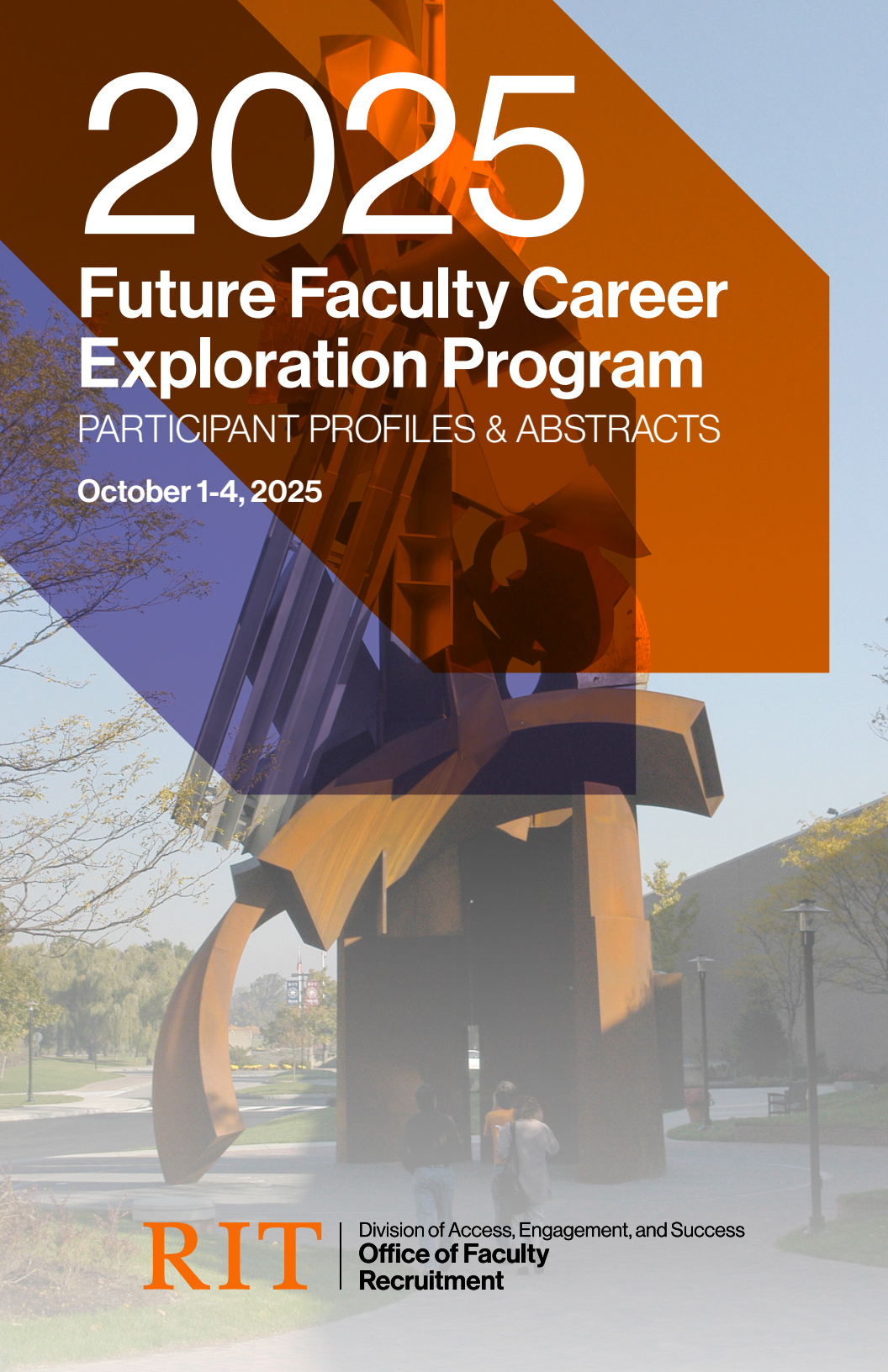
2025

Future Faculty Career Exploration Program

PARTICIPANT PROFILES & ABSTRACTS

October 1-4, 2025



RIT

Division of Access, Engagement, and Success
Office of Faculty Recruitment

This year, Rochester Institute of Technology is proud to welcome the 22nd cohort of participants in our Future Faculty Career Exploration Program. Your participation highlights our effort to advance the careers of outstanding current and future scholars.

RIT is one of the few universities in the nation centered on technology, the arts and design. We aim to consciously link our programs in business, liberal arts, and the health sciences to these foci. Our research programs, including artistic and scholarly expression, are expanding and creating exciting educational opportunities for our students. We are constantly looking for faculty who will leverage our creative and innovative strengths and enhance the student experience in our classrooms and laboratories.

As RIT's new president, I'm especially honored to greet you during this exciting time of growth and innovation. This is my first year in this role, and I cannot think of a better way to begin than by engaging with a group of scholars who represent the future of academia. Your participation in this program is a meaningful part of our journey forward.

We are always seeking faculty who can harness RIT's creative and innovative spirit to elevate learning and discovery. The Future Faculty Career Exploration Program is a nationally recognized initiative that exemplifies our tradition of programmatic innovation. It brings talented scholars to campus to explore opportunities in teaching, research, and scholarship.

As you engage with the program, I invite you to reflect on how your expertise and aspirations align with RIT's culture. Where might you make a meaningful impact—on our students, within our academic community, and beyond?

This program is designed not only for us to learn more about you and your work, but also for you to gain deeper insight into RIT. I hope you'll find inspiration in the stories of our students and faculty, and see how RIT supports success both inside and outside the classroom.

Welcome to RIT—I'm truly delighted you're here.

William H. Sanders
RIT President

Future Faculty Colleagues,

I am delighted to welcome you as part of the 22nd cohort of the Future Faculty Career Exploration Program at Rochester Institute of Technology. This program plays a crucial role in recruiting exceptional faculty to RIT and creates opportunities for you to build a network among peers as you prepare for your university careers. Congratulations on being selected to participate in our annual program!

At RIT, we place a high value on hiring a diverse community of scientists, artists and intellectuals, enabling us to be a strong and vibrant university—one that attracts creative and innovative students. The Future Faculty Career Exploration Program plays an integral part in making RIT a dynamic and exceptional university.

This nationally recognized program is designed to help us learn more about you, your research and career interests. It also allows you to get a first-hand look at RIT. While you are on campus, you'll connect with faculty and have the opportunity to share your research, scholarship, and artistic work.

The Office of Faculty Recruitment in the Division of Access, Engagement, and Success has put forth tremendous effort to recruit and welcome prospective faculty. This year's cohort includes individuals at all stages of their careers—from Ph.D. candidates to recent graduates to postdoctoral fellows. This program allows participants at the earliest stages of their academic careers to explore career opportunities at the university and experience RIT as a prospective workplace.

