

Mechanisms to Vertically Integrate MSTP and PSTP

2019 AAIM RESEARCH PATHWAYS
DIRECTORS WORKSHOP

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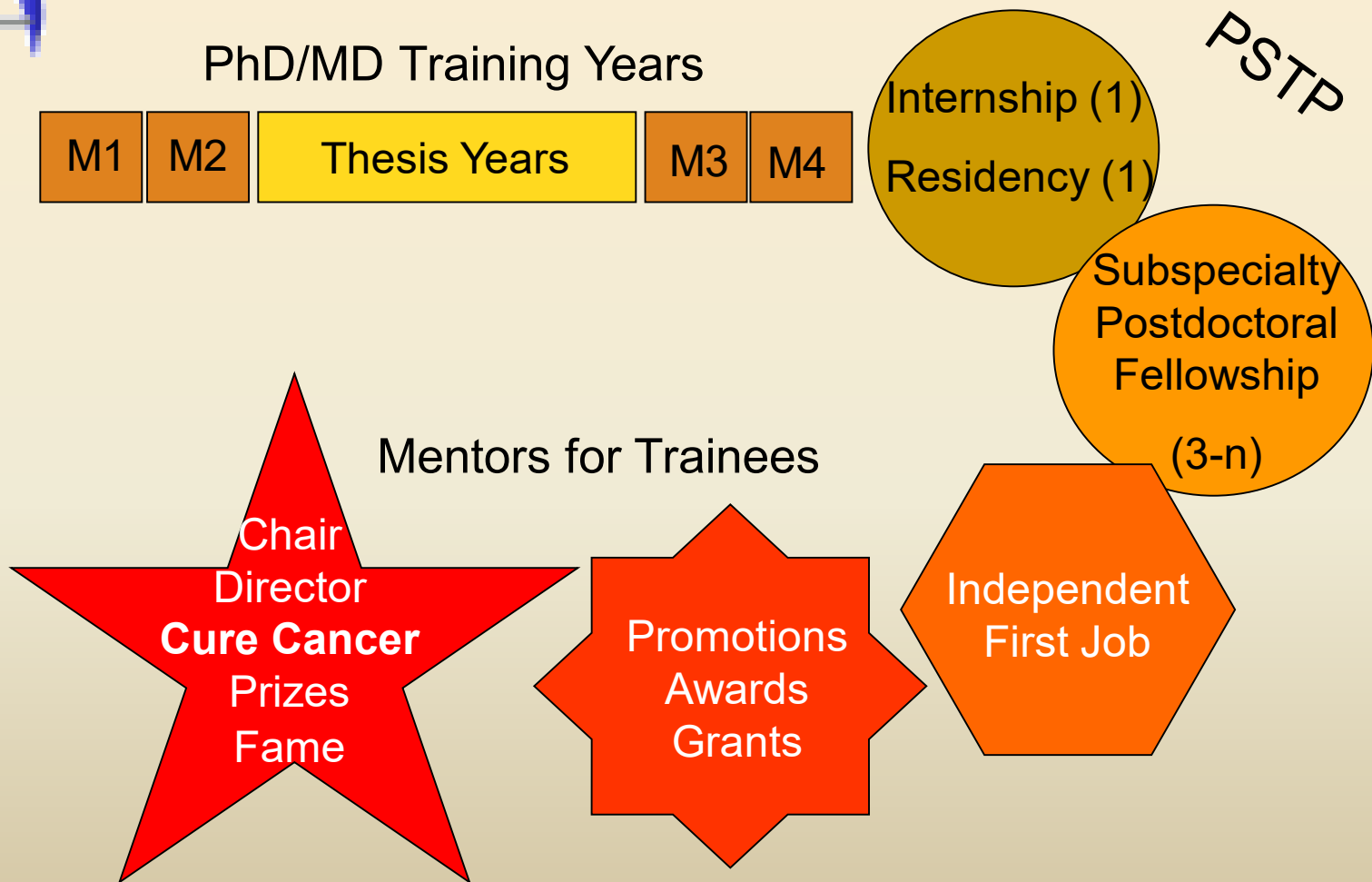
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MD/PhD Training: Critical Transition Points and Mentors in the Career Continuum



