



# the Collage

College of Liberal Arts & Sciences  
Kutztown University

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## Emily Leggiero | Environmental Science Student Highlight

“I like understanding, not necessarily the how, [but] the why,” explains Emily Leggiero, Kutztown University senior Environmental Science major. She found an interest in the geography track within the Environmental Science program. Emily wants to take a bigger step back and look at the influences of ecological and natural processes and why they happen, something a focus in geography allows her to do. “At first, I didn’t know what geography really was. I just thought it was knowing your states and capitals, and where countries are,” she jokes. “I found out that it’s more than that, especially with the Geographic Information Systems (GIS) aspects and cartography. That’s what I’m really interested in and want to pursue after graduation.”

Since she works with GIS software to earn her Geospatial Information Technology (GIT) certificate, she decided to try computer science, learning how to write python scripts and codes. She says this was intimidating, however, since she was only one of four women in her Introduction to Scientific Programming class.

It is important to Emily to be a part of the discussion concerning women in STEM. “I feel like I’m making an impact just by being here,” Emily notes. She believes diversity in any field is important and having one perspective on things can ruin both creativity and the integrity of science. Emily volunteers for the women in STEM symposium held by KU every year so she can help to directly influence and

encourage younger women down this path. “I want to make sure I reinforce that women and their presence should be in this field. The work [for equality] is not done, so that’s why I want to make sure I do my part.”

Emily also feels as though she will have an influence on environmental policies in her career, whether she follows them or writes them directly. To prepare for this, Emily picked up a minor in Bioethics.

“I wanted to have the Bioethics background to understand...why we value the environment in the way we do, what influences this, and how we then can have a positive influence on the environment,” she explains. Having the Bioethics minor will help her to overcome future challenges in her

work, and being able to understand and learn how to communicate complex ideas within the field is a strength she values.

Emily is currently deciding between going to graduate school or going into the field to gain experience and then attend graduate school later in her career. Along with her dedication to academics, Emily is currently planning her wedding, but still finds time in nature on hikes and salamander hunting. Emily’s advocate personality leads her to fight for herself, others, and the environment. She advises her peers to become their own advocates in their academic and personal lives. “There’s been multiple points within just my undergraduate career that I’ve had to step up,” she says. “Just even in day-to-day you really have to know who you are, what your skills are, and what would best suit you, because it’s kind of easy to get pushed around.”

**"I like understanding, not necessarily the how, [but] the why."**



## Kutztown University Celebrates Women in STEM

In honor of Women’s History Month, the March 2023 issue of  
*The Collage* features two women in STEM at KU!





### Dr. Erin Kraal | Physical Sciences Faculty Highlight

When her dream to be an astronaut did not take off, Dr. Erin Kraal, professor of Physical Sciences at Kutztown University, discovered she could study planetary science, specifically looking at the landscapes and atmospheres of planets. “I found that interesting, that you weren’t just looking at a light in the sky, you were really seeing the textures, the landforms,” says Dr. Kraal. “I became really fascinated and remain fascinated by the things that shape the surface of planets.” She focused on planetary research for several years of her career before realizing she wanted to teach and found her way to KU.

Dr. Kraal says it is like choosing her favorite child when asked what her favorite class is to teach. One course she loves teaching is called “Core to the Cosmos: Contributions of Women to Astronomy,” a general education course

co-listed between Astronomy and the Women’s, Gender, and Sexuality Studies program. As a woman in STEM, she feels this class is an important contribution to diversity conversations and providing representation for her students. “Every topic we look at through the lens of a discovery made by a woman,” Dr. Kraal explains. “When most of us open a science book, we don’t see representation of women, of people of color, of people with different life experiences. Very often we get this idea of the singular scientist, the genius.” She says this idea is a misrepresentation on two levels, as it does not show the contributions from different people all over the world, and it also is not how science really works. “Scientists

teaching science and integrating art and creativity into science courses, Dr. Kraal has been a part of a National Science Foundation grant assessing ‘Student Produced Audio Narratives’ (SPAN). Along with KU colleague Dr. George Sirrakos, Dr. Ari Epstein from MIT, and Dr. Laura Guertin from Penn State Brandywine, the grant looks at short, podcast-like projects students create in science courses and why the projects were met with such positive evaluations from students. The data showed it was meaningful for students to have a choice in what they do, as well as to have the ability to be creative in a science class. “[It] really cemented for me this idea that we need to give students choice and opportunities to be creative, because that empowers them, and it causes them to engage with the material and that’s what we want,” notes Dr. Kraal.

**“Be open to where [curiosity] takes you.”**

don’t operate alone,” she comments. “A key aspect of the scientific process is that you must share your results with others and get feedback.... If you’re not in collaboration with other people... you’re not really doing science.” Through teaching the class, her students become familiar with several female scientists, gaining more diverse perspectives.

Dr. Kraal feels it is essential to allow students to have the freedom to be creative and show their unique perspectives throughout science courses. As a part of her ongoing research on

She is also hoping to write a paper about the use of student research notebooks in her collaborative summer course with Dr. Amy Pfeiler-Wunder. The course concerns the integration of art and science within the classroom, and students use notebooks throughout to track their discussions and field experience. Ultimately, she hopes to encourage students and those pursuing tracks in STEM to always be curious and follow their interests. “Be open to where [curiosity] takes you,” says Dr. Kraal. “Don’t be afraid to learn about a new field.”

## Bonus Content

### Women's History Month Feature

Watch some of Emily's Stand-Out  
Student interview with CLAS!

To watch, click the video!

Or go to our YouTube channel:  
<https://youtu.be/ICeRxuWu9XM>

