

Why Should You Pursue an MD/PhD?

Physician-scientist pathways and careers in public service

My Path to Becoming a Physician-Scientist

My path was *very* non-linear!

University of Michigan (chemistry + Spanish) → worked in two academic labs (molecular dynamics, surgical lab) → industry R&D BASF polymer chemist → back to academia (cardiac research) → University of Miami MD/PhD

Gap years and alternate pursuits give you perspective and help you gain experience that better informs the career you want to build

Currently a 4th-year MD/PhD student
at the University of Miami, working
under Mark Yeager, MD, PhD

My research uses cryo-EM and
molecular dynamics to study cardiac
gap junction proteins involved in fatal
arrhythmias such as sudden cardiac
death

I also work with the American
Physician Scientists Association to
support applicants pursuing MD/PhDs



Why I Chose Academia Over Industry

Industry

Faster pace

Clear deliverables

Strong teamwork

Goal is *to commercialize something*

Academia

More intellectual freedom

More curiosity-driven

More independence

Goal is *scientific discovery*

Academia offered more intellectual freedom and the ability to ask fundamental biological questions. I ultimately returned to academia because I wanted a career combining scientific discovery with patient care

Why Physician-Scientists Matter to Public Service

Physician-scientists play a unique role in public service by bridging scientific discovery and patient care. They help translate discoveries made in the laboratory into new diagnostics, therapies, and treatments that improve individual and population health

By working at the interface of bench science and medicine, they also drive innovation in healthcare systems and help ensure that scientific advances meaningfully reach patients

What Is an MD/PhD?

MD/PhD programs train physician-scientists to both care for patients and lead research programs

Typical timeline: 2 years medical school → ~4 years PhD → 2 years medical school → residency/fellowship (3–8 years)

MD/PhDs are the best fit for students committed to basic or translational research

Is an MD/PhD Right for You?

Be confident that you want research to remain a central part of your career

Many forms of clinical research do not require a PhD!

PhD training is especially valuable for basic or translational science involving mechanistic questions, cell systems, animal models, or advanced technical methods

Finding Research Mentors

As an undergraduate, cold-emailing potential mentors is completely acceptable!

Read recent papers or lab websites first so your message is personalized

Keep emails concise: state your ask early, explain why their work interests you, attach a CV, and request a meeting:

"Hello, I am a student hoping to gain experience in basic science to pursue as a potential career path. Your work interested me because..."

Finding Research Mentors

During the application process, you generally *should not* cold-email faculty at schools you are applying to. Instead, research programs beforehand—read faculty profiles and identify labs aligned with your interests

MD/PhD programs usually review your research interests and pair you with interviewers or faculty mentors who match those interests. Be prepared to discuss why their research interests you, how your past work connects to their lab, and what scientific questions excite you

What Experiences Matter Most?

Research is the most heavily scrutinized part of the application (1500+ hours)

Aim for sustained lab involvement, increasing independence, and tangible outputs (undergraduate conference posters or publications)

Clinical volunteering (at least 100–500 hours) and physician shadowing (20–50 hours) to be confident you want to be a practicing physician and work with patients

Applications & Gap Years

Gap years are common and can be extremely valuable—I took 5!

Primary applications open in late May. You will need to take the MCAT and write essays on “why medicine,” “why MD/PhD,” and detailing your research experiences. You will then be invited to write secondary essays for each school

Interviews run from August through February or March

If you are accepted, you will typically matriculate in June and complete a summer research rotation with a potential PhD mentor

Funding an MD/PhD

One of the major advantages is that most MD/PhDs are fully funded with a full medical school scholarship and a stipend for all 8 years (~\$35–50k/year)

Many are Medical Scientist Training Programs (MSTPs), supported by the National Institutes of Health through training grants

These programs view physician-scientists as a critical investment in the future scientific workforce and recognize the opportunity cost of spending years pursuing research training instead of entering clinical practice as a physician

60%

of physician-scientists will remain
in academia

Physician-scientists work in academia, biotech, startups, consulting, public health, and industry

Many spend 50–75% of their time doing research and 25–50% seeing patients

You do not need everything figured out now—explore widely, seek mentors, and follow the work that excites you!

80%

Given the choice, the percent of MD-PhD program graduates surveyed who say they would repeat their program

Thanks!

Feel free to reach out for any questions:

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