

2022-2023



SACRAMENTO
STATE

University Awards for Research, Scholarship & Creative Activity

Early-Career Faculty

Nicole Fox, Ph.D.

Associate Professor of Criminal Justice

Senior Faculty

Katherine McReynolds, Ph.D.

Professor of Chemistry

Award Ceremony & Lecture

February 6, 2024 • 4pm

University Union, Cottonwood Suite III

Program

Welcome

Dr. Sadaf Ashtari, Professor of Information Systems and Business Analytics and Chair of the Research and Creative Activity Subcommittee

Dr. Mariappan "Jawa" Jawaharlal, Associate Vice President, Offices of Research, Innovation, and Economic Development (Interim)

Presentation of Award Recipient for Early-Career Faculty

Dr. Ernest Uwazie, Professor, Criminal Justice Director, Center for African Peace and Conflict Resolution

Early-Career Faculty Award Lecture

Memory, Reconciliation and Resilience After Atrocity

Dr. Nicole Fox, Associate Professor of Criminal Justice

Presentation of Award Recipient for Senior Faculty

Dr. Lisa Hammersley, Dean of Natural Sciences & Mathematics

Senior Faculty Award Lecture

In Search of Sugar-Based Broad Spectrum Anti-Viral Agents as Future Pandemic Preventers

Dr. Katherine McReynolds, Professor of Chemistry

This event is co-hosted by the Faculty Senate Research and Creative Activity (RCA) Subcommittee and the Offices of Research, Innovation, and Economic Development.

For more information about this award program, please visit csus.edu/research

Award History*

University Award for Research, Scholarship & Creative Activity for Early-Career Faculty

This award was established in 1989 and is given each year to recognize a colleague in the first ten years of their faculty appointment who has made significant contributions to his or her discipline through scholarly activity, research and publication, or creative and artistic endeavors.

2022–2023

Nicole Fox
Criminal Justice

2021–2022

Jun Dai
Computer Science

Kimberly Mulligan
Biological Sciences

2020–2021

Rodolfo Barniol Duran
Physics & Astronomy

2019–2020

Arturo Baiocchi
Social Work

2018–2019

Sharon Furtak
Psychology

2017–2018

Robert Crawford
Biological Sciences

University Award for Research, Scholarship & Creative Activity for Senior Faculty

This award was established in 1961 and is given annually to a faculty member who, over many years, has made significant contributions of a discipline through scholarly, activity research, publication and creative and artistic endeavors.

2022–2023

Katherine McReynolds
Chemistry

2020–2021

Hakan Ozcelik
Management & Organizations

2019–2020

Mona Siegel
History

2018–2019

Barbara Carle
World Languages & Literatures

2017–2018

Maureen Smith
Kinesiology and Health Science

2016–2017

Jamie Kneitel
Biological Sciences

2015–2016

Rafael Escamilla
Physical Therapy

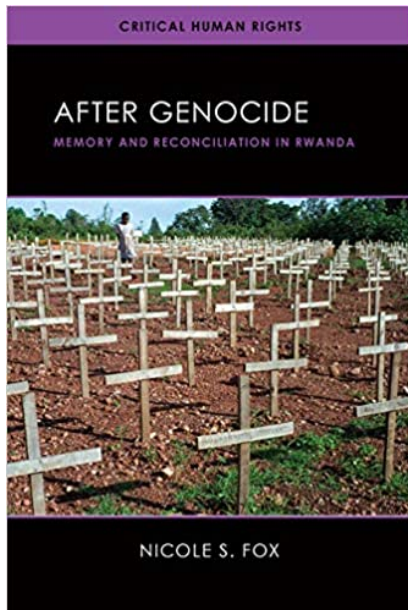
*The full list of award recipients can be found online at csus.edu/research

Nicole Fox, Ph.D.
Associate Professor of Criminal Justice
*Memory, Reconciliation and
Resilience After Atrocity*



Abstract

Dr. Fox discusses her research on post-genocide Rwanda and possibilities for reconciliation, resilience and hope in the aftermath of atrocity. She draws on her almost 15 years of research in country and her in-depth interviews with genocide and genocidal rape survivors, as well as rescuers (those who saved others during the genocide).



Biography

Dr. Nicole Fox earned her PhD in Sociology from Brandeis University, where she studied social movements, religion, and gender, with an emphasis on how communities heal in the aftermath of genocide. Dr. Fox's interest in studying genocide stems largely from a trip she took to Rwanda in 2010, which changed her life's trajectory. After traveling to Rwanda, Dr. Fox decided to study Rwanda for her dissertation and, specifically, to analyze how people remember the genocide. She returned there to live during 2011 and 2012 for her dissertation work.

