Medical Research Scholars Program *at the* National Institutes of Health

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Office of Clinical Research Training and Medical Education
NIH Clinical Center

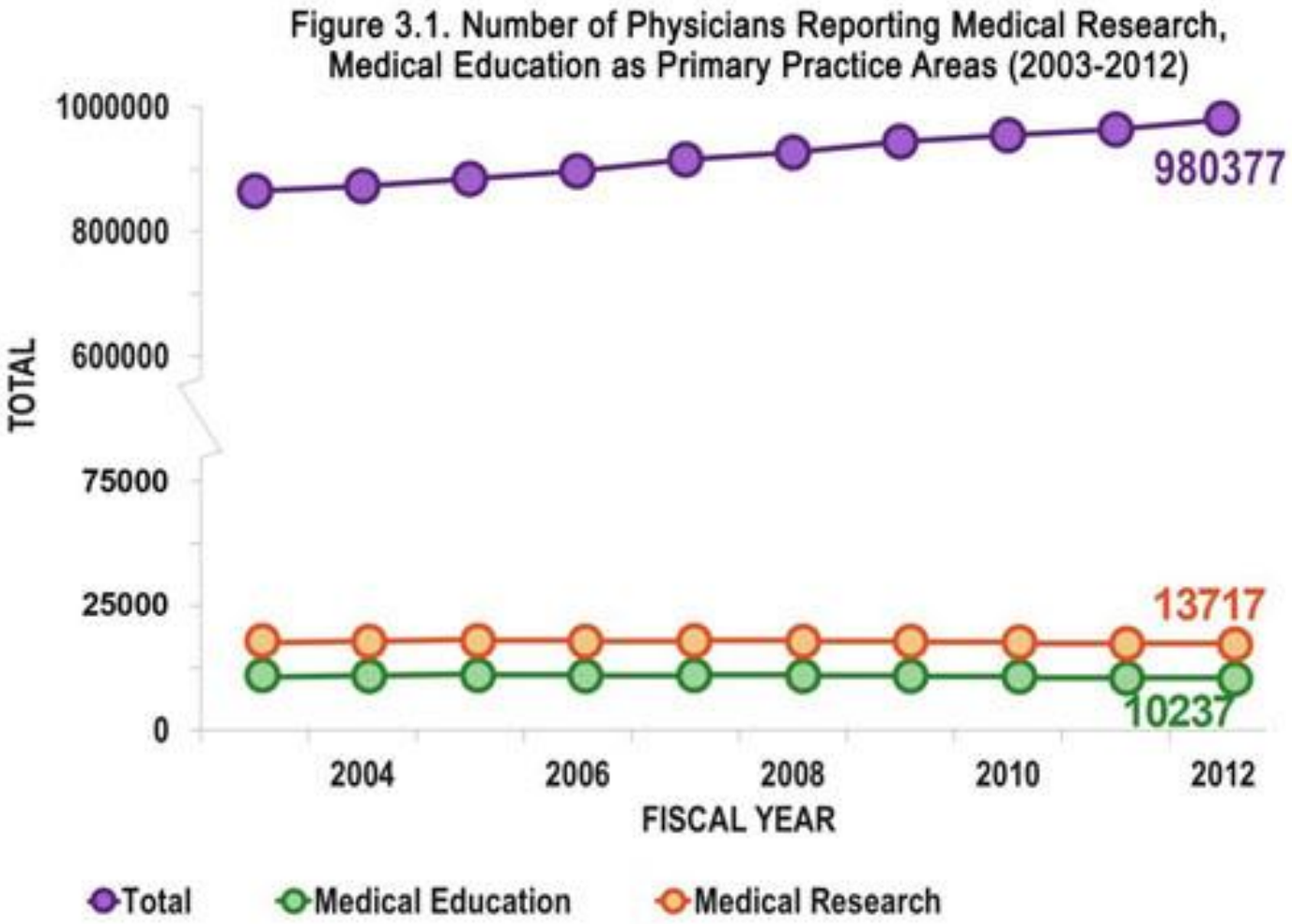
National Institutes of Health
Clinical Center

The challenge…and the opportunity

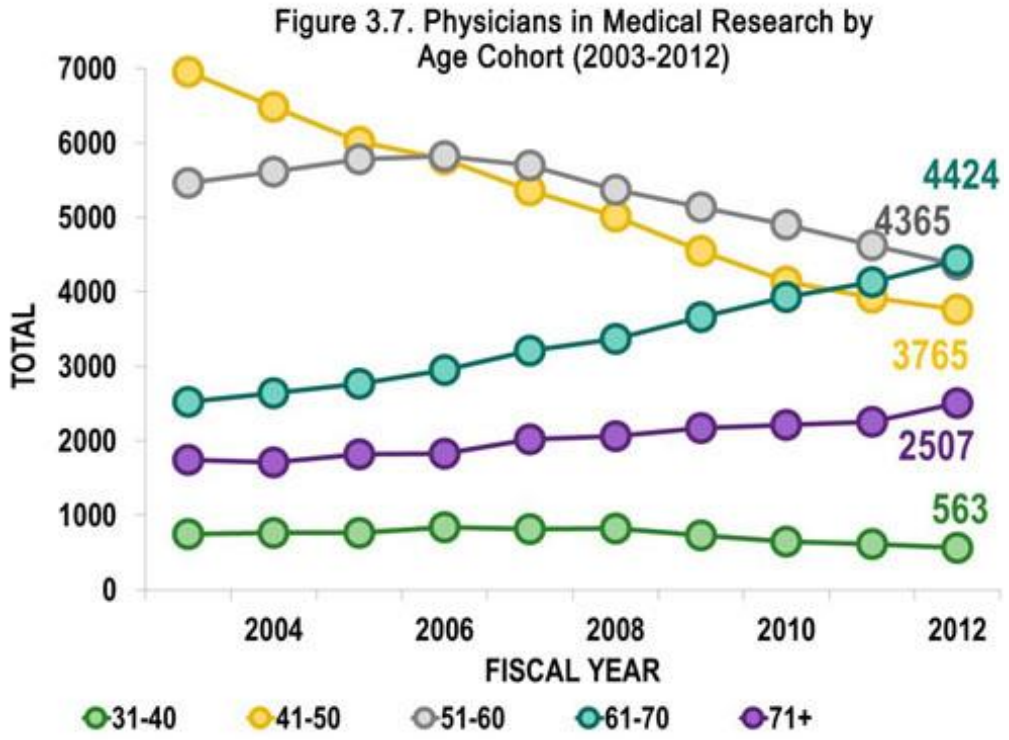
The National Institutes of Health Physician-Scientist Workforce Working Group Report, 2014

