Roster of Senior Preceptors. The participating preceptors exhibit a broad range of AD/ADRD relevant research interests and approaches.

David Baker (mentors both postdocs and predocs). Dr. Baker, winner of the 2024 Nobel Prize for Chemistry, founded the University of Washington's Institute for Protein Design (IPD) in 2012. The Institute has been widely recognized as the world leader in computational structure prediction and design. Understanding the biomolecular grammar of proteins is essential for harnessing their capabilities to solve ongoing challenges in medicine, technology, and sustainability. The IPD was founded with the mission to advance the understanding of protein grammar and turn that knowledge (interactions of polypeptides, etc.) into successful solutions to predict and design proteins with defined and knowable functions. The IPD continues to demonstrate its fluency in protein grammar and its capacity to design proteins with discrete structure, function, and purpose for implementation in tools across the sciences. As such, the IPD understands the challenges at the frontier of protein grammar: unstructured domains. Significant data and the right team of scientists are required to define the protein grammar of intrinsically disordered regions to solve the chronic diseases that continue to go unresolved and untreated in modern healthcare, including Alzheimer's Disease, tauopathies, and protein aggregation-driven diseases in general. Dr. Baker's numerous collaborations include working with ADTP Preceptors Drs. Kraemer, Ruholoa and Zheng. https://www.bakerlab.org/members/

William Banks, MD, (mentors both postdocs and predocs) is Professor of Medicine Division of Gerontology, Dept. of Medicine. He has pioneered research in blood-brain barrier (BBB)-mediated brain-body communication. His recent reviews have emphasized the BBB as an interface connecting the central nervous system (CNS) and peripheral tissues via the blood, forming neuroimmune axes, and using endocrine-like mechanisms. His lab has shown that alterations in BBB function in mouse models of AD can be largely induced by neuroinflammation. https://geriatrics.uw.edu/people/william-banks

Melissa Barker-Haliski, PhD (mentors both postdocs and predocs) is a Research Associate Professor in the Department of Pharmaceutics working in translational epilepsy research. She also serves as the graduate program coordinator for her department. Her laboratory focuses on developing preclinical models to identify new treatments for pharmaco-resistant epilepsy and age-related seizures including those occurring in AD/ADRD. Her work on mechanisms of seizure induced cognitive decline are highly relevant to AD/ADRD and she fills an important niche in the larger UW AD research landscape. https://sites.uw.edu/mhaliski/

Lynn Bekris, PhD (mentors both postdocs and predocs) is a Research Professor in the department of Laboratory Medicine and Pathology specializing in identifying genetic, epigenetic, and immune-related protein markers for early detection and progression monitoring of AD/ADRD. Her recent focus is developing noninvasive, blood-based tools to measure disease onset and progression, particularly studying sex-specific protein differences in women. Dr. Bekris serves as the biomarker core lead in the UW ADRC and provides biomarker expertise for the ADRC community at large, and collaborates with many, including ADTP Preceptors Drs. Crane, Latimer, Grabowski, Domoto Reilly, Leverenz, and MacCoss. https://dlmp.uw.edu/faculty/bekris

Elizabeth Blue, PhD, (mentors both postdocs and predocs) is Professor, UW Division of Medical Genetics, Dept. of Medicine. She specializes in population genetics and training in statistical genetics at the UW. She uses population genetics and genetic epidemiology tools to detect regions of the genome that influence disease. Her long-term research goals are to identify variants influencing disease within and between human populations, as well as to predict and evaluate their functions. Much of Dr. Blue's research focuses on identifying genetic factors that influence risk and age at onset of AD and on incorporating family- and population-based approaches with functional annotations and predictions of variant pathogenicity. She is an active

collaborator and co-investigator in several large-scale sequencing projects, including the ADSP, the UW Center for Mendelian Genomics, and the Pacific Northwest Undiagnosed Disease Network clinical site. https://medgen.uw.edu/people/elizabeth-blue