Critical Transition: Valley of Death

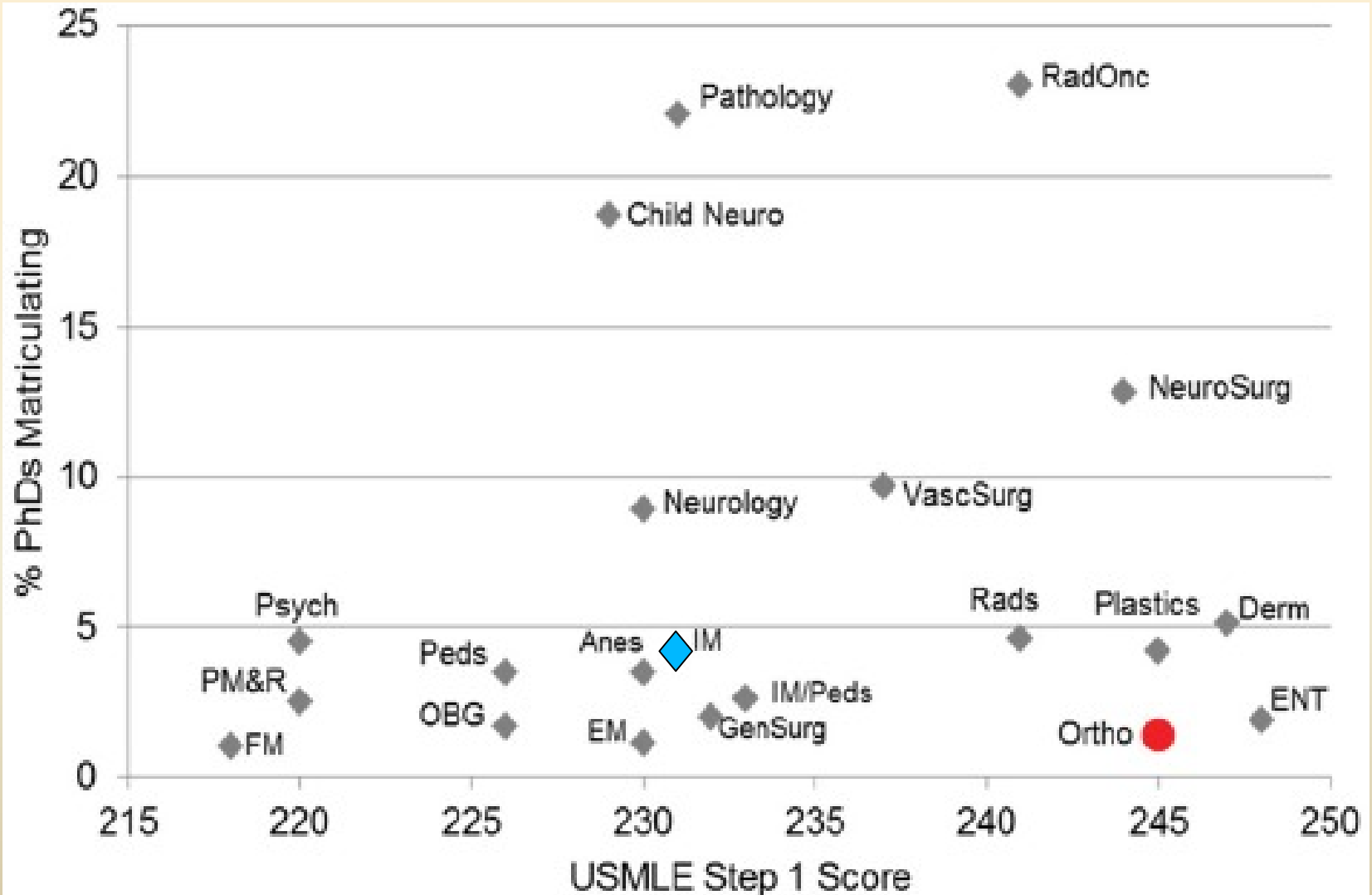



MD/PhDs are 2% of IM Matched Pool but ~95% of PSTP Matched Pool

- In 2018, ~37,000 trainees in the Match, 29,000 matched, 7,500 slots in IM-Categorical, with 3,300 being US seniors
- In 2018, 600 MD/PhDs graduated, with most entering the Match, and ~150 going into Internal Medicine (ie, 25% of MD/PhD pool and 2% of IM slot pool)
- ~35 PSTPs in the country compete for the top students in this group of 150, and PSTPs dominantly Match MD/PhDs
- We are all competing for the same group of ~50 superstars
- What is the value of Board scores, number of clinical clerkship Honors grades, Sub-I Honors, rank in class, “quality” of SOM, publications, F30/31, leadership, LORs in predicting successful outcome as physician-scientist?



Percent MD/PhDs in Different Specialties and NBME I Score in Matriculants





MD/PhD Applicant Misconceptions Regarding PSTP Selection Criteria

- MD/PhDs dominate the PSTP applicant pools and PST Programs are dominantly constituted by MD/PhDs
- MD/PhDs have a significant misconception regarding what PSTPs are looking for in competitive applicants
- They are overly concerned with class rank, NBME Part I score, and number of clerkship Honor grades, yet these are poor predictors of outcomes as a physician-scientist
- MD/PhDs are lusting for information regarding PSTPs yet there is no single website listing all PSTPs/RiRs, their selection criteria, and their specific attributes
- PSTPs have little to no organized MD/PhD trainee recruitment efforts



How and Where do MD/PhD Trainees Learn About PSTPs

Peers, Mentors and MST-MD/PhD Program Directors

- Alums, mentors and MST Program Directors provide advice about specific PSTPs and the application/interview process
- PSTP recruitment events at the MD/PhD National Student Conferences and ASCI/APSA Meetings
