



2024

Postdoctoral Research Symposium

Unifying the UVA Postdoc Community

Alumni Hall
May 20, 2024
9am - 7pm



**UNIVERSITY
of VIRGINIA**

**Office of Graduate and
Postdoctoral Affairs**



Welcome message from UVA PDA

On behalf of the UVA PDA leadership welcome to the 2024 Postdoctoral Research Symposium.

Our goals for today are to highlight the excellent work of our postdocs, foster the formation and strengthening of relationships within our postdoc community, and provide an opportunity to familiarize yourself with some of the resources available at UVA.

It is our hope that you will learn something new, make a new friend or contact, and have a great time that enhances your work and life.

Please take full advantage of the activities throughout the day and feel free to approach any PDA team member with questions or comments.

Thank you for being here as a valuable member of our community and have a wonderful day!

ACKNOWLEDGEMENTS

We would like to offer our appreciation to the postdoc leaders in the Symposium Planning Committee team for their effort to make this event possible.

› Sponsor & Collaborators

Office of Graduate and Postdoctoral Affairs (OGPA)
UVA Comprehensive Cancer Center
UVA Brain Institute
UVA Library

› Planning Committee

Amy Garrou, Ana Lorente, Christos Baryiamas, Elizabeth Uzzell, Fatima Saldaña Morales, Gislane de Almeida Santos, Irene Sánchez Brualla, Kelly Oman, Matthew Korban, Melanie Sinche, Phil Trella, Róza Przanowska, Samuel Lake, Susan Doyle, Todd Moellendick, and William Nash

› Postdoc Volunteers

Crystal Chu, Hari N. Nambiar, Kelsey Watts, Kristine Zengeler, Prem Sagar Menghwar, Selena Garcia DuBar, Shan Jiang, Thendral Velmurugan, and Zeinab Chitforoushzadeh

PROGRAM

REGISTRATION

8:30AM - 9:00AM

Registration

Annex

Breakfast

**Jefferson
Ballroom**

OPENING REMARKS

9:00AM - 9:30AM

Welcome from the UVA Postdoctoral Association
Director, Dr. Ana Lorente

Land Acknowledgement by Dr. Elizabeth Uzzell

Overview of the day by Dr. Fatima Saldaña Morales

**Jefferson
Ballroom**

LIGHTNING TALKS FINAL

9:30AM - 10:40AM

Introduction to Lightning Talks by Dr. Kelsey Watts

Lightning Talks Finalist Presentations
(See pages 7 & 8 for a list of presenters and titles)

**Jefferson
Ballroom**

Coffee Break

Annex

KEYNOTE ADDRESS

10:55AM - 12:00PM

Keynote Introduction by Dr. Irene Sánchez Brualla

Keynote: **“Advancing your career through connection
and community”** by Dr. Caleb McKinney.

**Jefferson
Ballroom**

Lunch

**Jefferson
Ballroom**

PROGRAM

CONCURRENT THEMATIC SESSIONS

1:00PM - 2:25PM

- | | | |
|-----|--|--------------------|
| I | The Future Is Now: Where Are Research Computing and AI Leading Us? | Manning Pavilion |
| II | Attacking Cancer from All Fronts | Small Conf. Room |
| III | Down to Earth: Understanding Our Ever-Changing Environment | Jefferson Ballroom |
| IV | Emerging Advancements in Medicine | Boardroom |

Coffee Break

Annex

CONCURRENT THEMATIC SESSIONS

2:40PM - 4:00PM

- | | | |
|------|--|------------------|
| V | Can We Understand Human Behavior? A Cross-Disciplinary Exploration of Why We Do What We Do | Manning Pavilion |
| VI | Of Neurons and Glands: Insights in Health and Disease | Small Conf. Room |
| VII | Turn Up the Optics: Research at the Smallest Level | TJ Conf. Room |
| VIII | This Session Is Contagious!: Learning from Infectious Diseases | Boardroom |

