

November 2021 | Issue 5

Biomedical Genetics Section

Newsletter

Meet the People

We are pleased to feature our new Administrative Research Assistant, Phuong Nguyen to the Biomedical Genetics Section!



Phuong is an alum from Boston University. As the Administrative Research Assistant, Phuong will assist Dr. Farrer, faculty, staff, and students.

Phuong's responsibilities include scheduling appointments and meetings, ordering supplies, updating the section website, as well as other miscellaneous research assignments.

Welcome Phuong!

Biomedical Genetics Section Updates

Two faculty receive awards on Evans Day



Dr. Lindsay Farrer

Research Mentoring Award



Lindsay Farrer, PhD
Section Chief & Professor
Biomedical Genetics



“This award recognizes Excellence in Research Mentoring in all aspects required for a successful career in laboratory, clinical or population-based investigation”

<https://events.productivemedia.com/portal/view.php?eventId=BMC20211007>



Dr. Shoumita Dasgupta

Faculty Diversity Award



Shoumita Dasgupta, PhD
Professor
Biomedical Genetics



“This honor is awarded to a Department of Medicine faculty member who promotes the department values of diversity, equity, inclusion and belonging in the DOM or in the broader community. This faculty member promotes the culture of diversity through their work, research, teaching or as an ally to underrepresented groups”

<https://events.productivemedia.com/portal/view.php?eventId=BMC20211007>

Grants Awarded

Dr. Richard (Rick) Sherva awarded NIH R01 Grant



Exploring mechanisms driving microbe-induced AD risk using next generations sequence data.

Multiple lines of evidence suggest microbial infections are risk factors for Alzheimer's disease (AD). Amyloid- β ($A\beta$) peptides possess antimicrobial activity and may protect against human herpes viruses (HHV). Viral DNA is also detectable in $A\beta$ plaques, and HHV DNA detected in next generation sequencing (NGS) experiments is associated with AD risk. [Read More Here](#)

Dr. Xiaoling Zhang awarded NIH 1U01 Research Project grant



Circular RNAs and their interactions with RNA-binding proteins to modulate AD-related neuropathology

New variants, especially in non-coding regions, are expected to be discovered through the ongoing [Alzheimer's Disease Sequencing Project](#) (ADSP). In 2020, NIA launched the ADSP Functional Genomics Initiative ([RFA-AG-21-006](#)) to strengthen the translational pathways leading from genetic variations to potential targets. In collaboration with [Dr. Benjamin Wolozin](#) in the Department of Pharmacology, we recently received a NIA U01 award (**\$3.6M**) to identify circular-RNAs and their interactions with RNA-binding proteins to modulate AD-related neuropathology. This is one of the six awarded core projects of the new [ADSP Functional Genomics Consortium](#) (ADSP-FGC) which was established in August 2021. This proposal will investigate circular RNAs (circRNAs) and RNA binding proteins (RBPs) that regulate or are regulated by these circRNAs. Recent genomic studies have discovered thousands of circRNAs produced from both protein-coding genes and non-coding regions of the genome via a process known as back-splicing. The discovery of circRNAs opens an entirely new window into mechanisms of neurodegeneration in AD and related dementias (AD/ADRD). This proposal seeks to identify and characterize disease-linked circRNAs and RBPs, and functional changes in circRNAs or circRNA-RBP interactions that modify ADRD neuropathology or neurodegeneration. Successful discovery of key circRNAs or circRNA-RBP interactions in aging human brains could uncover novel biomarkers, disease mechanisms, or therapeutic targets to diagnose, mediate, or prevent the progression of AD/ADRD. [Read More Here](#)

The top new and current grant awards

<https://www.bumc.bu.edu/busm/about/office-of-the-dean/ay2022-state-of-the-school/top-2021-new-and-current-grants/>

Top 2021 Current grants

PI	Total Funding FY21	Dept/Center/Section	Title	NIH Sponsor
Ronald B. Corley, PhD	\$11,500,000	NEIDL Administration	National Emerging Infectious Diseases Laboratories Operations	NIAID
Vasan S. Ramachandran, MD	\$8,788,412	Medicine - Preventive Medicine & Epi	RURAL: Risk Underlying Rural Areas Longitudinal Cohort Study	NHLBI
David M. Center, MD	\$6,701,850	CTS Institute	The Boston University Clinical and Transitional Science Institute	NCATS
Vasan S. Ramachandran, MD	\$6,494,081	Framingham Heart Study	Framingham Heart Study	NHLBI
Lindsay Farrer, PhD	\$5,244,895	Medicine - Biomedical Genetics	Precision Monitoring and Assessment in the Framingham Study: Cognitive, MRI, Genetic and Biomarker Precursors of AD & Dementia	NIA
Thomas T. Perls, MD, MPH	\$4,302,251	Medicine - Geriatrics	Identifying protective omics profiles in centenarians and translating these into preventive and therapeutic strategies	NIA
Lynn A. Rosenberg, PhD	\$3,401,129	Slone Epidemiology Center	A Follow-up Study for Causes of Cancer in Black Women	NCI
Lindsay Farrer, PhD	\$3,392,639	Medicine - Biomedical Genetics	Genetic Studies of Alzheimer Disease in Koreans	NIA
Robert A. Stern, PhD	\$2,259,927	Neurology	Chronic Traumatic Encephalopathy: Detection, Diagnosis, Course, and Risk Factors	NINDS
Ann C. McKee, MD	\$2,043,340	Neurology	Traumatic Brain Injury and Repetitive Head Impacts: Contributions to AD/ADRD and CTE Neuropathology and Resulting Clinical Syndromes	NINDS

