NINDS NEUROETHICS

WHAT IS NEUROETHICS?

Neuroethics is a field that studies the ethical, legal, and societal implications of neuroscience. Advances in our understanding of the brain and ability to monitor and modulate brain function can raise unresolved ethical questions, such as those related to privacy, personal identity, justice, and autonomy. Such questions may include:

- Do neural data raise unique privacy concerns? What differences exist in vulnerability of different patient or participant groups to potential risks associated with neural data sharing?
- What are the implications of identifying biomarkers of pre-symptomatic disorders?
- What are the ethical issues raised by computational phenotyping of individuals based on brain data?
- Who benefits from advances in neuroscience?
- What are the ethical challenges posed by first-in-human trials with new therapies for neurological disorders? How are the risks and potential benefits balanced?

Neuroethicists can work with neuroscientists to identify and address ethical questions that arise in neuroscience research. As such, neuroethics can empower neuroscience research and help inform how studies are designed, conducted, interpreted, and applied. NINDS participates in several trans-NIH programs that support partnerships between neuroethicists and neuroscientists.

How is neuroethics research conducted?

Utilizing a series of analytical and philosophical frameworks to identify and explore the underlying values and assumptions of a variety of stakeholders, a neuroethicist can work as part of a research team to help inform how neuroscience research is designed, conducted, interpreted, and applied. **Neuroethicists work to anticipate and help mitigate challenging value conflicts** – particularly those that may arise given the privileged status the brain has in human life and self-identity – to empower neuroscience research and clinical practice.
NEUROETHICS FOR THE NIH BRAIN INITIATIVE

The NIH Brain Research through Advancing Innovative Neurotechnologies® (BRAIN) Initiative (www.braininitiative.nih.gov) aims to develop innovative tools and neurotechnologies to advance our understanding of the human brain. The Initiative’s neuroethics efforts include:

- Funding neuroethics research projects within the scope of the BRAIN Initiative
- Managing the Neuroethics Working Group (NEWG) and organizing topical workshops e.g., *Ethical Issues in Research with Invasive & Non-Invasive Neural Devices in Humans*
- Facilitating collaborations between BRAIN-funded neuroscientists and neuroethicists
- Identifying relevant ethical questions within the NIH BRAIN Initiative research portfolio

NIH is leading the way for proactively considering and addressing potential ethical considerations as the BRAIN Initiative leads to novel ways of measuring and influencing the activity of the brain. Having discussions in real time is of paramount importance as clinical researchers investigate the use of such tools to reduce the burden of brain disease.

— Walter Koroshetz, M.D., NINDS Director

To learn more about the NINDS neuroethics program, funding opportunities, and other resources visit:

www.ninds.nih.gov/Current-Research/Focus-Tools-Topics/Neuroethics

And see:

*Neuroethics Guiding Principles for the NIH BRAIN Initiative* by Greely et al. (Journal of Neuroscience, 2018)

*Ethical Challenges of Risk, Informed Consent, and Posttrial Responsibilities in Human Research With Neural Devices* by Hendriks et al. (JAMA Neurology, 2019)

*Neuroethics: Fostering Collaborations to Enable Neuroscientific Discovery* by Farahany & Ramos (American Journal of Bioethics Neuroscience, 2020)

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