Elizabeth Buffalo, PhD, (mentors both postdocs and predocs) is Professor and Chair of the Department of Neurobiology and Biophysics at UW. Her work focuses on understanding of the neural mechanisms that support learning and memory. Her studies aim to develop new treatment strategies and better methods of diagnosis for patients with diseases that impair memory. Dr. Buffalo and her trainees use neurophysiological techniques to simultaneously record activity in the hippocampus and surrounding cortex of awake, behaving monkeys that have been trained to perform various memory tasks. These studies attempt to better understand how medial temporal lobe circuits support memory formation. Her laboratory also investigates spatial representations and synchronous activity in the hippocampus and adjacent medial temporal lobe cortex. Dr. Buffalo also has expertise in using extracellular recording techniques, including spectral analysis techniques, to investigate the role of oscillatory activity and neuronal synchronization in memory formation. https://buffalomemorylab.com/group

Erik Carlson, MD,PhD (mentors both postdocs and predocs) is Assistant Professor of Psychiatry and a Clinician-Scientist in the VA Puget Sound GRECC. Dr. Carlson focuses on understanding cerebellar circuits as they relate to psychiatric illnesses and neurodegenerative diseases, and utilizes this knowledge to inform and improve current and novel treatments for cognitive disorders. His research utilizes mouse behavior, *in vivo* electrophysiological recordings, gene targeting, viral vector production, translational profiling, chemo- and optogenetic tools, site-specific intracranial viral vector injection, and protein chemistry. One of his laboratory's discoveries has been the role of a catecholaminergic circuit from the *locus coeruleus* to the lateral or dentate nucleus of the cerebellum, which supports several cognitive functions involved in neurodegenerative diseases such as AD. Dr. Carlson's collaborations within the ADTP include with Drs. Valdmanis, Liachko, Crane, Latimer, and Grabowski. https://www.uwmedicine.org/bios/erik-s-carlson

Paul Crane, MD, MPH (mentors postdocs) applies psychometric methods to cognitive tests, including neuropsychological tests used in the elderly. He is PI of the UW subcontract for the Adult Changes in Thought (ACT) Study, and serves as scientific manager of that project. ACT has a wealth of risk factor data and cognitive data that has served as research material for graduate students and postdoctoral trainees. Dr. Crane has been ACT representative to the AD Genetics Consortium (ADGC), and in that role leads several Special Analysis Groups on research ranging from cognitive decline among people with AD to methodological issues in pathways analyses of genome-wide SNP data. He also participates in the ADSP, which has identified more than 1300 ACT participants for whole exome sequencing. Dr. Crane has been on the coordinating committee since the inception of the NIA-funded Friday Harbor Advanced Psychometrics Workshop. The workshop emphasizes educational training of applied researchers at all stages of training, with a special emphasis on postdoctoral fellows. Dr. Crane widely collaborates within the ADTP Preceptors through his role in the ACT Study. https://depts.washington.edu/mbwc/about/profile/paul-crane

Marie Davis, MD, PhD (mentors both postdocs and predocs) is Assistant Professor of Neurology and investigates the cellular mechanisms underlying the spread of pathogenic protein aggregation in neurodegenerative diseases. Her focus is on understanding how mutations in the gene GBA increase risk for developing Parkinson's disease and accelerate disease progression. She utilizes both *Drosophila* models of glucocerebrosidase (GBA) deficiency, as well as cell culture models of neurons and glia differentiated from iPSCs from Parkinson's disease patients heterozygous for a GBA mutations. She is investigating how GBA mutations impair

endolysosomal trafficking and may accelerate propagation of pathogenic proteins in neurons via dysregulation of lipid metabolism and extracellular vesicles, and collaborates with fellow ADTP Preceptors Drs. Latimer and Liachko. Dr. Davis was awarded the 2020 John H. Tietze Stem Cell Scientist Award. https://depts.washington.edu/neurolog/welcome/research/davis-laboratory/

