



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



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.”

Three Core Clinical Center Missions

Performing top-tier science

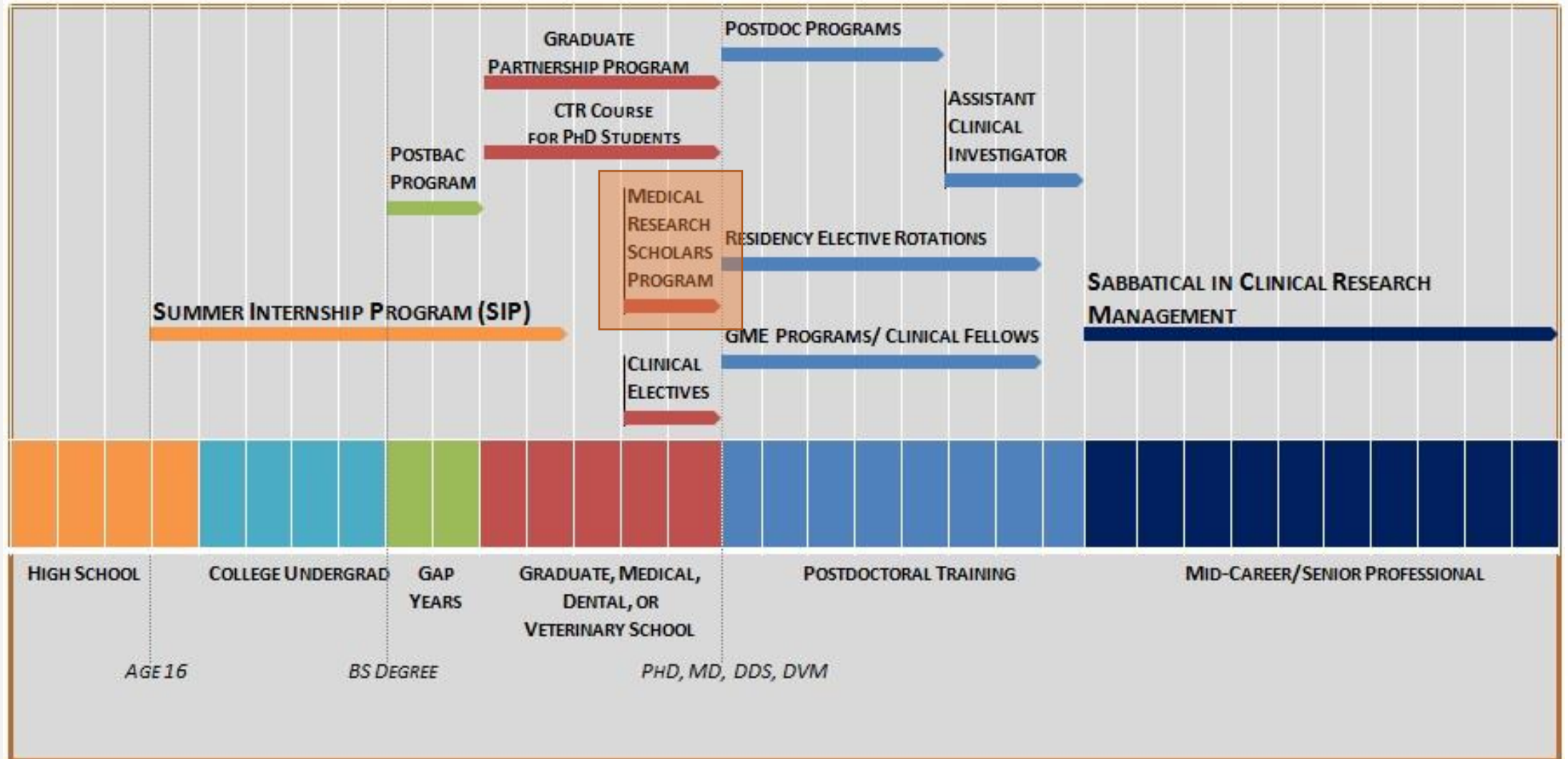


Providing patient care



**Training the next generation of
clinician-scientists**

Clinical Research Training Opportunities Portfolio



NIH Medical Research Scholars Program

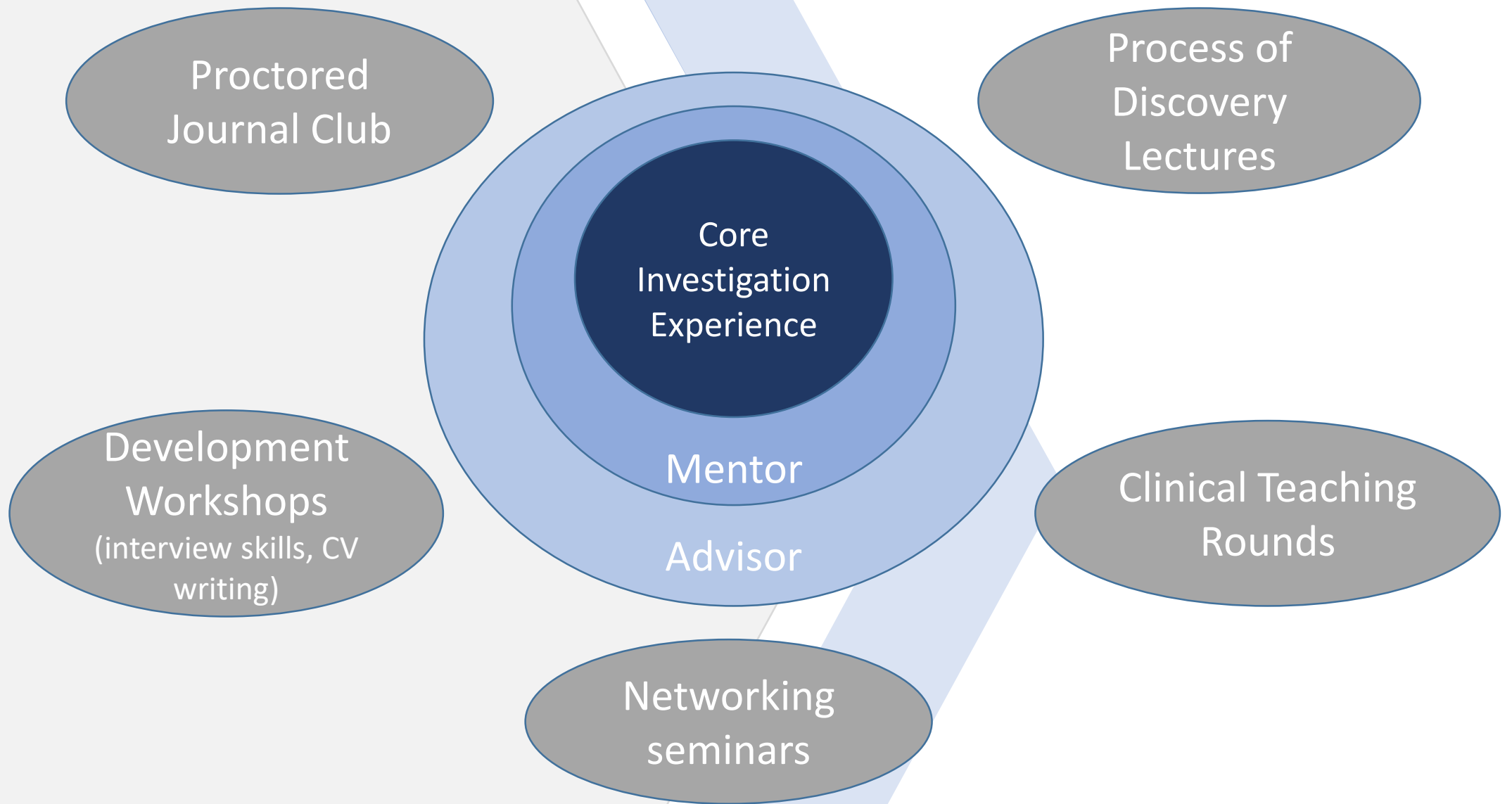
“To be the premier training program for future clinician-scientists that advances health by inspiring careers in biomedical research”

- 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



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”*



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

The Curriculum

- **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**

- **Training in clinical protocol development and the conduct of human subjects research**

- **Monthly networking sessions** with selected great teachers from NIH and other academic institutions

- **Workshops** (CV writing, interview skills, protocol writing, 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...

