

FEBRUARY 2026 | ISSUE 18

BIOMEDICAL GENETICS SECTION

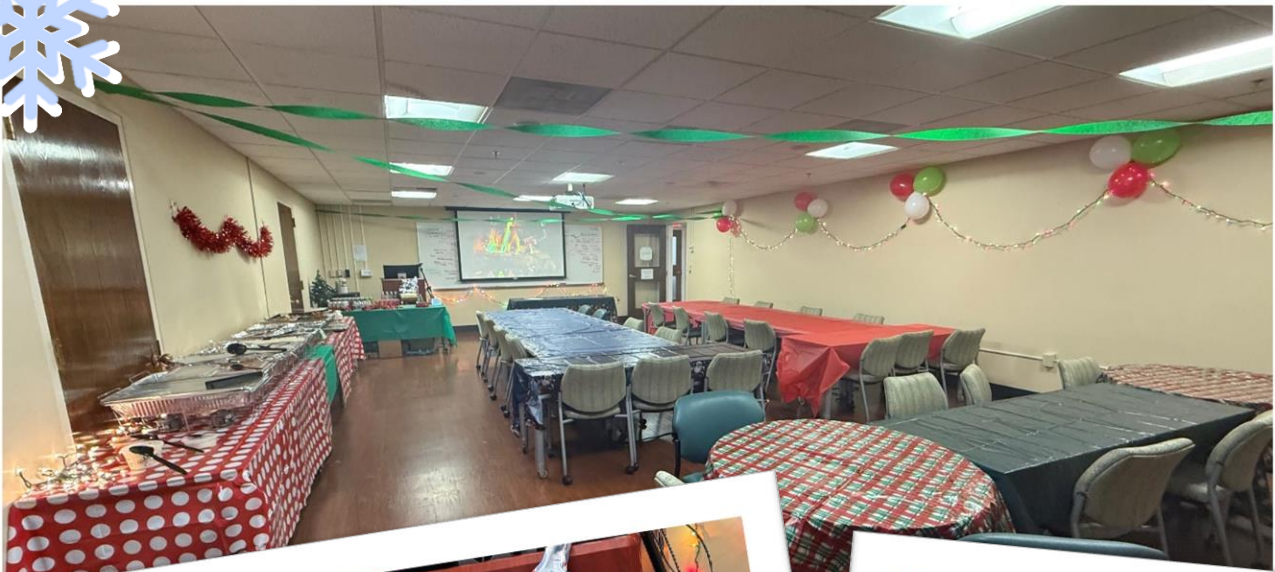
QUARTERLY NEWSLETTER

Section Updates

2025 Holiday Party Recap



**THANK YOU TO THOSE THAT
CAME TO OUR SECTION HOLIDAY PARTY
IN DECEMBER!**

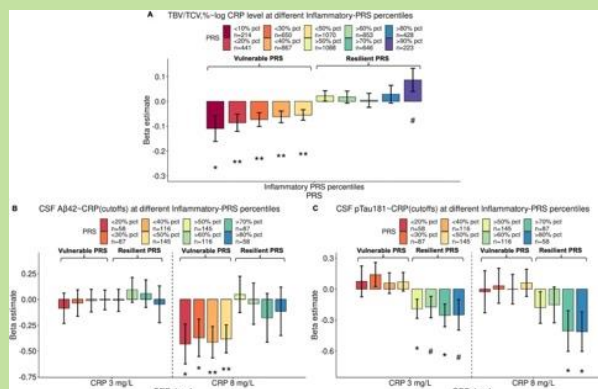






Some Recent Publications

Huang J, Rehman H, Doan C, Stein TD, Mez J, Ang TFA, Tao Q, Au R, Farrer LA, Zhang X[†], Qiu W[†]. *Circulating C-Reactive Protein Influences Polygenic Risk of Inflammatory Genes Expressed in Brain Endothelia for Alzheimer's Disease.* *Neurobiol Dis.* 2026 Jan 13;219:107257. PMID: 41539445



Abstract

Background: C-reactive protein (CRP) is a key marker of systemic inflammation that affects blood vessel endothelial function, including in the brain. Since endothelial dysfunction is linked to Alzheimer's disease (AD), we investigated whether elevated CRP level interacts with genetic pathways in brain endothelial cells to influence AD risk.

Methods: Using AD genome-wide association study (GWAS) data, we developed multiple polygenic risk scores (PRSs) including single nucleotide polymorphisms (SNPs) in genes expressed in brain endothelial cells, excluding the APOE region, that are involved in inflammation, synaptic transmission, and other pathways.