Kimi Domoto Reilly, MD (mentors postdocs) is associate professor in the Department of Neurology whose research focuses on aging related neurodegenerative diseases associated with cognitive decline. She has expertise in FTLD spectrum disorders, including primary progressive aphasia and behavioral variant FTD. Her work explores the clinical features and underlying pathology of these diseases with a focus on neuroimaging including tau PET. Her productive collaborations include ATDP Preceptors Drs. Grabowski, Latimer, and Bekris. https://depts.washington.edu/mbwc/about/profile/kimiko-domoto-reilly

Thomas Grabowski, MD, (mentors both postdocs and predocs) is Professor in the UW Departments of Radiology and Neurology, and Director of the UW ADRC, MBWC, and Integrated Brain Imaging Center (IBIC). His laboratory investigates the functional organization of the human brain using neuroimaging approaches; he then applies this knowledge to neurologic disease, especially AD and ADRD. He has particularly worked to elucidate brain systems supporting lexical-semantic retrieval using PET and fMRI imaging. Current projects focus on functional connectivity measures as preclinical biomarkers of neurodegenerative disease, topographic patterns of degeneration from MRI and tau PET in typical and atypical AD, and neuroimaging approaches to understanding resilience to AD. Dr. Grabowski collaborates with ADTP Preceptors including Drs. Domoto Reilly, Jayadev, Crane, and Shojaie. https://depts.washington.edu/mbwc/about/profile/thomas-grabowski

Jeffrey Iliff, PhD, (mentors both postdocs and predocs) is Associate Director for Research in the MIRECC and has joint appointments as Professor of Psychiatry and Behavioral Sciences and of Neurology at UW SOM. Dr. Iliff's group focuses on the biology of the glymphatic system, using cellular, molecular, and imaging techniques to define the glial and vascular contributions to the development of AD and ADRD. He is particularly interested in the intersection of brain vasculature, sleep, aging, and neurodegeneration. Dr. Iliff collaborates with fellow ADTP Preceptors Drs. Peskind, Kraemer, Li, Jansson, and Schindler. https://www.ilifflab.com/

Suman Jayadev, MD, (mentors both postdocs and predocs) is Professor of Neurology and Director of the UW Neurogenetics Clinic and leader of the UW ADRC Clinical Core. Dr. Jayadev is a practicing neurogenetics clinician and is particularly interested in inflammatory mechanisms of neurodegeneration, including the function of familial AD presenilin gene variants in AD pathogenesis and the characterization of AD gene mutation influence on the immune response to amyloid. She collaborates with a multidisciplinary team to study how common genetic variants confers risk for AD using bulk and single-cell transcriptomics of human archived brain tissue, including productive collaborations with fellow ADTP Preceptors Drs. Crane, Latimer, Young, and Prater. She further tests the consequences of AD-associated genomic risk using induced pluripotent stem cells (iPSC)-derived microglia cells for hypothesis-driven *in vitro* experiments. She frequently collaborates with colleagues in UW Genome Sciences, UW Medical Genetics, and the ISCRM. https://depts.washington.edu/mbwc/about/profile/suman-jayadev

Caitlin Latimer, MD, PhD, (mentors both postdocs and predocs) is Associate Professor, UW Dept. of Laboratory Medicine and Pathology. She has performed neuropathologic evaluations and research brain autopsies in several iconic studies, including the ACT Study, UW ADRC, Seattle Longitudinal Study, Nun Study, and Honolulu-Asia Aging Study. Her research focus is on neuropathologic changes of age-related neurodegeneration, particularly on the underlying pathophysiology, and potential synergies of multiple pathologic proteins of late-onset AD. Her work utilizing *C. elegans* as a model system for studying the interactions of pathologic proteins

and underlying genetic pathways will address critical gaps in knowledge surrounding the interactions between TDP-43 and tau pathology. Dr. Latimer is a close collaborator with many ADTP Preceptors including but not limited to Drs. Bekris, Carlson, Crane, Jayadev, Davis, Lein, Leverenz, Latimer, Kraemer, MacCoss, Shojaie, Valdmanis, and Young. https://dlmp.uw.edu/faculty/latimer