Resource Fair & Refreshments

Jefferson Ballroom

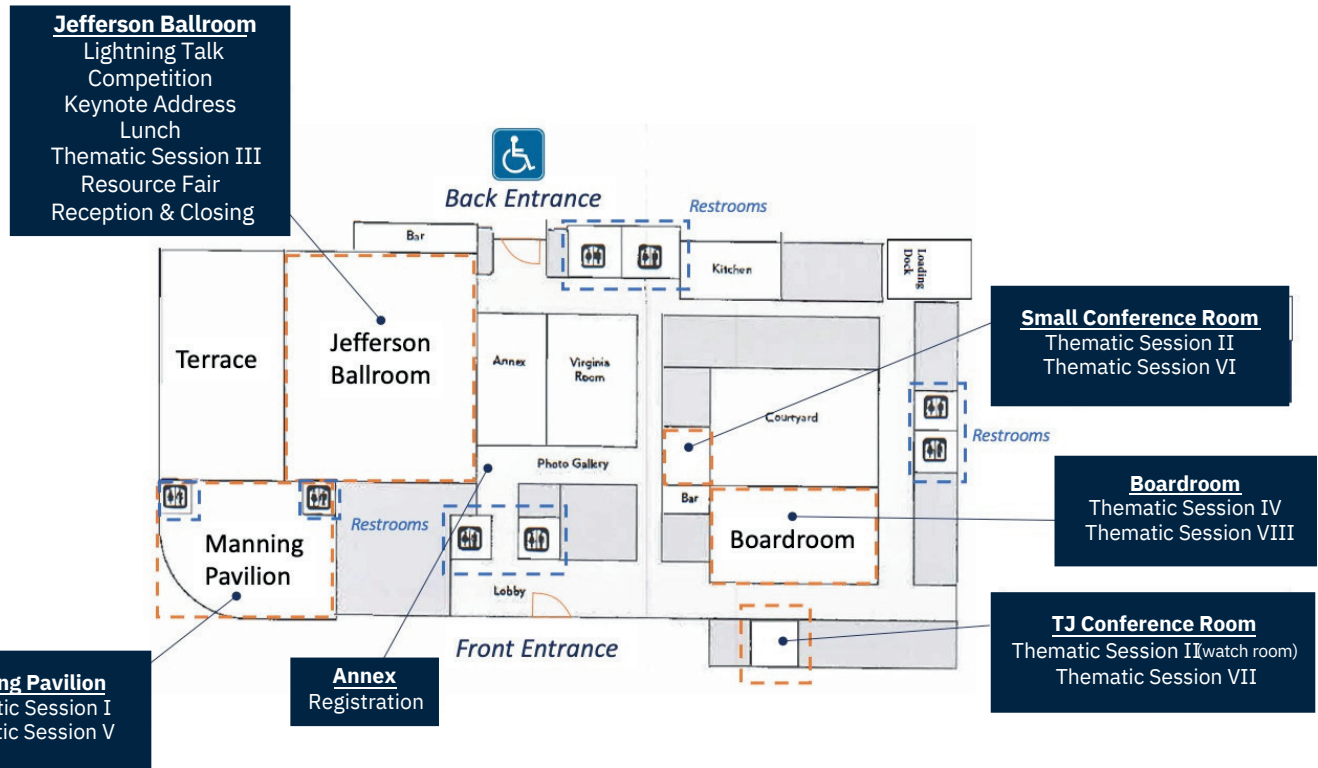
CLOSING

5:00PM - 7:00PM

Reception
Award Ceremony
Closing Remarks by Dr. Phillip Trella
Adjourn

Jefferson Ballroom & Terrace

Map



Questions about the location of a session?

Ask our registration station or one of the many volunteers (**red ribbon**), they will be happy to guide you.

Can we address accessibility concerns?

