RUSH UNIVERSITY

2025 Rush Mentoring Programs

Eleventh Annual Symposium

Thursday, Sept. 25, 2025

Podium Presentations
In-Person
Noon to 3:15 p.m.
Brainard (Searle Conference Center – 5th Floor of Professional Building)

Networking Reception
In-Person
3:15 p.m. to 5:00 p.m.
Billings/Herrick (Searle Conference Center – 5th Floor of Professional Building)

Poster Session
Virtual
Thursday, Sept. 25 at 3:15 p.m. to Friday, Sept. 26 at 5 p.m.
VoiceThread (Asynchronous)

Office of Faculty Affairs

Office of Mentoring Programs

2025 Rush Mentoring Programs

Eleventh Annual Symposium | Sept. 25, 2025

Noon - 12:05 p.m. **Introductory Remarks**

Amarjit S. Virdi, PhD
Director, Rush Mentoring Programs
Office of Faculty Affairs, Rush University

12:05 - 12:35 p.m. **Keynote Speaker**

Julie Anne Hoff, PhD, MPH, RN, FAAN
Provost and Senior Vice President
Robert C. and Naomi T. Borwell Presidential Professor, Rush University

2025 Cohn Fellow Presentations

12:35 - 12:50 p.m. **Characterizing the Roles of T Cells and Other Inflammatory Sources in Intervertebral Disc Tissues of Patients with Low Back Pain**

Ana V. Chee, PhD
Assistant Professor
Department of Orthopedic Surgery, Rush Medical College

12:50 - 1:05 p.m. **Multiscale Investigation of Proximal Femur Shape and Cam Deformity Tissue Properties in Cam-Type FAI**

Catherine Yuh, PhD
Instructor
Department of Orthopedic Surgery, Rush Medical College

1:05 - 1:20 p.m. **Stress Among Korean-American ADRD Home Care Workers: A Wearable Technology Approach**

Hyejin Kim, PhD, RN
Assistant Professor
Department of Adult Health and Gerontological Nursing, College of Nursing

1:20 - 1:35 p.m. **Role of M2 Macrophage Polarization During HIV/SIV cART Cessation**

Jeffrey Schneider, PhD
Assistant Professor
Department of Microbial Pathogens and Immunity, Rush Medical College

1:35 - 1:50 p.m. **The Influence of Surgical Resection on Hip Joint Contact Mechanics in Cam-Type FAI**

Steven P. Mell, PhD
Instructor
Department of Orthopedic Surgery, Rush Medical College

1:50 - 2:05 p.m. **Award Announcements**
2025 Mentee, Mentor and Postdoctoral Mentor of the Year

2:05 - 2:15 p.m. **Break**

2025 Abstract Winner Presentations

2:15 - 2:30 p.m.

Genomic Diversity of Global Colonizing Multidrug-Resistant Escherichia Coli (MDRE) Isolates Across Multiple High-Prevalence Resource-Limited Settings

Ahmed Babiker, MBBS, MSc, FIDSA

Assistant Professor

Department of Internal Medicine, Division of Infectious Diseases, Rush Medical College

2:30 - 2:45 p.m.

Deep Brain Stimulation of the Subthalamic Nucleus Engages Basal Ganglia Structures in a Rat Model of Early Parkinson's Disease

Alana Kirby, MD, PhD

Assistant Professor

Department of Neurological Sciences, Division of Movement Disorders, Rush Medical College

2:45 - 3:00 p.m.

The MIND Diet Association with Lower Microglial Inflammation in the Hippocampus: A Community-Based Neuropathologic Study

Puja Agarwal, PhD

Assistant Professor

Department of Internal Medicine, Rush Alzheimer's Disease Center, Rush Medical College

3:00 - 3:15 p.m.

TNFα-Triggered Bone Marrow Alterations Fuel CKD Progression

Alexis Paulina Jimenez-Uribe, DVM, MS, PhD

Postdoctoral Fellow

Department of Internal Medicine, Rush Medical College

3:15 p.m. - 5:00 p.m. **Posters and Networking Reception - In Person (Billings/Herrick)**

Starts at 3:15 p.m. **Virtual Poster Session - VoiceThread (Asynchronous)**

Thursday, Sept. 25 at 3:15 p.m. to Friday, Sept. 26 at 5:00 p.m.

