Faculty resources
*In alphabetical order*

Amanda Leggett, PhD
University of Michigan
Research Assistant Professor, Department of Psychiatry
Michigan ADRC, Leaders Initiative, Clinical Core

leggetta@umich.edu

Scientific expertise: Family caregiving for individuals living with dementia

| Methods or instrumentation | Training | Grant application reviews |
|---|---|---|
| Mixed-methods, qualitative and quantitative data analysis | | Social and behavioral science applications surrounding dementia |

Ana Daugherty, PhD
Wayne State University
Assistant Professor, Institute of Gerontology, Department of Psychology, and Department of Psychiatry and Behavioral Neurosciences
Michigan ADRC, Leaders Initiative, Data Management and Statistical Core

ana.daugherty@wayne.edu | healthyaging.wayne.edu

Scientific expertise: Vascular and metabolic health factors that modify human brain aging and dementia risk. I use multimodal neuroimaging and blood biomarkers, actigraphy, neuropsychological assessment and health history to study longitudinal aging in community samples. Emphasis on pathways for hypertension-related risk for Alzheimer's disease and related dementia.

| Methods or instrumentation | Training | Grant application reviews |
|---|---|---|
| Multimodal MRI (structural T1, high-res hippocampal subfields, susceptibility weighted imaging, T2 FLAIR); actigraphy; (non-clinical) cognitive assessment | Advanced statistics (multivariate methods, structural equation modeling, mixed models, reliability); MRI methods | |

Andrew Bender, PhD
Michigan State University
Assistant Professor, Department of Neurology and Ophthalmology
Michigan ADRC, Leaders Initiative, Neuroimaging Core

arbender@msu.edu

Scientific expertise: My expertise is in structural and diffusion MRI in the contexts of cognitive aging, lifespan development, and neurodegenerative disease. In addition to a host of methods for MRI processing, my work uses a variety of approaches for statistical analysis including structural equation modeling, mixed effects models, partial least squares, and path analysis.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| MRI processing methods (e.g., ANTs, ASHS, FSL, Freesurfer, MRtrix, SPM); high dimensional analysis methods (e.g., clustering, mixed effects models); manual and automated brain segmentation methods; advanced diffusion MRI processing (e.g., MRtrix, NODDI, DKI) | My lab has training resources for basic image processing, and we can offer consultation on image segmentation and diffusion MRI methods | Approach and significance of MRI methods, particularly for structural and diffusion MRI |

Andrew Lieberman, MD, PhD
University of Michigan
Gerald Abrams Collegiate Professor of Pathology
Michigan ADRC, Neuropathology Core Lead

liebermn@med.umich.edu | https://www.pathology.med.umich.edu/andrew-p-lieberman-lab

Scientific expertise: Neuropathology, cellular and mouse models of neurodegeneration, polyglutamine and lysosomal disorders

Animal models: AR113Q; Npc1 -/-; Npc1 flox; human NPC1 I1061T

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Molecular biology, biochemistry, histology | Analysis of neuropathology | Mechanisms of neurodegeneration |

Annalise Rahman-Filipiak, PhD
University of Michigan
Assistant Professor, Department of Psychiatry
Michigan ADRC, Leaders Initiative, Clinical Core

rahmanam@med.umich.edu | Program website: https://hampstead.lab.medicine.umich.edu/home

Scientific expertise: Neuropsychology, cognitive aging, biomarker disclosure

| Methods or instrumentation | Training | Grant application reviews |
|---|---|---|
| Neuropsychological testing, PET imaging, feedback, biomarker disclosure, mixed methods | Cognitive testing, test development and validation, psychometrics | Neuropsychology, cognitive aging, caregiving, TBI, Alzheimer's disease and related dementias |

Benjamin Combs, PhD
Michigan State University
Research Assistant Professor, Department of Translation Science and Molecular Medicine
Michigan ADRC, Leaders Initiative, Biomarker Core

combsben@msu.edu

Scientific expertise: I study the role of tau protein in neurodegenerative disease using protein biochemistry, cultured cells, and animal models. Specifically, I look at the role of tau protein in dysregulation of axonal transport as a potential mechanism of tau's toxicity in disease.

