MD-PhD: Is it Right for Me?
Training & Career Paths
What is a physician-scientist?

- Men and women who are physicians and investigators (and mentors and teachers and inventors and…)
- Spend most of their professional time doing research and applying research. Many of us see patients, too.
- Many (but not all) do research that is tied to human biology and human disease.
- Working at academic medical centers, research institutes and industry.

true chimeras who blend clinical medicine with the discovery and application of new knowledge
Who is MD-PhD training for?

Women and men who:

• are fascinated by biology and disease and have an aptitude for science.

• are passionate about understanding how things work.

• enjoy helping people and are willing to make personal sacrifices.
How is it done?

• Nationwide, over 100 MD-PhD programs are affiliated with medical schools.
• PhD can be awarded in a wide variety of disciplines.
• Curricula creatively mix MD and PhD phases to complete both in 7 to 8 years.
• Programs promote interactions with like-minded students and faculty.
How is it done?

- In order to promote physician-scientist career paths, most MD-PhD Programs offer significant financial support, in many cases these include stipends and tuition waivers.
- Nationally, 43 programs are partially supported by training grants from NIH known as Medical Scientist Training Programs or MSTPs.
- This national institutionalization of programs (starting in the 1970s) set a standard for how MD-PhD programs are organized.
- However each program offers unique opportunities and educational environments.
Disciplines

Biomedical Sciences including:
• Biochemistry & Macromolecular Biophysics
• Cell & Developmental Biology
• Immunology
• Molecular Biology & Genetics
• Microbiology & Infectious Disease
• Neuroscience
• Pathology & Mechanisms of Disease
• Pharmacology
• Physiology

Bioengineering & Biomedical Imaging
Bioethics
Chemical and Physical Sciences
Computational Biology & Bioinformatics
Public Health, Epidemiology & Preventative Medicine
Social and Behavioral Sciences
Curriculum is a continuum

Preclinical (years 1 - 2)
- Medical sciences
- Explore research opportunities (lab rotations)
- Initiate clinical exposure

Research (years 3 - 5 or 6)
- Develop and conduct thesis research
- Culminates with PhD
- Potential opportunity for clinical experience

Clinical (years 6 - 7 or 7 - 8)
- Clinical clerkships and rotations
- Potential opportunity for further research experience
Program Opportunities

• Retreats
• MD-PhD specific courses
• Visiting scholars
• Student/Alumni presentations
• Student council
• Social events
• National conferences and organizations
• A community, not just a “program”
Post-Training Pathways

• About 90% of graduates pursue clinical residencies followed by fellowship training.
  ▪ 4 to 7+ years of additional training, varies with specialty
  ▪ fellowship offers opportunity to return to research

• 80% of graduates become academic medical school faculty.

• 50% continue to do significant research.

• Many fill academic leadership roles.

• Alternate pathways include industry and research institutions (NIH, HHMI, etc).
Biomedical Scientists - Multiple Paths

• PhD graduates
• MD-PhD program graduates
• MD graduates, often with research experience in medical school, who pursue significant research during fellowship training
Applying to MD-PhD Programs
Who do MD-PhD Programs Seek?

• Applicants of integrity and maturity who show:
  • Concern for others
  • Leadership potential
  • An aptitude for working with others

PLUS:

• Demonstrated passion for research
What do MD/PhD Programs Evaluate?

• Research experience(s)
• Academic records
• Personal statements – why MD-PhD?
• MCAT scores
• Letters of recommendation from research mentors
• Experience in caring for others
• Extracurricular activities
• Life experiences
What constitutes a substantive research experience?

• Sufficient time pursuing research opportunities to understand what you are getting into
  • Multiple summer projects
  • Senior thesis research
  • One or more years pursuing research activities after undergraduate degree

• Familiarity with idea of testing a hypothesis
Statistics

Nationally, there are ~4,500 MD-PhD students
• 12% are underrepresented minorities
• 38% are women
# Statistics – MD-PhD Applicants 2008-2009 Cycles

**Total Applicant Pool** (n= 3,371) 100%

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<td>4 - 44</td>
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<tr>
<td>GPA</td>
<td>3.59</td>
<td>1.64 - 4.0</td>
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**Matriculants** (n= 1,162) 34.5%

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<tbody>
<tr>
<td>MCATS</td>
<td>34.25</td>
<td>21 - 44</td>
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<tr>
<td>GPA</td>
<td>3.73</td>
<td>2.38 - 4.0</td>
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Statistics – MD-PhD Applicants 2008-2009 Cycles

- Total
- Matriculants

Number of Applicants

- GPA
  - 1.6-3.0
  - 3.0-3.2
  - 3.2-3.4
  - 3.4-3.5
  - 3.5-3.6
  - 3.6-3.7
  - 3.7-3.8
  - 3.8-3.9
  - 3.9-4.0

- 10%
- 48%
Statistics – MD-PhD Applicants 2008-2009 Cycles

Number of Applicants

MCAT Scores

04-26 27-29 30-32 33-35 36-38 39-44

Total
Matriculants

- 17%
- 33%
Application Timeline

Application to AMCAS - Summer before entry year
  • Secondary applications
  • Letters of recommendation

Interviews - October to February

Final decisions - November to March

Revisit programs – March and April

Process complete – April 30

Start program - June to August
What do you look for in an MD-PhD program?

• Research environment - programs, support, faculty and opportunities

• Academic environment - science and clinical curricula and teaching

• MD-PhD program organization, achievement, and community

• Location

• A sense of belonging or “good fit"
For more information:
aamc.org/mdphd