

**THROUGH  
RESEARCH**



# Discovery excites us.

Including the discovery of what we don't know.

We are ever in search of frontiers—whether new answers or new questions.

Within established lines or the uncharted.

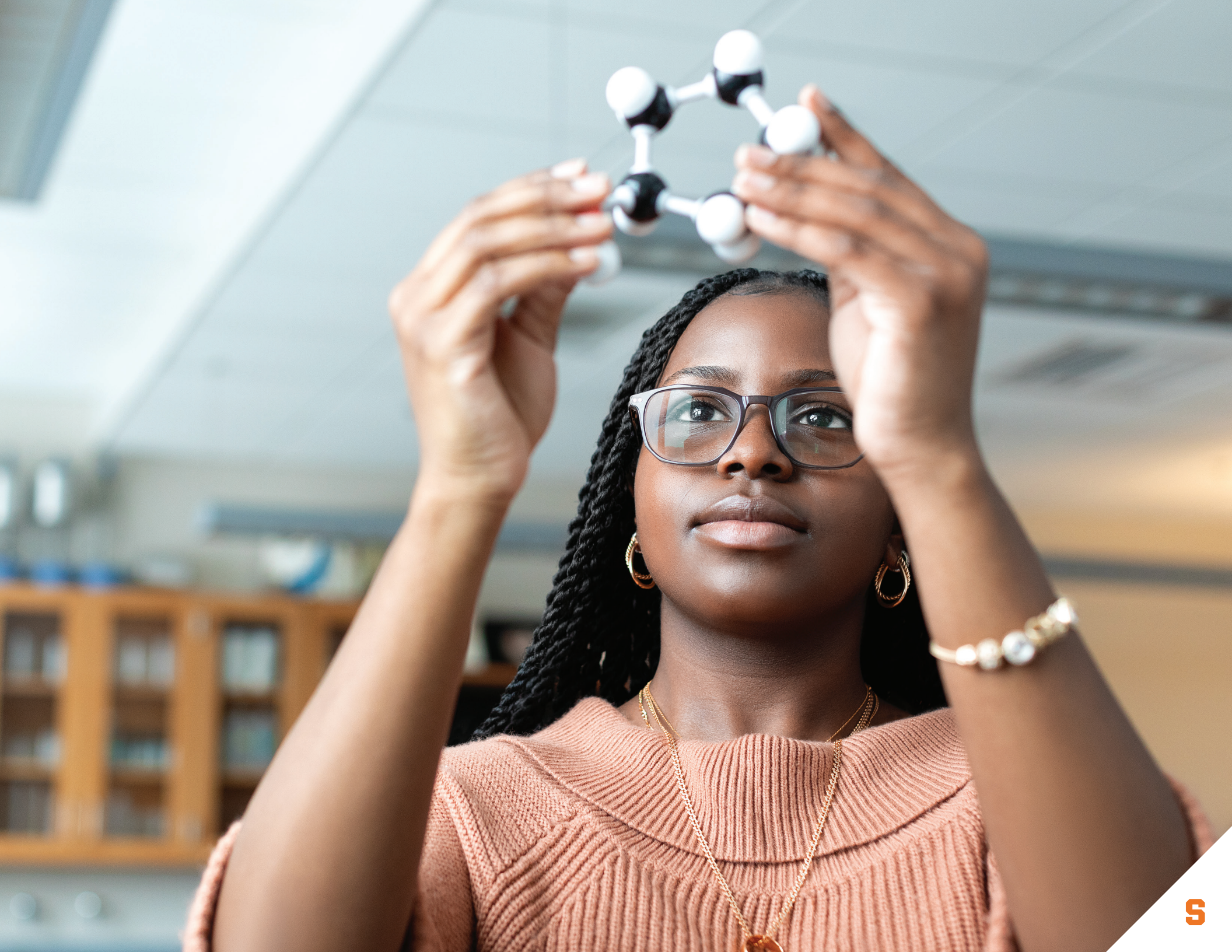
Together, we go where inquiry, creativity and conscience lead us.

Pursuing one vision through multiple viewpoints.

Not always knowing the path ahead—but trusting it will take us forward.

Through research, we rise.





TODAY'S STRENGTHS



**State-of-the-art facilities, leading faculty and impactful work have established us as a top-tier research institution.**

# R1 TOP-TIER RESEARCH INSTITUTION

Our status as an R1 research institution means students can contribute to groundbreaking discoveries alongside world-class faculty and scholars.