Thank you for participating in this engaging and exciting professional development opportunity, and welcome to RIT.

Sincerely,

Prabu David, Ph.D.
Provost and Senior Vice President for Academic Affairs

Congratulations on being selected to participate in the 22nd class of Rochester Institute of Technology's Future Faculty Career Exploration Program! I applaud your many achievements to date and take great honor in formally welcoming your participation in this exciting four-day RIT event.

RIT advances the exceptional through a welcoming and inclusive environment! The values of access, engagement, and success are fundamental aspects of RIT's identity as an institution and are intrinsically tied to its historic strength as one of America's most innovative and forward-looking universities. The I *am RIT Faculty* campaign highlights and celebrates some of our outstanding faculty.

You might be pleased to learn that *INSIGHT Into Academia* magazine recognized Rochester Institute of Technology as a 2025 Higher Education and Distinction (HEED) Award recipient, marking the eleventh year in a row RIT has received this honor. *Winds of Change* magazine, for the 15th year, listed RIT as one of the "Top 200 Colleges for Native Americans." Today, RIT continues to focus on creating pathways to higher education for all students, faculty, and staff, thus, addressing barriers that create access and success gaps. We understand well the importance of fostering a supportive campus environment through meaningful initiatives and programming that empower and enrich the RIT community. So, we are honored to welcome you to our campus as we learn more about each other.

An outstanding program has been prepared for you. During your visit, I hope your many questions regarding RIT/NTID—our students, staff, faculty, programs, departments, colleges, campus and community—are addressed and answered. Most important, I hope you get a better idea of your potential space in the RIT family as we both explore the many opportunities for a wonderful relationship.

Keith Jenkins, Ph.D.
Vice President and
Associate Provost for
Access, Engagement,
and Success

Dear Colleagues,

It is with great enthusiasm and heartfelt congratulations that I welcome you to the 22nd cohort of the Rochester Institute of Technology's Future Faculty Career Exploration Program. Your selection for this initiative speaks volumes about your dedication and impressive achievements to date. We are truly honored to have you join us.

At RIT, our pursuit of inclusive excellence is a cornerstone of our institutional values. This program exemplifies our commitment to cultivating thought leadership and fostering innovation across all areas of academic life. We believe that creativity and progress flourish when fueled by a wide range of perspectives and experiences.

Representing the Office of Faculty Affairs, our mission is to support faculty growth through forward-thinking policies, purposeful programs, and dynamic professional development opportunities. We strive to empower faculty at every stage of their careers, and I'm eager to share more about the resources and support available to you during your time with us.

Your involvement in the Future Faculty Career Exploration Program is deeply appreciated. We view your participation as a vital step in shaping a vibrant, forward-looking academic community. I'm excited to collaborate with you and explore possibilities for your future at RIT.

Thank you for joining us on this journey. With your insights, passion, and scholarship, we look forward to building a future defined by creativity, excellence, and lasting impact.

LaVerne McQuiller
Williams, Ph.D., J.D.

Associate Provost for Faculty
Affairs

Office of Faculty Affairs

Dear Future Colleagues,

Congratulations on your acceptance into RIT's Future Faculty Career Exploration Program. On behalf of the Office of Faculty Recruitment, I welcome you to Rochester, NY, and to the 22nd cohort of the Future Faculty Career Exploration Program.

After a rigorous national search, you were selected from among the brightest minds in the nation. Your cohort embodies an extraordinary level of research excellence, artistic vision, skill, and expertise—truly among the very best we could have hoped to bring together. Furthermore, your presence honors us and exemplifies RIT's commitment to excellence. We hope that you will discover the attraction of innovation, and the professional quality which sets RIT apart as a premiere technology focused university. We also trust that your experience here will be a transformational one.

For those of you who have already participated in our *Pathways to RIT* events, thank you for your continued engagement with RIT. Whether this is your first experience or not, you should be as proud of your accomplishments as we are.

Over the next few days, I encourage you to enjoy the outstanding workshops, panels, and networking events. I invite you to shine as brightly as you can through your presentations, and the opportunities you will have to collaborate and cultivate relationships with RIT faculty and other cohort members.

I look forward to personally meeting each of you.

Congratulations again,

Torrence E. Sparkman, Ph.D.

Assistant Provost and Assistant Vice President for Faculty Recruitment

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College of Art and Design

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Ashley Michelle Hannah

Graduate Student
UCLA

Profile

Ashley Michelle Hannah received a BA in art practice with Honors from Stanford University (2020) and is currently an MFA candidate in photography at the University of California, Los Angeles (2026).

At Stanford University, Hannah received the John Shively Fowler Award in Photography, Robert M. Golden Medal for Performance in the Humanities and the Creative Arts, and the William W. and Janet F. Crandall Beagle II Award for her photographic thesis project, *Jacksonville*. She received the Graduate Opportunity Fellowship, Clifton Webb Fine Art Scholarship, and Dr. Hyman Eugene Oxman Scholarship to continue her studies at UCLA.

Hannah's images have been exhibited at Stanford University, the Bard Hessel Museum, the Virginia Museum of the Civil War, and FotoFocus Cincinnati, among others. She has served as a photography instructor at Curious Cardinals, Dougherty Art Center, Venice Arts, and UCLA, where she is continually inspired by her students.

Abstract

An Adapted Walking Practice: At the Intersection of Photography, Walking, and Disability Studies

According to Susan Sontag, "photography first comes into its own as an extension of the eye of the middle-class flâneur." From its inception, then, photography has been tied to wandering, walking.

Look no further than Rebecca Solnit's history of walking in *Wanderlust*, Janet Cardiff's *The Walk Book,* Yuji Agematsu's daily walk sculptures, or Richard Long's *A Line Made by Walking* to see the profound impact that walking, as a practice, has made on the fields of art, literature, and philosophy.

What happens to photography, then, when walking becomes difficult?

In this lecture, Hannah analyzes the way disability transformed her photographic practice, turning walking into not just a modality to make work, but the subject of her work itself.

Joseph Obanubi, MA

Graduate Student
University of Illinois, Urbana Champaign

Profile

Joseph Obanubi is a creative artist who lives/works between New York and Philadelphia. Obanubi holds master's degrees in new media from the University of Illinois, Urbana-Champaign and graphic design from the University of Lagos, Nigeria. Their practice spans across Visual Art/Design, Art Direction, and Art Education. Obanubi's making process involves digital, tactile and (multi) sensory experimentation. Their creative practice is interested in questioning, engaging, and reconstructing understandings of identity, time, place and translation through digital, tactile, and multi-sensory experimentation. They describe their art making practice as a visual bricolage, a (re)construction of fragments found in everyday experiences, taken from their original context into another.