This fieldwork—as well as many subsequent trips—laid the basis for Dr. Fox's award-winning book, *After Genocide: Memory and Reconciliation in Rwanda* (2021 University of Wisconsin Press). *After Genocide* asks how memorials aiming at remembering the 1994 Genocide against the Tutsi matter in the lives of genocide survivors. Dr. Fox's book has been praised for how she centered survivor's voices, especially women and poor survivors, and for her insightful engagement with debates on research ethics in post-conflict zones. It has been taught in classrooms throughout the US and South Africa.

More broadly, since arriving at CSUS in 2018, Dr. Fox has published 11 peer-reviewed articles, 7 book chapters, 6 policy briefs/reports, and over 55 talks on her research (conferences, invited talks). Her work draws upon in-depth interviews with communities directly affected by violence and human rights abuses. Specifically, her research centers on how racial and ethnic contention impacts communities, including how remembrances of adversity shape social change, crime, and present-day experiences with law and policy. She has studied these processes across numerous settings, including the 1979 Greensboro Massacre, the MOVE bombing in Philadelphia, the South African Truth and Reconciliation Commission, acts of rescue during genocide, confederate monuments, and the Survivors Memorial in Minneapolis. Dr. Fox's scholarship has been published in top journals such as *Social Forces*, *Social Problems* and *Deviant Behavior*. Fox's solo-authored publication in *Signs* won the American Sociological Association, Section on Human Rights, Best Scholarly Article award.

Taken together, Dr. Fox has been invited to speak on this research globally, from South Africa, Spain, and Poland to the United Nations (UN). As a lead delegate for the UN Economic and Social Council for the Committee for the Status of Women (CSW) for Sociologists for Women in Society, Dr. Fox leads a delegation to the UN Headquarters for the annual CSW meeting each March. This past year, she took two of her graduate students, and this coming spring she will be taking one of her graduate students and one of her undergraduate students.

Dr. Fox loves working with graduate and undergraduate students at CSUS. She enjoys supervising theses, allowing students to use her own datasets for their thesis projects, and takes pride in taking both her undergraduate and graduate students to research conferences.

When off campus, Dr. Fox volunteers at Folsom State Prison and Solano Prison. For the past six years, she has been running prison book clubs with over sixty incarcerated men. She now has undergraduate interns that assist in creating discussion questions for the multiple books each group is reading, and has them attend book club meetings, exposing them to the dynamics of prison education and inspiring them to go on to higher education.

Dr. Fox is grateful for her academic community at CSUS and beyond. She has been lifted up by engaging scholars from around the world and is a better researcher, writer, and teacher because of them. She is humbled by the survivors and participants who have shared their lives and perspectives with her, including the bravery they show during adversity and in their strength to carry on. Finally, she is forever indebted to her loving family, including her parents for making all things possible, and her beautiful children, Avi and Mira, who make all things worthwhile.

Katherine McReynolds, Ph.D.
Professor of Chemistry

***In Search of Sugar-Based Broad Spectrum
Anti-Viral Agents as Future Pandemic
Preventers***



Abstract

Dr. McReynolds has been engaged in the development of carbohydrate-based molecules as anti-viral agents since 1994. Her work as a graduate student encompassed the synthesis of novel glycolipids as potential anti-HIV agents. This spurred an interest in the study of pandemic-causing viruses that continues today.

While at Sacramento State, Dr. McReynolds, together with her talented student research team, have developed new polymer-based scaffolds on which to anchor virus-recognizing sugars, first targeting HIV, and now including another pandemic-causing virus, SARS-CoV-2. These sugar-coated polymers, or glycopolymers, can take the form of glycodendrimers, star glycopolymers and other novel architectures. The goal of the McReynolds lab is to formulate a variety of glycopolymers as topically applied broad spectrum anti-viral agents. The world formulary currently lacks drugs that are active against multiple viruses/virus classes. Current anti-viral drugs are better classified as “one bug-one drug” compounds that are capable of acting against a single virus, or in many cases, one part of the viral life cycle of that virus. Then, when a new virus of concern emerges and spreads, there are no available drugs to prevent the spread or limit the degree of illness/death caused leading to global pandemics such as what we have experienced with HIV since 1981, and more recently, with SARS-CoV-2, first observed in late 2019. As we all are aware through the global experience with the COVID-19 pandemic, the shutdown of schools, workplaces and society as a whole was not ideal, with the long-term devastating negative impacts to society still revealing themselves. Therefore, my lab has revised our long-term research goals beyond HIV to include SARS-CoV-2. These two viruses are from different families, have different mechanisms of action on humans, and as a result, can serve as the proof of concept for our work in developing broad-spectrum anti-viral drugs. If our molecules are active against BOTH HIV and SARS-CoV-2, this can lead to the development of topical agents that would have activity against viruses that have yet to reveal themselves. If successful, it is possible that we could prevent the next global pandemic from occurring by having drugs that could be deployed at the first sign of a new virus, and be able to limit the number of new infections, as well as to dampen the severity of illness and prevent many deaths for those infected.