- Statistical programming software
- Flow cytometry
- CRISPR
- MRI techniques/Image processing and analysis
- On-campus courses
- Publications
- Travel
- Public Speaking

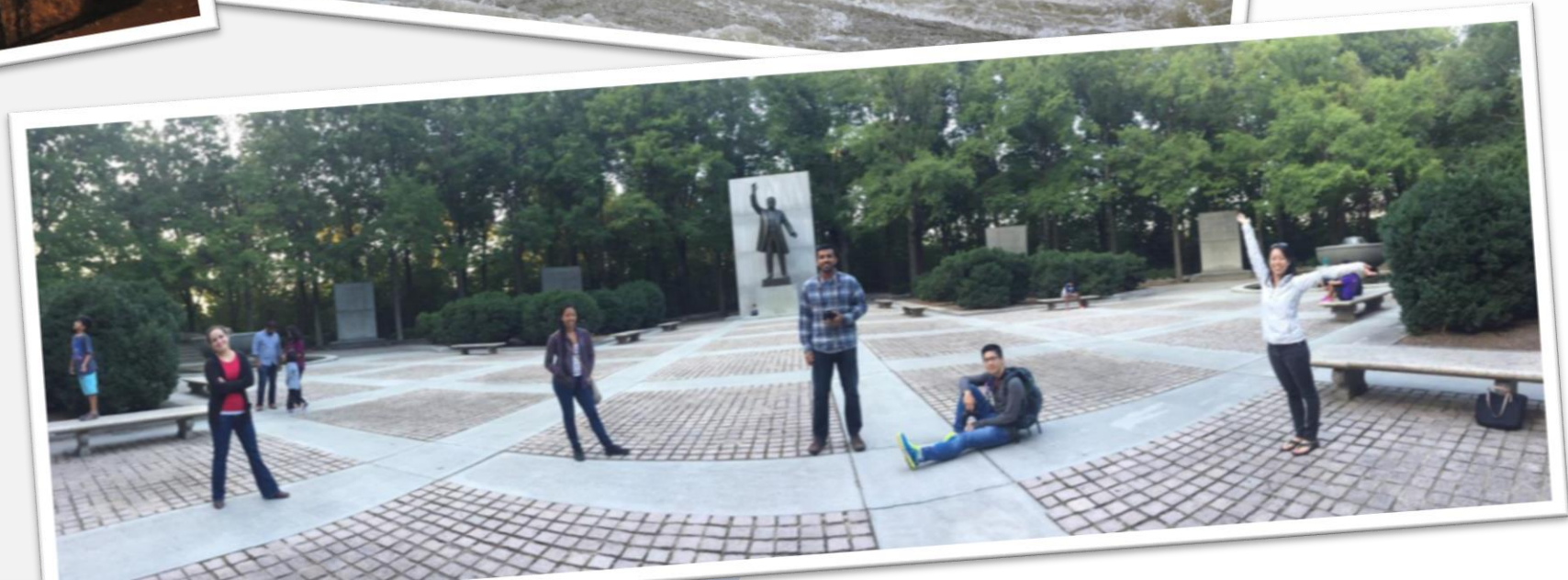
Networking...meeting renowned scientists and academicians...

- 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

What do Scholars investigate?

Finding a research mentor

- After scholars are selected, they are given access to lists of approved mentors. With hundreds to select from, they are also given advice and guidance from the MRSP Academic Director and their MRSP Advisor.
- Scholars can research mentors in advance using the NIH intramural database
 - Go to <http://intramural.nih.gov/search/index.taf>
 - In top line, leave the reporting year as 2015, and then
 - Select either “all” NIH Intramural Institutes and Centers or any individual Institute or Center
 - In the next line, put an investigator’s name and/or one or more key words
 - Check “include relevancy score in search result”
 - Click “Search” to get relevant “NIDB Annual Report(s)”
 - Click on weblinks to get pop-up reports of interest
 - To start a new search, close pop-up, scroll up, change the investigator or key words, and click Search again

The screenshot shows the NIH Intramural Database (NIDB) search interface. At the top, the NIH logo and 'NIH Intramural Database NIDB' are displayed. Below this is a search bar titled 'Search NIH Intramural Research Reports'. It contains a dropdown menu with '2017', a button 'Select Institute or Center -->', a dropdown menu with 'Institute or Center', and a text input field for 'search words'. Below the search bar is a section titled 'All Annual Reports by an Institute or Center (by single year)'. It contains a button 'Request List of Reports', a red asterisk '*Required', a text input field 'The sum of 9 + three = 0', and a button 'List all for an NIH Institute or Center'. Below this is a section titled 'Retrieve a SINGLE Intramural Research Report, using the project's Z-number'. It contains a table with columns 'Code', 'Project #', and 'Year'. The 'Code' column has a dropdown menu with 'AA', the 'Project #' column has a text input field, and the 'Year' column has a dropdown menu with '2017'. Below the table is a button 'Retrieve'. Below the button is a note 'ALL three elements are required'. Below the note is a section titled 'Request must be in the following format:'. It contains three lines of text: 'Code = The Institute's two letter report code (select from the list)', 'Project # = The individual Report's project number (e.g., 012345)', and 'Year = Select to obtain the Report for the project in that fiscal year'. Below this is a note 'Only those reports approved at the Scientific Director level will be available for viewing.'