- MSTP & PSTP Directors must do a better job of advising

Websites

- There is no single website listing all *bona fide* PSTPs and RIRs in all specialties, such as the AAMC houses for MD/PhD Programs
- APSA is the only current site and it's not complete nor vetted
- AAMC is planning to house vetted PSTPs and RiRs



NIH R38 & K38 Stimulating Access to Research Residency Transition Programs

- R38 - NIA, NIAID, NCI, NHLBI; K38 - NIAID, NCI, NHLBI
- StARR R38: Institutional programs that can provide outstanding mentored research opportunities for Resident-Investigators and foster their ability to transition to individual career development research awards. R38's will support institutions to provide support for up to 2 years of research conducted by Resident-Investigators in structured programs for clinician-investigators with defined program milestones
- StARRTS K38: Resident-Investigators who complete the StARR program are expected to continue research activity with support from the "Stimulating Access to Research in Residency Transition Support" individual K38
- R38: <https://grants.nih.gov/grants/guide/rfa-files/rfa-hl-18-023.html>
- K38: <https://grants.nih.gov/grants/guide/notice-files/NOT-HL-17-533.html>



APSA Website Listing Research Residencies and Fellowships



Main page [Discussion](#)

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Main Page

Welcome to the Research Residency and Fellowship Program Database

The [American Physician Scientists Association](#) (APSA) launched the Research Residency and Fellowship Program Database to address the lack of a centralized resource for physician-scientist trainees preparing to pursue residency and fellowship training. Many residencies and fellowship programs offer significant research experiences or are designed specifically to train physician-scientists, but locating these programs was previously challenging, as no list of such programs existed.

