



Faculty highlight

When Dr. Richard Heineman was an undergraduate student at Grinnell College, he was fascinated by evolution and how it ties all living things together. Now, Heineman is an Assistant Professor of Biological Studies, and he has taken this fascination and integrated it into every aspect of his career from research projects to parody songs.

“Understanding how evolution works and the interplay between bacteria and viruses is going to be hugely important to the effective use of phage therapy which might be very important to treat infections,” said Heineman. Heineman focuses on two areas of study: bacteriophages and pedagogy. Bacteriophages are bacteria that have been infected by viruses.

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As an evolutionary biologist, Heineman studies evolution in viruses in different conditions. He did not want to spend months in nature observing stuff; he wanted to be in the lab, so he decided to focus on viruses. By studying viruses, he can see the quick evolution of them in petri dishes right on the lab bench. The virus he mainly studies is T7 bacteriophage. These viruses stick to the bacteria, infect, reproduce, and then break out and kill the host. Since these bacteriophages are not harmful to humans, they are becoming important in treating antibiotic resistant bacterial infections.

Heineman’s lab work also provides opportunities for students to reach out if they want to pursue a career in biology. “If you want to do research with a professor, ask early and often. A lot of students think that they need to be

very experienced before any professor would be interested in working with them, but that is not necessarily the case.” Heineman has included many students in his bacteriophage research. Not every professor will be able to work with every student that asks but asking is important; it is the first step in getting involved.

Aside from Heineman’s work with bacteriophages, he also focuses on pedagogy. Pedagogy is the study of teaching, and he has found an effective pedagogical strategy through parody songs. “A way of looking at this is why would someone use songs? There are lots of reasons to think that people remember things better when they are in a format where they can use rhyming,” he said.

Heineman developed an interest in parody songs at a very young age. He used to listen to “Weird Al” Yankovic, and he turned in his first assignment in the form of a parody

song in the fifth grade. When he started teaching, he thought that since he enjoyed writing these songs that maybe students would find them helpful in learning course material.

Heineman has a process when it comes to writing songs. First, he chooses a song that both he and his students know and enjoy. The more the students know the original song, the more effective the parody. From there, he tries to find a topic that will fit the message of the song. To finish off, he ensures that the rhyming, lines, and beat are consistent with the original song. He tries to tell stories by using these songs. While he has not completed controlled tests to determine if students are learning more from the songs, students say they are useful, and many have reached out stating how much they enjoyed the songs during class. Heineman has plans for a



Dr. Richard Heineman | Biological Studies

new parody song about how DNA stores the information to make proteins to the tune of Miley Cyrus’s “Party in the USA.”

Heineman’s favorite parody is “Hello, I’ve Metastasized” (to the tune of “Hello” by Adele) which features the evolution of cancer. The original song is about a breakdown in communication between two people, and in Heineman’s song, the cells stop listening to one another. His writing method can be seen through these few lines from the chorus of “Hello, I’ve Metastasized”:

Hello from the other side

I’ve divided a thousand times

*But when you call and say
that I’ve gotta slow down*

*I don’t listen ‘cause my genes
have had a breakdown*

Heineman hopes to someday produce a CD or possibly a series of music videos to record his songs professionally and make them available to more instructors and students. Bacteria and viruses can be complicated to understand, but Heineman is combining his passions for living things, evolution, and parody songs to tell these stories to everyone around him.

Student highlight

For Senior English major Cynthia Diaz, reading has always been easy, so she assumed majoring in English was a logical choice. Despite the challenges she has faced along the way, Cynthia has taken this love for reading and completed interdisciplinary research in History.

Early in her career at Kutztown, Cynthia struggled with the transition from high school to college. But after taking two history courses with Dr. Christine Saidi on African Studies, she not only improved her GPA but also quickly became interested in the subject of gender in early African history. After those courses, Dr. Saidi reached out to Cynthia and asked her to help with the research for her upcoming book entitled *Family Beyond Gender*. Cynthia's research position and the book



Cynthia Diaz | English

anthropologists from 1900 to 1970, to find the necessary information.

Throughout the project, Cynthia was not under any direct supervision or clock in hours. The work was all up to her. During most of summer 2019, Cynthia received stacks of research

Also, Cynthia developed stronger research skills. At the beginning of the process, it would take her quite some time to find the answers she needed within the readings, but by the end of the project, the process became much easier.

Cynthia is proud of the excellent work she did, but she is most proud of her newly acquired knowledge on Bantu Africa. According to Cynthia, a lot of information about Africa and its different cultures and countries is misinterpreted. Her work on this project is one step closer to righting those wrongs.

Dr. Saidi was very impressed with Cynthia's work during her classes, and she knew Cynthia would be fantastic in this position. "I wanted her to realize how very smart she is and give her some real research experience," said Dr. Saidi. "Sometimes woman students need to be reminded how smart they are."

While Cynthia is not one of the contributing authors for *Family Beyond Gender*, she will receive a dedication within the acknowledgements for all her hard work. She loved and learned so much from this experience, and Cynthia hopes to do work like this again—ideally on a different topic so she can continue learning more about the world. As she looks forward to her last few classes at Kutztown, she is currently researching graduate schools in hopes of taking the next steps to become a university English professor.

Some people may think they do not have the time to participate in a research project or that they are not in the position academically to do so. However, according to Cynthia, all you have to do is give it a chance, follow what you love to do, and put in the time and effort.

"I was learning things that I never even imagined."

itself was funded through the National Endowment for the Humanities.

Cynthia's tasks for the research project involved extensively reading about Bantu African social institutions from the distant past until 1900. Dr. Saidi asked Cynthia to look for specific information, especially examples of Bantu vocabulary, oral traditions, and the cultural impact of female rites of passage. Cynthia carefully examined the research, such as first-hand observations of colonial

material, and she dedicated a few hours each day at home to reading and answering Dr. Saidi's questions.

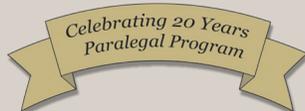
"I was learning things that I never even imagined," said Cynthia. She enjoyed the research because she was able to combine her love for reading and her desire to learn new things. Aside from learning about social institutions in Bantu Africa, she also practiced time management. She had to sit for hours with only one focus, so she needed to keep herself on track.



Celebrating 20 Years of Paralegal Partnership

On November 20th, the Kutztown University department of Political Science and Public Administration and Lehigh Carbon Community College celebrated the 20th anniversary of their Paralegal Studies program. Over the last two decades, they have partnered to provide students with the knowledge and opportunity to become strong paralegals. KU and LCCC also partner through the English, Criminal Justice, History, and Psychology departments to offer students even more opportunities to pursue various positions where legal knowledge and skills are required.

KU department chair of Political Science and Public Administration Dr. Steve Lem and LCCC Professor Diane Tallarita are current program coordinators of this amazing collaboration.



The December 2019 edition of *The Collage* was designed, edited and written by Courtney Morstatt '21, Professional Writing major, under the supervision of the CLAS Dean's Office.