Kristina Ferrara ‘16

You’ve probably never heard of *Pseudomonas aeruginosa* or *Clostridioides difficile*, but Kristina Ferrara ‘16 knows these bacteria inside and out.

After graduating from Ursuline Academy in 2016 as her class’s salutatorian, Kristina went on to study at Rensselaer Polytechnic Institute (RPI). At RPI, Kristina networked with professors and was able to secure a competitive research position in a microbiology lab on campus. It was in this lab that Kristina began studying the bacteria *Pseudomonas aeruginosa*, learning how the bacteria operates and strategizing how best to combat it. This bacteria is opportunistic, meaning that it targets those with weakened immune systems, especially people afflicted with cystic fibrosis. *Pseudomonas aeruginosa* is resistant to many antibiotics, which makes Kristina’s work that much more urgent.

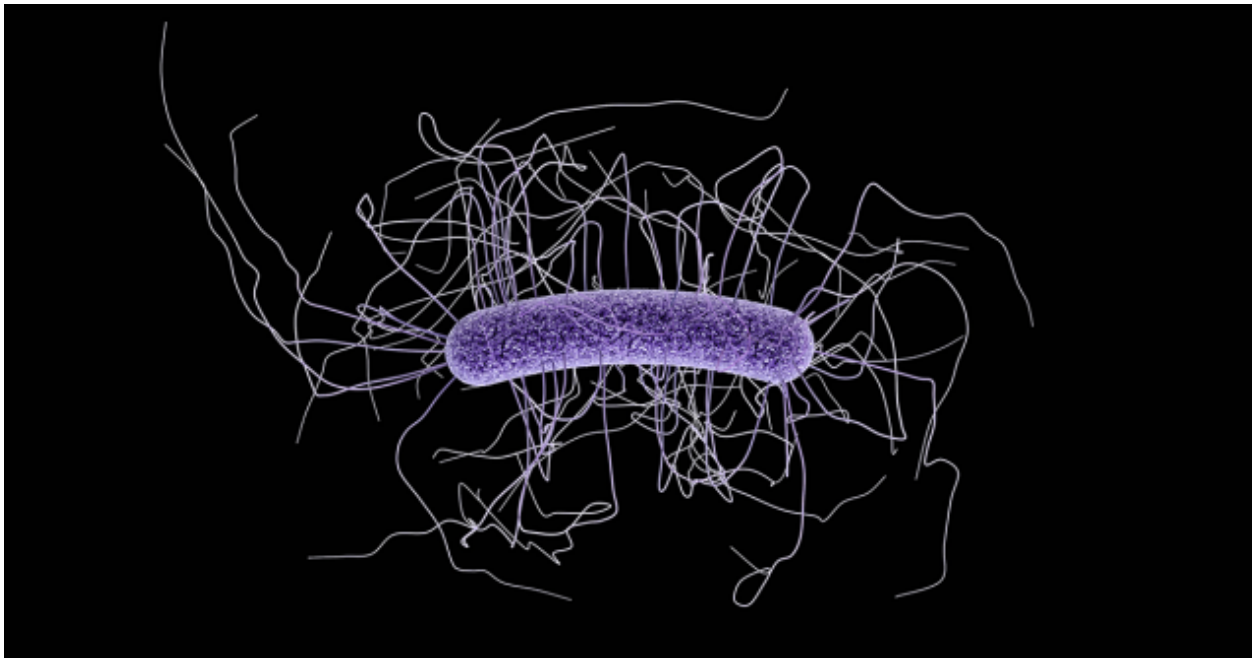
Kristina graduated from RPI in 2020 with Bachelor of Science degrees in Biochemistry and Biophysics and was the recipient of RPI's Roland Walker Prize, which is awarded to a senior in the Department of Biological Sciences for outstanding scholarship.

Pseudomonas aeruginosa
Photo from the CDC

After graduating from RPI, Kristina accepted a research position at Massachusetts General Hospital within the Infectious Disease Program of the Broad Institute of MIT and Harvard, during the height of the COVID-19 pandemic.

At the Broad Institute, Kristina continued researching *Pseudomonas aeruginosa.* However, the research Kristina conducted at the Broad Institute was more translational to the general public than the research she had completed during her undergraduate career. Kristina found this shift to be inspiring and rewarding. "I want to help people," she says. "I realized what I truly love is not research for the sake of researching, but research that can help people in the real world." Kristina spent a total of three years at the Broad Institute.

In 2023, Kristina began a new chapter of her career. She joined Yale University as a PhD candidate studying Microbiology. At Yale, Kristina is currently investigating a different bacteria: *Clostridioides difficile* (C. Diff). This species causes severe intestinal infections and is more common than *Pseudomonas aeruginosa*. Kristina's program at Yale does not have a specific end-date; it will be guided by the trajectory of Kristina's research. At the moment, Kristina can be found working diligently in Yale's microbiology labs, as she works to understand each facet of the bacterium.



Clostridioides Difficile
Photo from the CDC

Before her time at Yale, the Broad Institute, and RPI, Kristina was a bright and shy ninth-grader walking onto the Ursuline campus for the first time. Kristina joined our Ursuline community in 2012. She participated on the Robotics Team and played percussion in the Chamber Ensemble. Kristina loved her time at Ursuline; she fondly reflects on the trip she and her classmates took to New York City during their sophomore year, the lifelong friendships she made, and the extracurriculars she pursued. Kristina emphasizes the importance Ursuline's rigorous academics played in preparing her for college. RPI, where Kristina received her undergraduate degrees, is a male-dominated school, with a gender ratio of about 70/30. Kristina states that she was able to participate confidently in these male-dominated courses because she had experience directing class discussions and voicing her ideas at Ursuline. As Kristina puts it: "Ursuline's all-girls academics allowed me to go out into the real world and know that I was qualified and worthy to be there."

When asked to share advice to Ursuline students considering their futures post-graduation, Kristina said the following: "Be open to trying different fields and classes." For those interested in science, specifically research, Kristina urges students to get involved in the research field as early as possible. It is a competitive field and it is not for everyone. By getting experience early, a student will have more insight about whether it is the right path for them.

Kristina feels lucky for the opportunities she has been given, lucky for the teachers and professors that have encouraged her along the way, lucky to have access to the resources and research positions that allow her to conduct the experiments she loves so dearly. While it may be true that Kristina is lucky, it is clear that Kristina is where she is today because of her incredible work ethic, passion for science, and fierce determination to succeed in the competitive, oftentimes cutthroat, male-dominated world of research. To maintain such grace, gratitude, and humility in such a world is a true accomplishment and a testament to the character of an Ursuline woman and scholar.

Ursuline Academy is proud of Kristina for her brilliance in research and accomplishments in the academic world. Most importantly, Ursuline applauds Kristina for her embodiment of *Serviam* in everything she does — for it is giving back to others that is at the heart of Kristina's passion for science, working to ease the suffering of those afflicted by different bacterial infections with the objective of finding ways to combat it and cure illness.