Results: Analysis across three independent cohorts revealed that individuals with low inflammatory PRSs (<50%) and elevated blood CRP level were associated with an increased risk of AD; in contrast, those with high inflammatory PRSs (≥50%) did not exhibit this CRP-related AD risk increase. Further examination of individuals with a low inflammatory PRS showed that elevated CRP was associated with lower cerebrospinal fluid (CSF) Aβ42 level and temporal lobe atrophy. Among individuals with a high inflammatory PRS, elevated CRP level was negatively correlated with CSF pTau181 and brain tauopathy, suggesting a potential protective mechanism against tau pathology. Key inflammatory PRS genes, which were impacted by circulating CRP for AD, included APP, IL6ST, and FN1, are involved in amyloid pathology, wound healing, and coagulation.

Conclusion: Our findings highlight two distinct genetic-dose dependent backgrounds: "vulnerable" (<50% inflammatory PRS) and "resilient" (≥50% inflammatory PRS), and support a Genome-Internal Environment (G×IE) interaction model, linking peripheral inflammation to AD risk.



Khurshid Z, Farrell J, Tong T, Zhu C, Alzheimer's Disease Sequencing Project, Martin ER, Bush W, Pericak-Vance MA, Wang LS, Schellenberg G, Haines JL, Lunetta KL, Leung YY, Zhang X[†], Farrer LA[†]. *Identification of rare coding variants associated with Alzheimer's disease.* Alzheimers Dis. 2025 Dec 22. PMID: 41428483

Abstract

Background: Previous whole exome and whole genome sequencing (WES/WGS) studies identified genome-wide significant associations for late-onset Alzheimer's disease (AD) with rare variants but highlighted the need for larger samples.

Objective: Identify associations of rare coding variants with AD risk in a large-scale, multi-ancestry exome-wide.

Methods: We combined non-overlapping portions of the Alzheimer's Disease Sequencing Project (ADSP) WES (n = 18 717) and WGS (n = 35 014) datasets obtaining a sample (n = 34 202) including participants ages ≥ 60 from four genomic similarity clusters consistent with European ancestry (EA, 9 744 AD cases and 9 095 controls), African American (AA, 1 944 AD cases and 4 215 controls), Caribbean Hispanic (CH 2 344 AD cases and 3 465 controls), and Native American Hispanic (NAH 743 AD cases and 2 652 AD controls) populations. Association of AD with 253,421 bi-allelic variants with minor allele count ≥ 20 in the total sample and each population group was evaluated using GENESIS. Gene-based tests comprising predicted moderate and high-impact variants were performed using SAIGE.

Results: Novel study-wide significant associations ($p < 1.97 \times 10^{-7}$) were identified with variants enriched among the Amish in BTBD8 (rs927193859, $p = 1.58 \times 10^{-10}$), LINGO1 (rs150289554, $p = 8.60 \times 10^{-8}$), and KCNG2 (rs140218057, $p = 1.77 \times 10^{-7}$) in the total sample. Population-specific analyses confirmed significant associations with APOE in all groups and detected an association in CH individuals with the PSEN1 missense mutation G206A ($p = 3.07 \times 10^{-7}$), a variant that was previously linked to early-onset AD in Hispanics. Gene-based tests highlighted significant associations with LINGO1 ($p = 2.75 \times 10^{-8}$), DYNLT4 ($p = 2.80 \times 10^{-7}$), and ADCY4 ($p = 7.43 \times 10^{-7}$).

Conclusion: We identified rare variants in novel genes which provide new insights into AD pathogenesis.

Upcoming PhD Thesis Defenses

We are pleased to share that several of our students will be defending their PhD theses in the coming month. Congratulations to each of them on reaching this significant milestone!

Marlene Tejada	Oluwatosin Olayinka	Zainab Khurshid
<i>Neurotropic Viral Sequences in Human Genomic Data: Genetic Associations, Host Interactions, and Predictive Modeling in Alzheimer's Disease</i>	<i>An Integrative Omics and Genetic Investigation of Alzheimer's Disease and Related Dementias</i>	<i>Investigation of Multi-Ancestry Genomic Variation, Telomere Length, and Molecular Biomarkers in Alzheimer's Disease</i>
March 25 th	March 31 st	March 31 st

BUMC News

January 28th - President Gilliam's 1st Presidential Address



Boston University President Melissa Gilliam laid out what she described as a “North Star vision” for the future of BU—one that draws upon the institution’s long history of innovation, collaboration, and openness and its strength in interdisciplinary, convergent research—to point the University in a direction that will enable it to meet the current moment and to excel for generations to come.