Rush Mentoring Programs

Class of 2025 Cohn Fellows

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Assistant Professor
Department of Orthopedic Surgery
Rush Medical College

Steven P. Mell, PhD
Instructor
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Rush Medical College

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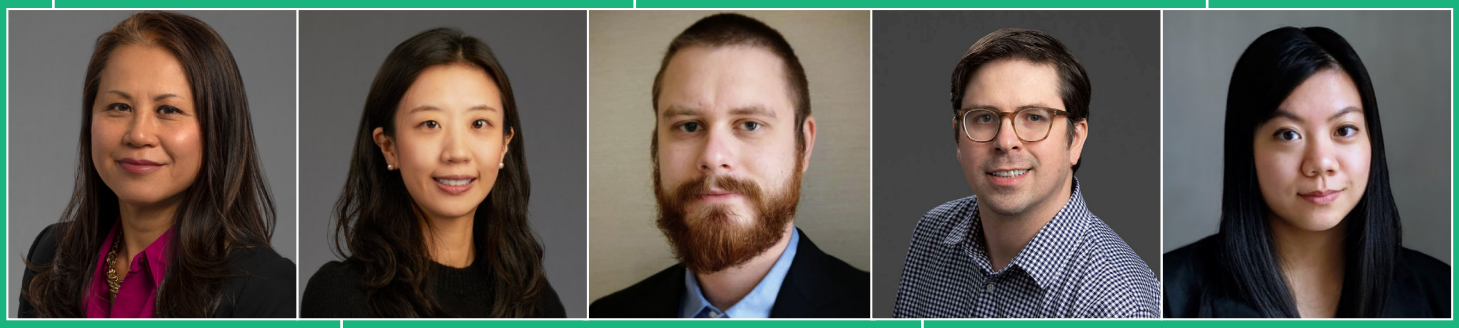


Hyejin Kim, PhD, RN
Assistant Professor
Department of Adult Health and Gerontological Nursing
College of Nursing

Jeffrey Schneider, PhD
Assistant Professor
Department of Microbial Pathogens and Immunity
Rush Medical College

Rush Mentoring Programs

2025 Award Winners

2025 Mentee of the Year

Puja Agarwal, PhD
Assistant Professor
Department of Internal Medicine
Rush Alzheimer's Disease Center
Rush Medical College

Awarded by the Rush Mentoring Programs in recognition of excellence in scholarly work, leadership and involvement in the Mentoring Program.

From nominator Lisa L. Barnes, PhD, FGSA, FABMR and Julie A. Schneider, MD, MS:
I've had the pleasure of working with Dr. Puja Agarwal since her postdoctoral training and more closely since her arrival at the Rush Alzheimer's Disease Center in 2021. Throughout this time, she has consistently impressed me with her dedication to scientific rigor, professional development and collaborative engagement. Dr. Agarwal stands out as a driven and insightful mentee—highly inquisitive, open to feedback, and eager to contribute to the broader mentoring community.

This year, Dr. Agarwal received her first R01 and has published in a high impact Neurology Journal on the role of diet in pathologic changes in the brain (hippocampal neuronal loss and sclerosis) and cognitive decline in the ROS/MAP cohorts.

Dr. Agarwal is highly committed to succeed at Rush University. I knew her prior to her joining the Rush Alzheimer's Disease Center and after the death of her mentor (Dr. Martha Clare Morris) I specifically wanted her to join the Rush Alzheimer's Disease. I had been working closely with her on diet and pathology and found her extremely committed to science and growth.

Dr. Agarwal brings a rare combination of humility, initiative, and perseverance to her work. She is intentional in applying mentorship, while also mentoring others—a quality that strengthens the entire academic network around her. Her thoughtful approach, collaborative spirit, and growing impact on both research and community make her a truly deserving nominee for the Mentee of the Year Award.