Obanubi has exhibited at the Research Centre for Society, Technology and Ecology in Africa, Bayreuth, Germany (2025), Krannert Art Museum, Illinois, USA (2025), Museum of Photography Lianzhou, China (2024), Hi-Flow Geneva, Switzerland (2022), Grand Palais Ephemere, Paris, France (2022), Rieterpark, Museum Rietberg, Germany(2022), African Artist Foundation, Lagos, Nigeria (2021), Musee Mohammed VI d' art Moderne et contemporain, Rabat Morocco (2021), Magnin-a Gallery, Paris, France (2020), Sharjah Art Foundation, 2020, Darmstädter Tage d. Fotografie Festival, Darmstadt, Germany, (2020), Carreau du Temple, Paris, France (2019) and Somerset House, London, United Kingdom (2019).

Their practice has been recognized by the British council, Mellon Foundation, Contemporary African Photography Prize, Google Arts and Culture, CNN style, amongst others. Obanubi was the winner of Kate Neal Kinley Memorial Fellowship, 2024, Contemporary African Photography Prize 2021 and Institut français and La Cité internationale des Arts creation prize 2020.

Abstract

This Image is Loading: Compositing self in transition through materiality

Joseph Obanubi's creative research practice investigates the possibilities of constructing identity through visual bricolage, exploring how materiality, memory, mobility and temporality converge to shape what he calls 'identity in transition.' Rooted in Black futurity, phenomenology, and a diasporic understanding of space and self, his research asks: What does it mean to represent something in a world where the image is always moving digitally, culturally, and politically? What gaps persist between what is presented and what is lived? Who holds authorship in a reality shaped by image circulation and technological fragmentation?

Obanubi's research practice unfolds through the compositing of tactile and digital fragments, drawing on personal and familial image archives, found materials, and digital platforms. These components, sourced from what he refers to as "secondary spaces" such as thrift stores, garage sales and digital repositories, are reassembled using compositing techniques, experimental film, projection mapping, and built environments. This multimodal approach forms the core of an ongoing inquiry into the politics of representation, authorship, and translation within the context of globalization.

In his research practice, he looks at personal and collective histories and seeks to test ways of thinking about authorship, ownership, and visibility in image making culture while using auto-ethnographic methods to trace and navigate spatial and temporal movement, a form of nomadic authorship of the self. Obanubi also examines how technology mediates our perception of time and space, and how that mediation leaves traces in the body, in memory, and in the archive.

The implications of this research are twofold: Artistically, it contributes to discourses around Black digital practice, experimental media, and its intersection with technology. Conceptually, it offers new frameworks for understanding how visual culture frames selfhood and its presentation.

Obanubi's goal is to make this creative research into a traveling exhibition that is developed as immersive/hybrid installations for public engagement across geographies. He will further research into Black diasporic archives, collaborate across disciplines including performance and sound studies, and expand the pedagogical applications of his practice. Ultimately, this practice as a research approach offers new questions and an alternative framework for thinking about temporality, authorship, and embodied experience. He also envisions developing community-based image archives that center Black and diasporic ideologies and strategies.

Kamaria Shepherd, MFA

MFA Candidate
Cornell University

Profile

Kamaria Shepherd is a visual artist/writer. Her work touches on identity, memory, race, culture, womanhood, and femininity as an African-American woman in the United States. Her paintings, prints, drawings, poetry, fiction and installations vacillate between minimal and excess; bold and subtle; loud and intimate. Shepherd writes about her artwork, experiences, and family history.

The location of her first novel is grounded between places she has lived such as Los Angeles and Houston; and Grapeland, Texas, where her family has owned land dating back to the end of the nineteenth century. Shepherd has exhibited in Human Resources and Ochi Projects in Los Angeles, Chen's in Brooklyn, New Release Gallery in New York City, and WIRWIR gallery in Berlin. Shepherd's solo installation, "She Learned Herself Awake" exhibited at Bermudez Projects in Los Angeles. Her lithographs have also been exhibited at the Houston Museum of African American Culture and the Arthur Rose Museum at Claflin University. Her installations/paintings have been featured on episodes of *The L Word GQ*. She read/discussed her work as a part of the *Writers on the Rise* series at the Vermont Studio Center (VSC).

Shepherd is an MFA candidate in the image text program at Cornell University. She earned an MFA in painting/drawing from UCLA in 2018, and a BFA in painting from RISD in 2015. Shepherd is the 2018 UCLA recipient of the Toby Devan Lewis Fellowship. She attended residencies at VSC, Banff Centre for Arts and Creativity, Frans Masereel Centrum, and was a Visiting Researcher at CAD+SR in Spoleto, Italy. Shepherd's writing/images having been edited by curator Meg Onli will be published by Image Text Ithaca Press in a collective re-envisioning/re-issuing of *The Last Man* by Mary Shelley. Shepherd lives in Houston, Texas.

Abstract

Life of a So-Called Texas PreacHer

"Life of a So-Called Texas PreacHer" is an experimental novel of personal narrative, oral family histories, poetry, and auto-fiction. Beginning in a fertility clinic in Los Angeles and weaving between experiences of moving home to Houston and "back home" to Grapeland, Texas, the novel focuses on the infinite iterations of Kamaria. Kamaria is also the first name of the author. A ride through unclear time descriptions, blurry landscapes, misunderstandings, and questions of consent and belonging, the reader is lost in memory and thought. Just like Kamaria, we are all the while wondering which Kamaria is moving us through the story. Are we ourselves, and how do we know we are truly ourselves even when we are constantly re-evaluating/re-developing ourselves? What is the core of a person? Can we start anew? A virgin even? Does it matter when we are born and do we really control when we can and will have a baby? And with whom? Kamaria asks if time traveling within not only one's own family history, but within one's own personal history, will allow us to escape with an understanding of reality. Can we leave with an understanding of reality that doesn't seem ready for Black bodies, Black intellectual impact, and Black wealth in ways that benefit Black people? Are African-Americans a community of starving artists exploited, and jump scared at every turn? Kamaria goes "back home" through time travel, tradition, and culture in a multifaceted attempt to somehow not lose all of herself. This novel, as well as Shepherd's paintings, drawings, prints, and family photographs, give space to mediate within the space of being a Black woman in and out of the United States. These different forms of Kamarias, whether in text or image, are self-portraits. These self-portraits are copies and reincarnations. Through language and mark making, Shepherd forms her own language of understanding identity. Kamaria is re-exploring historical and Black experience through time. The Kamarias are a timeline. The Kamarias are a documentation of selves, or selfies, from one day or year or generation to the next. How is Kamaria experiencing what her grandmother experienced, and what is different between their experiences? What is the difference between experiences that are unique to them as people and experiences that are unique to their time? Will we all be Kamarias by the next century?