Animal models: TauKO: a mouse line with the MAPT gene knocked out. hTau: a mouse line with human MAPT gene replacing mouse tau.

| Methods or instrumentation | Training | Grant application reviews |
|---|---|---|
| Primary neuron culture, confocal microscopy, electron microscopy | | Tau protein, axonal transport |

Benjamin Hampstead, PhD, ABPP/CN
University of Michigan
Stanley Berent, PhD, Collegiate Professor of Psychology
Michigan ADRC, Clinical Core Lead

bhampste@med.umich.edu | https://hampstead.lab.medicine.umich.edu/home

Scientific expertise: I focus on the early detection of, and non-pharmacologic treatment for, cognitive deficits arising from neurologic injury and disease.

Core resources: UM-MAP data set

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| TMS, tES, fNIRS, s/fMRI, neuropsych measures, cognition-oriented treatments | TMS, tES, fNIRS, s/fMRI, neuropsych measures, cognition-oriented treatments | Areas related to neuromodulation, neuroimaging, non-pharmacologic interventions, and diagnosis |

Bruno Giordani, PhD
University of Michigan
Professor of Psychology, Departments of Psychiatry, Neurology, Psychology
Chief Psychologist, Department of Psychiatry
Senior Director, Mary A. Rackham Institute
Michigan ADRC, Associate Director

giordani@med.umich.edu

Scientific expertise: Earliest appearance of cognitive and motor features in healthy aging and dementia. Nonpharmacological to cognitive loss in aging and medical illness.

Other resources: Driving simulators

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Computer-based assessment, EEG methodologies | Computer-based assessment and remediation of cognitive, motor, and behavioral features in medical illness and dementia | See previous |

Dave Morgan, PhD
Michigan State University
Professor, Department of Translational Neuroscience
Michigan ADRC, Biomarker Core Co-Lead

scientist.dave@gmail.com

Scientific expertise: Neurochemistry of memory. Mouse models of amyloidosis and tauopathy. Immunotherapy and gene therapy. CSF and Blood fluid biomarkers in AD

Animal models: APP+PS1 model of amyloidosis. PS19 model of tauopathy. Aged C57 mice.

Core resources: Access to SIMOA assays

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Digital scanning microscopy, SIMOA protein measurement at fg/ml levels | Quantitative microscopy | Animal models, drug development, fluid biomarkers |

Courtney Polenick, PhD
University of Michigan
Assistant Professor, Department of Psychiatry

Michigan ADRC, Leaders Initiative, Outreach, Recruitment and Engagement Core

cpolenic@med.umich.edu

Scientific expertise: Family relationships and caregiving, chronic illness management, and complex care needs including dementia and multimorbidity

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Daily diary and ecological momentary assessment, salivary biomarkers, dyadic data | | Caregiving, chronic illness management, dyadic data |

Doug Noll, PhD
University of Michigan
Ann and Robert H. Lurie Professor of Biomedical Engineering
Professor, Department of Radiology
Co-Director, fMRI Center
Michigan ADRC, Neuroimaging Core Lead

dnoll@umich.edu | https://nollresearch.engin.umich.edu/

Scientific expertise: Research is focused on the data acquisition and processing for imaging brain function using magnetic resonance imaging (functional MRI or fMRI). Projects include development of image acquisition and reconstruction techniques, post-processing and analysis methods, methods for elimination of movement and other artifacts, and the development of neuroimaging biomarkers for disease.

Core resources: Access to neuroimaging data for MADRC cohorts, consulting on design of imaging components and imaging biomarkers, consulting on image analysis

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| 3T MRI, Functional and Anatomical MRI | MRI Physics, MRI protocols, fMRI experimental design | Imaging components |

Henry Paulson, MD, PhD
University of Michigan
Lucile Groff Professor of Neurology for Alzheimer's Disease and Related Dementias
Interim Co-Director, Michigan Neuroscience Institute
Michigan ADRC, Director and Principal Investigator

henryp@med.umich.edu

Scientific expertise: Mechanisms of age-related neurodegenerative diseases

Animal models: multiple polyglutamien mouses models, esp. SCa3; P301S Tau tg ; A53T synuclein tg; WT-UBQLN2 and P506T-UBQLN2 tgtg

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Basic molecular and cell biological methods | Basic molecular and cell biological methods | Mechanisms of neurodegenerative diseases |

Irving Vega, PhD
Michigan State University
Associate Professor, Department of Translational Neuroscience
Michigan Center for Contextual Factors in Alzheimer's Disease, Recruitment Core Co-Lead
Michigan ADRC, REC Co-Lead
vegaie@msu.edu | https://translationalscience.msu.edu/research-groups/vega-lab.html

Scientific expertise: Proteome changes associated with the accumulation of pathological tau. Identification of biomarkers in tissue and biofluids. Health disparities associated with ADRD.