Dr. Agarwal has demonstrated an exceptional and sustained commitment to succeed at Rush University through her research, mentorship, and interdisciplinary collaboration. As a key member of the nutrient and brain health research team at Rush, she is actively shaping this evolving field and is recognized both nationally and internationally for her work. Within Rush, Puja has built strong collaborative relationships across departments and research centers, fostering a multidisciplinary approach to scientific discovery. Dr. Agarwal is committed to mentoring the next generation of scientists. She actively mentors students across academic levels, including Rush medical students, Master of Clinical Nutrition students, and PhD trainees from other institutions. Given her impressive trajectory, collaborative spirit, leadership experience, and dedication to advancing science, there is no doubt that Dr. Agarwal will continue to make meaningful and lasting contributions at Rush University.

Dr. Agarwal's long-standing involvement in RMP and her commitment to both personal growth and community engagement make her a highly deserving candidate for the Rush RMP Mentee of the Year Award. She is outstanding and it gives me great confidence to know that individuals of her character, ethics and skills are members of the Rush community.

Rush Mentoring Programs

2025 Award Winners

2025 Mentor of the Year

Mary Hayden, MD
Professor
Department of Pathology
Rush Medical College

Awarded by the Rush Mentoring Programs in recognition of outstanding contributions to mentees success, commitment and involvement in the Mentoring Program.

From nominator Sarah Sansom, DO:
Dr. Mary Hayden has been an incredible mentor to me from fellowship up through my current early career practice. She has strived for decades to bring up the next generation of ID clinical investigators. As an expert in her own right, she is internationally renowned for her work in infection prevention and antimicrobial resistance. She has also taken the reigns leading the ID division and guided us to continued growth following the disruptive COVID-19 pandemic. Her track record of mentorship speaks for itself when you look at the number of mentees that have trained under her and found success in academic ID clinical research positions. I have no doubt that her individualized mentoring for myself, and so many other young investigators, has furthered the field of ID epidemiology.

Her support for my career growth, despite the numerous bumps, has been unwavering. With her help, I have forged new research collaborations, published multiple high-profile manuscripts, reached national recognition for my research work, and was funded for the intramural KL2 grant for 2025-27. She also encouraged me to take on infection prevention and ID director at Rush Specialty Hospital, which has helped further my career.

Mary's influence in the ID epidemiology world is far-reaching and highly respected. Her expertise and mentoring draw highly promising young faculty to our division. We all think she must be a super woman, or just never sleeps, in order to accomplish all her commitments. Despite being division director, she still makes time for each of us to mentor one-on-one to create individualized career plans, set goals, support in the writing of manuscripts and funding applications, and also to provide life advice when we need it. Her steady hand has guided me through a few tough times, finding the right balance to comfort you but also keep pushing you forward toward your goals. I cannot express how thankful I am to have her support.

Rush Mentoring Programs

2025 Award Winners

2025 Postdoctoral Mentor of the Year

Zoe Arvanitakis, MD, MS, EMBA, FAAN, FANA
Professor and Section Head of Cognitive Neuroscience
Department of Neurological Sciences
Rush Medical College

Awarded by the Rush Postdoctoral Society in recognition of outstanding contributions to the postdoctoral fellow's success, commitment and involvement in the Mentoring Program.

From nominator Nicholas Baumgartner, PhD:
Dr. Zoe Arvanitakis should be recognized for her extraordinary commitment to mentoring postdocs at Rush and beyond for more than a decade. She runs biweekly grant-writing meetings, where she explains grant mechanisms in great detail from her extensive experience, encourages us to ask questions, and works with us on our own grant drafts, offering detailed individualized feedback to improve our writing. She has also allowed us to contribute to two real R01 grant submissions, giving invaluable hands-on experience. Zoe also holds weekly one-on-one meetings with postdocs to guide research design, data analysis and manuscript preparation, reviewing progress personally each week to provide tailored and effective feedback.