Saunders College of Business

Isaac Yamoah

Isaac Yamoah

Ph.D. Candidate
University of Illinois, Urbana Champaign

Profile

Isaac Yamoah received his bachelor's degree in accounting and information systems from New Mexico Highlands University in 2011, and his MBA in accounting and finance from Webster University in 2015. He went on to spend almost a decade in the audit industry. Since joining Gies, he has received several awards and recognitions for his scholarship excellence, including an AICPA Foundation Doctoral Fellowship in 2021; the Outstanding Emerging Scholar Award, American Accounting Association/Accounting, Behavior, and Organizations Section in 2023; the Alan J. and Joyce D. Baltz Fellowship in 2024, and a Deloitte Doctoral Fellowship in 2025.

Abstract

Who Gets the Benefit of the Doubt?
Juror Assessments of Auditor Negligence in Cases of Undetected Fraud

Auditors' key role is to provide reasonable assurance about the accuracy and reliability of financial statements. While an emerging literature finds a positive association between ethnic minority auditors and financial reporting quality (Krishnan, Singer, and Zhang 2023), I draw on status characteristics theory (Berger, Cohen, and Zelditch 1972) and argue that, in audit litigation, jurors rely on status characteristics to draw expectations of auditor performance. Consistent with theory, I predict and find that, in cases of undetected fraud, jurors treat the audit failure as less diagnostic of negligent auditor performance for the ethnic majority versus ethnic minority audit firm. Jurors show greater leniency towards finding in favor of the ethnic majority firm. I find theory-consistent evidence that jurors' lenient negligence assessments and verdicts are driven by their subconscious elevation of perceptions of the auditors' burden of proof. In line with a backlash effect, jurors impose higher economic penalties against the ethnic minority firm for performing a higher quality audit. My experimental findings have implications for audit litigation risk and inequities in culpability assessments.

Golisano College of Computing and Information Sciences

Rachel Donley
Prerana Khatiwada
Jason Lucas
Aviv Yaish, Ph.D.

Rachel Donley

Ph.D. Candidate
Georgia Institute of Technology

Profile

Rachel Donley is pursuing a PhD in Georgia Tech's digital media program and serving as a graduate student instructor of record for courses in coding and visual design. She previously received an MA in digital media through the University of Central Florida's games and interactive media program in 2020.

Prior to her return to academia, Donley worked as escape game designer, project lead, operations manager, and pop star at SCRAP Entertainment, Inc.'s San Francisco and New York City locations. She was involved in the production of over 15 escape games across the US. She also developed digital games, including an audio-first AR experience for Bose, featured at their 2019 PAX West booth. She continued design for physical experiences as well, including participation in a 72-hour "immersive experience" design challenge at LA Immersive International, where her team received "best participation design" from a panel of industry experts.

Building on these experiences, her current research explores puzzle design for serious games. She challenges conventional design practices to create puzzles that introduce, rather than reduce, the complexity of real-world knowledge. Her work has been published and presented at international design conferences, and her most recent game, designed in collaboration with Georgia Tech's Leadership Education and Development (LEAD) program, is used in their training for leadership coaches.

Donley seeks to support students and colleagues through various roles and initiatives. She was selected as a Leadership Fellow through LEAD in 2022, serving as a leadership coach for two years. She created and secured funding for a weekly writing event for fellow Ph.D. students and served as part of the Graduate Student Advisory Board for Georgia Tech's Ivan Allen College. Beyond Georgia Tech, she co-organized the first "Queer Play" workshop for Foundations of Digital Gaming (FDG) and created an active book club for escape game designers.

Abstract

Keep it Complicated: Designing Puzzles for Serious Games

Building on the millennia-long history of puzzles as a means of conveying new concepts (Danesi, 2002), escape games have seen a rise in prominence among serious games over the past decade, particularly in education (Costa, 2017; Nicholson & Cable, 2021; Veldkamp et al., 2020). These interactive puzzle-based games exist across analog and digital spaces (Krekhov et al. 2021), often combining elements of both through the Internet of Things (IoT) and related technologies (Karageorgiou et al. 2021). They can foster core skills, such as critical thinking and collaboration, and have already been applied across a breadth of topics and disciplines (Makri et al., 2021; Breakout EDU, n.d.).

Puzzles often require lateral thinking (Danesi, 2002), challenging players to overcome their assumptions and "think outside the box" to find the solution in epiphanic "a-ha" moments. This arc of self-reflection and reframing is a compelling fit for serious games, especially "games for change" that address complex, real-world issues.

Despite great promise, conventions of puzzle and game design hinder the potential of many serious games (Boskic et al., 2008; JafariNaimi & Meyers, 2015). One major challenge for puzzle games especially is that puzzles are traditionally made to solve to a simple, singular solution. To solve, players typically apply existing knowledge to an unknown space with an unknown solution (Nicholson & Cable, 2021). Applying this convention to complex, real-world topics risks reinforcing oversimplification, pre-existing biases, and reductionist practices, misaligning the game to the topic it is meant to represent.

Rather than require players to categorize and simplify an unknown space into one "correct" answer, how could puzzle design instead encourage multiple possible understandings?

My research builds on this question to explore alternate approaches to puzzles and the game design process for both physical and digital serious games. As part of this process, I dismantle the hidden conventions and assumptions that influenced my own design thinking and bring in new perspectives, from collaborators and scholars in the serious games field, to rebuild and create new possibilities.

This talk examines one such possibility: "multi-answer" puzzles. I highlight their potential to initiate critical reflection and introduce new knowledge through my design of two games: *Red [Redacted] Theatre* and *Re:Solve*. I analyze both the games and my design process to widen the breadth of possibilities in the broader field of serious games and support new designers through a series of design proposals. In addition, I will note future research possibilities as well as its current influence on my teaching practice and philosophy.

Prerana Khatiwada

Ph.D. Candidate
University of Delaware

Profile

Prerana Khatiwada is a 4th year Ph.D. student in the department of computer and information sciences at the University of Delaware. She holds a bachelor's degree in computer engineering from Kathmandu University. Her research sits at the intersection of human-computer interaction, AI-driven behavior modeling, and real-time misinformation intervention. She is a member of the Sensify Lab, where she designs user-centered systems that detect online misinformation and deliver timely, personalized just in time interventions using large language models (LLMs).