- One of 39 private doctoral universities to hold this classification.
- R1 classification factors include total research expenditures, full-time faculty and research staff, and number of postdoctoral fellows and doctoral degree conferrals.

“**Researchers want to join us knowing they are going to be a part of a great institution.**

—SHIKHA NANGIA  
Professor of Biomedical and Chemical Engineering

**Shikha Nangia**  
Read her story





From the hard sciences to creative arts, our research and creative enterprise drive progress through every discipline.

### **Computing for a Cure**

Using computer modeling and theoretical and computational techniques, Professor Shikha Nangia is researching how to enable and design drug molecules to pass through the blood-brain barrier and reach the brain. This would revolutionize how brain-related diseases are treated and cured.

### **Harnessing the Vast Potential of Quantum Science**

While some of our physicists peer into the vastness of space and time, others study the smallest known subatomic particles. Researchers in our Quantum Information Science area are working to develop quantum computing solutions that could have massive implications for fundamental science and future computing technology.

We craft practical solutions through creative expression.

## Nurturing the Storytellers of Tomorrow

An internationally acclaimed author, Professor George Saunders G'88 teaches in the graduate program in creative writing, one of the nation's oldest, most distinguished full-residency programs.

**“In my own research, I’ve been attempting to push the boundaries of extended reality to explore how these tools help visualize buildings and demonstrate critical performance factors like ventilation, lighting and thermal control.**

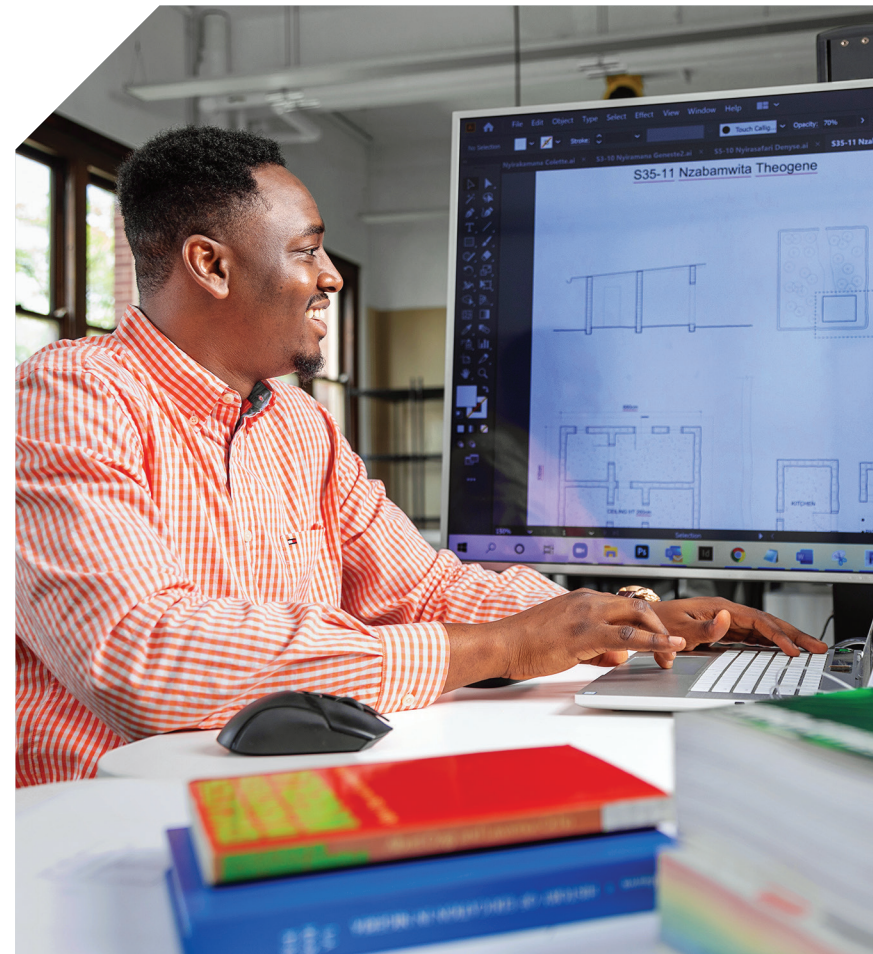
—**AMBER BARTOSH**  
Professor of Architecture

## Advancing Ahead of the Architectural Curve

At the precipice of a paradigm shift in architecture, Professor Amber Bartosh uses hybrid-reality and interactive design experiences to examine the immersive infrastructures of the built environment. She and her students design spaces where people can interact with augmented physical and virtual environments.

