cross-check tables – make sure that data is consistent
- Keep a “working” database and continually input your data even after your grant is submitted
- **Contact CAROLE LATKER at NIH**