Research Training Opportunities at the National Institute on Aging

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NIA Intramural Scientific Recruiters

NIA Recruitment 2010
National Institutes of Health (NIH)

- **Mission:**
  - 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 the burdens of illness and disability.
What does that mean?

• NIH studies and conducts research on almost **every** disease, disorder and complex that affect human life, health, and well being
How does NIH study all those diseases?

• Conduct research in NIH laboratories (intramural)

• Provide research support for scientists in universities, medical schools, hospitals, and other research institutions throughout the country and abroad (extramural)

• Training research investigators at all levels
  • Summer Interns
  • Post-baccalaureate training
  • Post-doctoral training
  • Junior/senior investigators
  • Clinical researchers
NIH conducts research in 27 Institutes and Centers

- OD
- NCMHD
- FIC
- NIGMS
- NCRR
- CSR
- NCMHD
- NIMH
- NIDCR
- NINR
- NINDS
- NIAMS
- NIDA
- NHGRI
- NIDCD
- NICHD
- NIDDK
- NIAID
- NLM
- NIEHS
- CIT
- NIAAA
- NEI
- CC
- NIA
- NHLBI
- NCCAM
- NCI

= Intra- & Extramural program
= Extramural only
Why do research at the NIH?

• Premiere research institution in the world
• World renowned scientists and clinicians conduct research and make presentations
• Several Nobel Laureates or members of the National Academy of Science on faculty or supported with NIH funds
Why do an internship at the NIH?

• Breadth of knowledge
• Scope of research
• Wealth of interactions

• The experience is unlike any other!!
Does the NIH do research that I’m interested in?
Special Research Groups

- Mycobacterial Interest Group
- Nanomedicine/Nanotechnology Interest Group
- Neural Cell Function Interest Group
- Neurodevelopmental Disorders Interest Group
- Neuroinformatics Interest Group
- Neuromuscular Diseases Interest Group
- Nonhuman Primate Neurobiology Research Interest Group
- Nurse Practitioner Special Interest Group
- Clinical Applications of Stem Cells Interest Group
- Clinical Pharmacology Interest Group
- Cognitive Neuroscience Consortium
- Critical Illness and Injury Interest Group
- Cell Biology Interest Group
- Clinical Research
- Genetics Interest Group
- Immunology Interest Group
- Molecular Biology/Biochemistry Interest Group
- Neurobiology Interest Group
- Structural Biology Interest Group
- Bone Marrow Stromal Cell Transplantation Center
- Lab Managers Interest Group
- Staff Scientists/Staff Clinicians Organization
- Women Scientist Advisors Committee
- Cultural and Qualitative Research Interest Group (reforming soon)
- Cytokine Interest Group
Special Research Groups

- Data and Research Resources Sharing Interest Group
- DNA Repair Group
- Domestic Violence Research Group
- Drosophila Interest Group
- Drosophila Neurobiology Interest Group
- Economics Interest Group
- Emergency Preparedness and Biodefense Interest Group
- End-of-Life / Palliative Care Interest Group
- Engineering and Physical Sciences Interest Group
- Epidemiology and Clinical Trials Interest Group
- Epigenetics Interest Group
- Epilepsy Interest Group
- Epithelial Transport Biology Interest Group
- Flow Cytometry Interest Group
- Fluorescence Interest Group
- Free Radical Interest Group
- Trans-Institute Angiogenesis Research Program
- Translational Research Interest Group
- Viral Hepatitis Interest Group
- Virology Interest Group
- Washington Area NMR Group
- Washington Area Yeast Club
- Wnt Working Group
- Women's Health Special Interest Group
- X-ray Diffraction
- Zebrafish-Frog Interest Group
- Hypoxia Inducible Factor (HIF) Interest Group
- Image Processing Interest Group
- In Vivo NMR Interest Group
- Infectious Disease Imaging Interest Group
Special Research Groups

- Optical Imaging Interest Group
- Pain Interest Group
- Patent Law and Technology Transfer Interest Group
- Pediatric Clinical Research and Outcomes Interest Group
- Pediatric Imaging Scientific Interest Group
- Pediatric Neuroimaging Interest Group
- PET (Positron Emission Tomography) Interest Group
- Phage-Tech Interest Group
- Pharmacogenetics Interest Group
- Pigment Cell Research Interest Group
- Polyunsaturated Lipid Function Interest Group
- Probiotic and Prebiotic Working Group
- Prostate Cancer Interest Group
- Protein Trafficking Interest Group
- Infectious Diseases Interest Group
- Integrative Neural Immune Interest Group
- Integrative Neuroscience Interest Group
- Lambda Lunch (Bacterial and Phage Genetics)
- Light Microscopy Interest Group
- Liver Biology Interest Group
- Magnetic Resonance Imaging and Spectroscopy Interest Group
- Mass Spectrometry Interest Group
- Membrane Protein Interest Group
- Metabolomics Scientific Interest Group
- Microarray Users Scientific Interest Group
- Mitochondria Interest Group
Special Research Groups