Zoe's mentorship has profoundly shaped my growth as a scientist. She has guided me through submitting two publications, with five more underway, providing continuous weekly feedback on manuscripts. She sits with each postdoc to explain the rationale behind editing changes and helps us think about research questions and manuscripts from both the reader's and reviewer's perspectives. Through her grant workshops, I have learned a great deal about writing and reviewing proposals effectively. She also gives us the opportunity to present our work in multiple formats, from internal meetings, monthly workshops with international scholars, and all the way to national and international conferences. She coaches us on presentation design and delivery, and helps us make new connections with leading scientists at every meeting we attend. Zoe also organizes an annual "NeuroBlitz" event, which is a unique event where young and established scientists present a project in five minutes, increasing the visibility of early-career research and helping us learn to communicate succinctly. These experiences have strengthened my writing skills, confidence and professional visibility.

Zoe creates a warm, supportive environment where mistakes are treated as learning opportunities. She is always available despite a busy schedule (and multiple appointments) and consistently encourages independence while providing guidance and accountability. Beyond technical skills, she fosters collaborations outside her own research, supports networking, and invests in our development as both scientists and people. For example, she recently facilitated a collaboration between myself and a group at the University of Calgary in an area of my interest (but not an area of her research), demonstrating her commitment to our personal and professional growth.

While Zoe has not recently contributed directly to the Rush Postdoctoral Society, she has had a profound impact on the postdoctoral community at RADC and beyond. She mentors multiple postdocs simultaneously, meets with trainees from Rush and other institutions to support publications and grant writing, and facilitates collaborations across universities. Her efforts have advanced my career along with many other postdocs, while fostering a supportive and growing scientific community at Rush.

Rush Mentoring Programs

Class of 2026 Cohn Fellows

Every year the Cohn Family Foundation provides grant funding to support junior faculty at Rush University who are mentees in the Rush Research Mentoring Program. The Cohn Fellowship allows mentees to gather preliminary data for research proposals and continue their research activities.

The following faculty members were selected as the Class of 2026 Cohn Fellows after a very competitive process.

Ahmed Babiker, MBBS, MSc, FIDSA, is an assistant professor in the Department of Internal Medicine, Division of Infectious Diseases at Rush Medical College. The overarching theme of his research is utilizing -omics techniques to directly address challenges posed by antimicrobial resistance. His research interests include the clinical and molecular epidemiology antimicrobial resistance organisms, the surveillance of antimicrobial resistance in low- and middle-income settings and the role of the gastrointestinal microbiome in colonization resistance.

His Cohn fellowship research will leverage a unique dataset of sequenced multidrug resistant organisms and associated epidemiological metadata, collected from asymptomatic carriers in both hospitals and community settings in low- and middle-income countries to identify the bacterial lineages and plasmids that serve as global reservoirs for efficient antimicrobial gene transmission. This integrated analysis will provide a high-resolution picture of antimicrobial resistance transmission in community and health care networks on a global scale and be an important step towards identifying drivers and risk factors for antimicrobial spread in low- and middle incomes settings. This will ultimately guide the design of synergistic one-health multisectoral tailored interventions for the containment of antimicrobial.

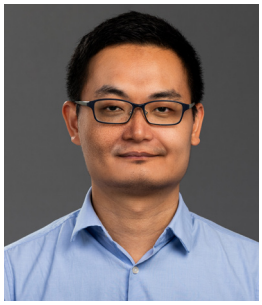
Lourdes Carolina Figueroa, PhD, is an assistant professor in the Department of Physiology and Biophysics at Rush Medical College. Her research focuses on understanding the mechanisms that control calcium signals in the excitation-contraction coupling of skeletal muscle. Dr. Figueroa earned her PhD in Biophysics in Venezuela, where she studied the postnatal development of calcium homeostasis in skeletal muscle. During her postdoctoral studies at Rush University, she gained expertise in using advanced fluorescent microscopy techniques to quantify calcium dynamics in muscle cells. As an instructor, she developed a platform using patient-derived skeletal cells to study and characterize calcium channel (RyR1) mutants associated with muscle disorders, such as Malignant Hyperthermia and Central Core Disease.