**“Every class with Professor Saunders feels like an energetic conversation between fellow artists who care about their work and its effect on the world.**

—**THEODORA “TEDDY” ALLOR G'22**  
Creative Writing Program Graduate Student



We commit our minds to social, civic and environmental advancement, taking time to explore multiple points of view.

## Living and Breathing Sustainability

Professor Sam Van Aken's first-of-its-kind living agricultural archive—where each tree is composed by the ancient agricultural practice of grafting—gives rise to creative and practical thinking around sustainability and climate change.

**“The scientific solutions to address climate change are already out there—we know what we need to do. Where art becomes a vehicle for change is by giving people an experience that allows them to access their own thoughts and opinions.”**

—SAM VAN AKEN  
Professor of Studio Arts

## Creating Inclusive Opportunities for People With Disabilities

For more than half a century, Syracuse University has been at the forefront of research and advocacy to remove barriers that exclude people with disabilities. The Burton Blatt Institute guides public policy and programs that advance civic, economic and social inclusion, and the Taishoff Center for Inclusive Higher Education offers an inclusive college experience for students with intellectual disabilities through InclusiveU.



## Cultivating Research in the Arts and Humanities

Syracuse University is home to one of the largest academic art museums in the country with nearly 45,000 objects. The Syracuse University Libraries' special collections include nearly 500,000 multimedia collections. We're also home to internationally renowned art centers Light Work and Point of Contact, where researchers explore the depths of verbal and visual arts.

## Driving Policy for Veterans at the National Level

With a long history of welcoming military-connected students, Syracuse University is home to groundbreaking research initiatives addressing challenges that confront the veteran and military community. Syracuse University's D'Aniello Institute for Veterans and Military Families is a resource for expertise, data and insights, and cultural competence that informs decisions about programs and policies nationwide.

**“It’s one thing to summarize what research says about veterans, and another to ask what these findings suggest not only about veteran culture, but about the culture of our society as a whole.**

—ASHLYN WONG '21  
Psychology and Sociology Major



Daniel A. D'Aniello '68, H'20

**We use our research capabilities and creative output to confront the most pressing issues of our times.**

We think forward to get ahead of emerging societal needs.

## Writing the Rules of Automation

From driverless cars to maritime systems, autonomous systems are revolutionizing the way we work and live. The Autonomous Systems Policy Institute explores complex policy questions raised by rapidly evolving technology and offers critical perspectives on norms and practices to shape their ethical and fair use.

## Elevating Public Health in the Community and Classroom

Through hands-on opportunities and community engagement, our students and faculty advance the science and practice of public health. They strive to eliminate health inequities through research, teaching, advocacy and agency collaborations, addressing some of today's most pressing public health needs.

## Building the Blockchain

As blockchain technology reshapes our ability to track and trade almost anything of value on the global stage, our students engage in cutting-edge research on these highly secure, decentralized networks. "Blockchain has the power to disrupt health care, business, government, even higher ed," says Professor Lee McKnight. "Our students will power the future of this exciting technology."

[Learn more about blockchain](#)  
[Read the story](#)



**\$78+** **MILLION**  
AWARDED ANNUALLY  
FOR RESEARCH



We're examining health and wellness through new lenses.

## Driving Societal Wellness Through Nutrition Science Research

Our nationally acclaimed nutrition program expands knowledge in health and wellness, sparking advances in public health and improving quality of life. Graduates are ready to become medical professionals and biomedical researchers with a well-rounded and unique background in preventive health care—a global priority.

**“A valuable lesson I learned at Syracuse is to leverage my knowledge, which empowers me to be of service to others—to be of better service to those who came before us and to those who come behind us.**

—JUSTIN PASCUAL '20, G'22  
Nutrition Science Graduate Student

Justin Pascual '20, G'22  
[Read his story](#)



# 40+ RESEARCH CENTERS AND INSTITUTES

## Imagining BioInspired Solutions

Our BioInspired Institute researchers use insights from biology to drive innovation in the design and manufacture of new types of materials with applications including adhesives and robotics. This research brings together world leaders with expertise in specific model systems that can help provide new approaches to understanding and treating disease and developmental anomalies.