Alongside her research, she has served as an instructor for "Computer Ethics and Society," a course closely aligned with her research on the ethical implications of technology. Khatiwada's teaching philosophy is grounded in inclusivity, clarity, and mentorship. She is passionate about presenting complex topics in accessible ways and fostering active student engagement. With over four years of mentoring experience, she has guided undergraduate and graduate students on interdisciplinary projects in AI, HCI, and misinformation.

Beyond her academic work, Khatiwada is actively involved in leadership and community service. She serves as the president of the Nepalese Student Association and the vice president for Student Affairs in Graduate Student Government. She is also a Cultural Competence in Computing (3C) Fellow and an advocate for inclusive tech spaces through Nepali Women in Computing and Girls in ICT Nepal.

Prior to academia, she worked as a software engineer at LIS Nepal and contributed to projects ranging from ETL automation and data visualization to front-end design for the Nepal Stock Exchange. Khatiwada's work has been published at ACM CSCW, ICWSM, and CHI workshops, and she serves as a reviewer for leading conferences in HCI and social computing. Khatiwada's work bridges technical innovation with human-centered values, aiming to build trustworthy technologies that support critical thinking, civic awareness, and inclusive digital participation.

Abstract

Toward Adaptive Real-Time Media Literacy Interventions for Online News

Despite a surge in tools to combat misinformation, users still struggle to navigate an increasingly polluted information environment. Existing solutions, such as media bias checkers and content filtering algorithms, have come under scrutiny for perceived ideological bias, lack of transparency, and their tendency to override user agency. These concerns are compounded by the opaque nature of algorithmic decisions, which often leave users uncertain about how and why certain news is surfaced, suppressed, or disproportionately down-ranked. This lack of insight fosters mistrust and diminishes such interventions' perceived fairness and credibility. Furthermore, while tools and other dashboards can help identify misleading or skewed language, they primarily rely on post-hoc analysis and are designed for media professionals or researchers. As a result, they offer limited real-time support for everyday users during in situ online news reading.

My work proposes a new class of user-centered misinformation interventions delivered via a browser plugin that leverages Large Language Models (LLMs) and Personal Informatics (PI) to surface emotionally manipulative or logically fallacious language in real time. Rather than replacing user decision-making, the system aims to improve it by surfacing adaptive, in-situ feedback tailored to users' reading contexts and online browsing behavior. The proposed system builds on the emerging work in personal informatics (PI), adapting based on user online interaction and browsing context to provide meaningful, reflective feedback rather than static warnings. This approach strives to improve media literacy and foster healthier online news consumption behaviors by supporting rather than supplanting user decision-making. A key challenge in designing such a system is not just detecting manipulative language but selecting and surfacing the right intervention at the right moment. An overly frequent or irrelevant prompt may frustrate users or reduce trust in AI tools, while a well-timed, context-sensitive cue can promote reflection without disruption. Therefore, my work also focuses on developing a selection algorithm that ranks candidate interventions using a combination of engagement patterns, content salience, linguistic features, and real-time user feedback. The goal is to algorithmically determine which interventions are most likely to be perceived as helpful, least intrusive, and most aligned with users' current reading context, ensuring that the system complements rather than interrupts the news reading experience.

Through iterative development, hybrid AI-human feedback pipelines, and longitudinal controlled studies, this work seeks to improve digital media literacy, rebuild trust, and offer transparent, socially aligned tools that empower users to engage with news more critically and confidently.

Jason Lucas

Ph.D. Candidate
Penn State

Profile

Jason S. Lucas is a Ph.D. candidate in data science and AI at Pennsylvania State University, specializing in multilingual natural language processing, AI safety, and disinformation detection. He holds an MPH in epidemiology from St. George's University and an MS in computer information systems with health informatics focus from Boston University.

Currently an NSF LinDiV Fellow at Penn State's PIKE Research Lab under Dr. Dongwon Lee, Lucas conducts cutting-edge research in low-resource multilingual NLP for detecting deepfakes and combating disinformation. His expertise spans adversarial machine learning, transfer learning, and robust AI systems development, with particular focus on the dual capacity of large language models for creating and detecting false information.

Lucas has authored 8+ publications with 160+ citations at premier conferences including EMNLP, ACL, NAACL, and IEEE venues. His research addresses critical challenges in developing AI systems that are safe, fair, and accessible across diverse linguistic communities, particularly in low-resource regions.

As a Data Science Institute graduate student intern at Lawrence Livermore National Laboratory, he explores secure and trustworthy AI systems, evaluating model vulnerabilities and developing robust multilingual multimodal language models for national security applications.

Demonstrating exceptional leadership, Lucas has mentored five research interns and served as president of the Graduate Student Association in Information Sciences & Technology. His innovative teaching approaches increased student engagement by 40% across three computing courses serving 150+ students.

Lucas has received prestigious recognition including the NSF LinDiV Fellowship and Penn State FEGR Fellowship. His interdisciplinary background spanning computer science, public health, and linguistics, combined with his global perspective from working across Caribbean and U.S. contexts, uniquely positions him to address complex societal challenges through AI innovation while ensuring safety and accessibility across diverse communities.

Abstract

Global Frontiers in Disinformation Detection: Advancing Low-Resource Multilingual NLP Approaches in the Era of Artificial Intelligence

Disinformation threatens the integrity of societies worldwide, yet countermeasures predominantly target high-resource languages like English, leaving low-resource multilingual communities vulnerable. This challenge is amplified by scarce multilingual data, model constraints, imperfect translations, and evolving AI technology in the "disinformation 2.0" era. Advanced Large Language Models (LLMs) exhibit emergent in-context learning and semantic reasoning capabilities, enabling generations of authentic-looking human-like content that increases risks of adversarial attacks and persuasive falsehood creation, particularly dangerous during crises when accurate information is critical.

This research comprehensively investigates low-resource multilingual disinformation detection and generation challenges through three research questions. RQ1 examines high-resource monolingual model effectiveness by scrutinizing state-of-the-art models' efficacy for domain-specific and agnostic disinformation detection. RQ2 evaluates multilingual transformer architectures and transfer learning techniques across three scenarios: multilingual resource-rich data application, cross-lingual generalization to resource-low languages, and machine-translated bridge language handling. RQ3 investigates developing a robust, universally applicable multilingual detector.

Addressing RQ1, we present the F3 framework, revealing foundation LLMs' dual potential for exploitation in large-scale disinformation campaigns and significant defensive capacity against human and AI-generated disinformation, comparing performance with state-of-the-art customized detectors.