In the award presentation, Dr. McReynolds will describe her early work with HIV, and will reveal her latest work targeting both HIV and SARS-CoV-2, and conclude with where the work is headed next.

Biography

Dr. Katherine (Kathie) McReynolds is a native Californian. She is proud to be a product of the CSU system, having received her BS in Biochemistry from Cal Poly SLO in 1994. Upon graduating, she immediately embarked on her journey to earning a PhD in Chemistry from the University of Arizona. While in graduate school, Dr. McReynolds studied carbohydrate chemistry under Dr. Jacquelyn Gervay-Hague and focused on the synthesis and biological evaluation of glycolipids against HIV. This began her career-long study of the biomedical importance of carbohydrates. Upon completion of her PhD in 1999, she returned to California to the Sacramento area and started her postdoctoral studies under Dr. Frederic Troy at UC Davis. Here, she focused on the chain lengths of a specific sugar, sialic acid, on cell surfaces and the implications of this on cancer metastasis vs. normal embryonic development.

In 2001, Dr. McReynolds was invited to join the faculty of the Department of Chemistry at Sacramento State and is currently at the rank of Professor. She began her independent research career developing carbohydrate-scaffolded polymers, known as glycodendrimers, as potential topical preventative agents against HIV. With the onset of the COVID-19 pandemic in early 2020, Dr. McReynolds expanded her research platform to study both HIV and SARS-CoV-2 in the hopes of generating carbohydrate-based polymers with activity against both viruses. If successful, this work would generate topical preventative broad-spectrum anti-viral agents, something sorely lacking in our arsenal against emerging viruses of concern.

Dr. McReynolds is a champion of research at Sacramento State. She has served in numerous roles in the department, college, and campus in support of research as a high impact practice in the professional development of students. In this capacity, she is currently serving as Faculty Fellow for Research and Engagement for the College of NSM. Statewide, she has also been deeply involved with CSU Biotechnology since 2003. She is currently the statewide chair of this group and is responsible for promoting education and research in biotechnology across all 23 CSU campuses.

Dr. McReynolds has been fortunate in her 24 years at Sacramento State in working with a large group of talented students in her lab. Thus far she had the pleasure of mentoring 89 students in her lab. This includes 4 high school students, 67 undergraduates and 18 MS students. These students have gone on to successful careers in industry and advanced degrees in chemistry, pharmacy, medicine and law. Dr. McReynolds has had 23 student co-authors on her publications at Sac State, and her students have won numerous research awards & support totaling well over \$250K to support their research activities. For further support of her research program, Dr. McReynolds has won numerous external grants totaling over \$2M in direct support, including the first NIH SCORE grant to our campus in 2016 and the first NIH SCORE grant renewal our campus has received in 2021, and has also led teams of colleagues in winning NSF MRI grants to fund new departmental instruments, including a 500MHz NMR and SEC-MALS instrument. Dr. McReynolds collaborates widely with scientists from around the country and has presented her research at numerous national and international scientific meetings across the country and around the world, respectively.

In her personal time, Dr. McReynolds can often be found with her nose in a book, or hiking & backpacking around the western US with her husband Alan, and children Hayden and Nora. She and her adventurous family also enjoy road trips to US National parks to earn Junior Ranger badges, and longer forays to other countries to explore a variety of cultures, languages and cuisines.



Thank you to the 2022-23 Research and Creative Activity Subcommittee for their work in selecting these two outstanding recipients

Sadaf Ashtari, Information Systems and Business Analytics, College of Business (Chair)

Mei Shen, Teaching Credentials, College of Education

Clara Scarry, Anthropology, College of Social Sciences & Interdisciplinary Studies

Nikolaos Lazaridis, History, College of Arts & Letters

Susanna Curry, Undergraduate Director, College of Health and Human Services

Samantha McClellan, University Library

Rohollah Moghadam, Electrical Engineering, College of Engineering and Computer Science

Anna Patterson, Geography, College of Natural Sciences & Mathematics



SACRAMENTO STATE

California State University, Sacramento
6000 J Street
Sacramento, CA 95819
csus.edu/research