HOOKE COLLEGE™ OF APPLIED SCIENCES

Chemical Microscopy Degree

The Ideal Blend of Academic and Practical Training

At a Glance

Hooke College and North Central College collaborate to offer America's first four-year college degree in Chemical Microscopy, which includes one year of coursework alongside industry professionals.

Marissa Bartz (center) attends PLM class alongside industry professionals and other college students.

The media reports about the ever widening skills gap, the skills employers need and the ones workers actually have, has been a source of concern over the past several years. The 3+1 Chemical Microscopy program, a collaborative effort between Hooke College of Applied Sciences (HCAS) and North Central College (NCC), is helping to bridge this gap.

Chemical Microscopy majors complete the first three years of their undergraduate degree at North Central College. The course work provides students with a liberal arts and science background that serves as the foundation for the final year of study at Hooke College of Applied Sciences. At HCAS, each course is a week-long intensive class followed by a practicum project that puts the recently learned skills into practice, creating a project-based learning experience. "I think that the combination of the liberal arts education at NCC and the unique class structure at Hooke College really gave me a one-of-a-kind way to address the problems people encounter on the job. The liberal arts and science education at NCC showed me how different disciplines connect, and Hooke College showed me how theoretical knowledge is the basis for the practical solution to any problem. This combination allows me to look at a challenge from many angles before deciding the best approach," said Marissa Bartz who graduated with a bachelor's degree in Chemical Microscopy.

Bartz has always appreciated fine art in all forms: paintings, sculptures, textiles, photographs, books, and items that bring beauty to daily life. "Because I wanted to go into museum studies or art conservation, I knew I would need a strong science background. I started by visiting the chemistry department at North Central College (NCC). It did not take long after talking to Dr. Jankowski, NCC's chemistry department chair, before I knew Chemical Microscopy would be the right major for me."

Students at HCAS each have their own microscope work stations, and collaborate in small groups of three or four students on the larger instruments. "At NCC my science classes were about 75% lecture and 25% lab; it is the exact opposite at HCAS. The alignment of lecture and lab happens more naturally, and students spend a lot more time actually using the instruments."

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While the hands-on approach helps keeps students engaged in learning, it is the connections with industry professionals that stand out as an advantage for Marissa. "Working with people in industry allows the 3+1 students to hear about different types of jobs and positions that are available in labs around the world. It also adds context to what we are learning because the industry professionals ask questions about their real work problems."

Marissa was a College Scholar at North Central College. Beyond taking honors courses, she was part of a community that values enrichment opportunities and individual achievement. College Scholars complete an honors thesis during their senior year which serves as a culmination of their undergraduate studies. "My honors thesis topic changed course while at Hooke College because I realized I was not confined to a research-based project. Once I knew how to run the analytical instruments, I was able to develop a thesis project that applied directly to my career path. I was able to work with many research grade instruments—an experience that is not available to most students until graduate school."

Bartz's advice to chemistry students interested in the 3+1 program is to be sure you have the commitment and drive it takes to be successful in a program that combines immersion with professionals. "It's a great program, but takes a lot of self-motivation and organization to complete your work. There is a lot of support available, but you are ultimately responsible for your own success."

After spending a year at HCAS Marissa came to value the many applications of the knowledge she acquired at HCAS. "People on the Hooke College staff have worked in many different industries. They have resources and connections with so many people. They provided me with the guidance I needed to consider a wider range of career options." Marissa has accepted a Graduate Tuition Scholarship at Syracuse University. She will earn her Master of Arts in museum studies while enjoying more opportunities to apply her unique skill set to art.

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During a crystallography course, Scientist Emeritus for the U.S. Geological Survey and HCAS Instructor Dan Kile (center) explains the universal microscope stage to students including Marissa (left), Brent Platt (second from right), a college student from Concordia Univeristy–Chicago, and industry professionals.

Marissa aligns a polarized light microscope.