Ed Lein, PhD, (mentors both postdocs and predocs) is Vice President for the Allen Institute for Brain Science and Affiliate Professor, UW Dept. of Neurological Surgery. He has provided scientific guidance for the creation of large-scale gene-expression atlases of the adult and developing mammalian brain as catalytic community resources, including the inaugural Allen Mouse Brain Atlas and a range of developmental and adult human and non-human primate brain atlases. Dr. Lein's particular interests include using the transcriptome as a core phenotype to understand brain organization at the regional, cellular, and functional level, to understand what is unique about the human brain, and to understand what is disrupted in brain diseases. He previously led the Cell Types Program and directs the Human Cell Types Department, which developed critical AD/ADRD datasets including SEA-AD. Dr. Lein has also recently turned his attention to how AD perturbs brain gene expression and organization at the molecular and cellular level (see **Table A**), and collaborates broadly within the ADTP. https://alleninstitute.org/person/ed-lein

Nicole Liachko, PhD, (mentors both postdocs and predocs) is Research Associate Professor of Medicine, Division of Gerontology and Geriatric Medicine and a Research Core Investigator in the GRECC at the VA Puget Sound Health Care System. Dr. Liachko's research centers on understanding the biology underlying neurodegenerative diseases of aging, with a focus on TDP-43 proteinopathies such as amyotrophic lateral sclerosis (ALS), frontotemporal lobar degeneration (FTLD), and limbic predominant age-associated TDP-43 encephalopathy (LATE). She also leads the ADRC REC Core, and frequently collaborates with fellow ADTP Preceptors Drs. Valdmanis, Latimer, Carlson, and Kraemer. https://geriatrics.uw.edu/people/nicole-liachko

James B. Leverenz, MD, (mentors both postdocs and predocs) works to understand the neurodegenerative changes in dementia with Lewy Bodies. Leverenz's research addresses the clinical/molecular neuropathology of AD/ADRDs and co-morbid protein aggregates. In pursuing these research interests, he collaborates closely with Drs. Peskind, Raskind, and Tsuang. Dr. Leverenz's work has also focused on the neurological correlates and brain pathology associated with dementia with Lewy bodies (DLB) and he serves as the national leader of the Lewy Body Dementia Consortium. https://gp2.org/individuals/james-b-leverenz/

Gail Li, MD, PhD, (mentors both postdocs and predocs) is Associate Professor of Psychiatry and Behavioral Sciences. She has completed several epidemiological studies investigating the associations between AD and cardiovascular risk or protective factors (e.g., hypertension, hypercholesterolemia, and hyperglycemia) in a longitudinal cohort. In this work, Dr. Li and her colleagues have found that the cholesterol-lowering statin drugs are associated with both a decreased risk of dementia and fewer neurofibrillary tangles in the brain. More recently, she has expanded her interests to include examining the effects of air pollution on the aging brain and AD, and collaborates with ADTP Preceptors Drs. Tsuang and Iliff. https://depts.washington.edu/mbwc/about/profile/gail-li

Michael MacCoss, PhD, (mentors both postdocs and predocs) is Professor of Genome Sciences. He leads a laboratory that focuses on the development and application of cutting-edge mass spectrometry–based technologies for the analysis of complex protein mixtures. His laboratory applies these approaches to study AD- and ADRD-related changes in the CSF and brain proteomes. Dr. MacCoss's primary areas of expertise are in protein biochemistry, nanoflow liquid chromatography, mass spectrometry instrumentation, and computational analysis of mass

spectrometry (MS) data. He has over 20 years of MS experience that bridges the fields of protein MS, isotope ratio MS, and quantitative MS. His laboratory is also experienced in all aspects of computational analysis of MS data, which is essential for any large-scale proteome analysis, and his laboratory is widely known for its expertise in the development and support of proteomics software tools. Dr. MacCoss collaborates with ADTP Preceptors Drs. Latimer, Bekris, and Kraemer. https://maccosslab.org/maccoss/