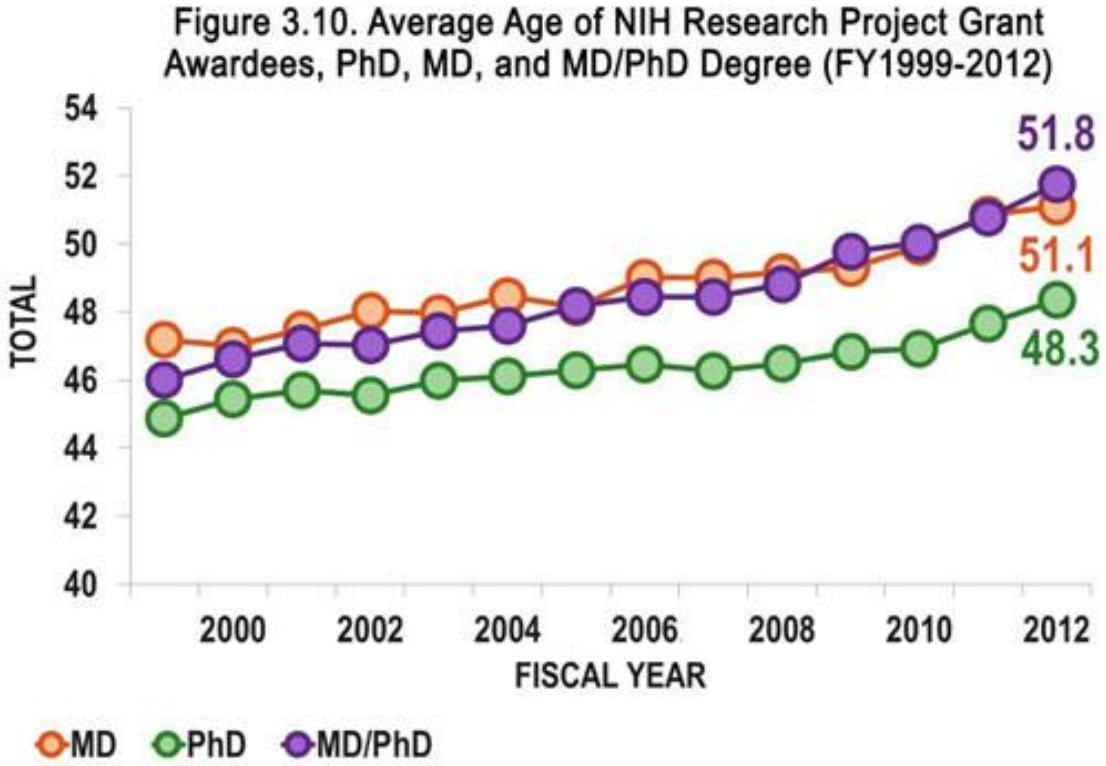
The Physician-Scientist Workforce

While the number of physicians are increasing, the number of physicians engaged in medical research and medical education has remained flat.



