



UNIVERSITY of  
**SOUTH FLORIDA**  
TAMPA

2025  
**OneUSF**  
**UNDERGRADUATE  
RESEARCH  
CONFERENCE**







Welcome to the

# **OneUSF Undergraduate Research Conference**

April 23, 2025

Tampa Campus

MARSHALL STUDENT CENTER, OVAL THEATER 2ND FLOOR

# SPEAKER INFORMATION



## **Sandra Johnson Austin, EdD. Director, Office of Student Engagement USF Research & Innovation**

Dr. Johnson Austin has dedicated her career to promoting and advocating for student success. She has held leadership positions in secondary, post-secondary, non-profit, industry, engineering public policy, and community development sectors. Her research is grounded in the effective implementation of STEM curricula in middle schools. She is the recipient of The Pennsylvania State University Outstanding Engineering Alumnus Award for Civil and Environmental Engineering. She earned a Bachelor of Science in Civil Engineering from The Pennsylvania State University, an MBA from the University of Notre Dame, and a Doctor of Education in Organizational Change and Leadership from the University of Southern California.



## **Sylvia Wilson Thomas, PhD Vice President for Research & Innovation President & CEO, USF Research Foundation, Inc. Professor of Electrical Engineering**

Dr. Thomas is a USF Professor in Electrical Engineering where she leads the Advanced Materials Bio and Integration Research (AMBIR) laboratory, and Vice President for Research at the University of South Florida. She previously served as Assistant Dean of the College of Engineering at USF. Dr. Thomas' research and teaching endeavors are focused on the investigation of bio (biomedical, biological) and nano electronic device integration using advanced material

systems for nano membrane technology, energy harvesting, sustainable environments, drug delivery, and bioapplications to meet global technological challenges. With over 25 years of global experience in academia and industry, Dr. Thomas has authored or co-authored over 50 publications and six book/book chapters. She holds 12 patents/pending patents and has received over \$4M in funding.

## SPEAKER INFORMATION



### Provost Prasant Mohapatra

Prior to joining USF, Dr. Prasant Mohapatra served as the Vice Chancellor for Research at University of California, Davis. He was also a Distinguished Professor in the Department of Computer Science and served as the Dean and Vice-Provost of Graduate Studies at University of California, Davis during 2016-18. He served as an Associate Chancellor during 2014-16, and the Interim Vice-Provost and CIO of UC Davis during 2013-14. He was the Department Chair of Computer Science during 2007-13, and held the Tim Bucher Family Endowed Chair Professorship during that period. Dr. Mohapatra's research interests are in the areas of wireless networks, mobile communications, cyber-security, and Internet protocols. He has published more than 350 papers in reputed conferences and journals on these topics.



### Mr. JM Rahman

JM Rahman is a Biomedical Sciences student passionate about medicine and research, especially in otolaryngology. He plans to attend medical school to focus on hearing and voice disorders. He led a study on hyperacusis under Dr. Joseph Walton, exploring behavioral mechanisms behind sound sensitivity. JM now works with Dr. Yael Bensoussan at USF Health, advocating for hearing health integration in AI voice data research. His initiative aims to enhance AI's effectiveness in diagnosing and treating speech and hearing disorders.

## KEYNOTE SPEAKER



### Dr. Ruan Cox, Jr. AstraZeneca Alumnus of University of South Florida

Dr. Ruan Cox, Jr. is Director of Oncology External R&D and Academic Alliances at AstraZeneca, leading partnerships to advance cancer treatment. He previously held leadership roles at Regeneron Genetics Center and USF's Technology Transfer Office, fostering collaborations to accelerate innovation. At Moffitt Cancer Center, he supported industry-sponsored research in cancer. Dr. Cox holds a Ph.D. in Molecular Medicine from USF, where his dissertation focused on anti-inflammatory therapies for acute lung injury. He has co-authored NIH publications on lung disease and inflammation. He is also a committed advocate, speaker, and member of several academic and leadership organizations.

# SCHEDULE OF EVENTS

**Wednesday, April 23**

Time	Activity/Presenter	Location
8:15 a.m. – 1:00 p.m.	Check-in	Marshall Student Center (MSC) Atrium
8:30 a.m. – 9:00 a.m.	Light refreshments	Oval Pre-Function Area
9:00 a.m. – 9:30 a.m.	Opening Remarks: Dr. Saundra Johnson Austin, Mr. Jm Rahman, and Dr. Karen Garcia-McGowan	Oval Theater (MSC 2500)
9:45 a.m. – 11:45 a.m.	Poster session	MSC Ballrooms (2100)
11:45 a.m. – 12:15 p.m.	Lunch	Oval Pre-Function Area
12:15 p.m. – 1:00 p.m.	Remarks: Dr. Sylvia Thomas, Provost Prasant Mohapatra, and Keynote Speaker Dr. Ruan Cox, Jr., AstraZeneca and USF Alum	Oval Theater (MSC 2500)
1:15 p.m. – 3:00 p.m.	Oral presentations	MSC 2702, 2703, 2707, and 2708
3:00 p.m.	Conference concludes	