Read the full recap [HERE](#).

BU Launches “Chart Your Career”: A New Performance Review System



A new staff performance review process [Chart Your Career](#) replaces an outdated performance review form that no longer meets the University’s evolving needs. Chart Your Career is designed to enhance collaboration between managers and staff around professional growth. This new process is designed to help staff strengthen their core competencies, establish goals, and to pursue career growth within an increasingly complex and fluid environment.

Jennifer Fitzgerald Named New Executive Assistant of the Department of Medicine



Jen will be supporting the calendar for Vicki Jackson. Kathy Airas will continue supporting Rania Omar Burke and James Hudspeth. Jen and Kathy are both sitting in the Chair’s office, E113. Jen can be reached at 617-358-3510 or jennifer.fitzgerald@bmc.org

BU HR Announces New Staff Recognition Program



Two of the recognition programs are coupled with a monetary award; the third program centers around peer-to-peer recognition and is non-monetary. All three programs are designed to recognize employees whose contributions have a profound impact on BU. More information about each program can be found [HERE](#).

Some Upcoming IS&T RCS Tutorials



Tue, March 3rd: 1-3pm

- [Applied Generative AI: Building LLM-Driven Chatbots and RAG Systems, Part One \(Hands-on\)](#) [Zoom](#)

Thu, March 5th: 1-3pm

- [Applied Generative AI: Building LLM-Driven Chatbots and RAG Systems, Part Two \(Hands-on\)](#) [Zoom](#)

BUMC Upcoming Events

Feb. 23 - FDD Seminar: Leveraging Social Media (Virtual)



Title: Leveraging social media to enhance your academic network and impact
Speaker: [Shoumita Dasgupta, PhD](#)
Register Here: https://bostonu.qualtrics.com/jfe/form/SV_bxtSluIS0ITuRIq
Contact: Teresa Acosta | bumcfdd@bu.edu | (561) 315-2654
Date: Monday, Feb. 23 | Noon
Location: Zoom

This session is designed for faculty, researchers and students looking to elevate their professional presence in the digital age to enhance research visibility, build scholarly networks and engage with the public. Participants will learn strategies for creating professional profiles, building networks, sharing research and learning from a wider set of voices than we might encounter in traditional academic spaces. Bluesky Social Handle: @profdasgupta.bsky.social

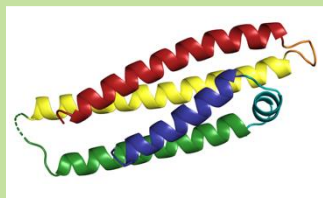
March 2 - FDD Seminar: Title: Publish, Present, Promote: A Practical Guide to Sharing Your Medical Education Work (Virtual)



Title: Publish, Present, Promote: A Practical Guide to Sharing Your Medical Education Work
Speaker: [Hollis Day, MD, MS, MHPE](#)
Register Here: https://bostonu.qualtrics.com/jfe/form/SV_2nsybpZq9Wh7ySy
Contact: Teresa Acosta | bumcfdd@bu.edu | (561) 315-2654
Date: Monday, March 2 | Noon
Location: Zoom

This session will provide practical strategies to promote your educational scholarship. The session will cover multiple methods of dissemination including how to choose an appropriate journal for your work.

March 10 - Pharmacology Student's Dissertation Defense Seminar: Sabrina Kistler



Title: Alternative Splicing in the Alzheimer's Disease Brain: New Insights into APOE and its Receptor
Speaker: Sabrina Kistler, PhD candidate
Zoom Info: Meeting ID: 989 2302 6833 - Passcode: 596123
<https://bostonu.zoom.us/j/98923026833?pwd=hjNQ5hxEOyMmN0LElGc1mQyGCMzXjW.1>
Contact: Licia Holman | lmh@bu.edu | (617) 358-9564
Date: Tuesday, March 10 | 11 a.m.-Noon
Location: Evans Buiding (E) 111, Keefer Auditorium

Alternative splicing is an important but underexplored regulatory mechanism in Alzheimer's disease (AD). Here, we define how APOE isoforms and APOER2 splicing interact to shape neuronal signaling and vulnerability. Using genetically defined models combining humanized APOE3 or APOE4 alleles with Apoer2 exon 19 inclusion or deletion, we show that Apoer2 splicing is a dominant driver of hippocampal transcriptional programs and modulates APOE-dependent signaling.