Recently, she has identified several small RyR1 inhibitors that specifically target the abnormal activity of the channel (i.e., due to genetic variants or post-translational modifications) without affecting its normal function, which is very attractive for therapeutic use. For her Cohn Fellowship, Figueroa will investigate the decline in muscle function associated with aging and evaluate the efficacy of these novel drugs in this context. Her research will contribute to our understanding of the mechanisms of muscle function loss with age and the search for interventions that improve the quality of life of our older adults.

continued

Rachel Medernach, MD, MSCI, is an assistant professor in the Department of Internal Medicine, Division of Infectious Diseases at Rush Medical College. Her research focuses on understanding how multidrug-resistant organisms persist in health care environments and developing strategies to prevent their infectious potential and spread throughout facilities.

Her Cohn Fellowship will investigate a continuously active disinfectant against high-priority pathogens including carbapenemase-producing Klebsiella pneumoniae and E. Coli on environmental surface materials found throughout the healthcare environment in a laboratory setting, with the long-term goal of applying the in vitro findings to real-world health care settings.



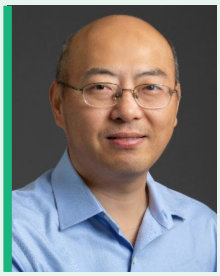
Ted K.S. Ng, PhD, is an assistant professor at the Rush Institute for Healthy Aging, Department of Internal Medicine at Rush Medical College. His research integrates psychosocial stressors, biological markers, and cognitive outcomes to better understand Alzheimer's disease risk, particularly among diverse community-dwelling populations. Grounded in a biopsychosocial framework, his long-term goal is to translate epidemiologic insights into precision prevention strategies for populations at elevated risk.

Dr. Ng's Cohn Fellowship research will pilot a Stage I randomized controlled trial (RCT) of the Mindful Awareness Practice (MAP), a mindfulness intervention tailored for individuals with mild cognitive impairment (MCI), a preclinical stage of Alzheimer's disease. Building on promising results from a proof-of-concept RCT in Singapore, this study will test whether MAP improves mindfulness, breathing regulation, and reduces perceived stress and related biomarkers—ultimately enhancing cognition, mood, and quality of life (QoL). Findings will inform a fully powered Stage III trial, with the long-term goal of establishing MAP as a feasible, acceptable, and low-risk intervention for improving mental and cognitive health in MCI populations at high risk for Alzheimer's Disease.

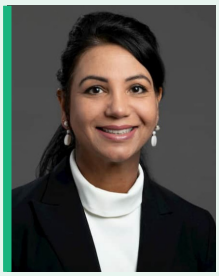
Rush Mentoring Programs

2025 Graduating Mentees

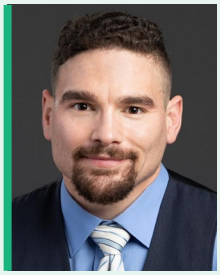
Mentees graduate from the Rush Research Mentoring Program and become junior mentors after they have been in the program for five years.



Fei Chu, MD, PhD
Assistant Professor
Department of Surgery
Rush Medical College

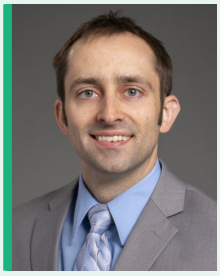


Manju Daniel, PhD, MSN, APRN, FNP-BC
Professor
Department of Community, Systems and Mental Health Nursing
College of Nursing

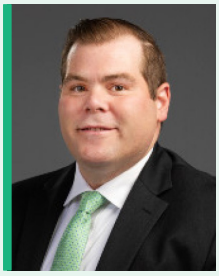


Christopher Ford, PhD, MPH
Assistant Professor
Geriatrics, Gerontology and Palliative Medicine
Rush Medical College

Jonathan Gustafson, PhD
Assistant Professor
Department of Orthopedic Surgery
Rush Medical College



Michael Jelinek, MD
Assistant Professor
Department of Internal Medicine
Division of Hematology, Oncology and Cell Therapy
Rush Medical College



Mark McInerney, DHSc, RD
Assistant Professor
Department of Clinical Nutrition
College of Health Science

Evguenia Popova, PhD, MS, OTR/L
Associate Professor
Department of Communication Disorders
College of Health Science

Shannon Theis, PhD
Associate Professor
Department of Communication Disorders
College of Health Science

Jongwon Yoo, PhD, APRN
Assistant Professor
Department of Adult Health and Gerontological Nursing
College of Nursing