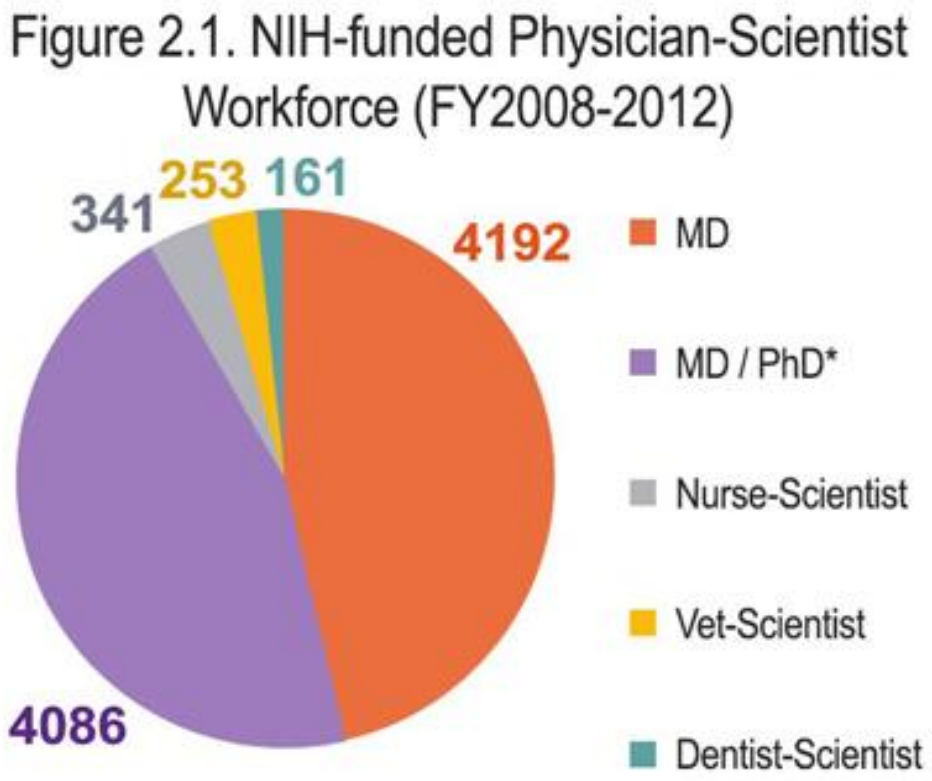
The Physician-Scientist Workforce



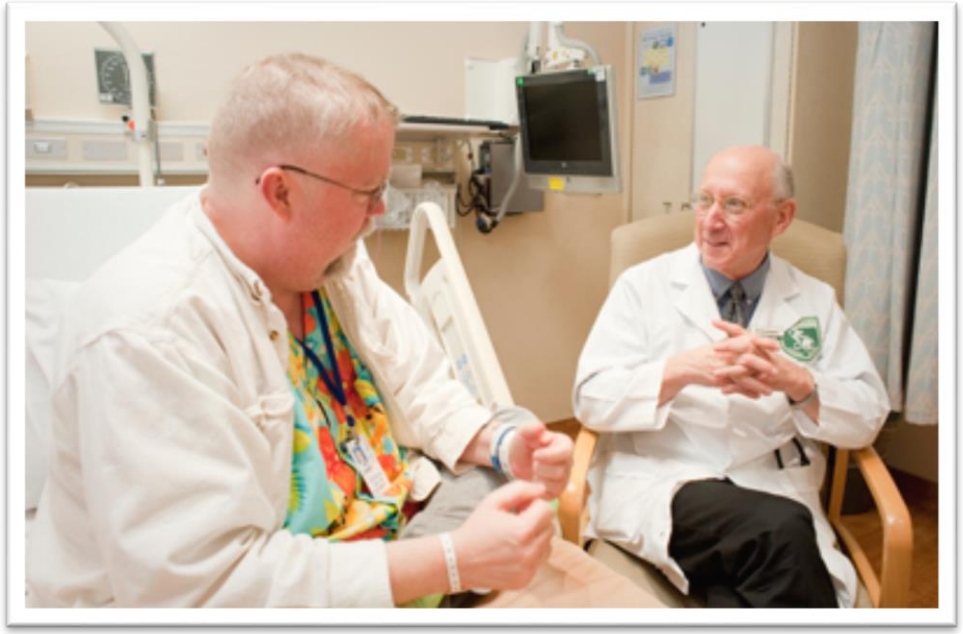


"…the cohort of physicians engaged in research getting older…"

The Physician-Scientist Workforce



"….the well trained physician scientist can thoroughly understand, interpret, and properly care for human subjects that involve an intervention. …"



National Institutes of Health

Turning Discovery Into Health

"NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability."

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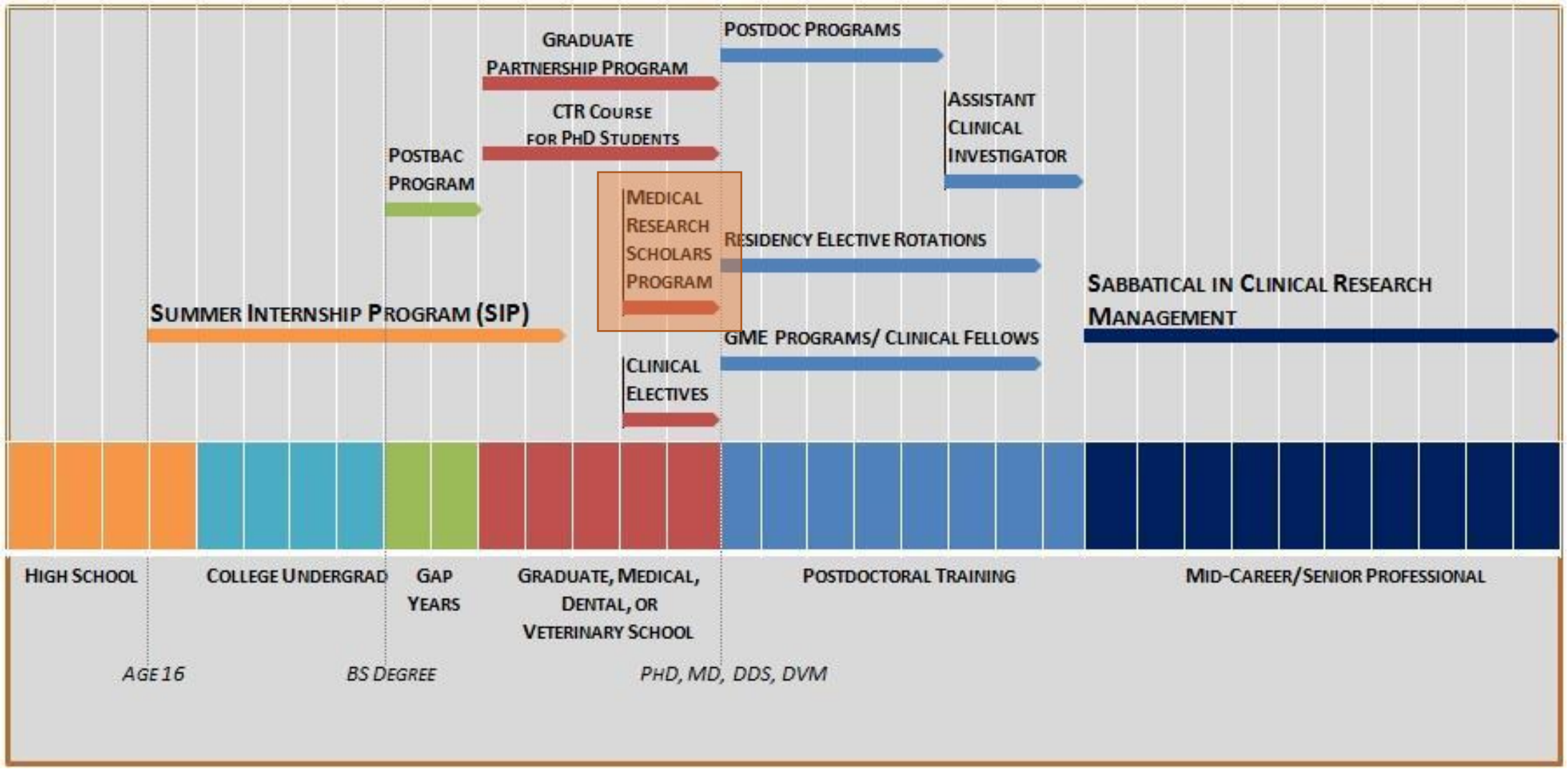
Three Core Clinical Center Missions