Animal models: JNPL3 - expresses htauP301L under the prion promoter (SW background as developed at Mayo Clinic JAX by Mike Hutton and Jada Lewis))

Other resources: At the Integrated Mass Spectrometry Unit, we provide proteomics services. https://translationalscience.msu.edu/resources/proteomics.html

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Mass spectrometry-based proteomics for the identification and quantification of proteins and PTMs | Proteomics | Projects related to tauopathies that involves molecular and biochemical approaches. Also, projects that propose interventions related to ADRD in underserved and underrepresented groups |

Jeske Damoiseaux, PhD
Wayne State University
Associate Professor, Institute of Gerontology, Department of Psychology
Michigan ADRC, Leaders Initiative, Neuroimaging Core

damoiseaux@wayne.edu | connectlab.wayne.edu

Scientific expertise: Age and disease related changes in cognition and brain structure and function. Early detection of atypical brain changes and identifying risk groups. Possible interventions to delay cognitive decline.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Functional and structural MRI; brain network connectivity | General MRI data analyses; specific functional connectivity analyses | Cognitive and brain changes in aging and neurodegenerative disease; specifically, neuroimaging applications |

Joan Ilardo, PhD
Michigan State University
College of Human Medicine, Director of Research Initiatives
Michigan Dementia Coalition
Michigan ADRC, Outreach, Recruitment and Engagement Core Investigator

ilardo@msu.edu

Scientific expertise: Health Services Research and Implementation Science, Chronic Disease Self-Management Program Implementation and Evaluation

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| | Translational research phases T3 and T4 | Translational research phases T3 and T4 |

Judy Heidebrink, MD, MS
University of Michigan
Richard D. and Katherine M. O'Connor Research Professor of Neurology
Michigan ADRC, Clinical Core Co-Lead

jheide@med.umich.edu

Scientific expertise: Clinical research pertinent to diagnosis/management of dementia, including clinical trials in the prevention and treatment of Alzheimer's disease

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Clinical trial methodology | Clinical trial methodology | Clinical trials in dementia prevention/treatment |

Kelly Bakulski, PhD
University of Michigan
Assistant Professor, Department of Epidemiology, School of Public Health
Michigan ADRC, Data and Statistical Core Lead

bakulski@umich.edu | https://sites.google.com/umich.edu/bakulskiresearch/home

Scientific expertise: Environmental chemical and genetic risk factors for neurological disorders using epidemiology and toxicology methods.

Core resources: Contact information for study recruitment, data for secondary analyses, database design/automation, statistical consultation for grant/manuscript, collaboration for analyses for grant/manuscript

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Data preprocessing and analysis for genetics, RNA expression, epigenetics, and exposomics | I teach three regular classes in programming in R statistical software, epigenomics data QC and analyses, and pathophysiology | Epidemiology, toxicology, genetics, environmental exposures |

Luis Hernandez-Garcia, PhD
University of Michigan
Research Professor, Department of Biomedical Engineering and Functional MRI Laboratory
Co-Director, Animal MRI Facility

hernan@umich.edu | http://fmri.research.umich.edu/about/faculty/hernandez.php

Scientific expertise: MRI, brain blood flow, non-invasive neuromodulation

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| MRI | MRI, signal processing, mathematical modeling | MRI, signal processing, mathematical modeling |

Marcia Gordon, PhD
Michigan State University
Professor of Translational Neuroscience

Marcia.Gordon@hc.msu.edu | https://translationalscience.msu.edu/research-groups/gordon-lab.html

Scientific expertise: I am especially interested in the role of innate immunity in aging and neurodegenerative disease. Increasingly, my research focuses on developing novel therapeutics to modulate innate immunity, including small molecule agents, vaccines, gene therapy and biologics, using transgenic mouse models with Alzheimer-like pathology.