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Conference Program



# ORAL PRESENTATION SCHEDULE: MSC 2702

Time	Activity/Presenter	Location
1:15 p.m.	A Comparative Analysis of Healthcare Systems: The United States and Germany	Catherine Ugwu and Belinda Solis
1:30 p.m.	A Comparative Analysis of Recycled PET and HDPE Filament Production Using Pultrusion for Sustainable 3D Printing	Brinley Jordan
1:45 p.m.	A Systematic Review of the Impact of Various Demographic Factors on CAM Usage and Physician Disclosure among Immigrant Populations	Gayathri Mannem
2:00 p.m.	A THERMAL INSULATION and UV-RESISTANCE System based on AEROGEL for Settlements on the Moon and Mars	Kautilya Veer
2:15 p.m.	Actinium-225 targeted alpha-particle therapy causes cell-cycle DNA damage checkpoint arrest and programmed cell death in MC1R expressing uveal melanoma.	Loc Nguyen
2:30 p.m.	Airbus's Formation and Impact in US Markets and the American Response	Noah Burkley and Aidan Carroll
2:45 p.m.	Barry Jenkins' Moonlight: Reimagining the Coming-Of-Age Genre in Film	Jonathan Davis



# ORAL PRESENTATION SCHEDULE: MSC 2703

Time	Activity/Presenter	Location
1:15 p.m.	Chemical Fingerprints: Characterizing VOC Biomarkers Across Multiple Diseases	Meead Hadi
1:30 p.m.	Cognitive Health Differences between Germany and the United States: An Exploration of the Effects of Western Work Culture	Madelyn Zera and Lindsey Smith
1:45 p.m.	Determining The Role of YTHDF1 in Regulating Neuroinflammation Induced By Lipopolysaccharide	Linh Nguyen
2:00 p.m.	Developing an Intervention Program Focused on Combating Cardiovascular Disease in South Asian American Populations	Archana Rao
2:15 p.m.	Emerging AI in Oncology: Evaluating High-Potential Models for Cancer Diagnostics and Therapeutics	Elena Spall
2:30 p.m.	Endothelial Cells Adhere Through Multiple Integrins to the Kidney-Enriched Extracellular Matrix Protein, Nephronectin	Sophie Khullar

# ORAL PRESENTATION SCHEDULE: MSC 2707

Time	Activity/Presenter	Location
1:15 p.m.	Exploring Sex Differences: A Cross-Sectional Analysis of Risk Factors and Substance Use Disorder in Sexually Abused Justice-Involved Adolescents	Jordan Barringer
1:30 p.m.	German Culture & Identity through a Cinematic Lens	Sofia Dolmanet and Essimo Mokube
1:45 p.m.	Germany and America: An Exploration of Work-Life Balance & Worker Satisfaction	Lizt Pena Castillo and Roselvis Martinez
2:00 p.m.	Government Expenditure on Education and its Impact on Access to Higher Education in the U.S. and Germany	Miguel Barrero Garcia and Minh Anh Nguyen
2:15 p.m.	Healthcare Systems Comparison of the United States and Germany	Lauren Dolan
2:30 p.m.	How does winning a Super Bowl Championship significantly increase the value of an NFL team, as measured by franchise growth over the following year?	Rachel Robidoux
2:45 p.m.	How the German Innovations in the 19th - 20th Century Influence the Modern Chemical Industry	Andrea Barrios Rivas



# ORAL PRESENTATION SCHEDULE: MSC 2708

Time	Activity/Presenter	Location
1:15 p.m.	Knife Fights, Gunslingers, and Social Warfare: The American Western as Political Ideology	Gabrielle Whyte
1:30 p.m.	Post-Hurricane Pathogens: Waterborne Infections in Immunocompromised Hematology Patients	Edwin Cruz
1:45 p.m.	Shape-Shifting and Molecular Chaperoning: Unraveling ARHGEF7 and TIAM1 in Cancer Metastasis with AlphaFold 3	Poojitha Swaminathan, Ana Beatriz Melgar and Khary Walker
2:00 p.m.	Systematic and Cultural Influences on Women's Healthcare: A Comparative Analysis of the U.S. and Germany	Emily Meeker
2:15 p.m.	The Role of Citizenship in the Poor Living Conditions of the Chinese Xinjiang Uyghur Muslims	Rysun Chu
2:30 p.m.	The Weaponization of Anti-Intellectualism in Society	Jacqueline Calhoun
2:45 p.m.	The Role of Body Shape and Size on Burst Swimming Performance in Marine Reef Fishes	Erica Molnar

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