Performing top-tier science

Providing patient care

Training the next generation of clinician-scientists

Clinical Research Training Opportunities Portfolio



NIH Medical Research Scholars Program

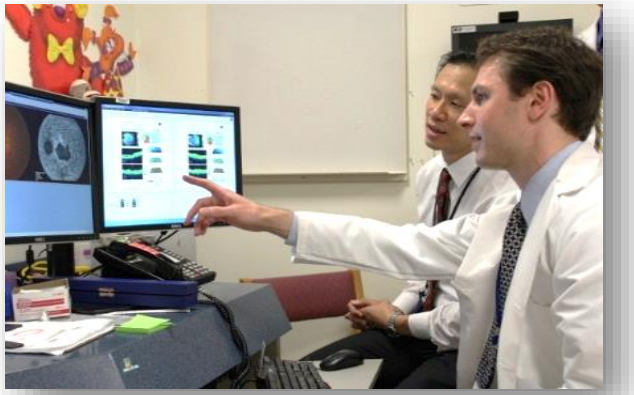
"Not a research program for medical students …

but a career development program for students heading toward careers in biomedical research that is centered around a robust investigation experience"

NIH Medical Research Scholars Program

"To be the premier training program for future clinician-scientists that advances health by inspiring careers in biomedical research"

- A comprehensive, year-long residential research enrichment program for medical, dental, and veterinary students
- Scholars engage in a mentored basic, translational, or clinical research project in an area that matches their personal interests and career/research goals
- Located at the NIH Intramural Research Program in Bethesda, MD
- Co-sponsored by the NIH and private partners via contributions to the Foundation for the NIH



The Curriculum

Mentoring, advising and a curriculum…centered around a robust investigation experience…..

- **Process of Discovery**

  Lectures on seminal basic and clinical research topics that highlight the continuum of discovery, including issues in bioethics, science policy and emerging technologies