New 2021 grants of >\$3M total funding

PI	Project Anticipated	Dept/Center/Section	Title	NIH Sponsor
Lindsay Farrer, PhD	\$26,623,365	Medicine - Biomedical Genetics	Precision Monitoring and Assessment in the Framingham Study: Cognitive, MRI, Genetic and Biomarker Precursors of AD & Dementia	NIA
Joseph P. Mizgerd, ScD	\$4,127,435	Pulmonary Center	Biology of the Lung: A Multidisciplinary Program	NHLBI
Robert A. Stern, PhD	\$3,995,702	Neurology	Risk for Later-Life Cognitive Impairment, Neurobehavioral Dysregulation, and Dementia in Former Soccer and American Football Players: The Head Impact and Trauma Surveillance Study (HITSS)	NINDS
Jennifer Cappione, PhD	\$3,701,426	Microbiology	Gamma delta T cells promote inflammation in aviremic HIV infection and normal aging	NIA
Tara L. Moore, PhD	\$3,605,597	Anatomy & Neurobiology	Extracellular Vesicle treatment and age-related neuropathology in non-human primates	NIA
Kimberly Bertrand, ScD	\$3,406,428	Slone Epidemiology Center	Socio-environmental context in monoclonal gammopathy of undetermined significance (MGUS) disparities	NCI
Xiaoling Zhang, MD, PhD	\$3,377,949	Medicine - Biomedical Genetics	Circular RNAs and their interactions with RNA-binding proteins to modulate AD-related neuropathology	NIA
Joseph Zaia, PhD	\$3,357,417	Biochemistry	Selecting HA glycosylation for improved vaccine responses	NIAID
Camron D. Bryant, PhD	\$3,339,211	Pharmacology & Experimental Therapeutics	A Reduced Complexity Cross in BALB/c substrains to identify the genetic basis of oxycodone dependence phenotypes	NIDA
Tuhina Neogi, MD, PhD	\$3,241,002	Medicine - Clinical Epi	Pain in community-based older African American Adults: The Jackson Heart Study	NIA
David A. Harris, MD, PhD	\$3,220,064	Biochemistry	Mechanisms of Prion Protein Toxicity	NINDS
Andrew Emili, PhD	\$3,134,870	Biochemistry	Mapping Protein Interaction Networks Essential for Gonococcal Pathogenesis	NIAID
Jennifer I. Luebke, PhD	\$3,111,617	Anatomy & Neurobiology	Multimodal characterization of prefrontal and premotor circuits underlying perceptual decision making in the rhesus monkey	NINDS
Joshua D. Campbell, PhD	\$3,002,598	Medicine - Computational Biomedicine	Investigating the mechanisms of driver genes associated with ancestry and aggressiveness in prostate cancer	NCI

Biomedical Genetics Section Suite

Everyone is back in their offices and enjoying lunchtime together



Dr. Lindsay Farrer



Dr. Gyungah Jun



Tong Tong, Cong Cong Junming, and Donghe



Dr. Shoumita Dasgupta

Enjoying traditions in the suite



What That Turkey Is All About

National lore has it that the first Thanksgiving was in 1621, when Plymouth colonists and the Wampanoag Indians shared a harvest feast. Several American presidents had called for days of thanks, but it was President Abraham Lincoln who made Thanksgiving a national holiday, in 1863, during the height of the Civil War. No one truly knows what was served at that first Thanksgiving dinner, but most Americans are familiar with what fills the plate today. Turkey, stuffing, mashed potatoes, cranberry sauce, and pumpkin pie are staples on nearly everyone's menu—which begs the question: why? [Read More Here](#)

BU Health

BU COVID Update: Most Coughs, Sniffles, and Sore Throats Are Other Illnesses, Not COVID



Midway through fall semester, Judy Platt, BU’s chief medical officer, reports on COVID, seasonal illnesses, mental health, and holiday travel planning

Halfway through the fall semester, Judy Platt, Boston University’s chief medical officer, has mental health top of mind. In a University-wide letter, headlined as “Mid-Semester COVID Report” and emailed to BU students, faculty, and staff on Friday, Platt writes about the “tremendous loss, frustration, and worry” that the global pandemic has caused members of BU’s community and the world beyond.

Many people have experienced anxiety or depression for the first time in the nearly two years since COVID-19 first began to sicken people in Wuhan, China. And, Platt pointed out, for some people the strain of the pandemic has worsened existing mental health issues.

“For those who struggle or those who have witnessed someone struggling—you are not alone,” Platt said. “There are so many resources right here on campus that can help with a variety of challenges.” [Read More Here](#)

Boston University News

Wellness Challenge Imagines Ways to Help BU Heal from the Pandemic

Finalists in Innovate@BU competition dreamed up wellness center using psychedelic plant-based medicines, free professional clothing for students, and more



One group came up with an organization that hands out free professional clothing for needy BU students. Another is working to provide gender-affirming products to transgender and nonbinary BU students. And a third wants to premiere a short film about BIPOC (Black, indigenous, people of color) mental health, accompanied by a day of wellness, with therapy dogs and counselors.

[Read More Here](#)

Resources

Submit an Announcement Request Form and share your news in the next issue of the Biomedical Genetics Section Newsletter!



Do you have exciting news that you want to share in the next issue of our quarterly Biomedical Genetics Section Newsletter? Submit an [Announcement Request Form](#), located on the Resources page of our [website](#)!