Trainees can search for programs using the search box in the upper right. Programs are categorized by [specialty](#), [state](#), and [city](#), so searches may be done geographically or by specialty. Furthermore, a specialty browser is available below.

For Program Directors

We encourage program directors and administrators to provide updates or additions to your program's entry. **If your program is not represented and you would like to add it, APSA will create the initial entry for you. Please refer to our [getting started](#) page if you are interested.** If you have any questions about editing or accessing content in the database please do not hesitate to contact us at resdb@physicianscientists.org.

Browse Programs by Specialty

- ▶ [Allergy and Immunology](#)
- ▶ [Anatomic Pathology](#)
- ▶ [Anesthesiology](#)
- ▶ [Dermatology](#)
- ▶ [Infectious Disease](#)
- ▶ [Medical Genetics](#)
- ▶ [Medicine](#)
- ▶ [Multidisciplinary](#)
- ▶ [Neurology](#)
- ▶ [Occupational Medicine](#)
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Specialties

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https://resdb.physicianscientists.org/Main_Page



APSA Website Listing

33 Internal Medicine Research Residencies

Category:Medicine



Subcategories

This category has only the following subcategory.

I

► Infectious Disease (1 P)

Pages in category "Medicine"

The following 33 pages are in this category, out of 33 total.

A

- Albert Einstein College of Medicine of Yeshiva University

B

- Baylor College of Medicine - Internal Medicine
- Beth Israel Deaconess Medical Center
- Boston University School of Medicine - Internal Medicine
- Brigham and Womens Internal Medicine

C

- Case Western Reserve University Harrington Physician-Scientist Pathway
- Cedars-Sinai Medical Center PSTP
- Columbia University College of Physicians and Surgeons - Internal Medicine

D

- Dartmouth Medical School - Internal Medicine
- Duke University Internal Medicine

I

- Indiana University Internal Medicine Research Track

M

- Massachusetts General Hospital Internal Medicine
- Mayo Clinic Clinician-Investigator Training Program
- MetroHealth System/Case Western Reserve University - Internal Medicine - Physician Scientist Pathway

O

- Ohio State University Internal Medicine

U

- University of Alabama at Birmingham ABIM
- University of Cincinnati Internal Medicine Physician Scientist Training Program
- University of Iowa College of Medicine - Physician Scientist Training Pathway
- University of Maryland Internal Medicine Research Pathway

- University of Massachusetts Internal Medicine Research Pathway
- University of Michigan Internal Medicine Physician Scientist Track
- University of Minnesota PSTP
- University of North Carolina Physician Scientist Training Program
- University of Pennsylvania Physician-Scientist Pathway
- University of Rochester Internal Medicine
- University of Utah Physician Scientist Training Program
- University of Virginia Internal Medicine ABIM Research Track
- University of Washington Internal Medicine
- University of Wisconsin-Madison Internal Medicine IMPACT Program
- UT Southwestern Internal Medicine Physician Scientist Training Program

V

- Vanderbilt Physician-Scientist Training Program

W

- Washington University Oliver Langenberg Physician-Scientist Training Program
- Weill Cornell Medical College Internal Medicine