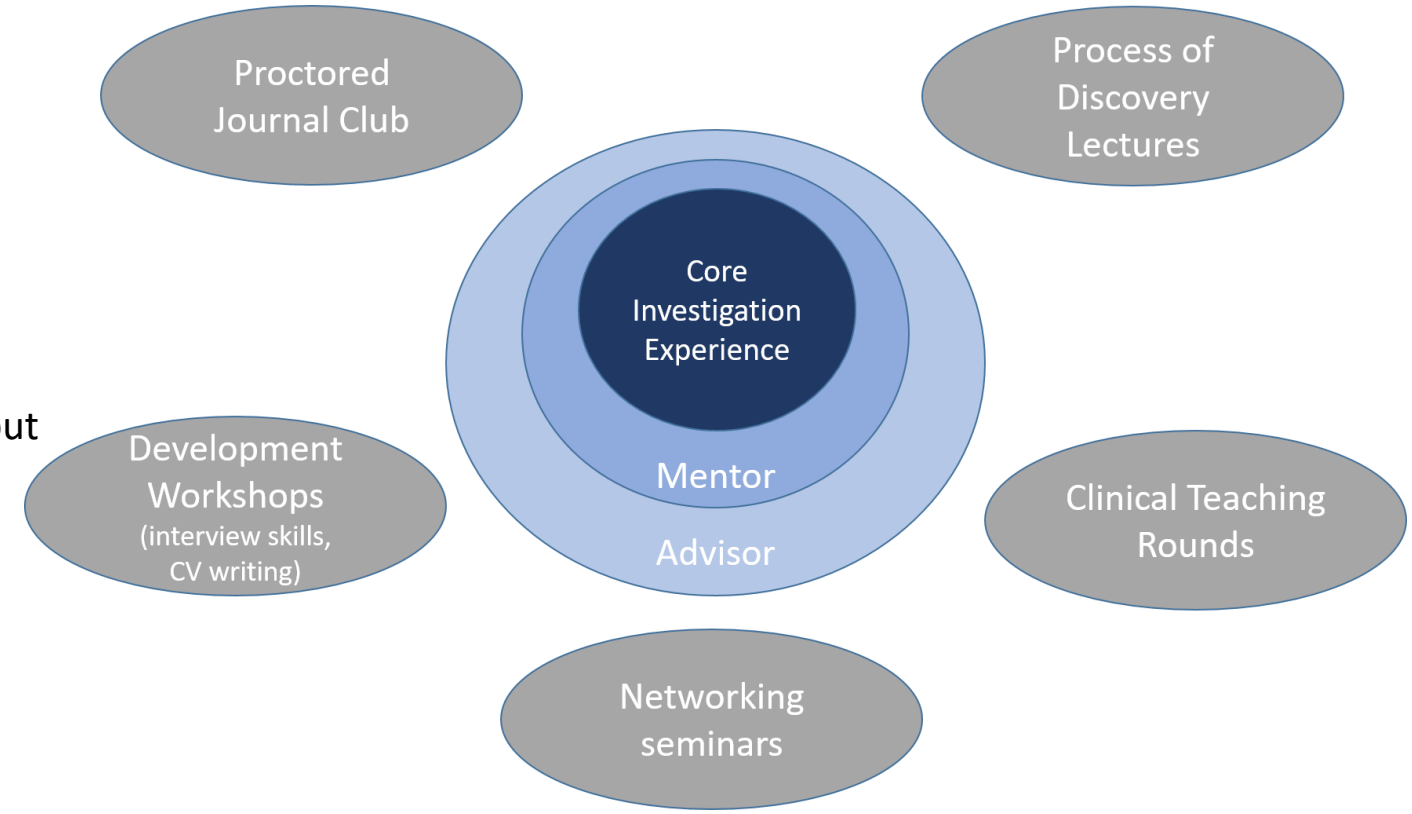
- **Clinical Teaching Rounds**

  Select master teacher/investigators present their research in a case-centered forum with participating patients, discussing not just the science of medicine, but the art of clinical care

- **Proctored Journal Club**

- **Workshops** (CV writing, interview skills, Work-Life balance)

- **On-going Seminars** by world renowned researchers (Clinical Center Grand Rounds, Demystifying Medicine, Wednesday Afternoon Lecture Series)



Why choose MRSP…

- Mentorship within and across disciplines
- Advising program
- Independent research time
- Unique curriculum
- Team science and collaboration with peers
- Professional and personal long-term networking with participants
- Access to a wealth of resources for conducting research

- Immersive residential experience, sharing the excitement of new discovery with like-minded fellow scholars from multiple academic institutions

Opportunities…

- Technologies
  - Genetics, genomics, tissue engineering, state-of-the-art imaging modalities with processing and analysis
- On-campus courses with Foundation for Advanced Education in the Sciences, www.faes.org
- Statistical programming
- Publications, Travel, Public Speaking

Networking…meeting renowned scientists and academicians…

- Dr. Francis Collins, Director of the National Institutes of Health
- Dr. Vivek Murthy, US Surgeon General, 2014-2017
- Dr. Catherine DeAngelis, first woman editor of JAMA
- Dr. John Schiller, developer of HPV vaccine
- Dr. Steve Rosenberg, pioneer developer of adoptive immunotherapy
- Dr. James Bagian, physician, astronaut and patient safety expert

Dr. Catherine DeAngelis, with MRSP Scholars

Living, working, and socializing with like-minded Scholars….

Anesthesiology	Transcriptional and Molecular Analyses of Spinal Pain Circuits
Cardiology	Effect of Anti-Interleukin-17 Monoclonal Antibody Therapy on Coronary Plaque Characteristics in Psoriasis
Dental Medicine	Localized Fibrin Accumulation in the Oral Gingiva Leads to Severe Periodontal Bone Loss
Dermatology	Assessing the Therapeutic Utility of CEACAM1 Blockade in a CRISPR-Cas9-Based Mouse Melanoma Model
Genetics (REI)	Investigating PRDM9, a Rapidly Evolving Regulator of Genetic Recombination
Infectious Diseases	Phylogenetic Analyses of Early HIV Epidemic in Washington, DC
Interventional Radiology	An Image-Based Evaluation of IVC Filter Implant Healing in a Swine Model: Implications for Performance and Retrievability
Neuro-psychiatry	7q11.23 Copy Number Variation Impacts White Matter Microstructure as Measured by Multicomponent Driven Equilibrium Single Pulse Observation of T1 and T2 (mcDESPOT)
Neurosurgery	Combination of PP2A Inhibition & PD-1 Blockade Synergistically Induces Regression of Murine Intracranial Glioblastoma
Oncology	Targeting CD200 as an Immune Checkpoint in Merkel Cell Carcinoma
Oncology	Immunotherapy Utilizing the Combination of NK and ADCC Mediating Agents with PARP Inhibition
Ophthalmology	Deep Learning and its Applications to the Age-Related Eye Disease Studies: An Imaging and Text-Mining Approach
Pediatric Neurology	PIEZO2 Deficiency Syndrome: Clinical Manifestations and In Vitro Cellular Modelling
Pediatric Oncology	A Therapeutic Strategy for Targeting N-Myc Driven Neuroblastoma using Epigenetic Small Molecule Inhibitors in Combination with Topoisomerase Inhibitors
Population Health/ Disparities	Secondhand Smoke vs. Secondhand Vapor: Prevalence and Associated Characteristics Among Youth in Florida
Population Health/ Disparities	Relationship Between Neighborhood Socioeconomic Deprivation and Telomere Length: NHANES 1999-2002
Urology	Multiparametric Magnetic Resonance Image-Guided Robotic Radical Prostatectomy After Neoadjuvant Enzalutamide and Androgen Deprivation Therapy