Abhinav Nath, PhD, (mentors both postdocs and predocs) is Associate Professor and chair of the Department of Medicinal Chemistry. His research focuses on understanding how highly dynamic and intrinsically disordered proteins recognize small molecules and biological binding partners and how they self-assemble or aggregate in ways important to normal function or pathological dysfunction. His laboratory employs a variety of experimental and computational biophysics techniques, including single-molecule fluorescence, NMR, MS, molecular simulations, and machine learning. Much of his recent work has focused on microtubule-associated protein tau, a key player in AD, FTDs, chronic traumatic encephalopathy (CTE), and related dementias. Dr. Nath and his trainees have developed novel families of tau-binding small molecules, and they have explored the relationships between chemical structure and the molecules' ability to inhibit tau aggregation *in vitro*. Their work has also revealed how different molecular chaperones interact with tau to delay or halt its aggregation, and they have defined the quasi-ordered nature of certain tau/chaperone complexes. https://faculty.washington.edu/anath/

Amber Nolan, MD, PhD (mentors both postdocs and predocs) is a board-certified neuropathologist and Associate Professor in the Department of Laboratory Medicine and Pathology. Her laboratory works to understand the mechanisms driving TBI and its progression from chronic cognitive dysfunction to neurodegeration. In particular she is interested in understanding how microglial dysfunction gives rise to maladaptive functional nodes of the brain. https://dlmp.uw.edu/faculty/nolan

Hannele Ruohola-Baker, PhD (mentors both postdocs and predocs) is Professor of Biochemistry and Associate Director of ISCRM. She leads a research group investigating the molecular and metabolic mechanisms that control stem cell states, self-renewal, and tissue regeneration in the context of aging. She also collaborates with IPD to design novel proteins with tissue rejuvenating properties. https://sites.uw.edu/ruohola-baker-lab/

Abigail Schindler, PhD (mentors both postdocs and predocs) is an Associate Professor in the Department of Psychiatry. Her group uses an iterative translation strategy employing a systems biology approach to understand the long-term impacts of traumatic stress. Her work focuses on TBI in the context of military blast exposure and its relationship with psychiatric conditions like PTSD, depression, and anxiety. She is particularly interested in the gut-brain axis and contributions of the microbiome to neurotrauma, and collaborates closely with ADTP Preceptors Drs. Iliff and Peskind. https://sites.uw.edu/aschind/about-us/

Andy Shih (mentors both postdocs and predocs) is a Professor of Bioengineering at the University of Washington. His research program employs advanced optical imaging to visualize and study on neurovascular function and how its failure leads to disease in the living brain. He has particular interests in neurovascular coupling, cerebral microinfarcts and pericyte biology in the contexts of aging and disease including AD/ADRD. https://www.peds.uw.edu/directory/andy_shih/1773

Ali Shojaie, PhD (mentors both postdocs and predocs) is Professor and Interim Chair of Biostatistics. His research program utilizes statistical machine learning and network analysis, with a primary goal of developing methods to analyze large-scale, complex biological and social

systems with a particular focus on AD/ADRD. https://www.biostat.washington.edu/people/ali-shojaie

Aakanksha Singhvi, PhD (mentors both postdocs and predocs) is Associate Professor in the Department of Neurobiology and Biophysics. Her research lab studies the cellular and molecular interactions between neurons and glia. Her primary experimental model is in *C. elegans* where she studies this interaction at the single cell level. In particular her group focuses on synaptic pruning mechanisms in the context of disease pathobiology. https://research.fredhutch.org/singhvi/en.html