<https://resdb.physicianscientists.org/Category:Medicine>

Specific Suggestions to Better Communicate Between PST and MD/PhD Programs

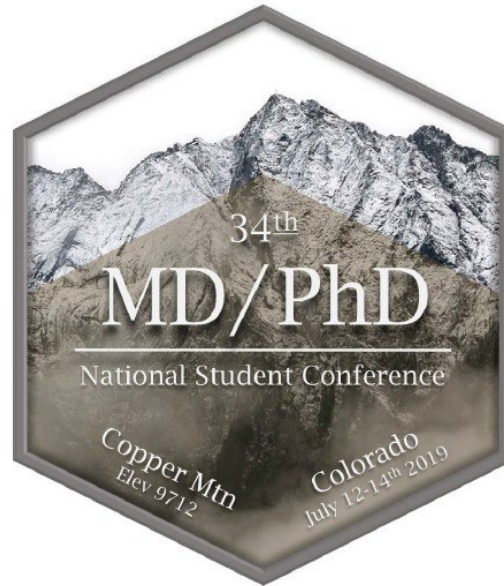
- Encourage more complete representation of PST Programs at the Annual MD/PhD National Student Conferences and ASCI Meetings, and possibly at regional conferences
- Establish an AAMC- &/or AAIM-vetted website(s) listing all ABIM-approved Internal Medicine PSTPs, with hotlinks to each Program
- Each PSTP should establish a robust website, listing clinical rotation scheduling, short track options, fellowship guarantee, mentorship plan, and overall financial support
- Invite local Directors of Research Pathway Programs in all specialties to provide career panel session to your MSTPs



34th Annual MD/PhD National Student Conference

34th Annual MD/PhD National Student Conference

Copper Mountain Colorado July 12th -14th 2019



Keynotes: Peter Agre, Huda Akil, Cato Laurencin, Padmanee Sharma, Doug Lowy

Early Registration: \$475, April 30, 2019; www.ucdenver.edu/MSTP

PSTP/RiR Showcase: \$350 reduced rate, includes 1 night lodging & meals

Email: mdphdnationalconference@gmail.com



Why Integrate MD/PhD and PSTP Training?

To Mitigate Attrition and Enhance Career Progression

- Attrition occurs in MD/PhD training – alumni peer mentorship is key; they hear all MSTPs question path
- Re-entry into research for the MD/PhD trainee typically occurs ~7 years after completing the PhD
- Achieving research career independence is interrupted by residency & fellowship clinical training, thus first R01 is at age ~42
- Trainees in residency and fellowship lose the tight MSTP structure and its frequent, formal mentoring
- Attrition occurs during fellowship period, due to key life events, with increasing financial pressures
- Incorporating on-going mentorship is key to success



Specific Activities to Integrate MD/PhD and PSTP Trainees

Include PSTPs in MD/PhD Program Career Sessions

- Include PSTPs in “How to Survive MSTP” sessions
- Include PSTPs in “Return to Clinic” Boot Camps
- Include PSTPs in Career Forums and Residency Application and Interview Tips Sessions

Include PSTPs in MD/PhD Program Annual Retreat

- PSTPs can serve as session chairs and poster reviewers
- PSTPs can serve on Career Panels

Invite PSTPs to MD/PhD Program Social Events

- Invite PSTPs to Welcome Picnic, Holiday Party, UnGraduation and Graduation Parties



Value to PSTPs in Mentoring MSTPs

- Taking on the role of mentor or role model validates their physician-scientist career path
- Reminds them of their advanced position and that their career is indeed moving forward
- Provides an opportunity to reflect on their career path so far and what they would do differently
- Questions that MSTPs ask them forces a re-assessment of their goals and how to best accomplish them
- Establishes a cadre of physician-scientists across the career spectrum to provide support & camaraderie



Establishing a Cadre of MD/PhDs across the Training and Departmental Spectrum

- A position in the SOM Dean's Office that supports all physician-scientists on Campus & coordinates events is key
- Start by generating a list of all MD/PhDs on Campus and their current training level and/or position
- Establish academic, career-promotional, and social events that bring together all MD/PhDs on Campus
- Encourage most senior MD/PhD faculty to become advisors/mentors of more junior MD/PhDs
- Invite all Campus MD/PhDs to MD/PhD Retreats, Graduation Dinners, and to Campus-wide workshops for MD/PhDs
- Give this group a name (Osler Society), website, and list-serve that allows communication, collaboration & support

The Scientific Basis of Learning Medicine:

A Lack of Discoverers As Attendings has Eroded the Understanding of the Scientific Basis of Disease

