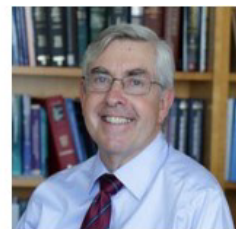


## Fact Sheet



# National Institute of Neurological Disorders and Stroke



Walter J. Koroshetz, M.D.  
Director

### Mission

To seek fundamental knowledge about the brain and nervous system and to use that knowledge to reduce the burden of neurological disease.

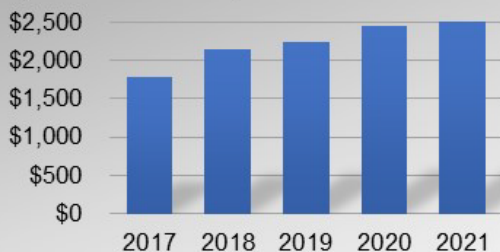
**Neurological disorders** include common and rare conditions that affect people of all ages. By some measures, they account for a greater burden than any other group of diseases.

### NINDS

- Supports and performs basic, translational, and clinical neuroscience research, including studies to understand the nervous system in health and disease and to develop and test new and improved therapies.
- Funds and conducts research training and career development programs to ensure a vibrant, talented, and diverse neuroscience workforce.
- Disseminates neuroscience discoveries and their implications for health to the public, health professionals, researchers, and policy-makers.

### NINDS Funding History

(Dollars in Millions)\*



FY 2022 CR: \$2,513 million

FY 2023 President's Budget: \$2,768 million

\*Includes funds from the 21st Century Cures Act.

### Facts and Figures FY 2021

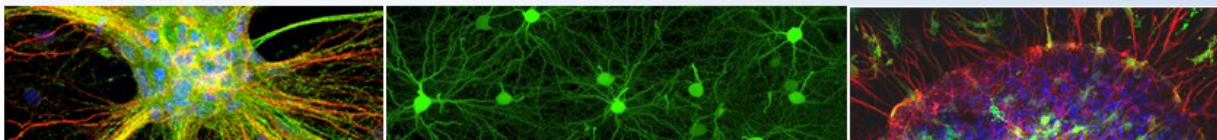
- 554 Full Time Employees
- 878 Research Project Grants<sup>1</sup>
- 1,107 Extramural Principal Investigators<sup>2</sup>
- 131 Extramural Early Stage Investigators<sup>1,3</sup>
- 52 Intramural Principal Investigators

<sup>1</sup>Competing awards only. <sup>2</sup>Includes Principal Investigators and Multiple Principal Investigators. <sup>3</sup>Early Stage Investigators are within 10 years of their final research degree or end of post-graduate clinical training and have not received a substantial independent research grant from NIH.

### Research Highlights

*Through research supported and conducted by NINDS, researchers understand more about the nervous system and the diseases and conditions that affect it. NINDS has contributed to:*

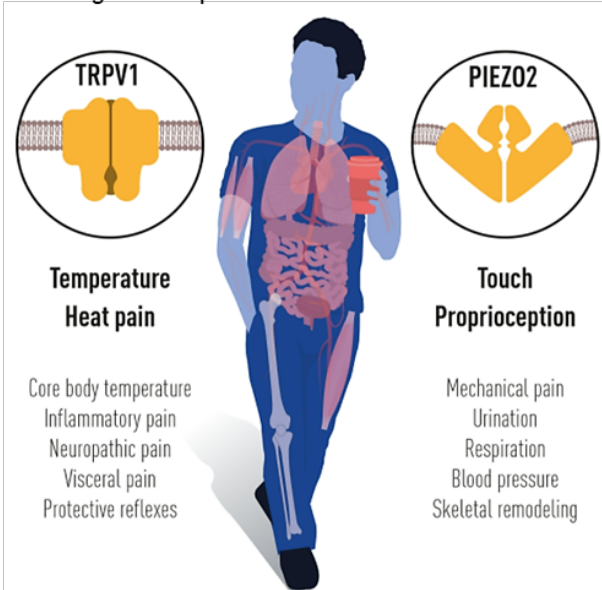
- Decades of decline in stroke deaths, due to advances in prevention and treatment including the clot-busting drug t-PA, clot retrieval devices, and innovative acute stroke imaging methods.
- New therapies for common and rare neurological disorders such as epilepsy, multiple sclerosis, migraine, spinal muscular atrophy, and muscular dystrophy.
- Devices that connect to the nervous system to restore functions lost or impaired due to disease or injury, including implanted brain stimulation therapies for Parkinson's disease, epilepsy, and spinal cord injury.
- Growing evidence for vascular contributions to dementia, which may inform new approaches to prevent cognitive decline and promote healthy brain aging.
- Cutting-edge tools for neuroscience research allowing studies to classify the many cell types in the human brain, map complex neural circuits, and observe brain activity in unprecedented detail.