**“It’s exciting to work at the nexus of different fields, some of which are under-explored. I draw on several areas—physics, biology, math and engineering—to understand how systems work and can be applied to societal problems.**

—ALISON PATTESON  
Professor of Physics





As active contributors to real-world research, our students become standout candidates for the careers of tomorrow.

## Preparing a New Generation of Biotech Entrepreneurs

Biotechnology is one of the most rapidly expanding fields across the globe, touching essential aspects of our day-to-day lives such as food, health care and the environment. Pfizer fellowship winner Zainab Kumandan '22 has paired her inherently interdisciplinary biotechnology coursework with a hands-on internship in supply chain management.



**Zainab Kumandan '22**  
*Read her story*

**41** FULBRIGHT  
RECIPIENTS  
SINCE 2016



**\$1M** COMMITTED ANNUALLY  
IN GRANTS TO UNDERGRADUATE STUDENTS  
TO ENGAGE IN FACULTY-GUIDED RESEARCH AND CREATIVE INQUIRY

**“Often tell my students, it’s like we’re the super collider of ideas in the innovation lab. We smash things together to see what happens. A lot of the time things don’t work. But when they do, they work really well. Innovation is a messy process, and we embrace that.**

**—DAN PACHECO**

*Peter A. Horvitz Endowed Chair in Journalism Innovation*

**Dan Pacheco**  
Read his story



## Navigating the New World of Media

Syracuse University is at the leading edge of research that expands knowledge as critical shifts occur in mass media and communications. Our faculty and students study how media interfaces affect human cognition and performance. They analyze the role of news in democratic societies and explore the effects of media bias and how the evolving media landscape influences our world.



GOING BEYOND

A photograph of a university campus scene, overlaid with a semi-transparent orange filter. In the foreground, a student with curly hair is sitting on a grassy lawn, reading a newspaper. In the background, a large, multi-story building with arched windows and doorways is visible. Several other people are walking or standing near the building. The overall atmosphere is academic and serene.

**Through interdisciplinary thinking, we're equipped to uncover new knowledge.**

We think outside of our own fields to reveal unexpected solutions.

## Building Multiple Disciplines Into Student Majors

Integrated learning majors combine deep training in the liberal arts with broad training in applied, multidisciplinary fields like forensic science or sustainability, establishing a foundation that gives students an edge in emerging careers.

**“I’m fascinated by how the natural and human sciences impact the environment and sustainability. Understanding our planet can make us more engaged citizens.”**

—KATE RYAN '22

*Biology, Geography and Environment, Sustainability and Policy Major*

**Kate Ryan '22**  
Watch her video





By crossing disciplines,  
we unearth connections.

## Examining Biology Through Big Data

By applying leading-edge technology to traditional investigations of hundreds of species, biologists in our Center for Reproductive Evolution use big data to advance our understanding of how complex reproductive traits evolve over time.



“Our research combines the power of genomics and new computational models to explore the origins of biodiversity. We’re leveraging rapidly evolving differences among species to identify the genes and gene networks underlying variation in complex traits—something that was considered impossible a few years ago.

—SCOTT PITNICK  
Weeden Professor of Biology

**“We’ve seen how extreme droughts can result in devastating fires and how extreme rainfall can cause flooding. These events have a real human cost. Paleoclimatology can be used to understand these processes and give us a sense of the future.”**