Paul Valdmanis, PhD (mentors both postdocs and predocs) is an Associate Professor in the Department of Medicine, Division of Medical Genetics. His group focuses on the intersection of neurogenetics and genomics to investigate novel disease mechanisms. He is particularly interested in uncovering novel gene regulatory mechanisms using long read sequencing and large AD related datasets like ADGC and ADSP. His collaborations include ADTP Preceptors Drs. Latimer, Liachko, Jayadev, and Prater. https://medgen.uw.edu/people/paul-valdmanis

Smita Yadav, PhD (mentors both postdocs and predocs) is an Associate Professor in the Department of Pharmacology and member of ISCRM. Her research group investigates the molecular signaling pathways that govern brain development and degeneration. Her studies focus on mechanism of protein kinase signaling as they contribute to neural health and disease. Emerging work from her group targets lysosomal biology to understand neuronal homeostasis. how their dysfunction leads to neurodevelopmental and psychiatric disorders. https://pharmacology.uw.edu/team-member/smita-yadav/

Jessica Young, PhD, (mentors both postdocs and predocs) is Associate Professor of Pathology. Her group studies the molecular and biochemical mechanisms that drive sporadic AD pathogenesis using human stem cell models. This includes work studying AD-associated risk variants in genes regulating endocytic trafficking, epigenetic factors that affect human neuronal maturation and aging and which are dysregulated in AD, and building a cohort of autopsy confirmed AD patient stem cell lines to investigate varying genetic backgrounds for cellular AD phenotypes. She collaborates with many groups at UW, including with Senior Preceptor, Dr. Latimer, of the ADRC Neuropathology Core to develop stem cell lines from autopsy tissue (leptomeninges) and a collaboration with Senior Preceptor, Dr. Jayadev, to understand cellular and molecular mechanisms of variation in the *SORL1* gene using patient-derived and gene-edited human iPSCs. https://depts.washington.edu/mbwc/about/profile/jessica-young

Cyrus Zabetian, MD, MS, (mentors postdocs only) is Professor in the UW Department of Neurology. He uses family-based, case-control, and longitudinal cohort studies to elucidate genes that increase the risk or modify the phenotypic characteristics of PD and related disorders. Efforts to discover causative genes are performed in over 200 multiplex PD families enrolled across North America through the Parkinson's Genetic Research Study. Dr. Zabetian leads the PD Cognitive Genetics Consortium, and through this endeavor, he has discovered several genes that modify the rate of cognitive decline and/or the patterns of cognitive dysfunction in PD patients. His group is now using machine learning methods to uncover complex relationships between genotype and phenotype in PD and to build predictive models aimed at identifying patients who are at high risk for rapid symptom progression. Dr. Zabetian's collaborations include ADTP Preceptors Drs. Leverenz and Tsuang. https://gp2.org/individuals/cyrus-zabetian/

Ning Zheng, PhD, (mentors both postdocs and predocs) is an Investigator at the Howard Hughes Medical Institute and Professor, UW Dept. of Pharmacology. Research in his laboratory focuses on the molecular and structural mechanisms by which protein-protein, protein-nucleic acid, and protein-small molecule interactions control eukaryotic biology and human diseases.

His research group has made major contributions to the field of protein ubiquitination and ubiquitin-dependent protein degradation. Through studies of plant hormone perception, his lab raised the concept of "molecule glue" in chemically induced ubiquitin ligase-substrate interactions. His group is now actively pursuing the discovery of therapeutic compounds that promote the ubiquitination and degradation of tau and other proteins involved in neurodegenerative diseases. A newly established collaboration between his group and Dr. Kraemer's lab holds the promise to reveal the structure-function relationships of MSUT2 and to enable the development of its inhibitor as a therapeutic target for AD. https://depts.washington.edu/zhenglab/