If you need any accommodation during the event, let us know at the registration desk or our designated volunteer Dr. Róża Przanowska (**Orange Volunteer ribbon**)

KEYNOTE ADDRESS

“Advancing your career through connection and community”

Overview

The postdoctoral training period is an exciting time to develop important skills, showcase discipline expertise, and gain career clarity. But there are also many challenges that postdocs have to navigate to reduce isolation, strengthen their mentoring relationships, and accomplish their career goals. Dr. Caleb McKinney will reflect on his experiences supporting postdocs locally through his roles at Georgetown University, and nationally through his volunteer service with the National Postdoctoral Association to explore the various ways to leverage shared community for personal and professional development

Brief Biography

Dr. McKinney is a steadfast advocate for student- and postdoc-led initiatives, and his office provides administrative support to the Medical Center Graduate Student Organization and the Georgetown University Postdoctoral Association. Dr. McKinney serves as Chair of the Board of Directors for the National Postdoctoral Association (NPA), having previously served as Treasurer and Chair of Finance, and as a Diversity Officer for the NPA.

Dr. McKinney is also a principal investigator and co-director of the NIH/NIGMS-funded Georgetown University Initiative for Maximizing Student Development, a predoctoral T32 training program that provides interprofessional and interdisciplinary training and student development activities focused on enhancing biomedical workforce diversity.

Dr. McKinney graduated from Cornell University with a Bachelor of Science in biology and a minor in applied economics and management. He then completed his doctorate degree in microbiology from New York University, a Master's in Professional Studies in design management and communications at Georgetown University, and the Harvard Macy Program for Educators in the Health Professions.

**Caleb C. McKinney,
PhD, MPS**



**Chair of the Board of Directors
for the National Postdoctoral
Association**

**Assistant Dean and Associate
Professor at Georgetown
University**

**Assistant Vice President of
Master's Program
Administration and Development
at Georgetown University
Medical Center**

2024 Lightning Talk Finalists



Jacopo Pavan, PhD.

“Using digital twins to optimize insulin therapy in children with Type 1 Diabetes”

Center for Diabetes Technology, Department of Psychiatry and Neurobehavioral Sciences
School of Medicine



Amber M. Henry, PhD.

“The Politics of Paradise: Caribbean tourism as a tool for peacebuilding in Colombia”

Carter G. Woodson Institute of African American and African Studies
Graduate School of Arts & Sciences



Mélisse Bonfand-Caldeira, PhD.

“Unveiling the cosmic origins of life”

Astronomy & Chemistry Departments
Graduate School of Arts & Sciences



Mina Ostovari, PhD.

“Leveraging Remote Health Monitoring Systems for Improving Cancer Pain Tracking and Management”

School of Nursing



Pawan Kumar Kanaujia, PhD.

“Green and Sustainable End-of-Life PV Module Recycling of Si-Solar Cells”

Electrical and Computer Engineering
Department
School of Engineering and Applied Sciences

Irene Sánchez Brualla, PhD.

**“Preventing Sudden Unexpected
Death in Epilepsy by
understanding impairments on
breathing function”**

Anesthesiology Department
School of Medicine



Daniel Rau, PhD.

**“Multi-material 3D printing of
highly stretchable elastomeric
composites”**

Department of Materials Science and
Engineering
School of Engineering and Applied
Sciences



Prem Sagar Menghwar, PhD.

**“A Framework for Understanding
and Resolving Pseudoscience
Crisis”**

The Institute for Business in Society
Darden School of Business



Our Judges

Meredith Cole

Director of Communication and Marketing
Office of Vice President for Research - UVA

Caleb McKinney

2024 Postdoctoral Research Symposium
Keynote Speaker

Róża Przanowska

UVA Research Associate
3rd place prize at the 2019 Three Minute
Thesis (3MT®) Competition

Preliminary Round Judges

Christos Baryiamas, Fatima
Saldaña Morales, Gislane Almeida
De Santos, Kelly Oman, Kelsey
Watts, Sam Lake, Susan Doyle.

