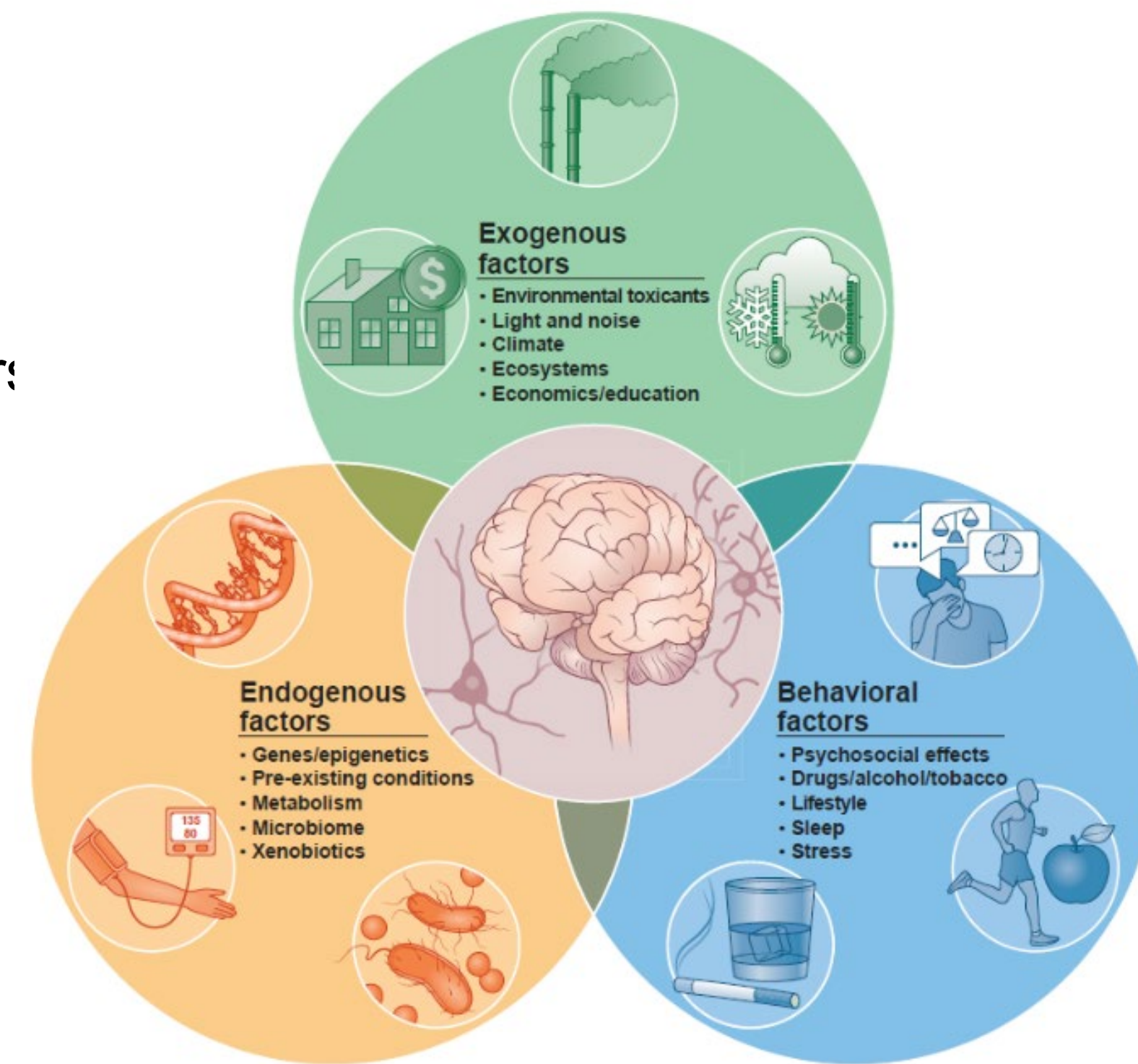


Figuroa-Romero C, Dhruv NT, Spriggs SM, Jett, DA

National Institute of Neurological Disorders and Stroke, 6001 Executive Boulevard, North Bethesda MD 20852

The Neural Exposome

Most diseases and disorders originate at the intersection between environmental, genetic, and age-related factors. The term “exposome” describes the totality of internal and external exposures across the lifespan affecting human health [1]. At the National Institute of Neurological Disorders and Stroke (NINDS) we refer to the “Neural Exposome” as non-genetic factors or exposures that, over time, impact nervous system health [2]. These exposures include environmental, chemical, biological toxins, psychosocial, and internal factors such as diet and the microbiome. Exposomic research will advance our understanding of the multiple causes of neurological illness and will lead to precise and effective intervention strategies, especially because many of the exposures are modifiable.



