

MD-PhD: What, Why, & How

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Outline

What is an MD-PhD?

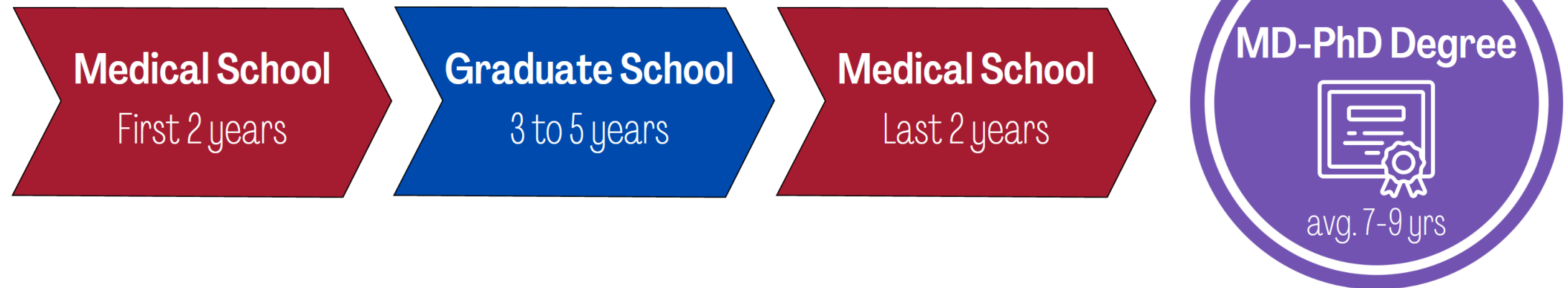
Why pursue an MD-PhD?

What does it take to get into an MD-PhD program?

What is an MD-PhD?

A **dual degree** program that combines **medical school (MD)** and **graduate school (PhD)** training

Example Timeline:



NOTE: The way medical school is partitioned to accommodate the graduate phase of MD-PhD training depends on the program

What do MD-PhD programs offer?

Most MD-PhD programs provide:



A stipend to cover housing, food, and other, living expenses



A full-ride scholarship for all medical school tuition and fees (graduate school is also covered)

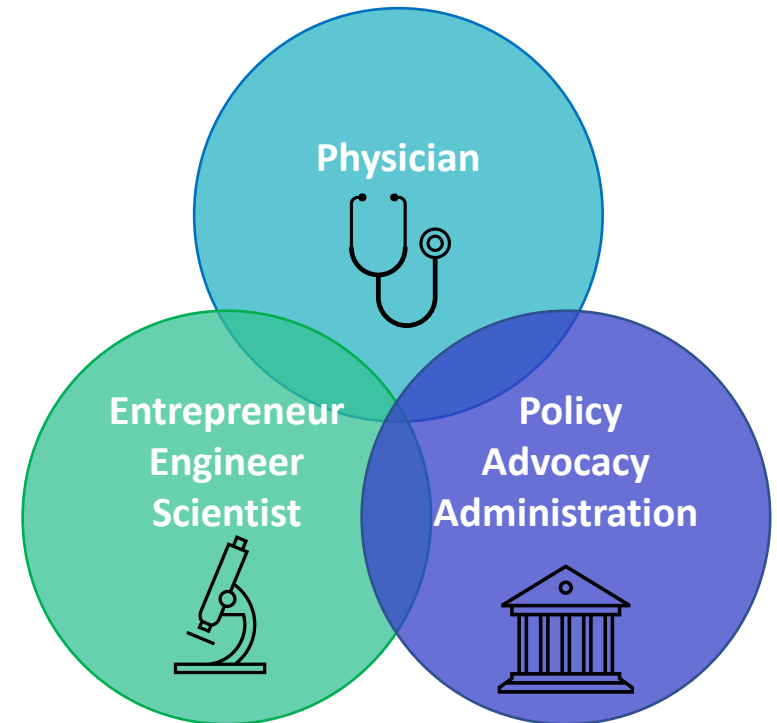


Research mentorship & Career advising

NOTE: Funding typically comes from either the Medical Scientist Training Program or private, institutional funds. However, not all MD-PhD programs are fully funded so always check before applying! **PRO TIP:** All MSTP programs are fully funded by the NIH. Check out a list of MSTP medical schools here: <https://www.nigms.nih.gov/training/instpredoc/pages/predocinst-MSTP.aspx>

Why pursue an MD-PhD?