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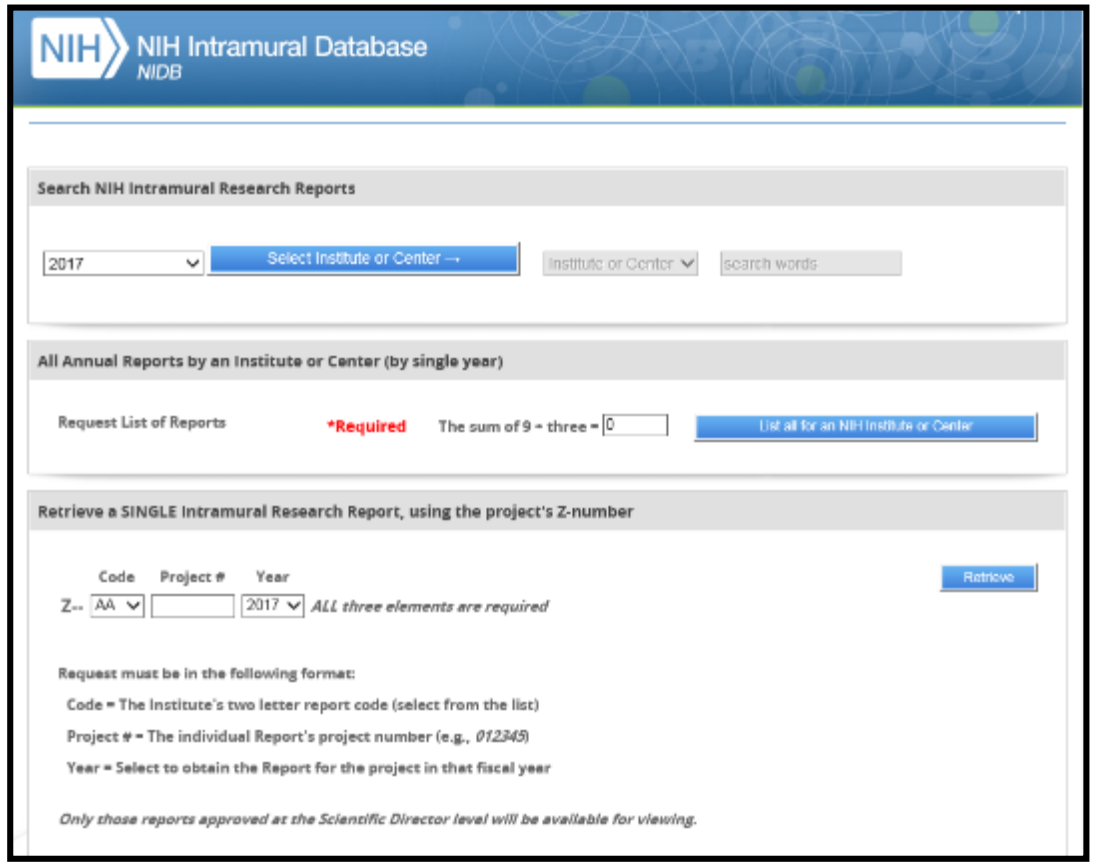
What do Scholars investigate?

Finding a research mentor: The first critical decision

- A committed research mentor is the key element to a successful research experience
- After Scholars are accepted, they are given access to lists of pre-approved mentors.
- With hundreds to select from, Scholars are also receive advice and guidance from the MRSP Academic Director and their MRSP Advisor.
- Accepted Scholars are encouraged to research mentors in advance using the NIH Intramural Database

