

Chemical Education

Doctor of Philosophy



Mentorship, Scholarship and Leadership

As one of the first universities in the U.S. to offer a Ph.D. in chemical education, UNC provides superior training for research in the teaching and learning of chemistry. You'll get exceptional guidance and mentoring in this specialized discipline, and build a well-rounded skill set that helps you stand out in the job market. Every one of our recent graduates has landed a position in their field. UNC's chemistry education program excels due to the extraordinary

commitment of our faculty. You'll build strong relationships with experienced academicians and teacher scholars who provide research collaboration, professional mentorship collaboration, and career counseling.

The program integrates qualitative and quantitative research with practical training in college-level course design and teaching. All of our Ph.D. candidates submit at least one manuscript—based on original research—for publication in a peer-reviewed journal.

Career Pathway

With a Ph.D. in Chemical Education, you can help to shape the future of STEM education at the elementary, secondary or post-secondary levels. National policy makers have identified STEM education as a strategic priority. This degree takes advantage of the demand by developing graduates with strong skills in research design, investigation and implementation in the field of chemistry and biochemistry. Graduates are well suited for careers in academia or within the education sectors of industry and government.

Degree Options

- **B.S. to Ph.D.** - Open to students who do not yet have a master's degree, this option includes coursework in advanced chemistry, pedagogy, research methodology and statistics. Students will complete a master's thesis based on research in chemistry, as well as a doctoral dissertation on a research topic in chemical education.
- **M.S. to Ph.D.** - For students who already have a master's degree in chemistry or biochemistry, this option includes training in course design and classroom instruction, methods and statistics in research program design, as well as research experience culminating in a doctoral dissertation.

Program Details

- Greeley Campus Delivery
- Credits Required: 60-94
- Time to Completion: six-eight semesters from M.S. degree
- Classes Start: Fall semester

Related Programs

- Chemistry: Education, M.S.
- Biological Sciences, M.S.
- Biological Education, Ph. D.
- Chemical Education, Ph.D.

Cost and Value

Tuition rates are based on the 2021-22 Academic Year:

Colorado Resident Tuition: \$685 per credit hour plus fees.

Nonresident Tuition: \$1,296 per credit hour plus fees. You may qualify for CO resident tuition — see WRGP information at right.

UNC is regularly called out as a top value for both resident and nonresident students, and the university offers financial aid packages for qualified students. For more information, visit [UNCO.EDU/COSTS](https://unco.edu/costs).

What Students Say

“The Ph.D. program in chemistry education provided me with knowledge of assessment methods and educational psychology. During my doctoral studies, I also had a chance to co-teach a course with one of the UNC faculty. This experience provided me with an opportunity to engage students in their education, organize course materials in a logical manner and confirmed my desire to teach students as a career. I had excellent opportunities to discover myself both as a teacher and a researcher at the University of Northern Colorado.”

-Alexey Leontyev, 2015, Ph.D. Chemical Education

Financing your Education

- The Department of Chemistry and Biochemistry offers competitive assistantships to well-qualified candidates. These assistantships are typically assigned for teaching undergraduate laboratories, but assistantships for research and administrative work are also available.
- Limited scholarships and grant funding in support of graduate research are also available.
- Colorado resident tuition for students from 15 western states is offered through the Western Regional Graduate Program. To see if you qualify visit [UNCO.EDU/GRADUATE-SCHOOL/FUNDING/WESTERN-REGIONAL-GRADUATE-PROGRAM.ASPX](https://unco.edu/graduate-school/funding/western-regional-graduate-program.aspx)
- For more information contact Financial Aid at [UNCO.EDU/OFA](https://unco.edu/ofa).

Faculty Spotlight

Melissa Weinrich, Ph.D.

Like many people I got into chemistry because of a really excellent teacher. Now I study how students learn chemistry. Projects in my group range from using eye-tracking technology to investigate how people interact with chemical representations such as organic reaction mechanisms, to studying best practices for chemistry instruction for blind students. At UNC you could participate in these projects or develop other research projects related to learning, teaching, and assessing in chemistry. My favorite part of my work at UNC is interacting with students. I like to help struggling students learn that it's OK to struggle.

Program Contact

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About UNC Graduate School

The University of Northern Colorado, founded in 1889, is Colorado's right-sized doctoral research university, serving a diverse student body around the world. Given its size, program mix, and mission, UNC offers students the access and opportunities of a small college along with the nationally recognized programs, research funding and facilities that come with being a leading U.S. university. Students seeking preparation for a world (and workplace) full of opportunities and options, complexities and cultures, diversity and demands, will find faculty mentors and excited fellow students to engage with here at UNC.

UNC

UNIVERSITY OF NORTHERN COLORADO

Graduate School

[UNCO.EDU/GRADUATE-SCHOOL](https://unco.edu/graduate-school)