- In the past, most academic clinicians were true “triple threats”, and many times, even “quadruple threats”: they pursued cutting-edge, nationally-funded research; they attended on the wards and in clinic; they taught in the classroom; and some were even Deans, Center Directors, Chairs or Divisions Chiefs.
- These academic physicians brought their research findings to the medical students and the patients, generating a culture of inquiry, critical thinking, and scientific rigor.
- They served as role models for the medical students and permeated the academic enterprise, establishing common institutional goals and values
- These “triple threats” are no longer on the general wards or in administration, thus medical students have minimal exposure to this group.
- Additionally, more recent medical curricular changes have emphasized earlier patient interactions, pattern recognition, and memorizing facts, thus diluting the scientific basis of medicine
- Current MD/PhD and PSTP trainees will be the ones who will develop new medical curricula in the future



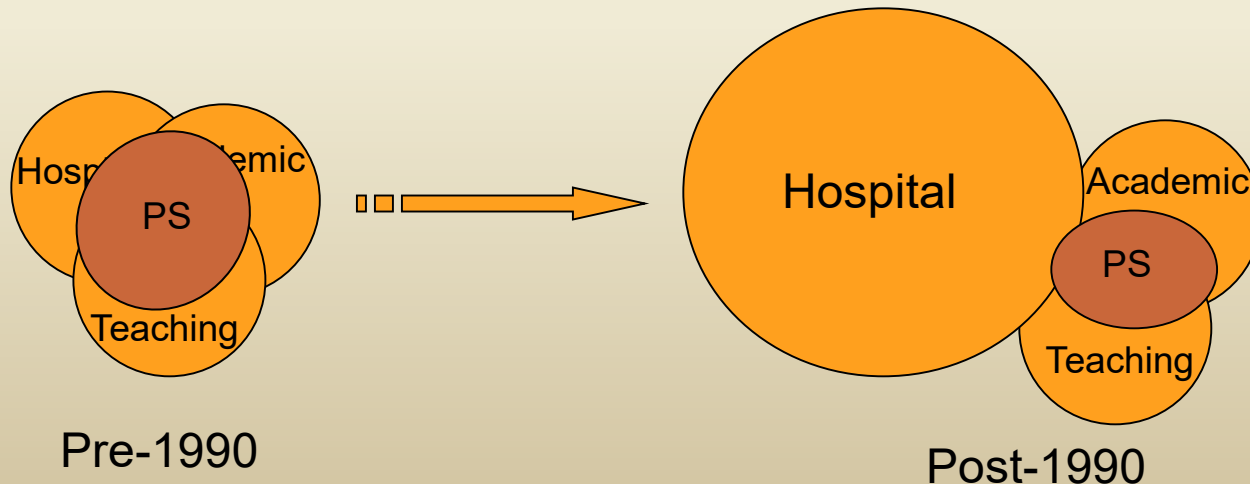
Changing Priorities in Academic Medicine

- Pre ~1990, most “clinical” faculty were hired through academic departments in the SOM, often in tenure-track positions, and ICR was key income source
- In the near future, academic hospitals will hire full-time clinical service physicians, and most will not have SOM appointments or scholarly requirements
- Clinical earnings now support the research mission
- The EMR administrative and paperwork burdens in clinical practice have become disincentives for physician-scientists to see patients
- Increasing pressure of PI’s to support greater percentage of their salary and research enterprise



Changing Priorities of the Academic Medicine Enterprise

- Clinical Departments have grown dramatically due to on-going, striking increases in full-time clinical service physicians and hospitalists, who have no scholarly requirements and some without SOM appointments
- MD/PhDs (and PhDs) have become the core cadre of biomedical scientists expected to maintain cutting-edge research in clinical departments
- Physician-scientists have become proportionally a much smaller group and diluted voice in the “new” academic medicine enterprise
- Reorganization and reduction of basic science departments and faculty: Most often driven by money issues, to limit financial costs to the SOM