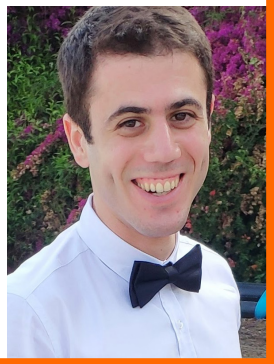
For RQ2(a), our Caribbean case study examines leading detectors' efficacy in low-resource multilingual settings, highlighting challenges in deploying high-resource language models across diverse environments. Findings show fine-tuned transformers perform best on heterogeneous low-resource data, motivating RQ2(b)'s comprehensive study of multilingual detection capabilities across transformer architectures and transfer learning methods.

RQ3 encompasses two studies: RQ3(a) develops a gold-standard multilingual benchmark dataset containing human-written and AI-generated disinformation, while RQ3(b) creates a global defense model enhancing multilingual generalization and adversarial resilience.

This research addresses critical gaps in multilingual disinformation defense, providing frameworks and methodologies essential for protecting diverse linguistic communities in our interconnected digital world. The outcomes will deepen understanding of complex low-resource multilingual disinformation problems and contribute to more equitable global information security.

Aviv Yaish, Ph.D.

Postdoctoral Scholar
Yale University



Profile

Dr. Aviv Yaish is a postdoctoral associate at Yale University's Applied Crypto Lab, where he researches the economics and security of distributed systems. Dr. Yaish's work has been recognized by the security community with a CCS Distinguished Paper award, the economics community with a CBER Best Paper award, and by industry with prizes from the Ethereum Foundation and Flashbots. His approach is driven by a decidedly practical philosophy of constructive deconstruction: pushing systems to their limits is fundamental to making them robust.

Dr. Yaish earned his Ph.D. in computer science from the Hebrew University (HUJI), where he was the sole lecturer for two large-scale courses and recognized by a teaching award. His honors include the AIANI and Jabotinsky fellowships, and inclusion in HUJI's Top 10 CS Teaching Staff of '20, CBER's Top Ph.D. Graduates of '23–'24, and HUJI's 40 Under 40 of '25 lists.

Abstract

Deconstructing and Rebuilding Trust in Decentralized Economies

Financial systems are becoming increasingly digital and decentralized, demanding a practical fusion of distributed systems security and economic theory. A key enabler of this change, blockchain technology, promises more private and egalitarian economic mechanisms, built by facilitating consensus between pseudonymous actors. However, the theoretical security of these systems may mask significant real-world risks.

In this talk, Dr. Aviv Yaish will present recent advances in bridging this gap between theory and practice. First, he will discuss the resolution of a decade-old puzzle: the lack of observed attacks on major consensus mechanisms. He will then distill the lessons learnt into a holistic approach to designing robust systems and demonstrate its adoption in practice using three lines of work on denial-of-service resistance in distributed systems, auctions with untrusted auctioneers and bidders, and markets where consumers may cheaply create new identities.

Kate Gleason College of Engineering

Zihan Zhang

Zihan Zhang

Ph.D. Candidate
Georgia Institute of Technology

Profile

Zihan Zhang is a Ph.D. candidate in industrial engineering at Georgia Tech, advised by Professors Jianjun Shi and Kamran Paynabar. Her research focuses on tensor-based modeling, analysis, and control of high-dimensional streaming data, with applications in semiconductor manufacturing, agriculture, and healthcare. Her work has received best paper awards from INFORMS, ASA, and IISE, and fellowships from organizations including IISE, INFORMS, ASA, ASQ, and ISA, as well as private foundations.

Zhang developed and taught the course module *Tensor-based Prognostics and Control with Applications in Semiconductor Manufacturing* in Spring 2024 and 2025. She currently co-chairs the INFORMS Education Outreach Committee K–12 Subcommittee and previously served as president of the INFORMS Georgia Tech student chapter, leading it to Summa Cum Laude distinction and earning the 2024 INFORMS Judith Liebman Award.

Abstract

Tensor-based Predictive Modeling and Process Control for High-dimensional Streaming Data

The rapid advancement of sensing technologies has led to an explosion of high-dimensional data—from high-resolution images and videos to 3D point clouds—that challenge the assumptions of traditional control methodologies. Conventional approaches, grounded in low-dimensional signal processing, often fall short in capturing the complex spatio-temporal dependencies inherent in such data. Simple vectorization techniques disrupt essential structural information, while many learning-based methods require large datasets and often lack theoretical analysis.

In this talk, I will focus on a suite of tensor-based process control frameworks that preserve spatio-temporal structure and enable principled control analysis. The first part of the talk will cover strategies for handling incomplete sensing in automatic process control. I will then introduce a novel system modeling approach that captures localized system response correlations and control impacts, along with a dynamic controller strategy for optimizing controller placement.

Building on these foundations, I will briefly outline how this framework can be extended using diffusion models to address nonlinear spatio-temporal correlations and support uncertainty quantification. I will also give a short overview of additional research works regarding tensor-based predictive modeling, such as regression modeling using multimodal distributed data and lifetime estimation for memory products in collaboration with Samsung Electronics.

Together, these efforts aim to establish a data-efficient and theoretically grounded approach to the control of modern intelligent systems operating with high-dimensional, multimodal sensory data.

College of Engineering Technology

Sajani Vithana, Ph.D.

Sajani Vithana, Ph.D.

Postdoctoral Scholar
Harvard University

Profile

Dr. Sajani Pallegoda Vithana is a postdoctoral fellow at Harvard University. She received her Ph.D. in electrical engineering from the University of Maryland, College Park. Prior to that, Dr. Vithana completed her undergraduate studies in electrical and electronics engineering at the University of Peradeniya in Sri Lanka—the beautiful island in the Indian Ocean where she was born and raised.

Dr. Vithana's research centers on establishing theoretical foundations for trustworthy machine learning and artificial intelligence. She employs information-theoretic frameworks to systematically investigate fundamental trade-offs between system performance and key trust dimensions, including data privacy, algorithmic fairness, and the reliability of ML/AI system components. This work has been recognized with several honors, including the Best Paper Award at the 2023 IEEE International Conference on Communications and the 2023 UMD ECE Distinguished Dissertation Award.

Beyond research, Dr. Vithana is deeply committed to teaching and mentorship. She has served as a teaching assistant and guest lecturer for courses such as Information Theory, Signal Processing, and Introduction to Machine Learning at Harvard and UMD. She has also had the opportunity to mentor both undergraduate and doctoral students on research projects related to information theory and signal processing—an aspect of academic life that she finds deeply fulfilling.

Outside of academia, Dr. Vithana enjoys traveling, hiking, and playing sports, which helps her stay energized and balanced.

