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MD-PhD: Is it Right for Me?

Training & Career Paths

Association of American Medical Colleges

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

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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.

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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.

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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.

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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

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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

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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”

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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).

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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

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Applying to MD-PhD Programs

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American Medical Colleges

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

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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

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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

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Statistics

Nationally, there are ~4,500 MD-PhD students

- 12% are underrepresented minorities
- 38% are women

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Statistics – MD-PhD Applicants 2008-2009 Cycles

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

	Average	Range
MCATS	30.95	4 - 44
GPA	3.59	1.64 - 4.0

Matriculants (n= 1,162) 34.5%

	Average	Range
MCATS	34.25	21 - 44
GPA	3.73	2.38 - 4.0

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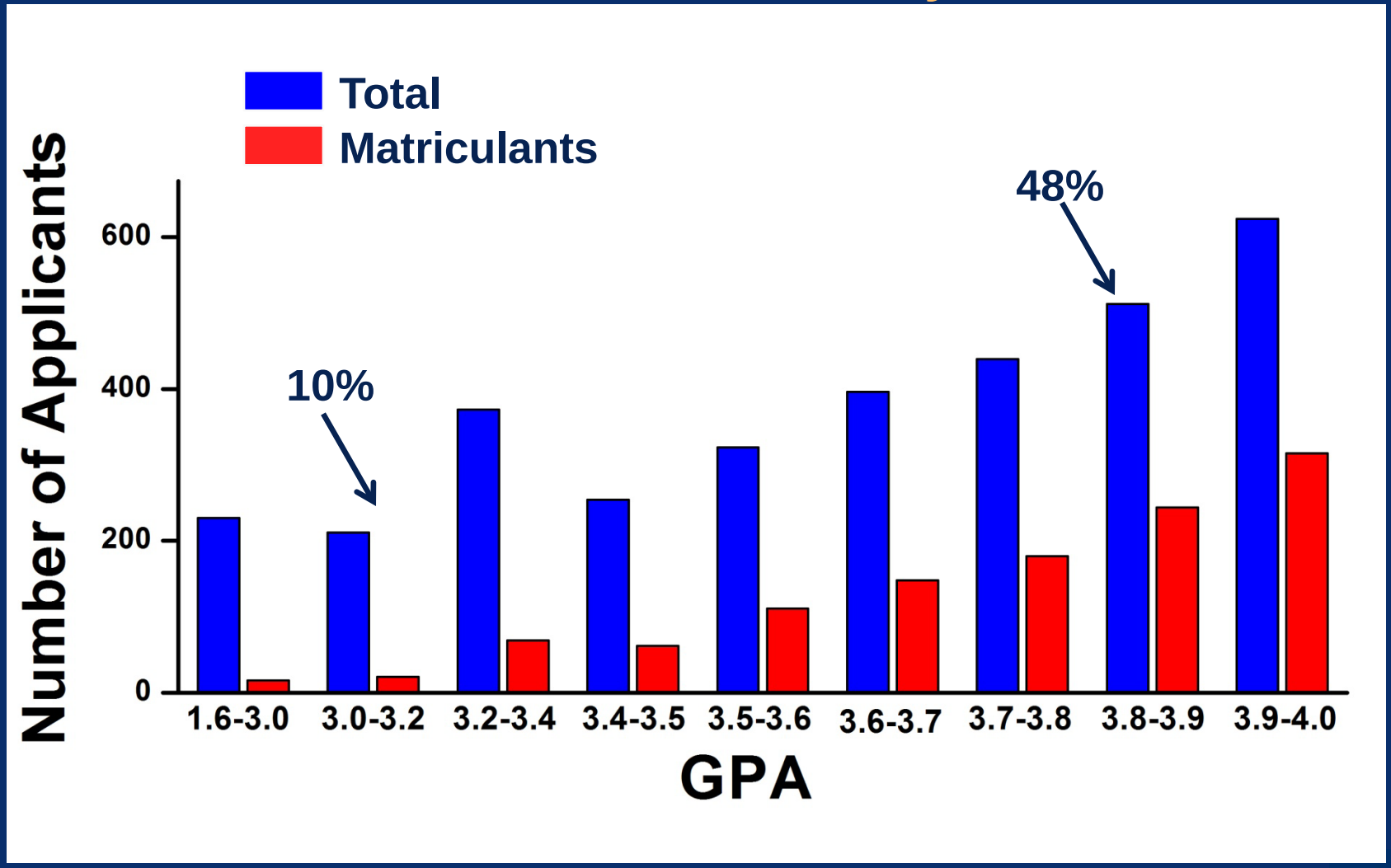
Statistics – MD-PhD Applicants 2008-2009 Cycles