Preliminary Round Presenters

Mehraju Din Lone, PhD.
School of Medicine

Pardeep Kumar, PhD.
School of Engineering & Applied Sciences

Rajaguru Jeyamohan, PhD.
School of Engineering & Applied Sciences

Sameeta Sahoo, PhD.
Graduate School of Arts & Sciences

Sergio Barbosa, PhD.
School of Engineering

Yulu Zhang, PhD.
Graduate School of Arts & Sciences

Yumeng Zhang, PhD.
School of Medicine

2024 Thematic Research Sessions

I. The Future Is Now: Where Are Research Computing and AI Leading Us?

Chair: Prem Sagar Menghwar, PhD.

- Adrian Shimpi, PhD.** “Combining linguistic and network approaches to analyze cell signaling”
- Qingying Chen, PhD.** “Benchmarking peak calling methods for CUT&Tag data”
- Abishek Karki, PhD.** “Automated Gross Errors Detection of Normal Organ Contouring in Head and Neck Region”
- Alex Clark, PhD.** “Systems Analysis of Gene Regulatory Subnetworks Driving Cardiomyocyte Specification”
- Prakash Gautam, PhD.** “Use of Simulation in Particle Physics Experiments”
- Shahab Azarfar, PhD.** “Physics-Aware Deep Learning for Reduced Order Modeling”

II. Attacking Cancer from All Fronts

Chair: Shan Jiang, PhD.

- Róża Przanowska, PhD.** “Establishing pre-clinical model of luminal breast cancer at UVA”
- Guyzuin Hu, PhD.** “The role of novel cytoskeleton septin 9 in junctional regulation and colorectal cancer development”
- Kelsey Day, PhD.** “Church-based health promotion programs in Virginia: prevalence, importance, and feasibility”
- Piotr Przanowski, PhD.** “Cell-state transcriptome heterogeneity in basal-like breast cancer premalignancies”
- Shengyuan Wang, PhD.** “Integration analysis of lncRNAs and R-loops in 3D genome organization and gene regulation in the cancer genome”
- Bishal Paudel, PhD.** “Biochemical subtypes provide a new stratification strategy in acute myeloid leukemia”

III. Down to Earth: Understanding Our Ever-Changing Environment

Chair: Zeinab Chitforoushzadeh, PhD.

- Madison Mann, PhD.** “Design and application of biological systems for detection of per- and polyfluoroalkyl substances”
- Abigail Hayes, PhD.** “The paradox of wing polyphenism in crickets”
- Dimitri Bandou, PhD.** “Overdeepenings: valleys buried beneath the surface”
- Ruoyu Zhang** “Impacts of reduced domestic water use on stream water quality in suburban watersheds”

IV. Emerging Advancements in Medicine

Chair: Thendral Velmurugan, PhD

- Hashir Rashad, PhD.** “Assessing the validity of the use of Geometric Similarity Indices to determine the quality of AI based Organ at Risk delineations for Radiation Therapy Treatment Planning”
- Mohammad Shafkat Islam, PhD.** “Vision transformer-based automated segmentation of patient-specific Velopharyngeal Anatomy”
- Sophie Cook, PhD.** “Multi-organ immunity on a 3D-printed multi-organs-on-chip and tubing-free pump”
- Camden Jansen, PhD.** “Deciphering DNA damage in cancer through machine learning”
- Deepthi Damera, PhD.** “Investigating Nanoparticle Structural Properties and Translational Relevance”
- Emerson Do Bú, PhD.** “The Intergroup Time Bias and Its Implications for Medical Healthcare”

2024 Thematic Research Sessions

V. Can We Understand Human Behavior? A Cross-Disciplinary Exploration of Why We Do What We Do

Chair: Róża Przanowska, PhD.