Abstract

Information-Theoretic Tools for Trustworthy AI

As artificial intelligence (AI) continues to evolve, ensuring that it operates in a trustworthy and responsible manner is essential to its safe and ethical integration into society. This presentation highlights key dimensions of trustworthy AI, including data privacy, algorithmic fairness, and system reliability, from an information-theoretic perspective.

This work develops mathematical frameworks that model these social aspects and analyze the fundamental trade-offs between system performance and trust. Using tools from information theory, it establishes theoretical limits and introduces algorithmic approaches—grounded in coding theory, optimization, and signal processing—that aim to approach these bounds.

In the domain of data privacy, the focus is on distributed computing methods that enable users to train AI models locally under formal privacy guarantees. This work considers multiple notions of privacy, introduces mechanisms that preserve them, and quantifies the resulting fundamental privacy-accuracy trade-offs.

For algorithmic fairness, the presentation addresses tasks such as database retrieval and text-to-image generation and proposes methods that ensure outputs are representative of all intersectional groups defined by attributes such as race, gender, and age.

Under reliability, the presentation explores the problem of watermarking large language models (LLMs) and shows how this problem connects to a classical problem in coding theory. It introduces efficient watermarking techniques that advance the state of the art in improving the detection-accuracy trade-off.

National Technical Institute for the Deaf

Sunday David Ubur

Sunday David Ubur

Ph.D. Candidate
Virginia Tech

Profile

Sunday David Ubur is a Ph.D. candidate in computer science and applications at Virginia Tech, where he is emerging as a leader in accessible computing and human-computer interaction (HCI). His research focuses on developing design guidelines in inclusive communication technologies that support Deaf and Hard-of-Hearing (DHH) and neurodiverse learners, particularly in STEM education. With academic foundations in Nigeria and the United Kingdom, he holds a BS in computer science from the University of Abuja and an MS in software development from Coventry University. At Virginia Tech, he leads interdisciplinary research at the nexus of artificial intelligence (AI), extended reality (XR), and accessibility, pushing the boundaries of inclusive technology design.

His dissertation, "AI-Driven Interpretation of Nonverbal Communication in AR-Enhanced Real-Time Captions," investigates how facial expressions, body gestures, and vocal intonations can be integrated into captioning systems to enhance comprehension, reduce cognitive load, and improve user experience for captioning technology users. Through empirically grounded design guidelines and user studies, his work contributes to a paradigm shift in real-time captioning, moving beyond transcription toward emotionally expressive, context-aware communication tools.

His work has been presented at leading conferences such as ACM Creativity & Cognition, IEEE VR, and HCI International. He also contributes to the academic community through peer-reviewed publications, reviewing for ASEE, and volunteering at HCI events. His achievements have earned him prestigious recognitions such as the Mandela Washington Fellowship (U.S. Department of State), the Chevening Scholarship (UK Government), and induction into the Phi Kappa Phi Honor Society.

Beyond research and teaching, Ubur is deeply committed to student engagement and inclusive leadership. He currently serves as media coordinator for both the Center for Human-Computer Interaction (CHCI) Graduate Student Council and the African Graduate Students Organization at Virginia Tech. He is also an active member of ACM, IEEE, AccessComputing, and Disability:IN NextGen.

Abstract

AI-Driven Interpretation of Nonverbal Communication in AR-Enhanced Real-Time Captions: Design Principles for Reducing Cognitive Load and Enhancing Engagement

Current real-time captioning systems fail to address a critical aspect of communication: nonverbal cues (facial expressions, vocal tone, gestures) that convey meaning and emotion. This gap disproportionately impacts Deaf and Hard of Hearing (DHH) and neurodiverse learners in fast-paced educational settings like STEM, where sign language support is often inadequate. While emerging AI and AR technologies promise solutions, the field lacks systematic design guidelines for integrating nonverbal information without overwhelming users. This research aims to bridges that gap by establishing evidence-based principles for accessible, emotionally intelligent captioning systems.

Preliminary study evaluated four caption prototypes (text highlighting, emojis, AR overlays, symbolic tags) with 32 participants. Results revealed that: (1) keyword highlighting improved comprehension by 45% while reducing cognitive load by 25% compared to baseline captions; (2) user preferences diverged sharply on abstraction levels, with 68% rejecting emojis as infantilizing versus 32% finding them intuitive; and (3) all participants demanded customization features. These findings informed the development of six provisional design principles, emphasizing glanceable cues and adaptable interfaces.

Study 1 introduced an Interpreter Captioning System that integrates OpenAI's Whisper for real-time transcription and a fine-tuned Wav2Vec2 model for vocal emotion recognition. The interface presented brief emotion tags (e.g., "H" for happy) alongside captions, with hover-based explanations to reduce visual clutter. Qualitative feedback from eight DHH participants revealed that while emotional annotations enhanced content engagement, they also introduced cognitive load due to the need to divide attention between text and emotion cues. These findings, combined with the recognition that interpretations of nonverbal signals can vary across cultures, stressing the need for culturally adaptive approaches to emotive captioning.

Ongoing work focuses on refining and expanding the applicability of emotive captioning design guidelines through participatory design workshops that center on cross-cultural communication frameworks. Specifically, these workshops engage participants from both high-context cultures where communication relies heavily on nonverbal cues, shared context, and relational understanding, and low-context cultures where communication is more direct, explicit, and reliant on spoken or written words. These sessions explore how emotional and nonverbal cues such as tone indicators, spatial placement, and symbolic tags are interpreted in XR captioning systems. These insights will inform design strategies that enhance comprehension and engagement for diverse users in immersive educational and collaborative XR environments.

College of Science and National Technical Institute for the Deaf

Breanne M. Kisselstein, Ph.D. ‘16

Breanne M. Kisselstein, Ph.D. ‘16

Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Fellow
USDA Agricultural Research Service,
Cornell University

Profile

Dr. Breanne M. Kisselstein is a DeafBlind plant scientist and an Oak Ridge Institute for Science and Education (ORISE) postdoctoral fellow at the USDA Agricultural Research Service’s Genetic Improvement for Fruits & Vegetables Laboratory (GIFVL), where she conducts research on cranberry quantitative genetics and pre-breeding. She earned her Ph.D. in plant pathology from Cornell University for her research on the epidemiology and population genetics of grapevine powdery mildew. She also holds a BS in biotechnology and molecular bioscience from the Rochester Institute of Technology. (Go Tigers!)

Dr. Kisselstein’s research spans multiple areas of the plant sciences—including pathology, genomics, and breeding—and is unified by her passion for applying data science, AI, and machine learning to safeguard the global food supply. Her interdisciplinary experience allows her to work across fields, from molecular biology to agricultural systems, to address and understand complex biological challenges.