- Proteomics Interest Group
- Reproductive and Adult Endocrinology Interest Group
- Retinal Disease Interest Group
- RNA Club
- Stem Cell Interest Group
- Stroke Branch Interest Group
- Synaptic and Developmental Plasticity Interest Group
- Genomics and Bioinformatics Interest Group (status uncertain)
- Glycobiology Interest Group
- Handheld Users Group
- Head and Neck Cancer Interest Group
- HTS Assay Development Interest Group
- Molecular and Functional Biophotonics Interest Group
- Molecular Modeling Interest Group
- Motility Interest Group
- Mouse Club
- Mucosal Immunology and Microbiome Interest Group
- Muscle Interest Group
- Systems Biology Special Interest Group
- TGF-beta Superfamily Interest Group
- Tissue Microdissection Interest Group
- Tobacco and Nicotine Research Interest Group
- Transcription Factors Interest Group
What is the
National Institute on Aging?
NIA’s mission

• To improve the health and well-being of older Americans through biomedical, social, and behavioral research.

• The Institute conducts and supports research by:
  – focusing on aging processes,
  – age-related diseases,
  – special problems and needs of the aged.

• NIA intramural program
  – Conducts basic, clinical, and translational research
  – Has a broad information program to communicate about research and health with older people, their families, health professionals, researchers, policymakers, and others.
NIA’s research scope include

• Basic research areas:
  – Degenerative neurological disorders (Alzheimer’s and Parkinson’s disease)
  – Immunological processes (immunosenescence and thymic involution)
  – Diabetes mellitus
  – Osteoarthritis
  – Cardiovascular disease
  – Obesity
  – Behavioral Research (personality & cognition)

• Medical disciplines:
  – Immunology
  – Endocrinology
  – cardiology
  – Rheumatology
  – Hematology
  – Oncology
  – Gerontology
Clinical Research Protocols

• Exendin-4 for the Treatment of Alzheimer's Disease
  – Examine how it may slow down the progression of brain cell damage and/or improve memory and other symptoms that are due to Mild Cognitive Impairment or early Alzheimer’s disease

• Hormones in Taste Buds
  – This study is being done to measure hormones that are secreted in response to smell, taste, and digestion of food.

• Prostate Cancer Study
  – Evaluates men treated for prostate cancer and the risk for developing diabetes.
How do you study Aging?

• Baltimore Longitudinal Study on Aging (BLSA)

• Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS)
Examines what happens as people age and how to distinguish changes due to aging and changes due to disease or other causes.

Studies various aspects of aging:
- functional disability (frailty)
- Alzheimer's disease
- cardiovascular disease
- cancer
- osteoporosis
- menopause
Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS)

• Community-based research effort
• Focuses on health disparities in socioeconomically diverse African-Americans and whites in an urban population
• Evaluates physical, genetic, demographic, psychosocial and psychophysiological parameters
Want to do an internship at the NIH?
Can I do an internship if I’m not a Natural Science Major?

- Natural Science Majors:
  - Biology
  - Chemistry
  - Physics
  - Biochemistry
  - Organic Chemistry
  - Plant Biology
  - Microbiology
  - Geology
  - Zoology
  - Genetics

- Other Majors:
  - Computer Science
  - Mathematics
  - Statistics
  - Behavioral sciences (psychology, cognition)
  - Informatics
  - Speech Pathology
  - Engineering
  - Architecture
  - & more!
Training opportunities @NIA

• **Summer Internship Program**
  – Hands-on experience in both laboratory and clinical settings
  – Attend specialized seminars that enhance their educational and investigative skills.
  – Help with educational development (i.e. personal statements, presentation skills)

• **Post-baccalaureate Fellowship**
  – For recent college graduates who want to explore career options in science and medicine
  – Conduct biomedical research at the NIA
  – Access to leading investigators at the cutting edge of aging research, modern facilities and most up-to-date equipment

• **Pre-doctoral Fellowship**
  – For Graduate Students in doctoral program
  – Forges a collaboration with independent researcher at NIA and the home institution
Training opportunities @ NIA

• Post-doctoral Fellowship @ NIA
  – Allows training toward developing an independent research career
  – Placed laboratories based on the research specialties or interest
  – Access to state-of-the-art instruments, core facilities, and world renowned scientists.

• Pharmacology Research Associate Program (PRAT)
  – Postdoctoral fellowship at either the National Institutes of Health (NIH) or the Food and Drug Administration (FDA)
  – For individuals who desire advanced experience in pharmacology
NIA Contacts

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Research and Training Opportunities @ the NIA

Important Dates:
Application opens: Nov. 22
Applications Deadline: March 1

www.nih.gov
www.training.nih.gov
www.grc.nia.nih.gov/training