Roster of Junior Preceptors:

Sarah Benbow, PhD (mentors both postdocs and predocs) is a Research Assistant Professor in the Division of Gerontology and Geriatric Medicine in the UW Department of Medicine. Her research focuses on the molecular mechanisms of age-related neurodegenerative diseases, specifically targeting the role of the cytoskeleton in disease progression. Dr. Benbow is an expert on tau function and tauopathies and is exploring genetic resilience to tau mediated neurodegeneration. Her collaborations include ADTP Preceptors Drs. Kow, Liachko, and Kraemer https://geriatrics.uw.edu/people/sarah-benbow

Anna Gillespie, PhD (mentors both postdocs and predocs) is Assistant Professor in Department of Neurobiology and Biophysics. She investigates the neuronal mechanisms of memory to understand how they degrade during healthy aging and neurodegenerative disease using aging rats as her model system. She studies how the hippocampus encodes and stores experiences as memories with a specific focus on sharp-wave ripples as a contributor to memory consolidation. She provides neurobiology of memory expertise to the ADTP. https://www.gillespie-lab.com/

Deidre Jansson, PhD (mentors both postdocs and predocs) is Research Assistant Professor in the Department of Psychiatry. Her research group investigates the physiological mechanisms of neurovascular dysfunction and glymphatic clearance in neurodegenerative diseases and brain injury. She specifically focuses on the choroid plexus as the generator of cerebrospinal fluid. She is particularly interested in BBB function and dysfunction in the context of aging and TBI. https://depts.washington.edu/mbwc/about/profile/deidre-jansson

Rebecca Kow, PhD (mentors both postdocs and predocs) is a Research Assistant Professor in the Department of Medicine, Division of Gerontology and Geriatric Medicine. Her group focuses on the molecular drivers of neurodegenerative diseases with emphasis on the contributions and synergy between pathological tau and pathological TDP-43. Dr. Kow leverages invertebrate genetics to nominate new resilience pathways in AD/ADRD, with collaborations including ADTP Preceptors Drs. Benbow, Liachko, and Kraemer. https://geriatrics.uw.edu/people/rebecca-kow

Kevin Lin, PhD (mentors both postdocs and predocs) is a Genentech Endowed Assistant Professor in the Department of Biostatistics. His research centers on the development of statistical machine learning methods to analyze single-cell data. He leverages these approaches to uncover the cellular drivers of molecular neurodegeneration in AD/ADRD. Dr. Lin co-leads our Open Neuroscience Workshop on single cell RNA sequencing approaches with Dr. Prater, and collaborates broadly with ADTP Preceptors including Drs. Lein, Liachko, and Prater. https://linnykos.github.io/

Katie Prater, PhD is an Assistant Professor in the Department of Neurology. Her laboratory investigates the biology of resilience in the context of AD/ADRD. She uses a multi-omics approach to study how microglial and neuroinflammatory changes contribute to disease

mechanisms. Dr. Prater co-leads our Open Neuroscience Workshop on single cell RNA sequencing approaches with Dr. Lin, and engages in productive collaborations with ADTP Preceptors Drs. Jayadev, Latimer, Lein, and Lin. https://sites.uw.edu/keprater/home/team/

Garth Terry, MD, PhD (mentors postdocs only) is a psychiatrist and Research Scientist Investigator in the MIRECC, and Assistant Professor in the UW Depts. of Psychiatry and Behavioral Sciences and Radiology. His research interests are two-fold. First, he is dedicated to the development and use of novel radioligands in positron emission tomography (PET) for neuropsychiatric translational and pre-clinical research. He has active projects in the identification of PET imaging biomarkers of neuroinflammation following blast mTBI and in the development of novel radioligands for CNS targets. Second, he is active as a speaker, educator, and researcher in the field of cannabis and cannabinoid pharmacology and its intersection with mental health. He has previously co-developed a novel radioligand for imaging the cannabinoid CB1 receptor using PET, and he is conducting a pilot study to assess the feasibility of prazosin in treatment of cannabis use disorder. https://psychiatry.uw.edu/profile/garth-terry/