A hallmark of Dr. Kisselstein’s work is her ability to connect diverse communities of individuals and professional disciplines. Whether linking Deaf and hearing worlds, engineers and biologists, or scientists and stakeholders, she thrives in the “in-between” spaces where novel ideas emerge, and collaboration drives innovation. These cross-cultural efforts reflect her deeply held belief that science is most impactful when informed by the communities it serves.

Proud to be an RIT/NTID alumna, Dr. Kisselstein is eager to return to her alma mater to teach, mentor, and empower the next generation of scientists. In addition, RIT has the requisite infrastructure in genomics, imaging science, computing, molecular biology, and the academic programs at the undergraduate and graduate levels to support Dr. Kisselstein’s vision. She is committed to providing rigorous scientific training through inclusive, ethical, evidence-based, and curiosity-driven teaching and research practices that expand participation among historically excluded groups in the sciences.

Abstract

Robots, Models, and Microbes: Data-Driven Approaches to Breeding Disease-Resistant Fruit Crops

Understanding how plants interact with both pathogens and their environments is critical to securing a resilient food supply. My research uses data-driven approaches to improve the stability and adaptability of fruit crops under environmental variation.

In my current role as an ORISE postdoctoral fellow at the USDA Agricultural Research Service, I advance cranberry breeding by integrating multi-environment trial (MET) data with two-stage mixed-model approaches. These models enable us to assess the environmental stability of key traits—such as fruit yield and rot resistance—by capturing complex genotype-by-environment interactions (GEI). Accurately modeling GEI is essential for disentangling genetic effects from environmental noise and for predicting how genotypes will perform in untested or future environments.

Beyond statistical modeling, my work leverages robotics and machine learning to accelerate phenotyping and identify genotypes with desirable traits, including disease resistance. This interdisciplinary approach enhances the scalability and efficiency of breeding pipelines and supports decision-making in variable environments.

I will also share insights from my doctoral research at Cornell University, where I investigated the epidemiology and population genetics of *Erysiphe necator*, the causal agent of grapevine powdery mildew. Powdery mildews are a group of fungal pathogens that infect a broad range of crops worldwide, with significant implications for global food systems, economic stability, and long-term agricultural sustainability. This work marked my initial integration of robotics, high-throughput phenotyping, and machine learning into grape breeding and continues to inform my research on host-pathogen dynamics, durable resistance, and trait stability across environments.

I will conclude by outlining my vision for the future of agriculture—centered on data-driven, inclusive, and resilient food systems—and describe how I would build a collaborative research and teaching program at RIT by leveraging its interdisciplinary strengths and innovation-focused community.

College of Science

Roxana Coreas, Ph.D.

Roxana Coreas, Ph.D.

Postdoctoral Scholar
University of California, Berkeley

Profile

Dr. Roxana Coreas is an interdisciplinary postdoctoral researcher in the Department of Chemical and Biomolecular Engineering at the University of California, Berkeley, where she investigates the interfacial biochemistry of nanomaterial-biological complexes, termed the biomolecular corona, to enhance the efficacy of nanotechnology for biomedical and agricultural applications. Recognized for her innovative research to advancing nanoscience, she is an NSF Postdoctoral Research Fellow (PRFB), a Burroughs Wellcome Fund PDEP scholar, and an American Chemical Society CAS Future Leader awardee.

Dr. Coreas is a first-generation academic and Southern California native. She earned her Ph.D. in environmental toxicology from the University of California, Riverside. Her dissertation focused on investigating the health implications of engineered and anthropogenic nanomaterials using toxicological cell models. Her work analyzed the "mimetic biology" of nanomaterials, mediated by their biomolecular corona, with implications for nanotherapeutics and environmental health. Before this, she received her BS at the California State University, Northridge.

Her future interests include establishing an independent research laboratory focused on developing innovative nanotechnology to advance human health and sustainable agriculture and fostering positive mentorship that empowers the next generation of researchers in biochemical engineering. Her goal is to cultivate equitable and accessible learning environments, both in the lab and the classroom, that inspire innovation and diversity in STEM.

Outside of lab, Dr. Coreas enjoys hiking, exploring museums, leisure reading, and gaming.

Abstract

Maximizing Nano-Bio Interfacial Chemistry

Nanotechnology, which adapts nanomaterials with precisely tailored physicochemical properties, has advanced modern medicine through innovative applications, including targeted drug delivery, sensitive diagnostics, and next-generation therapeutics. More recently, nanotechnology has emerged as a transformative approach to support sustainable agriculture and meet projected global food demand under climate constraints, by leveraging nano-tools, such as nano-carriers for genetic crop fortification.

Despite the prolific adoption of nanotechnology, the intrinsic interactions between nanomaterials and endogenous biomolecules within biological systems remain underexplored. These spontaneous interactions lead to the formation of a "biomolecular corona"—a complex, heterogenous adlayer comprised of proteins, lipids, and metabolites—that dictates nanomaterials' biodistribution and efficacy. Thus, to optimize the effectiveness of nanotechnology, it is essential to maximize the biomolecular corona through a mechanistic understanding of kinetic processes that govern corona formation, thermodynamic binding hierarchies, and nanoscale interfacial fluctuations that modulate biological impacts.

In this 2-part work, the protein composition of the biomolecular corona of distinct nanomaterials are characterized to (1) advance our understanding of the interplay between nanoparticle surface properties and protein adsorption dynamics for biomedical applications, and (2) harness nano-bio interactions as a sensitive bioanalytical tool for biomarker detection in agricultural contexts.

For the first part, we prepared a library of DNA nanostructures with varying physicochemical properties to investigate the relationship between their design features and the composition of the protein corona formed in human serum. Our proteomic results found that proteins preferentially adsorbed on DNA nanostructures through surface modification mediation. We then trained machine learning algorithms to predict DNA nanostructure-coronas and elucidate the factors that impact protein corona formation. Our models achieved >90% accuracy and we found that more than 150 features contributed to protein corona formation, underscoring the vast convolution of nanomaterial-corona complexes. For the second part, we developed a high-resolution nano-omics tool that detected early stress biomarkers in pathogen infected agricultural crops—days before the onset of visible phenotypic symptoms. By leveraging the interactions between gold nanoparticles and plant protein coronas, our approach identified temporally resolved stress signatures, including pathogenesis-related markers, oxidative stress mediators, and defensive enzymes. Notably, our nano-omics approach also detected unique systemic biomarkers in distal plant tissues that were never directly exposed to the pathogen, suggesting the presence of long-range stress signaling mechanisms. Overall, these findings elucidate the relationships between nanomaterials and proteins at the nanoscale, which aim to guide the rational design of nanotechnology for human health and precision agriculture.

Notes

Notes

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