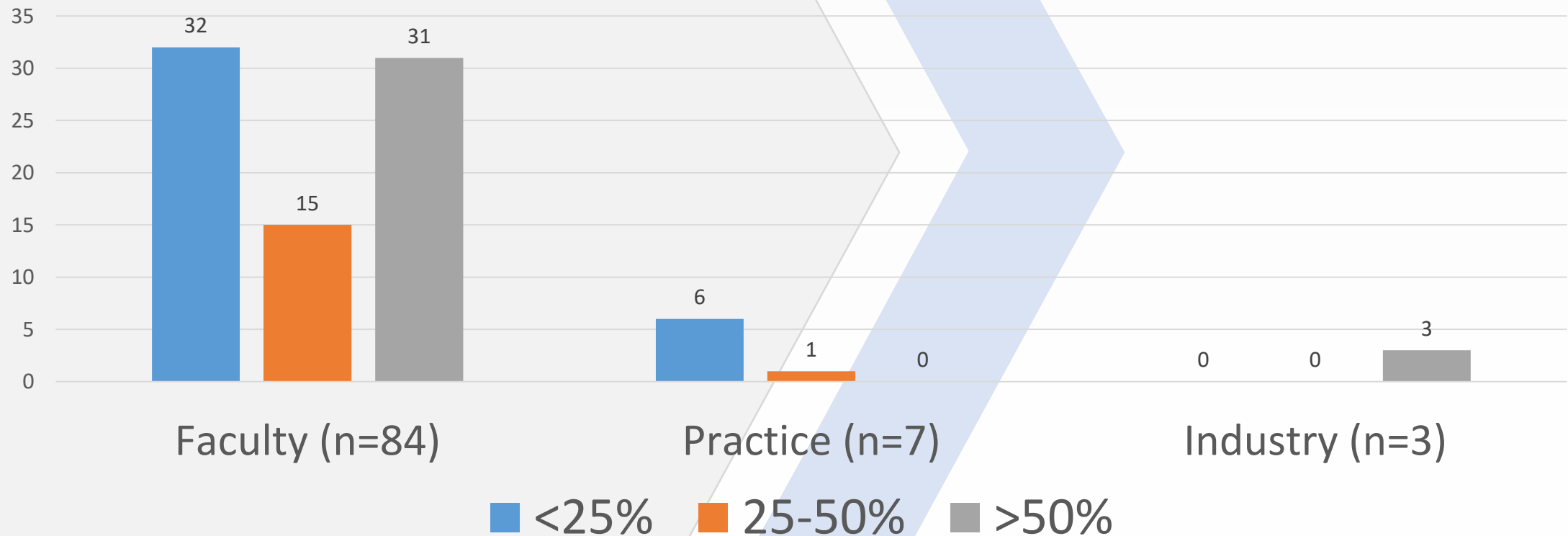
Outcomes: most graduates participate in research during residency....

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.

...and go on to research after residency and fellowship

Research Time Allotted



MRSP Class profile, '18-'19

- N=37
- 24 female (65%)
- 3 underrepresented minorities (8%)
- 34 medical, 2 dental, 1 veterinary
- 28 different schools

NIH MRSP Scholar Benefit Package

- 12-month stipend (~\$36,000)
- Relocation expenses to and from Bethesda
- Residential furnished housing on NIH campus
- Domestic conference travel expenses
- Health insurance
- Tuition support for scientific courses and textbooks

2019-2020 NIH Medical Research Scholars Program Timetable

October 1	Application website opens
November 15	MRSP informational webinar (12:30 pm, EST)
January 11	Application deadline (5 pm, EST)
Mid February	Notification of Interview
Early March	MRSP Interviews (on the NIH campus)
Mid March	Notification of Selection
Mid March	Uniform Deadline to Accept (MRSP, Sarnoff, and Doris Duke)
July thru August	Students Arrive at NIH to begin year (rolling arrival dates based on home school calendar)

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  National Institutes of Health



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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

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

  18 Mar

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

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

For More Information

- 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>

- Contact:

- Administrative email box, MRSP@mail.nih.gov