

From Guyana to ASU and back: PhD student advances innovation for climate-resilient development

How an ASU scholar is reshaping environmental education, research partnerships in developing regions

By Donovan L. Johnson, ASU News
December 12, 2025

Editor's note: This story is part of a series of profiles of notable [fall 2025 graduates](#).

Denise Simmons is dedicated to understanding how innovation, cross-disciplinary collaboration and climate awareness can strengthen developing countries such as her home nation of Guyana.

Her passion for environmental education, research in developing regions and the Advanced Scholars Funded Programme led Simmons to Arizona State University's [Rob Walton College of Global Futures](#), a unit of the [Julie Ann Wrigley Global Futures Laboratory](#), where she will receive a PhD in innovation in global development this fall.

Simmons earned her undergraduate degree in chemistry and physics from the [University of Guyana](#). For her doctoral work, she shifted her focus to the social sciences, analyzing the lived experiences of people affected by climate change.

"I realized that a person's lived experiences account for data and knowledge just as much as if I measured a height or a weight," she said. "This degree has totally expanded my sphere of interest. I now have an even greater appreciation for the social sciences."

Simmons' dissertation shows that innovation does not happen in a single place. Instead, she reveals why meaningful climate resilience requires scientists, government agencies, farmers and educators to work together.

Her research investigates how agricultural groups in Guyana collaborate to support the country's climate-vulnerable rice sector, which accounts for about 20% of the nation's agricultural GDP.

"Involving community members, policymakers and NGO representatives in the research design ensures that the work is anchored in the community's needs," Simmons said. "Research becomes more useful outside of academia when its findings are trusted by the people who need them most."

While completing her doctorate, Simmons also maintained a full-time lectureship at the University of Guyana. She taught students water-quality monitoring techniques to help them assess and improve environmental conditions in their own communities.

"This program has really changed my perspective on how we facilitate and help students," she said. "You can't solely focus on academics. We need to be aware of the holistic development of the student. My journey has taught me the importance of balance. While doctoral studies can easily take over one's life, I learned that personal well-being is essential for intellectual growth."

After graduation, Simmons will return to her role as a lecturer at the University of Guyana, supporting students, educators, government officials and community members as they work to build a sustainable future in Guyana.

"This pursuit extends beyond protecting nature," she said. "It involves empowering people, addressing inequalities and building improved communities. Knowing that my work could lead to meaningful change, however small, is a constant source of motivation to continue advancing this important work."

Read on to learn more about Simmons' ASU experience and her advice for other learners.

Question: What was your "aha" moment when you realized you wanted to pursue a PhD in innovation in global development?

Answer: Throughout my career as a lecturer, I have long aspired to earn a PhD, aiming to contribute original knowledge to my field through innovative research. Unfortunately, until recently, the opportunities did not present themselves in a way that would allow me to embark on this path sooner.

In 2020, a significant turning point occurred when I was selected by my university, the University of Guyana (UG), to participate in an Advanced Scholars Funded Programme. This initiative, funded by the ExxonMobil Foundation, was designed by UG in collaboration with Arizona State University and offered a scholarship to pursue a PhD in innovation in global development at ASU, an institution known for its commitment to innovation and to addressing global challenges through interdisciplinary approaches.

Q: During your time at ASU, what was something you learned that changed your perspective on research or leadership?

A: Before embarking on my PhD journey, with my training in the natural and environmental sciences, I had a strong quantitative analytical background, which guided my research approach — focused primarily on the experimental and survey methods. However, my dissertation research presented a methodological shift for me. It enabled me to deepen my qualitative practice within a constructivist framework, exploring how participants make meaning of climate risk and institutional

responses to it. By actively engaging with a range of stakeholders across key institutions, I was able to generate rich, experience-based insights that contributed to an understanding of the social landscape around climate action.

Q: Which professor or mentor at ASU taught you the most important lesson, and what was it?

A: Professor Netra Chhetri was not only my mentor, but also served as a co-chair for my dissertation committee. His expertise was instrumental in guiding my research, and I gained a wealth of knowledge through our in-depth discussions.

However, the most significant lesson that I learned from him was the power of optimism. His unwavering belief in the potential for positive outcomes, even in challenging situations, has inspired me to adopt a hopeful perspective in all aspects of my academic and personal life. Professor Chhetri's influence has left a lasting impact, reminding me that optimism can be a catalyst for success and achieving one's goals.

Q: What advice would you give to students who aspire to merge academic research with real-world impact, as you've done?

A: My advice to students is to view research as a tool to drive change rather than an end in itself. By engaging stakeholders, articulating ideas effectively and embracing an interdisciplinary approach, one could make certain that scholarly efforts do not go to waste but rather influence lives and ecosystems.

Involving community members, policymakers and NGO representatives in the research design ensures that the research is anchored in the community's needs and thus gains relevance outside of academia, with findings are usable and trusted by those who require them most. While scholarly writing holds significance for researchers, students should adopt various methods to communicate complex findings in clear and simple language, like using infographics. An interdisciplinary approach integrates a wider range of perspectives into the research, making the solutions more applicable.

This story originally appeared on [ASU News](#).

Text image(s)



Denise Simmons