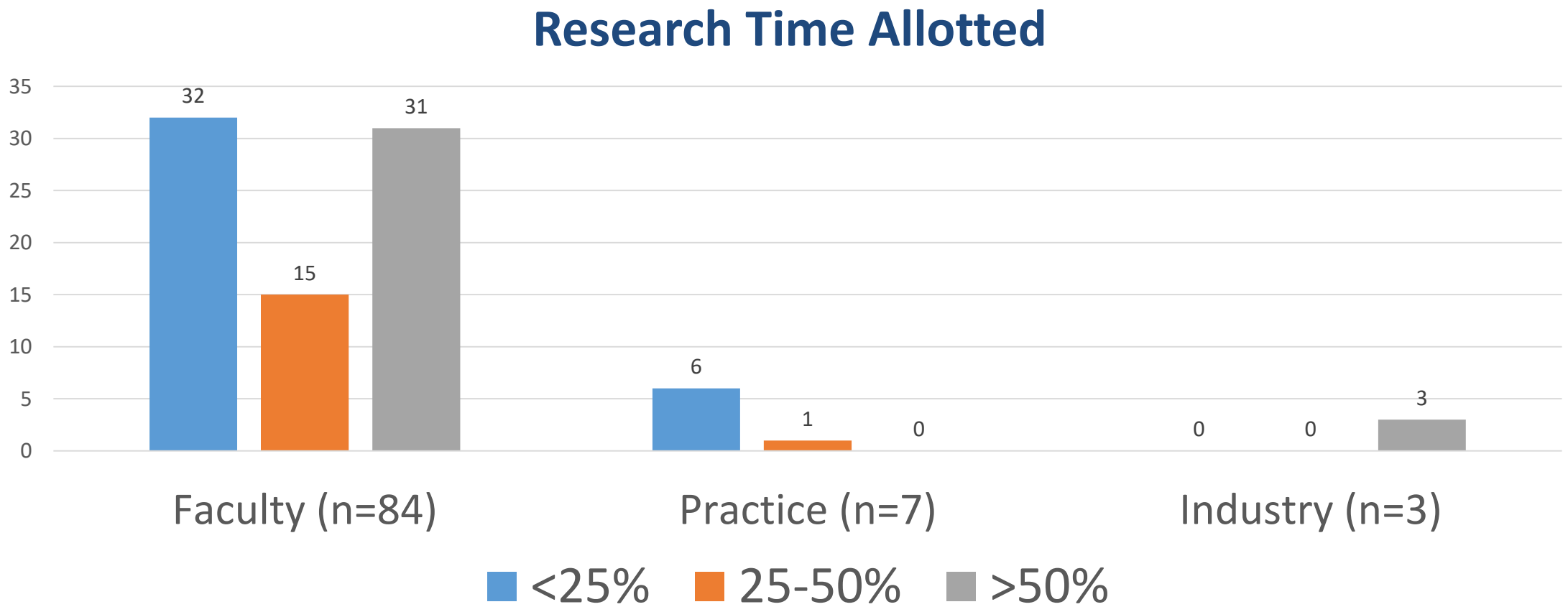


Outcomes: most Scholars go on to participate in research during residency….

Residency	No. of residents	Research in residency	% doing research
Anesthesiology	2	1	50%
Dermatology	14	4	29%
Emergency Medicine	6	3	50%
Internal Medicine	34	25	74%
IM/Pediatrics	2	2	100%
Neurology	5	5	100%
Obstetrics/Gynecology	1	1	100%
Ophthalmology	7	5	71%
Pediatrics	17	15	88%
Psychiatry	3	3	100%
Radiation Oncology	3	3	100%
Radiology	12	5	42%
Surgery (including Dentistry)	20	11	55%

From: Ognibene FP, Gallin JI, Baum BJ, Wyatt RG, Gottesman MM. Outcomes From the NIH Clinical Research Training Program: A Mentored Research Experience to Enhance Career Development of Clinician-Scientists. Acad Med. 2016 Dec;91:1684.

…as well as research after residency and fellowship



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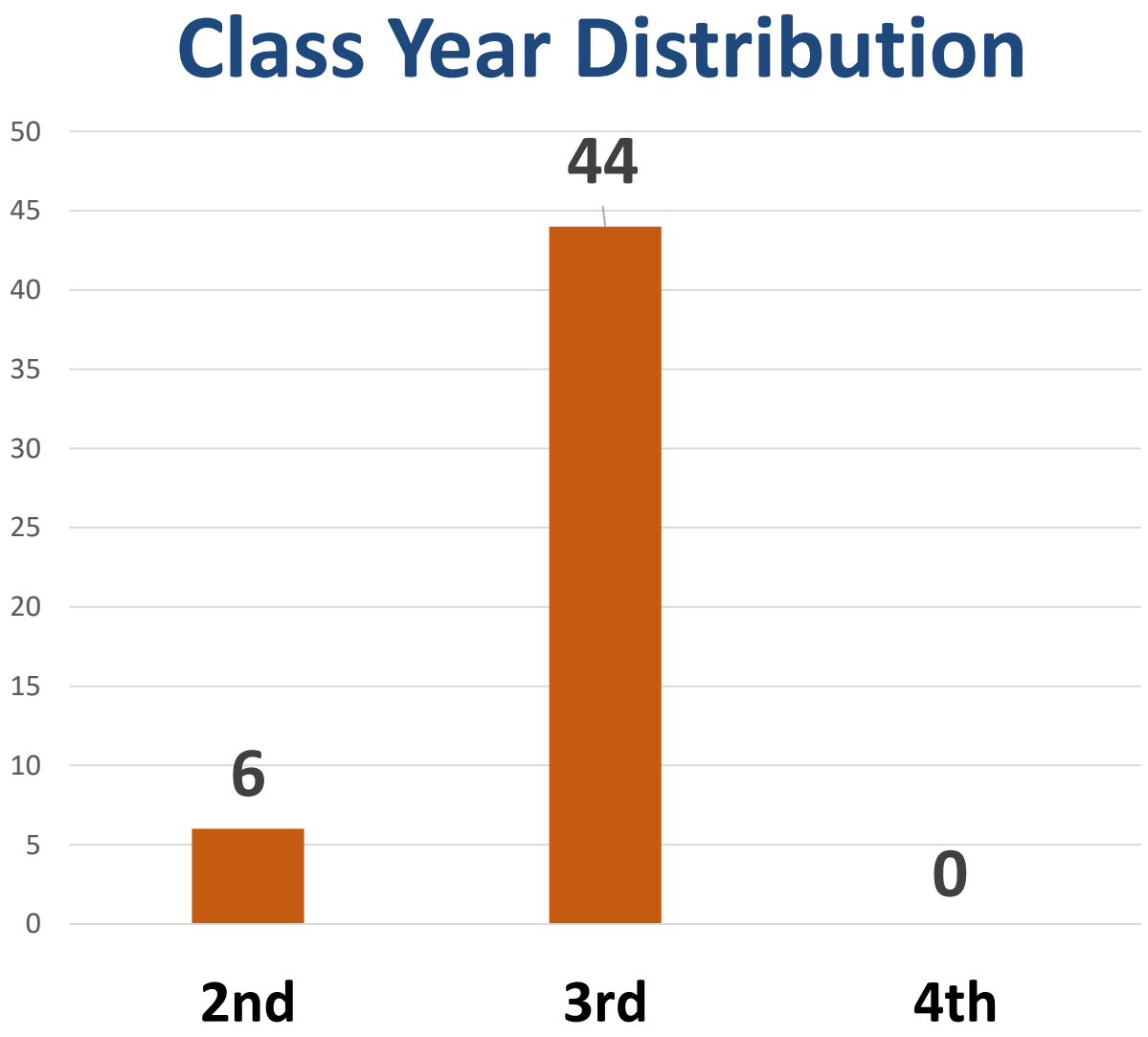
MRSP Class profile, ‘21-’22