Program Co-Director, Brian Kraemer, PhD, serves as Professor of Medicine in the Division of Gerontology and Geriatric Medicine, in the UW School of Medicine. Dr. Kraemer's laboratory works to identify and validate new neuroprotective strategies targeting the tau and TDP-43 neuropathology seen in dementia disorders, including AD. The ultimate goal of this work is to understand the underlying causes of pathological protein aggregation and to devise approaches that preempt or reverse damage caused by the proteostatic disturbances seen in AD and ADRD. This work proceeds in parallel by using simple *C. elegans* and human cellular models of neurodegenerative proteinopathy as primary discovery platforms for screening. Subsequent validation is then carried out in mouse models of tau or TDP-43 neuropathology. A recent study validated a new candidate target for therapeutic intervention in tauopathy disorders by showing that MSUT2 expression influences age of onset and disease severity in AD and that the deletion of MSUT2 protects mice from tauopathy. https://sites.google.com/uw.edu/neurodegenerationresearch/

Program Co-Director, Debby Tsuang, MD, MS Professor of Psychiatry, adjunct professor in the division of medical genetics, Department of Medicine; and adjunct professor in the Department of Epidemiology School of Medicine at UW. She was past Director of the VISN-20 Geriatric Research Education and Clinical Center (GRECC) and current Director of the GRECC Memory Disorders clinics. Her research focuses on genetics and digital biomarkers in AD and dementia with Lewy bodies (DLB); machine learning (ML) in VA's vast electronic medical records. She is PI of a NIH-funded study, Technology for the Early Detection of Dementia, focused on digital assessment of early changes in physical activity and sleep measurements in AD and DLB. Most recently, Dr. Tsuang received R01 funding from the NINDS to discover objective measurements of cognitive fluctuation in dementia with Lewy bodies. Furthermore, her research using VA's clinical data by applying machine learning models to improve the detection of undiagnosed dementia, has demonstrated the feasibility to advance large language models into VA's EMR. Furthermore, these ML scores are also associated with later conversion to dementia. Dr. Tsuang has played leadership roles in the NIA-funded Alzheimer's Disease Genetics Consortium (ADGC) and Alzheimer's Disease Sequencing Project (ADSP). In the latter project, she co-led a NIA-funded supplement to harmonize the phenotypes from the Million Veteran Program with the ADSP-Phenotype Harmonization Consortium. https://psychiatry.uw.edu/profile/debby-tsuang/

Program Co-Director, Nicole Liachko, PhD is a Research Associate Professor in the UW Department of Medicine, Division of Gerontology and Geriatric Medicine and a Research Core Investigator in the GRECC at the VA Puget Sound Health Care System. She also leads the

ADRC REC core. Dr. Liachko's research program centers on understanding the biology underlying neurodegenerative diseases of aging, with a focus on TDP-43 proteinopathies such as amyotrophic lateral sclerosis (ALS), frontotemporal lobar degeneration (FTLD), and limbic predominant age associated TDP-43 encephalopathy (LATE). Her research has identified kinase and phosphatase regulation of TDP-43 phosphorylation in ALS and FTLD, and shown that reduced kinase or increased phosphatase activities are neuroprotective. She has also found that tau and TDP-43 synergize resulting in worsened neurotoxicity and neurodegeneration in models of Alzheimer's disease with LATE co-pathology. Her lab is actively investigating the cellular mechanisms controlling this process using a variety of genetic, biochemical, transcriptomic, and microscopy paradigms and engaging in pre-clinical testing of new therapeutic strategies. Her long-term goal is to leverage a deeper understanding of disease biology towards developing new therapeutic targets and interventions. https://geriatrics.uw.edu/people/nicole-liachko