

Dean's Medalist continues to explore the universe's unknown

By Megan Neely, ASU News
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Editor's note: This story is part of a series of profiles of notable [spring 2025 graduates](#).

Olivia Calcerano had more questions than people had answers to about the universe, so she sought to solve them herself. Now she is set to graduate with a degree in physics and a minor in mathematics from Arizona State University — and getting closer to deciphering those questions.

"Many students would feel rightfully proud doing calculations that input to a world-leading observational dark matter limit," Department of Physics Assistant Professor [Matthew Baumgart](#) said. "They would consider their 'do research' box checked. Olivia wants more."

Since 2023, Calcerano has collaborated on research projects alongside Baumgart. The two are currently finishing up their contributions as theorists to the VERITAS (Very Energetic Radiation Imaging Telescope Array System) search for weakly-interacting-massive-particle, or WIMP, dark matter. Their research is on track to come to a conclusion on one of the most motivated dark matter candidates, an extra electroweak triplet, for the missing 27% of mass that makes up the universe.

"Olivia has been absolutely crucial toward getting our conclusion. It simply would not have been possible without her," Baumgart said.

She also served in multiple leadership roles for ASU's [Society of Physics Students](#) and in 2024 co-founded the [Association of Women in Physics](#) — a space for supporting women in physics and broader STEM-related communities at the university.

In April, the [Barrett, The Honors College](#) student defended her thesis on constraining WIMP dark matter with dwarf spheroidal galaxies.

"Never stop being curious and skeptical. The world will forever improve the more we learn," Calcerano said. "A curious mindset and a healthy dose of skepticism will allow you to be drawn to important questions and think critically about their solutions."

Her desire to push the limits of research has earned her the honor of being named the [Department of Physics's](#) spring 2025 Dean's Medalist.

After graduating, Calcerano will pursue her PhD at University of Washington, where she'll study theoretical particle physics. She hopes to eventually become a research professor and continue answering questions about the universe.

Question: What was your “aha” moment when you realized you wanted to study physics?

A: I have always been incredibly curious about the world around me. As such, I asked my teachers a lot of questions all throughout grade school. Some of my questions could be answered, but my teachers kept telling me my questions were beyond the scope of the classes. One day, I asked a question regarding the universe as a whole. Rather than brushing my question aside, a teacher said, “I don’t know because no one in existence knows. If you want to figure that out, you’ll have to go to university and be smart enough to answer that question on your own. Let me know when you figure it out.” I realized that it would be up to me to solve those questions myself and that I wanted to dedicate my life to answering them.

Q: What’s something you learned while at ASU — in the classroom or otherwise — that surprised you or changed your perspective?

A: I learned how important it is to surround yourself with the right people. People tell you that college is all about making connections and to try and meet as many people as you can. I did this in high school as well, but I was really surprised at how much better my life got when I found my people. I connect with my friends so much and they really make me a better person.

Q: Why did you choose ASU?

A: I chose ASU because I knew that I could achieve my goals of studying physics while also exploring my related interests. I have taken several classes in philosophy, many classes relating to materials science and engineering, a few in astrophysics and even more in math. I really love that ASU lets me build my broad foundation of knowledge while also supporting my true passions.

Q: Which professor taught you the most important lesson while at ASU?

A: The most important lesson I learned while at ASU was from my research advisor Matthew Baumgart. Among many other valuable lessons, he taught me, “When in doubt, do.” There is really no harm in just trying when you don’t know what your answer should even look like. I was worried that I would waste time getting the wrong answer, but I actually ended up wasting more time waiting to begin.

Q: What was your favorite spot on campus, whether for studying, meeting friends or just thinking about life?

A: My favorite place on campus is the Society of Physics Students club room in the physics department building. What used to be a storage room is now a frequently visited hang-out spot, with walls decorated with physics posters, whiteboards and even a Milky Way galaxy mural that we hand-painted ourselves. Without this room, I would spend much more time at home and without my friends.

Q: If someone gave you \$40 million to solve one problem on our planet, what would you tackle?

A: I would like to fund an international education program for brilliant children and young adults from places around the world where they don't have access to adequate schooling and resources. Intelligence is spread evenly throughout the world, but opportunities are definitely not. Perhaps something like this already exists, but there should be more of it.

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Main image



Olivia Calcerano. Photo courtesy of Meghan Finnerty.