Rush Mentoring Programs

Poster Presentations

1. **Albadi, H. et al.** The Mismatch Between Spine Disease and Low Back Pain: A Systematic Review of Longitudinal Studies
2. **Cahoon, S. et al.** Bictegravir Contributes to Musculoskeletal Pain more than Dolutegravir-Based Antiretroviral Therapy in Female Mice
3. **Emezue, C. et al.** Coping Strategies Among Young Black Males Exposed to Violence: An Interpretive Description Study
4. **Emezue, C. et al.** Feasibility of a Digital Intervention to Shift Aggression and Pro-Firearm-Violence Attitudes Among Young Black Males: A Pretest–Posttest Study
5. **Figueroa, L. et al.** Chemotherapy-Induced Couplonopathies: Skeletal Muscle Defects in EC Coupling and Mitigation Strategies
6. **Gonzalez, F. et al.** Biokinetic Insights into Hip–Spine Relationship: Understanding Compensatory Mechanisms in Patients with Low Back Pain and Altered Pelvic Motion
7. **Gonzalez, F. et al.** Gait Biomechanics in Medial Meniscus Posterior Root Tears and Repairs: Assessing Established Risk Factors for Knee Osteoarthritis
8. **Gonzalez, F. et al.** Preoperative Neuropathic Pain and Central Sensitisation are Risk Factors for Chronic Pain After Total Knee Arthroplasty: A Systematic Review and Meta-Analysis
9. **Handoklow, L. et al.** A Multi-Institutional Archive and Deep Learning Pipeline for Quantifying Chondrosarcoma Composition
10. **Jimenez-Uribe, A. et al.** An ICOSL-Based Peptide Treatment Targeting αVβ3 Integrin Reduces Proteinuria and Alleviates CKD
11. **Lazcano, I. et al.** Tenofovir-Based Antiretroviral Treatment Suppresses Adipogenic Gene Expression in Bone Marrow Adipocytes
12. **Lee, H. et al.** Endothelial-to-Mesenchymal Transition During Bone Regeneration via Intramembranous Ossification
13. **Marco-Moreno, P. et al.** Novel Ryanodine Receptor (RyR1) Inhibitors as a Promising Therapeutic Strategy for Treating Skeletal Muscle Disorders
14. **Medernach, R. et al.** Evaluation of a Continuously Active Surface Disinfectant Against Candidoyzma auris
15. **Miyadahira, R. et al.** Preop Vs Postop RTSA: Scapular Rotation and Tilt During Hyper-Adduction Before and After Reverse Total Shoulder Arthroplasty
16. **Miyadahira, R. et al.** Pyrocarbon Vs. Metal Hemiarthroplasty for Shoulders: A Systematic Review of Pain, Survival Rate, Revision Causes and Complications
17. **Perrone, M. et al.** Assessing Vertebral Metabolism in Lumbar Degenerative Scoliosis Through Deep Learning and FDG PET Imaging
18. **Potter, N. et al.** The Efficacy of Cognitive Stimulation on the Prevention of Falls in Healthy Older Adults; A Systematic Review and Meta-Analysis
19. **Radaideh, M. et al.** Understanding Online Discussions Related to Pain among Patients Living with Myositis
20. **Romay-Tallon, R. et al.** Mitochondrial Dynamics in a Model of Early Parkinson's Disease
21. **Romanova, L. et al.** Age-Dependent Remodeling of Extracellular Matrix in Brain Meninges
22. **Zavala, I. et al.** Differential Expression of Renal and Hepatic PCSK9 During Development of Hypercholesterolemia in Minimal Change Disease (MCD)-Related Nephrotic Syndrome
23. **Zayas, J. et al.** HIV-1 Infection Activates Sensing in Microglia Through the Inflammatory cGAS-STING Pathway
24. **Zhang, L. et al.** TICAM1 is a Cofactor to the Early Steps of HIV-1 Infection of T-Cells Under interferon-β Stimulation

Rush Mentoring Programs

Special Thanks

The Cohn Family

Rush Mentoring Programs Symposium Steering Committee

Mentors, Mentees and Postdoctoral Fellows

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