Class size

- 50 Scholars

Gender

- 33 women (66%)
- 17 men (34%)



Represented Schools

Cleveland Clinic Lerner College of Medicine
Cornell University College of Veterinary Medicine
David Geffen School of Medicine at UCLA
Drexel University College of Medicine
George Washington University School of Medicine
Georgetown University School of Medicine
Icahn School of Medicine at Mount Sinai
Indiana University School of Dental Medicine
Jacobs School of Medicine -University at Buffalo
LSU Health Sciences Center School of Medicine in New Orleans
McGovern Medical School at the University of Texas
Medical College of Georgia at Augusta University
Michigan State University College of Human Medicine
New York University School of Medicine
Northwestern University Feinberg School of Medicine
Rutgers, Robert Wood Johnson Medical School
Texas Tech University Health Sciences Center University of Arkansas College of Medicine

University of California, San Diego School of Medicine
University of Chicago Pritzker School of Medicine
University of Connecticut School of Medicine
University of Florida College of Medicine
University of Iowa Carver College of Medicine
University of Massachusetts Medical School
University of Miami Miller School of Medicine
University of Minnesota Medical School
University of Missouri - Columbia School of Medicine
University of Missouri - Kansas City School of Medicine
University of North Carolina School of Medicine
University of Puerto Rico School of Medicine
University of Texas Health Science Center at San Antonio Long School of Medicine
University of Texas Medical Branch at Galveston School of Medicine
University of Texas Southwestern Medical School
University of Virginia School of Medicine
Wake Forest School of Medicine

NIH MRSP Scholar Benefit Package

- 12-month stipend (~$41,050)
- Relocation expenses to and from Bethesda
- Residential furnished housing on NIH campus
- Domestic conference travel allowance
- Health insurance
- Personal education fund for scientific courses and textbooks

2022-2023 NIH Medical Research Scholars Program Timetable

October 1st	Application website opens (https://clinicalcenter.nih.gov/training/mrsp)
November 10th	MRSP informational webinar (1:00 pm, EST)
January 7th	***Application deadline (5pm, EST)***
Mid February	Notification of interview
Early March	MRSP interviews
Mid March	Notification of selection
Mid March	Uniform acceptance deadline (MRSP, ASH)
July	Scholars arrive at NIH to begin their year (several arrival dates offered to accommodate the home school schedules)

Recommendations for a competitive application

- **Clear interest in research**
  - Your interest and potential are the most important criteria
- **Strong and detailed letters of recommendation**
  - From faculty who know you well
  - If your research accomplishments are modest, then have your recommenders address this positively and strongly
- **Focused cover letter/personal statement**
  - Excellent writing is essential. Grammar matters!
  - Use this as your opportunity to describe your motivations to pursue biomedical research as your career path.
- **Start application early**

Clinical Center's Training Website

Department of Health and Human Services | NIH National Institutes of Health

NIH Clinical Center
America's Research Hospital

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Training the Next Generation

The NIH Clinical Center offers an extensive range of clinical research training to help prepare the next generation of clinician-scientists. The innovative curriculum includes courses in pharmacology, principles and practice of clinical research and bioethics.

Office of Clinical Research Training and Medical Education (OCRTME)

- **For Students**
  - Summer Internships
  - Clinical and Translational Research Course for Ph.D. Students
  - Medical Research Scholars Program
  - Clinical Electives
- **For Residents/Fellows**
  - Graduate Medical Education
  - Elective Rotations
  - NIH-Duke Master's
  - Clinical Fellows Corner
  - Loan Repayment Program
- **For Mid-Career Professionals**
  - Sabbatical in Clinical Research Management
- **Other Training Opportunities**
  - Continuing Medical Education
  - Courses in Clinical Research
  - Other NIH Training/Educational Resources
  - News and Events
  - Contact Us

Department Fellowships and Other Opportunities (Specific Areas of Clinical Research)

- Bioethics Fellowship Opportunities
- Critical Care Medicine - Fellowship Opportunities for

Tweets by @CCMedEd

NIH CC MedEd Retweeted

NCI Cancer Training
@NCI_Training

Are you a 4th year graduate student? Apply to NCI's Graduate Student Recruiting Program at go.usa.gov/cfgpH

18 Mar

NIH CC MedEd Retweeted

NCI Cancer Training
@NCI_Training

NCI's new EXPOSE program application deadline is today at midnight! Learn how to apply here go.usa.gov/csDKF

30 Mar

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http://clinicalcenter.nih.gov/training/index.html

For More Information

- Medical Research Training Program
  https://clinicalcenter.nih.gov/training/mrsp

- Clinical Center Office of Clinical Research Training and Medical Education
  http://www.cc.nih.gov/training/index.html

- NIH Clinical Center
  http://www.cc.nih.gov

- National Institutes of Health
  http://www.nih.gov

- For more information contact us: MRSP@mail.nih.gov