- There are many ways to impact the field of medicine:
 - Making discoveries
 - Driving innovation
 - Shaping institutions
- Graduate programs offer degrees in a wide array of subjects
- Combined with an MD, a graduate degree in your field of interest can earn you highly specialized skills and expertise to address important issues in health




MD-PhD Leaders in Health & Science

Explore your interest

Follow your passions

Make a difference



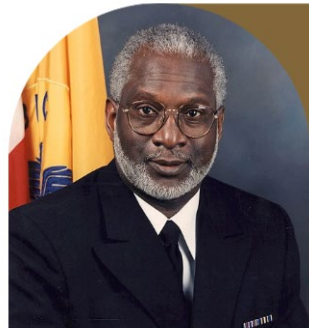
Dr. Michelle McMurry-Heath
CEO of the Biotechnology Innovation Organization
Duke University School of Medicine
MD-PhD in Immunology

- **Industry Mogul**
- **Policy Leader**
- **Educator**



Dr. Kirsten Bibbins-Domingo
Professor and Chair of the Department of
Epidemiology and Biostatistics at UCSF
The University of California, San Francisco,
MD-PhD in Biochemistry

- **Healthcare Provider**
- **Researcher**
- **Educator**



Dr. Daivd Satcher
Former Surgeon General of the United States
Case Western Reserve University School of Medicine
MD-PhD in Cell Biology

- **Policy Leader**
- **Healthcare Provider**
- **Educator**



Dr. George Q. Daley
Dean of the Faculty of Medicine at
Harvard Medical School
Harvard Medical School & MIT
MD-PhD in Biology

- **Researcher**
- **Educator**
- **Healthcare Provider**

The options are limitless!

How do you get into an MD-PhD program?

In addition to all the normal requirements for medical school, you must have...



Significant, longitudinal research experience(s)



Recommendation letters from research advisors

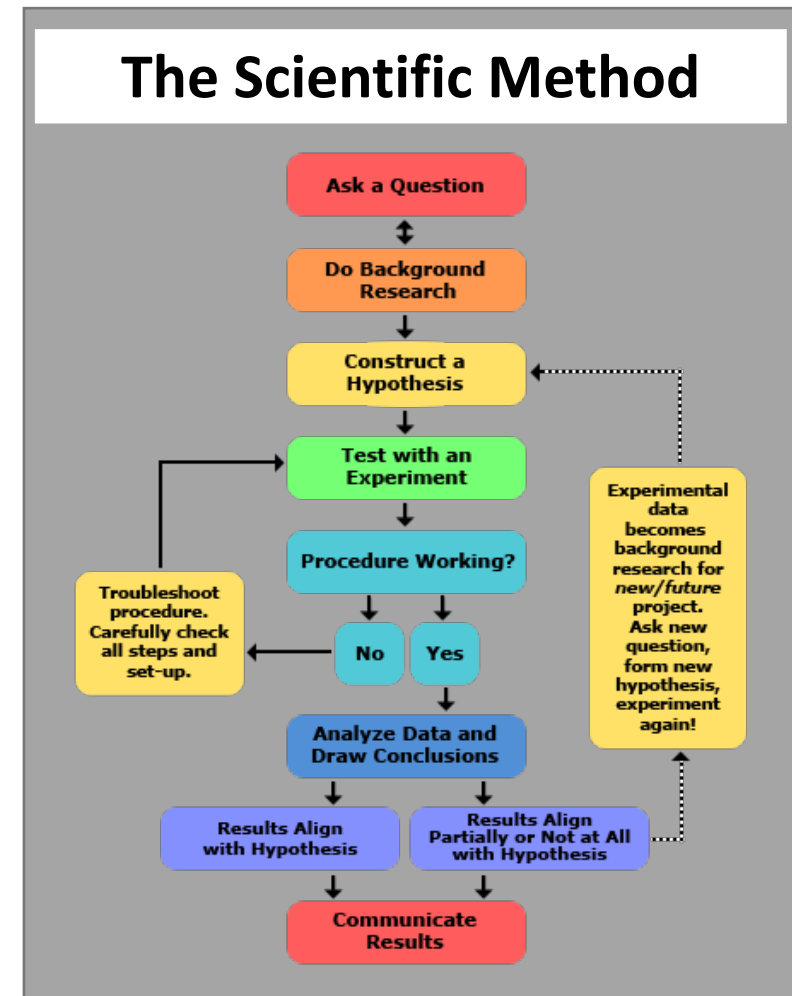


Two Additional Essays:

- MD-PhD Essay
- Significant Research Experience Essay

Significant, Longitudinal Research Experience

- Provides **evidence** of your:
 - Scientific curiosity
 - Mastery of the scientific method
 - Problem solving skills
 - Dedication
- Can be any field:
 - **Basic science:** biology, chemistry, physics, engineering, computer science etc.
 - **Social science:** public health, public policy, anthropology, economics etc.



What counts as 'significant'?

Ask yourself the following:

1. How much did I utilize the scientific method in my work?

➤ Are you a critical thinker who can formulate testable hypotheses?

2. How well can I communicate the motivations and details of my project?

➤ Were you an active and informed participant of this research endeavor?

