

SEPTEMBER 2024 | ISSUE 14

BIOMEDICAL GENETICS SECTION

QUARTERLY NEWSLETTER

Section Updates



Welcome to Miriam, our new Molecular Genetics Core Lab Technician!

A laboratory technician in the Genetics Core lab extracts DNA/RNA from various samples including blood, saliva, placenta, and brain tissues and store them for genetic analysis. They also log and map samples using network databases, perform genotyping reactions, optimize PCR-based assays, and operate automated DNA genotyping equipment.

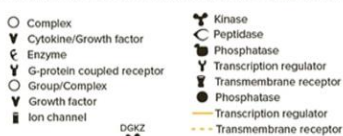


AI's Drug Revolution, Part 2: New Uses for Old Drugs

The second in a three-part series from Medscape Medical News on the impact of artificial intelligence (AI) on drug discovery and development. [Part 1](#) is about AI's role in designing speedier, more effective clinical trials. [Part 3](#) reports on AI's ability to create new proteins from scratch, streamlining the creation of protein-based therapeutics.

How AI Can Predict a Drug Target

A type of machine learning called a graph neural network uses relationships between data points to predict a target gene.



Adapted from <https://doi.org/10.1038/s41398-024-02834-x>

Medscape

Scientists the world over are racing to end Alzheimer's disease. Over two decades, they've conducted hundreds of clinical trials and spent billions in funding. Yet only a handful of Alzheimer's medications have been approved.

But what if there were drugs already on the market that could help treat or even prevent this devastating disease?

If such drugs exist, geneticist [Gyungah R. Jun, PhD](#), is determined to find them — using AI.

"Using big genetic and molecular data from patients and AI, I can predict everything in silico," she said, including who is at a risk for Alzheimer's and how these individuals will respond to existing drugs.

Read the full article by Sarah Amandolare on [Medscape HERE](#).





Congratulations to Dr. Lindsay Farrer & Dr. Gyungah Jun on their new U01 grant!



Title: APOE Genotype Mediated Effects on Alzheimer Disease Risk and Mechanisms

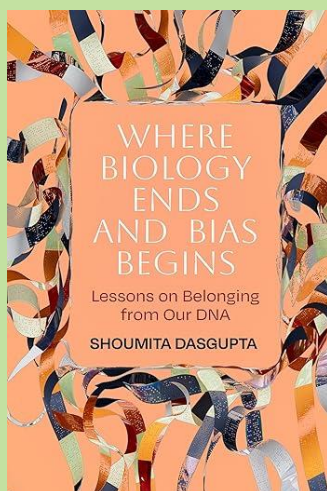
Grant: U01- AG082665

Total: \$ 810,698 (Year 1)

Project Dates: 09/15/2024 – 06/30/2029

Aims:

- 1) Identify genetic modulators of the APOE2 and 4 effects on AD risk in several populations.
- 2) Identify plasma biomarkers for AD modulated by APOE ϵ 2 and ϵ 4 in blood and brain.
- 3) Determine mechanisms by which genes identified previously and in Aims 1/2 confer APOE ϵ 2 and ϵ 4-mediated effects on AD pathophysiology by employing a novel human iPSC-derived human 3D spheroid model of AD exhibiting AD pathologies including amyloid- β , tau, gliosis and neurodegeneration.



Dr. Shoumita Dasgupta's Book is Now Available for Pre-Order!

Title: *Where Biology Ends and Bias Begins: Lessons on Belonging from Our DNA*

Author: Shoumita Dasgupta, PhD

Release Date: February 18, 2025

Pre-Order Link: <https://www.amazon.com/Where-Biology-Ends-Bias-Begins/dp/0520397142/>



BUMC News



Dr. Karen Antman to Step Down as Medical Campus Provost & Dean of the Chobanian & Avedisian School of Medicine

[Karen Antman](#), who led two transformative decades for Boston University's Chobanian & Avedisian School of Medicine as dean of the school and provost of the Medical Campus, has announced plans to step down from those roles and return to the faculty at the BU medical school as a professor of medicine when her successor is named. Read the full announcement [here](#).