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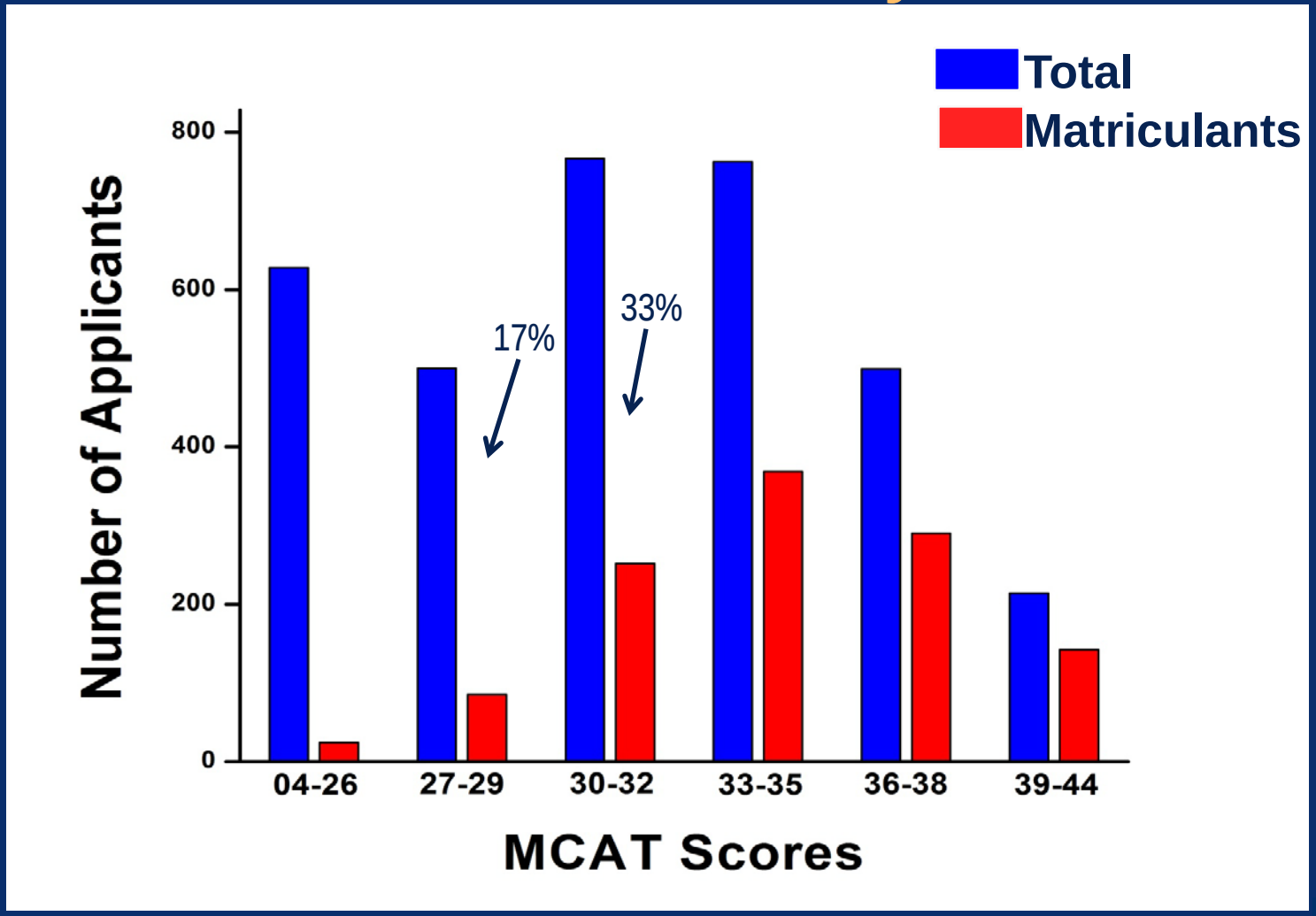
Statistics – MD-PhD Applicants 2008-2009 Cycles



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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

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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"

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For more information:

aamc.org/mdphd

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