April 15 - FDD Seminar: Leveraging Data Science and Artificial Intelligence (Virtual)



Title: Leveraging Data Science and Artificial Intelligence in Clinical and Biomedical Research at BU and BMC
Speaker: [Charlene Ong, MD, MPH](#)
Register Here: https://bostonu.qualtrics.com/jfe/form/SV_ebz26KbHi3mCimG
Contact: Teresa Acosta | bumcfdd@bu.edu | (561) 315-2654
Date: Wednesday, April 15 | Noon
Location: Zoom

This seminar will highlight how emerging data science and AI approaches are transforming clinical and biomedical research, from precision diagnostics to predictive modeling. Participants will gain insights into practical applications, current challenges, and opportunities for integrating these tools into their own research programs.

February 23rd: Health Economics in Alzheimer's Disease & Alzheimer's Disease-Related Dementias (AD/ADRD) Mini-Symposium

*Precision Medicine for Alzheimer Disease & Related Disorders ARC Program
presents this virtual event:*

Why **health economics** should matter to my research in ADRD



**Amitabh Chandra,
PhD**
Harvard
University



**Norma Coe,
PhD**
University of
Pennsylvania



**David Cutler,
PhD**
Harvard
University

To register, please click [here](#)



FEBRUARY 23, 2026
1:00-2:15 PM EST

*There will be three 15-minute talks with 5 minutes for Q&A for each speaker,
and then a 15-minute panel discussion at the end.*

For additional information about this event, please contact:

Phillip Hwang (pwhwang@bu.edu) or Maria Dudek (medudek@bu.edu)

February 25th: Food As Medicine Research Mini-Symposium



Wednesday, February 25, 2026

72 East Concord St, room L403

2:00-4:15pm

2:00pm-Welcome and Introduction to the Food is Medicine Pre-ARC (10 minutes)

Vipul Chitalia, MD, PhD

Olivia Thomas, MS, RDN, LDN and PhD student

2:10pm-Keynote (20 minutes)

[Fang Fang Zhang, MD, PhD](#)

2:30pm Research presentations (70 min (total w/ transitions)

Session 1: Mechanistic Pathways in Food Is Medicine: Understanding How Diet Influences Disease Biology and Therapeutic Targets

Maria Kukuruzinska, PhD

Vipul Chitalia, MD, PhD

Barbara Corkey, PhD

Session 2: Food Is Medicine in Translational Research: Translating Nutrition Science into Clinical and Community-Based Interventions

Megan A. McCrory, PhD

Alana Brennan, PhD

Ana Población, PhD

Kelsey Egan, MD, MSc

3:40pm Round Table Discussion (30 minutes)

Katya Ravid, DSc

4:10pm Final Words (5 minutes)

More information about this event can be found [HERE](#).

April 10&11: BU's MEDAI Hackathon

MEDAI HACK

REAL DATASETS. REAL CHALLENGES. REAL IMPACT ON HEALTH.

a 2-day hackathon to build AI on real biomedical datasets, backed by faculty mentorship, GPU compute, and cash prizes—to create work that can impact research and patient care



>\$10,000
CASH PRIZES

- GPU compute access
- Real de-identified datasets
- Food + swag + networking
- Collaboration with faculty

APRIL 10 & 11

FRI 3-6 PM • SAT 9 AM-6 PM
CDS 17TH FLOOR

LIMITED SPOTS ARE AVAILABLE. REGISTER SOON:

MEDAIHACK.ORG

BOSTON
UNIVERSITY



The days are getting longer... technically. Until spring officially shows up, here are a few small ways to make sure you don't remain in full hibernation mode until April.

End-of-Winter Survival Guide



Try a New Coffee/Tea Spot

Get yourself out and explore that random café you walked by once. You might find better lighting — and stronger caffeine — than your go-to spot.



Take the 15-Minute Reset Walk Outside

Yes, it's cold. Yes, you'll initially regret stepping outside... But by minute 8, those endorphins start to kick in.



Read Something That Has Nothing to Do With Work

No industry news. No work productivity hacks. Just a plot, some drama, maybe even a fictional vacation.



Create a New Playlist or Listen to a New Podcast

Fill your ears with inspiration — or pure chaos, if you're into that sort of thing. Your choice.



Cook Something That Pretends It's Spring

Think citrus. Fresh herbs. Something green. Manifest spring on your plate.



Put One Warm-Weather Plan on the Calendar

An oceanside dinner reservation. A weekend getaway. An outdoor concert. Anything to have something to look forward to.



Do One Thing That Doesn't Involve a Screen

Puzzle. Bake. Talk to a friend for an hour. Touch the dead grass (if you can find it under all the snow)



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](#)!