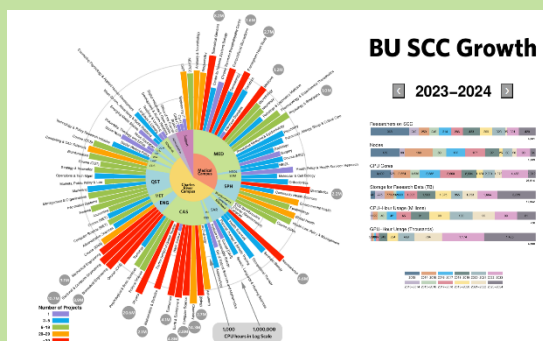


Office of Research

NIH, AHRQ, and HRSA Announce FY 2024 Updates to NRSA Stipends, Tuition/Fees, and Other Budgetary Levels

Stipend increases are announced for fiscal year 2024 Kirschstein-NRSA awards for undergraduate, predoctoral, and postdoctoral trainees and fellows. Training-related expenses and institutional allowances for predoctoral and postdoctoral trainees and fellows reflect a moderate increase. The tuition and fees for all educational levels remain unchanged from the prior budget year. Please see [NOT-OD-24-104](#) for full details and the important notes in the post [here](#).

GPU Resource Expansion on the Shared Computing Cluster (SCC)



The annual equipment refresh of the shared portion of the SCC was completed in June. This refresh focuses on supporting the ever increasing single-precision workloads such as machine learning and AI. The 24 new GPUs essentially double the number of GPUs available on the Shared resource.

Details: New Nodes with NVIDIA Lovelace L40S GPUs

- 6 nodes, each with 4 NVIDIA L40S GPUs, 32 compute cores, 256 GB memory, and 25 Gb Ethernet.
- Policy: 12 hour time limit.

If you have questions about using any of these resources, please don't hesitate to contact the RCS staff at help@scc.bu.edu.



6/30/2024: Goodbye BU (802.1x), Hello eduroam !



Information Services & Technology

The BU (802.1x) wireless network was retired and is no longer accessible, as of Sunday, June 30th. eduroam, a global Wi-Fi network for education and research institutions, makes it seamless for you to travel from one campus to another and remain connected.

BU's Framingham Heart Study (FHS) Gets New Director



Donald M. Lloyd-Jones, MD, ScM, has accepted the position of director of the Framingham Center for Population and Prevention Science, principal investigator of the FHS, and chief of the section of preventive medicine within the department of medicine at the Chobanian & Avedisian School of Medicine and Boston Medical Center, effective January 1, 2025.

Read the full announcement [here](#).

NIH's Adoption of Common Forms for Biographical Sketch and Current and Pending (Other) Support by May 25, 2025



Office of Research

As detailed in NIH Notice [NOT-OD-24-163](#), NIH has adopted Common Forms for Biographical Sketch and Current and Pending (Other) Support to be used with all applications and Research Performance Progress Report(s) (RPPRs) by May 25, 2025.

NIH will implement the Common Forms without change to any collection fields. However, in accordance with NIH's Peer Review Regulations at 42 Code of Federal Regulations Part 52h, NIH currently plans to continue collecting three required agency specific data elements (i.e., Personal Statement, Contributions to Science, and Honors) to assess qualifications. These data elements will be collected separately from the Common Forms on a new NIH Biographical Sketch Supplement.

For a full summary of these NIH specific updates, go [here](#).