The Developing and Future Role of MD/PhDs in Academic Medicine

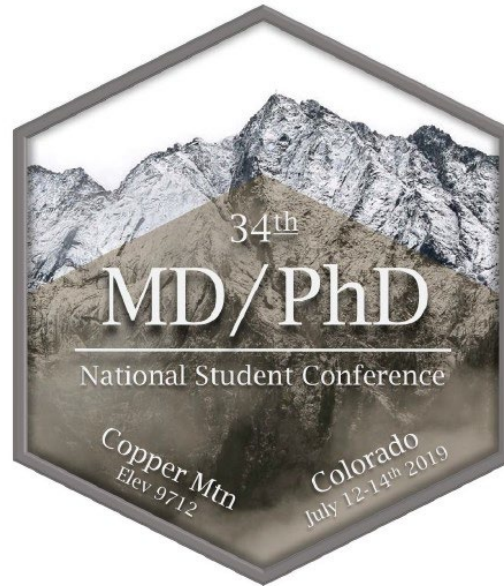
- MD/PhDs obtain more than 50% of the K grants, yet they constitute only 3% of total MD pool
- MD/PhD are dominantly securing election into ASCI and AAP, and selection for prestigious funding sources (HHMI, Pew, Searle, etc)
- Clinical divisions continue to lust for R01-getting MDs and MD/PhDs, thus many institutions have initiated PSTP tracks to recruit these trainees
- MD/PhDs have become THE major supply to the physician-scientist pool, yet this was not original goal
- MD/PhDs will drive the future vision of the research, discovery & scholarly aspects of academic medicine



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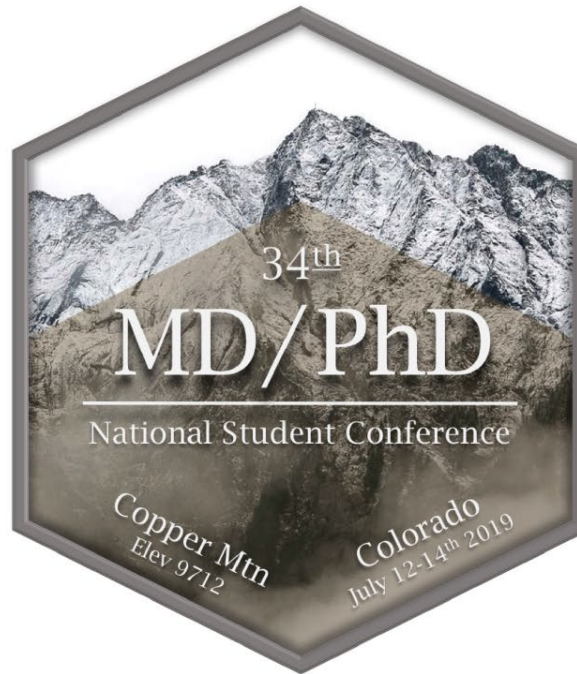
University of Colorado PSTP

Goal: To identify future CU/AMC faculty who will conduct high impact biomedical investigation

- Linked IM residency and fellowship training
- Short track option
- Mentoring to achieve independence ASAP
- Formal and informal career guidance
- Grant writing/grant funding opportunities
- PSTP and MSTP Network
- Additional stipend for meetings, textbooks, journals
- Rising Stars Funding Mechanism

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Registration Information

Early Registration Deadline (\$475): April 30th, 2019

Late Registration Deadline (\$575): June 13th, 2019

Oral Presentation and Travel Award Submission Deadline: May 19th, 2019

Abstract Submission for Poster Presentation Deadline: June 1st, 2019

PSTP Director Registration (\$350, includes one night of lodging)

Visit www.ucdenver.edu/MSTP click 'Copper Conference' for info & registration

Email mdphdnationalconference@gmail.com

 [MD/PhD National Student Conference](#)