Animal models: APP+PS1 transgenic mice = age-dependent accumulation of amyloid deposits, cognitive deficits and innate immune activation; rTg4510 = transgenic mice overexpressing 4R tau, with age-dependent tau phosphorylation, aggregation and deposition leading to cognitive impairments; PS-19= similar to Tg4510 but less aggressive.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Bench-top cell sorter, mouse behavior facility, digital slide scanner and computer-assisted image analysis | | Innate immune activation, mouse models, innate immunity, glial activation |

Navid Seraji, MD
University of Michigan
Associate Professor of Neurology

seraji@med.umich.edu

Scientific expertise: MRI measures of neuro degeneration and disease progression.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| MRI, morphometrics, fMRI, MRS and diffusion MR | Post processing of MR data | Imaging research |

Nick Kanaan, PhD
Michigan State University
Associate Professor of Translational Neuroscience
Michigan ADRC, Biomarker Core Co-Lead

nkanaan@med.umich.edu https://translationalscience.msu.edu/research-groups/kanaan-lab.html

Scientific expertise: Molecular mechanisms of disease with a focus on Alzheimer's disease and other tauopathies, as well as tau protein biology and pathobiology

Animal models: Wild-type C57 mice; PS19 transgenic mice: mice harboring P301S mutant tau; Human tau knockin mice (Saido model): endogenous mouse tau gene was replaced with human tau gene and mice express all 6 human tau isoforms; Tau knockout mice: endogenous mouse tau gene was removed

Core resources: Blood (or other biological fluid) biomarker assessments via SIMOA immunoassays and/or mass spectrometry

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Microscopy (TEM, confocal), Recombinant protein, monoclonal antibody production, biomarkers (SIMOA immunoassays), histology, biochemical assays, molecular biology assays, cell culture (including primary neurons), rodent models of tauopathy | Any of the previous | Grants on AD, tauopathy, tau, aging, PD |

Peter Lichtenberg, PhD
Wayne State University
Distinguished University Service Professor of Psychology
Director of the Institute of Gerontology and Merrill Palmer Skillman Institute
Michigan ADRC, REC Co-Lead

p.lichtenberg@wayne.edu | https://iog.wayne.edu/profile/aa2275

Scientific expertise: Clinical geropsychology and geriatric neuropsychology; Financial decision making and neurocognitive decline; intersection of declining cognition, financial management and financial exploitation.

Core resources: REC provides a number of opportunities including developmental funds

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Interviews, cognitive assessment | Community engaged research, financial capacity measurement; Engaging with African American communities to enhance research participation | Behavioral science grants--both basic and intervention; Community based work in behavioral sciences |

Peter Tessier, PhD
University of Michigan
Albert M. Mattocks Professor of Pharmaceutical Sciences and Chemical Engineering

ptessier@umich.edu | https://tessier.lab.medicine.umich.edu/

Scientific expertise: My lab focuses on therapeutic antibody discovery, engineering, and optimization of affinity and specificity. We also work on delivery of antibodies to the brain using bispecific antibodies.

Animal models: Wild type and PS19 (tau) mice

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Mammalian protein production (suspension HEK 293 and CHO), immunization and in vitro antibody library generation, single B-cell sorting for antibody generation, flow cytometry and FACS | Mammalian antibody production, antibody discovery and engineering | Therapeutic antibodies |

Robert A. Koeppe, PhD
University of Michigan
Professor of Radiology

koeppe@med.umich.edu

Scientific expertise: Research interests center around the quantitative aspects of positron emission tomography (PET). Specific research areas include the development and implementation of tracer kinetic models for new and existing positron labeled radiotracers. Has extensive experience in multi-center trials involving PET imaging of amyloid and tau.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| PET Scanning | | |

Roger L. Albin, MD
University of Michigan
Anne B. Young Collegiate Professor, Department of Neurology
Michigan ADRC, Research Education Component Lead

ralbin@med.umich.edu

Scientific expertise: Movement Disorders; Neurodegeneration Clinical Research

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| PET Imaging | Participant characterization | Neurodegeneration research |

Sami Barmada, PhD
University of Michigan
Angela Dobson Welch and Lyndon Welch Research Professor of Neurology
Director, Michigan Brain Bank
Michigan ADRC, Leaders Initiative, Neuropathology Core

sbarmada@med.umich.edu | www.barmadalab.com

Scientific expertise: We focus on disease mechanisms and therapeutic strategies in amyotrophic lateral sclerosis and frontotemporal dementia. Our objective is to use these models to test and identify effective new therapeutics; and define the pathways culminating in neurodegeneration in these disorders.