3. Did I offer up my work to scrutiny via activities like poster presentations, talks, honors thesis, or publication?

➤ Can you defend your work and utilize constructive criticism?

4. Did I have enough time and autonomy to experience all the above in a meaningful way?

➤ Have you developed the skills and self-motivation that you will need to become a successful researcher?



Research Advisors

What should you look for in an advisor?

1. Someone who is invested in you:

- Takes the time to learn about your background, interest, and goals
- Challenges you to become a better thinker, communicator, and collaborator
- Supports you in networking opportunities
- Advocates for you and your work (recommendation letters!)

2. Someone who works on a topic that you...

- Find interesting
- Can gain transferable skills e.g.,:
 - Analyzing large data sets
 - Working with model organisms
 - Presenting and writing

MD-PhD Essay: Developing a Narrative

In both your essays and interviews, you should be able to clearly answer:

1. Why you want to pursue an MD and PhD?

- What do you want to work on and why?
- Why does your career necessitate both medical and graduate school training?

2. Why are you suited to become a MD-PhD?

- How have your experiences informed your goals and motivations?
- How will your unique experiences, skills, and perspectives help you succeed?



Significant Research Experience Essay

For every research experience you include, you should succinctly answer the following:

1. What did you do?
2. Why did you do it?
3. What happened?
4. What did it mean?
5. What were (or what would have been) your next steps?
6. How has this experience...
 - Developed your skills and perspectives?
 - Informed your future goals of becoming a physician-scientist?



Frequently Asked Questions

Q: What is the 'lower-bound' of research experience I need?

A: This is subjective, but let's say at least the equivalent of 2 years of full-time research e.g., 2 summers (full-time) and 4 semesters (part-time). However, you should aspire to gain as much research experience as possible.

Q: Can I do research with just an MD?

A: Absolutely! But know you will have to receive scientific training at some point. If you already know that research will be a major facet of your career, the financial and structural support MD-PhD programs offer are major perks

Frequently Asked Questions

Q: Is MD-PhD right for me?

A: This decision should be informed by your career and personal goals.

Tips:

- **Get out there.** Engage in opportunities to conduct research and work in clinical settings. Think critically about what you likely and dislike about these experiences. Compare how much time you would like to dedicate to each in the future.
- **Talk to people about their experiences.** Find people in positions in which you would like to be and ask them: what their lives are like, what they did to be where they are now, and what is their advice to you.
- **Investigate alternative solutions.** Many paths can converge to the same result, so it is imperative to do your due diligence in researching which one will be the most effective use of your time and resources. For example, alternative graduate degrees include:
 - Master of Public Health
 - Master of Public Policy
 - Master of Education
 - Master of Science
 - Master of Engineering
 - Master of Social Work
 - Master of Business Administration
 - Master of Health Administration
 - Law Degree

Common Myths about MD-PhD Applications

- ✘ **You need to be published in a scientific journal to get accepted**
 - Your ability to speak confidently and intelligently about your research is much more important than having your name on a paper
- ✘ **You have to start research your first year of college**
 - Quality matters more than quantity. Seek out opportunities to grow, not to check off boxes or collect hours
- ✘ **You must stick to one research topic**
 - Provided the experiences are meaningful, you should explore your research interest.
- ✘ **If you don't take gap years you won't be a competitive applicant**
 - Many people get accepted to MD-PhD programs with just their college research experience

Conclusion

MD-PhD Programs:

- Are a great way to acquire specialized training in the medical sciences
- Provide tremendous support throughout medical and graduate school training
- Require lots of forethought and preparation to apply:
 - Significant, longitudinal research experience(s)
 - Recommendation letters from research advisors
 - Clear narrative on why MD-PhD
- Can be a long, so before committing it is important to assess whether pursuing an MD-PhD is the most efficient and effective way to achieve your goals.

Resources

- Undergraduate Research Programs:
 - <https://www.aamc.org/professional-development/affinity-groups/great/summer-undergrad-research-programs>
 - [https://www.pathwaystoscience.org/programs.aspx?descriptorhub=SummerResearch Summer%20Research%20Opportunity](https://www.pathwaystoscience.org/programs.aspx?descriptorhub=SummerResearch%20Research%20Opportunity)
- MD-PhD School List:
 - <https://www.nigms.nih.gov/training/instpredoc/pages/predocinst-MSTP.aspx>
 - <https://students-residents.aamc.org/applying-md/phd-programs/md-phd-degree-programs-state>
- How to Apply via AAMC:
 - <https://students-residents.aamc.org/applying-md/phd-programs/applying-md-phd-programs-0>
 - <https://students-residents.aamc.org/how-apply-medical-school-amcas/section-8-amcas-application-essays>



Thank you for your
attention!