CAMed 2024 Largest New/Renewal Research Grants

PI	\$ millions	Title (All NIH funded)
Rosenberg	14.5	Lifetime stressors and Alzheimer's Disease genetic variants and biomarkers in relation to cognitive decline among Black Women's Health Study participants.
Kotton	14.0	Developing Pluripotent Stem Cells to Model and Treat Lung Disease
Farrer & Sherva	13.7	Genetic Studies of Alzheimer's Disease in Jewish and Arab Populations
TCW	3.9	Microglia targeted interventions in prodromal Alzheimer's disease stage
Goldstein, Mez & Alosco	3.9	Validation of Lens Beta-Amyloid as a Novel Biomarker for Early Detection of Alzheimer's Disease at the Boston University Alzheimer's Disease Research
Hamburg	3.7	Endothelial Cell Health Across the Spectrum of Cardiometabolic Disease
Varelas	3.3	Defining immune-evasive mechanical signaling in head and neck cancer
Lenburg	3.2	Integrating imaging and biopsy-derived molecular markers for the pre-surgical detection of indolent and aggressive early-stage lung adenocarcinoma
Zachariou	3.2	Studies on RGS4-regulated pathways in models of neuropathic pain
Wilson	3.1	Mechanistic studies of the genetic contribution of desmoplakin to pulmonary fibrosis in alveolar type 2 cells
Mizgerd	3.0	Fibrin in the Infected Lung

- Gates Ventures made a grant of \$5 million to Rhoda Au, PhD, professor of anatomy & neurobiology and epidemiology, for a brain health technology research center.

Read the full AY 2025 state of the school announcement by Dean Antman [here](#).

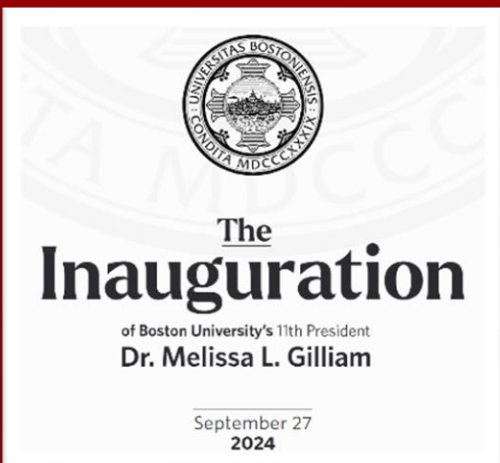


BUMC Upcoming Events

Sept. 27th: Inauguration of BU's 11th President, Dr. Melissa L. Gilliam



Read Dr. Gilliam's greeting message [here](#).



RSVP for in-person inauguration attendance [here](#).

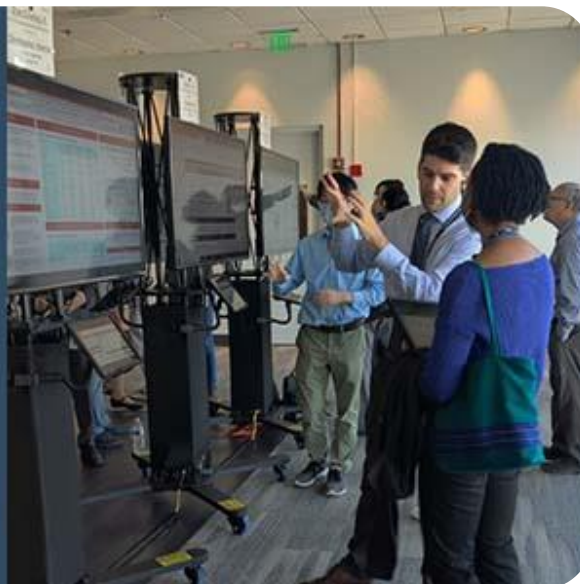
Livestream of the inauguration is also available [here](#).



October 10-11th: Evans Days

Evans Days

Oct. 10-11, 2024



Thursday, Oct. 10

8:15-9:15 a.m.

Oral Presentation, L110

9:30-11 a.m.

Basic Science Poster Presentation, Hiebert Lounge

11:15 a.m.-12:45 p.m.

Basic Science & Clinical Research Poster Presentation, Hiebert Lounge

1-2 p.m.

Wilkins Visiting Professor Lecture, Keefer Auditorium

2-3 p.m.

ARC Presentations, Keefer Auditorium

6-9 p.m.

Reception & Awards Ceremony, Hiebert Lounge

Friday, Oct. 11

Noon-1 p.m.

Ingelfinger Visiting Professor Lecture, Keefer Auditorium



Resources

Don't Forget-- 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](#)!