- Jianjian Gao, PhD.** “The changing landscape of academic leadership: A study of presidents at US R1s”
Dong Chen, PhD. “Impact of Different Infrastructures on the Behavioral and Physiological Responses of E-scooter Users”
Paloma Pérez, PhD. “Interdisciplinary Insights: Enhancing Social-Emotional Competencies Beyond Schooling through Education, Psychology, and Applied Behavior Analysis”
Xuehui Guo, PhD. “Using satellite data to understand combustion-related air pollution inequalities in the U.S.”

VI. Of Neurons and Glands: Insights in Health and Disease

Chair: Matthew Korban, PhD.

- Kristine Zengeler, PhD.** “Astrocyte inflammasome signaling modulates synaptic plasticity”
Selena Garcia DuBar, PhD. “Brainstem neurons activated during seizure-induced breathing failure”
Shan Jiang, PhD. “Brain-wide non-invasive neuromodulation via sono-optogenetics”
Yipkin Calhan, PhD “AgRP Neurotrophin Signaling: Navigating Adaptation to Energy Excess and Scarcity”
Yuta Ohno, PhD. “Non-muscle myosin IIC knockout enhances tear volume via disruption of ductal cell junctions in lacrimal gland”

VII. Turn Up the Optics: Research at the Smallest Level

Chair: Hari N Nambiar, PhD.

- Mehraju Din Lone, PhD.** “Lightning Talk: The Incredible Journey of Cell Identity: A Story of Choices”
Hayrettin Yavuz, PhD. “Optimization of Urinary Extracellular Vesicles Analysis to Study Kidney Disease in People with Cystic Fibrosis”
Aleksandra Ulman, PhD. “Targeting cMYC condensates”
Randall Schirra, PhD. “Single Particle CryoEM of Pleomorphic HIV Capsids”
Steven Rolland, PhD. “Navigating from cell to cell: Insights from the bacterium *Shigella flexneri*”
Carolyn Shurer, PhD. “The biophysical and biochemical polarization of the epithelial cell plasma membrane”

VIII. This Session Is Contagious!: Learning from Infectious Diseases

Chair: Elizabeth Uzzell, PhD.

- Gislane de Almeida Santos, PhD.** “Targeting CD38 to Mitigate Age-Related Chronic Lung Sequelae Following Acute Viral Infections”
Jasmine Jackson-Akers, PhD. “Healthcare Disparities in *Clostridioides difficile* infection in the United States, 2011-2018”
Mohammad Mazharul Islam, PhD. “Metabolic modulations during infection in diverse clinical *Pseudomonas aeruginosa* isolates”
Cameron Griffiths, PhD. “Three Responses to Viral Heart Infection”

Thematic Research Sessions

Detailed schedule and
abstracts can be found on
our website



bit.ly/2024_Postdoc_Abstracts

Want to learn more?

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and more!



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_Symposium_UVALibra](https://bit.ly/2024_Postdoc_Symposium_UVALibra)

Resource Fair Exhibitors & Partners

Thank you to all our Resource Fair partners for supporting the postdoc community and attending this event.

- UVA Comprehensive Cancer Center (UVACCC)
- UVA Center for Teaching Excellence (CTE)
- Faculty & Employee Assistance Program (FEAP)
- International Students & Scholars Program (ISSP):
International Center
- International Students & Scholars Program (ISSP): J-1 Visas
- Integrated Translational Health Research Institute of Virginia
(iTHRIV)
- National Postdoc Association (NPA)
- Office of Graduate & Postdoctoral Affairs (OGPA) Diversity
Programs Office
- OGPA PhD Plus Program
- Research Computing Group
- Research Core Resources
- UVA BRAIN
- UVA HR Benefits
- UVA HR Immigration Services
- UVA Library: Health Sciences
- UVA Library: Libra Open Access
- Scholars' Lab: Digital pedagogy
- Scholars' Lab: Makerspace
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- UVA PDA Equity Minded Reading Group
- UVA Environmental Institute



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