—**TRIPTI BHATTACHARYA**

*Thonis Family Professor of Earth and Environmental Sciences*

**Tripti Bhattacharya**  
*Read her story*

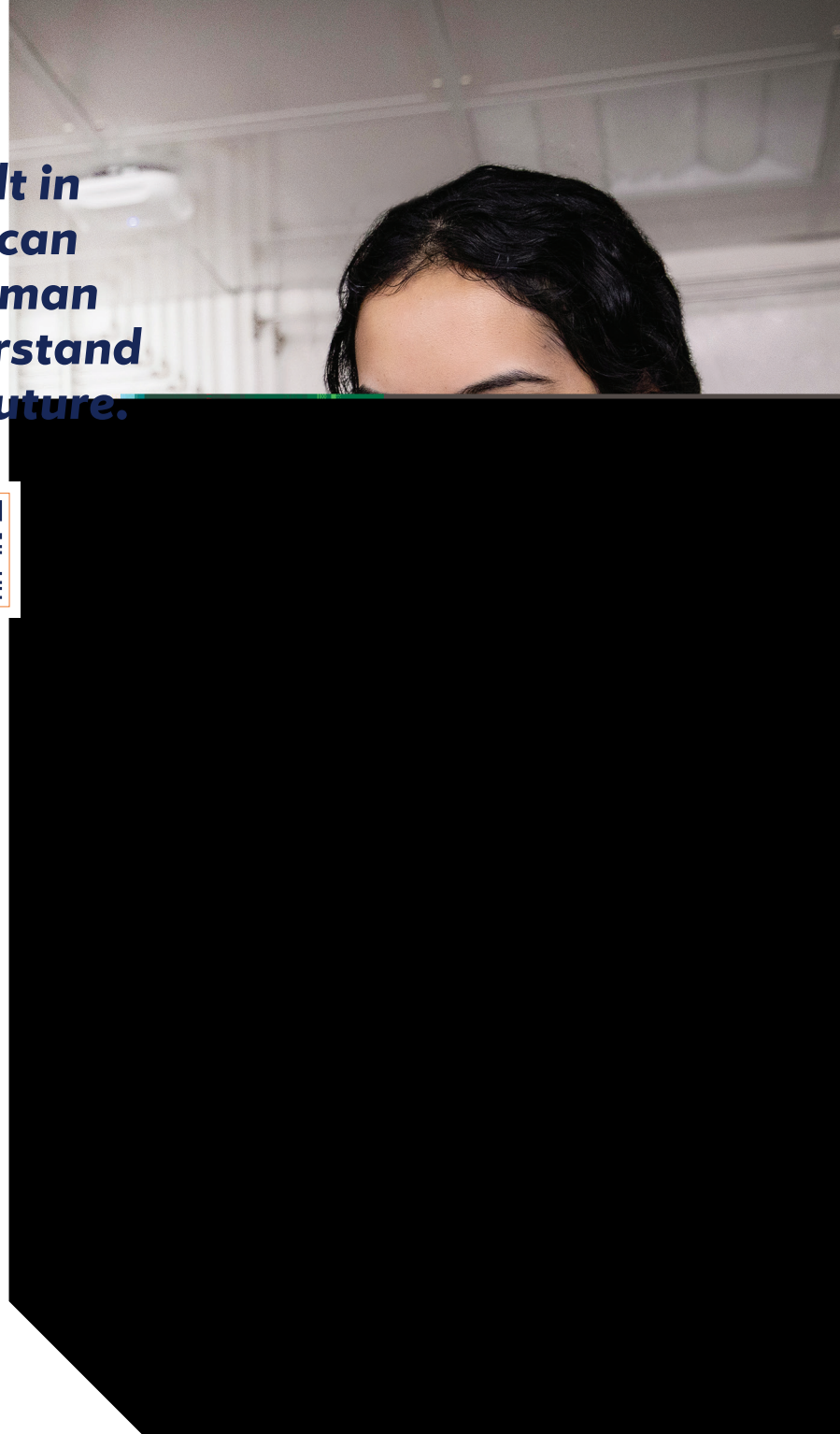


## **Looking to the Past to Understand Our Changing Planet**

Professor Tripti Bhattacharya’s interdisciplinary work is making a global impact at the nexus of climate physics and paleoclimatology. Combining organic chemistry and state-of-the-art methods in climate modeling that explore conditions dating back millions of years, her research focuses on understanding the sensitivity of regional rainfall to climate change and how that can inform future climate models.

## **Dissecting Public Dialogue on Social Justice**

Given the increasingly contentious public discourse around social justice, now is a critical time for our faculty and students to explore social consciousness and advocacy on these issues. The Lender Center for Social Justice promotes robust, interdisciplinary dialogue on social justice, equity and inclusion.



Together, we continue to illuminate new truths.

Discovering new answers by asking bold questions.

Stepping outside of our own disciplines.

Following where truth leads us.

**Together. We Rise.**

[syracuse.edu/rise](https://syracuse.edu/rise)

All information is accurate as of April 2022. For the most up-to-date statistics, please visit [syracuse.edu](https://syracuse.edu).