## Recent accomplishment

### *Basic science as the foundation for breakthroughs*

Two recipients of NINDS and other NIH support for basic neuroscience research were awarded the 2021 Nobel Prize in Physiology or Medicine. Over decades of research David Julius and Ardem Patapoutian identified ion channel receptors in nerve endings that trigger electrical impulses in response to temperature changes and mechanical force. Beyond unraveling mysteries about how we sense heat, touch, and body position, these fundamental discoveries are leading to new approaches for treating chronic pain and other conditions.



Credit: Mattias Karlén © The Royal Swedish Academy of Sciences, <http://www.nobelprize.org/>.

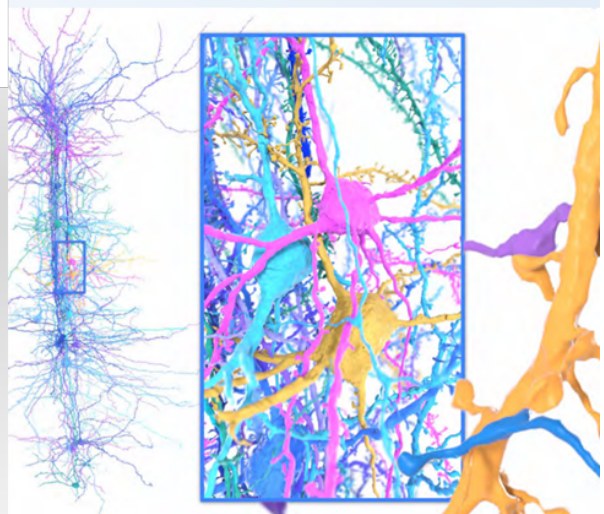
## Future Initiatives

- **Health Disparities and Health Equity** NINDS is committed to reducing the disproportionate burden of neurological disease borne by disadvantaged groups. Guided by public input and strategic planning, NINDS will intensify research on health disparities and equity, and minority, community, and global health.
- **NINDS Ultra-rare Gene Therapy (URGenT) Network** URGenT will support precision gene targeted therapy development for severe ultra-rare neurological diseases affecting fewer than 20 in one million people. Together, these diseases represent a large medical need with little incentive for therapy development. NINDS will also support natural history studies to identify clinical outcome measures, a prerequisite for future clinical trials.

## Trans-NIH neuroscience research

*NINDS is a leading partner in trans-NIH neuroscience initiatives, reflecting the nervous system's role in many aspects of human health, development, and disease.*

- The **Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative**<sup>®</sup> is an ambitious effort to develop and use new technologies to study brain circuits and their functions, and ultimately to understand and treat brain diseases.
- NINDS leads programs within the **NIH Helping to End Addiction Long-term<sup>SM</sup> (HEAL) Initiative** to develop non-addictive treatments for pain and also leads the **NIH Pain Consortium**, joining 23 Institutes and Centers on pain research.
- NINDS and the National Institute on Aging (NIA) work together to advance research on **Alzheimer's Disease and Alzheimer's Disease-Related Dementias (ADRD)**, including through the new **Center for Alzheimer's and Related Dementias (CARD)** on the NIH campus.
- The **NIH Blueprint for Neuroscience Research** is a collaboration among NIH Institutes, Centers, and Offices to address cross-cutting needs for neuroscience research and research training.
- NINDS and the National Institute of Allergy and Infectious Diseases (NIAID) lead the trans-NIH **Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)** working group.



This 3D reconstruction of neurons and their connections in the mouse brain was recreated by an artificial intelligence pipeline that uses electron microscope images from a cubic mm of mouse visual cortex. (Amy Sterling, Princeton University)