The Neural Exposome Gaps and Opportunities: Request for Information (RFI) to Increase Interdisciplinary Neural Exposomic Research

Financial Support

Funding interdisciplinary and multi-institutional partnerships.



Early career education intervention to promote interdisciplinary collaborations

Education

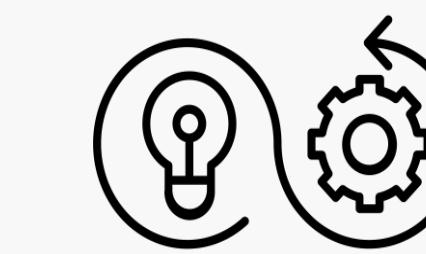


Research

Challenges and opportunities to study the effect of environmental exposures on neurodevelopment, aging, neurodegeneration, substance abuse, and complementary and integrative approaches



Implementation



Effective implementation of scientific findings

Research between academia, industry, and government



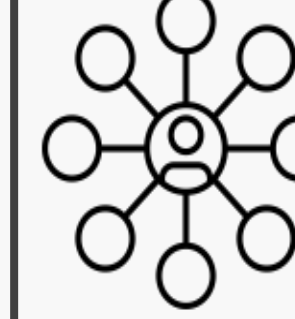
Collaborations

Rigorous Research Data sharing

Promote standardization and leverage on existing research resources



Outreach to disseminate information and provide spaces for networking



Networking and Communication

Interdisciplinary Research Opportunities that Bridge Neuroscience and Environmental Health Science (NOT-NS-22-076)
Open March 8- July 11, 2022

Summary responses from government, industry, academia, and the public

Goals of the Office of Neural Exposome and Toxicology (ONETOX) Research at NINDS



- Fund basic, translational, and clinical research on the effect of the exposome on nervous system health and disease
- Foster research between different disciplines
- Facilitate collaboration with researchers, non-profits, patients, caregivers, and the community
- Partner with various NIH Institutes and Centers

ONETOX Efforts to Promote Interdisciplinary Research



Satellite Event

“The Neural Exposome and Why it’s Important to You!”



Recording available



Symposium

“Expanding Our Knowledge of Neurological Disease Etiologies: Current Research on the Neural Exposome”

Examples of ONETOX Funding Opportunities

	Clinical Relevance of the Linkage between Environmental Toxicant Exposures and Alzheimer’s Disease and Related Dementias	PAR22-048
	Impact of the Microbiome Gut-Brain Axis on Alzheimer’s Disease and Alzheimer’s Disease Related Dementias	PAR22-211
	Research on Biopsychosocial Factors of Social Connectedness and Isolation on Health, Wellbeing, Illness, and Recovery	PAR21-349 PAR21-350
	Climate Change and Health	NOT-ES22-006
	Notice of Intent to Publish a Funding Opportunity Announcement for Role of Environmental Stress in the Health Inequities of Alzheimer’s Disease-Related Dementias (ADRD)	NOT-NS23-087

Funded 12 Projects

Future Notice of Funding Opportunity

References

- Wild, C.P. 2005 Cancer Epidemiol Biomarkers Prev. 14(8):1847-50
- Tamiz, AP, et al 2022, Neuron. 110(8):1286-1289.

Learn More and Contact Us



David A. Jett, PhD | Director, ONETOX
jetttd@ninds.nih.gov



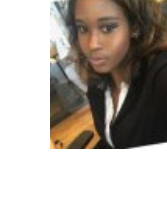
Shardell Spriggs, PhD
shardell.spriggs@ninds.nih.gov



Neel Dhruv, PhD
neel.dhruv@nih.gov



Claudia Figuroa-Romero, PhD
claudia.figuroa-romero@nih.gov



Scarlette Cella
scarlette.cella@nih.gov