Animal models: primary neurons isolated from rodents (rattus norvegicus, mus musculus) or human stem cell derived neurons from individuals with sporadic and familial disease

Lab resources: We are happy helping with imaging needs and disease modeling.

Other resources: Longitudinal microscopy, super-resolution microscopy

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| High content microscopy, super-resolution microscopy, longitudinal microscopy, directed differentiation of stem cells into neuronal subtypes | Fluorescence microscopy, super-resolution microscopy, human neuron differentiation from stem cells | Basic science of FTD/ALS, protein and RNA homeostasis, disease modeling |

*Updated January 2022*

Sarah Elzinga, PhD
University of Michigan
Edith Briskin Emerging Scholar
Postdoctoral Fellow, NeuroNetwork for Emerging Therapies

seelzing@med.umich.edu | https://medicine.umich.edu/dept/mneuronet

Scientific expertise: Immuno-metabolic interactions in the CNS

Animal models: C57BL6 high fat diet induced obesity and prediabetes

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| IHC (floating sections and confocal microscopy), Western blotting, Cognitive testing in mice | IHC (floating sections and confocal microscopy), Western blotting, Cognitive testing in mice | Basic review of scientific content and minor editing of language/structure |

Scott Counts, PhD
Michigan State University
Associate Professor of Translational Neuroscience

countsc@msu.edu | https://translationalscience.msu.edu/people/scott-counts.html

Scientific expertise: Cellular and molecular mechanisms of AD and VCID

Animal models: 3 rat models: Tg344-19 AD (F344 rats carrying APPswe and PS1d9); Spontaneously hypertensive stroke-prone rats (SHRSPs, Wistar-Kyoto rats with naturally occuring vascular abnormalities); "Frankenrats" (Tg344-19 AD rats backcrossed onto SHRSPs as a model for VCID)

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Laser capture microdissection (LCM) | LCM; single neuron gene expression analysis; rat behavioral training; stereotactic surgery; all standard molecular, cell biological, histological, and biochemical assays | Anything dementia related but specifically anything that would be handled by CNN study section |

Scott Peltier, PhD
University of Michigan
Technical Director and Research Scientist Functional MRI Laboratory

spelt@umich.edu | fmri.research.umich.edu

Scientific expertise: MRI acquisition and data analysis

Core resources: The lab offers pilot grants for investigators to allow collection of preliminary data

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Human MRI scanners (3T) | Our lab runs a yearly FMRI course | Imaging applications |

Scott Roberts, PhD
University of Michigan
Professor, Health Behavior and Health Education
Michigan ADRC, Outreach, Recruitment and Engagement Core Lead

jscottr@umich.edu | https://robertsresearch.org/

Scientific expertise: Health communication; bioethics; dementia education; health psychology, especially as applied to genetic testing

Core resources: We can help assist studies actively trying to recruit participants; we can offer speaking opportunities / feature articles on our website/newsletter to promote visibility of their work

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Social and behavioral health surveys | Social / behavioral interventions / surveys; RCR / ELSI | Grants addressing psychosocial issues posed by Alzheimer's disease |

Sean Ferris, MD, PhD
University of Michigan
Assistant Professor, Neuropathology in the Department of Pathology
Michigan ADRC, Leaders Initiative, Neuropathology Core

Scientific expertise: Clinical neuropathology (surgical, muscle/nerve, dementia brain autopsy diagnosis), PhD in biochemistry/glycoprotein folding, experience in mouse work

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Whole slide scanning, immunohistochemistry through the U-M pathology department | Neuropathology, mouse necropsy | Neuropathology, mouse work |

Sheria Robinson-Lane, PhD, RN
University of Michigan
Assistant Professor, Department of Systems, Populations and Leadership, School of Nursing
Michigan ADRC, Leaders Initiative, Outreach Recruitment and Engagement Core

grices@med.umich.edu | https://nursing.umich.edu/faculty-staff/faculty/sheria-g-robinson-lane

Scientific expertise: My work examines the personal, familial, and structural adaptations necessary for diverse older adults to age in place with cognitive and/ or physical disabilities. This work is evaluated through a health equity lens.

| **Methods or instrumentation** | **Training** | **Grant application reviews** |
|---|---|---|
| Content analysis, ethnography, mixed-methods study design | | Pain and symptom management, informal caregiving, long term care services, community based participatory research, anti-racism |