

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).  
See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**TRIAL COURSE OR NEW COURSE PROPOSAL**  
(Attach copy of syllabus)

**SUBMITTED BY:**

Department	Chemistry and Biochemistry	College/School	CNSM
Prepared by	Sarah Hayes	Phone	907-474-7118
Email Contact	<a href="mailto:s.hayes@alaska.edu">s.hayes@alaska.edu</a>	Faculty Contact	Sarah Hayes

1. ACTION DESIRED (CHECK ONE): Trial Course ☐ New Course ☒

2. COURSE IDENTIFICATION: Dept CHEM Course # 686 No. of Credits 2

Justify upper/lower division status & number of credits:

This course enhances graduate student mentoring skills through the introduction of mid-level undergraduates to research. The course will consist of 1 hour lecture, 3 hours lab, 1 hr discussion.

3. PROPOSED COURSE TITLE: Chemical Research Mentoring

4. To be CROSS LISTED? YES/NO no If yes, Dept: Course #

NOTE: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

5. To be STACKED?\* YES/NO no If yes, Dept: Course #

How will the two course levels differ from each other? How will each be taught at the appropriate level?:

\* Use only one Format 1 form for the stacked course (not one for each level of the course!) and attach syllabi. Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi (undergraduate and graduate versions) will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

6. FREQUENCY OF OFFERING: Springs  
Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (Effective AY2015-16 if approved by 3/31/2015; otherwise AY2016-17)

AY 2016-17

RECEIVED

SEP 18 2015

**8. COURSE FORMAT:**

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the Core Review Committee.

COURSE FORMAT: (check all that apply) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc) 1 hr lecture, 3 hrs lab, 1 hr discussion

9. CONTACT HOURS PER WEEK: 1 LECTURE hours/weeks 3 LAB hours/week PRACTICUM hours/week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-guidelines-for-computing/> for more information on number of credits.

OTHER HOURS (specify type) 1 hr discussion

Dean's Office  
College of Natural Science & Mathematics



10. **COMPLETE CATALOG DESCRIPTION** including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

Example of a complete description:

FISH F487 W, O Fisheries Management

3 Credits Offered Spring

Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. *Prerequisites:* COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor. Cross-listed with NRM F487. (3+0)

**CHEM 686 Chemical Research Mentoring**

**2 Credits Offered Spring**

This course provides graduate students the opportunity to mentor undergraduates in chemical research within a structured environment, from developing a research idea to executing a small research project. The focus of this course is to refine mentoring skills that contribute to the professional development of maturing chemical professionals. (1+3)

11. **COURSE CLASSIFICATIONS:** Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

YES:

NO:

X

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6

W = Writing Intensive, Format 7

X = Baccalaureate Core

11.A Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.

YES

NO

X

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES

X

NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

Mentees would vary from semester to semester, so mentors would be offered a different mentoring experience.

How many times may the course be repeated for credit?

1

TIMES

If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course?

4

CREDITS

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?

CREDITS

13. **GRADING SYSTEM:** Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change – Format 2 form.

LETTER:

X

PASS/FAIL:

**RESTRICTIONS ON ENROLLMENT (if any)**

14. **PREREQUISITES**

Graduate standing in a scientific discipline

These will be required before the student is allowed to enroll in the course.

15. **SPECIAL RESTRICTIONS, CONDITIONS**

16. **PROPOSED COURSE FEES**

\$0

Has a memo been submitted through your dean to the Provost for fee approval?

Yes/No

no

17. **PREVIOUS HISTORY**

Has the course been offered as special topics or trial course previously?

YES



Yes/No

If yes, give semester, year, course #, etc.:

Offered as a trial course, CHEM 694 in Spring 15 and 16

**18. ESTIMATED IMPACT**

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

This course requires 2 credits of workload for the instructing faculty (shared with proposed 288). It will also require the use of a teaching laboratory in the Chemistry Department for 3 hours per week and a projector-equipped classroom for 1 hr per week in the semester delivered.

**19. LIBRARY COLLECTIONS**

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No

☒

Yes

☐

Current library collection is adequate for the course. This course will rely heavily on electronic subscriptions to primary literature.

**20. IMPACTS ON PROGRAMS/DEPTS**

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

The primary department affected is the Department of Chemistry and Biochemistry. This course is highly regarded by students from the trial offering and students report feeling better prepared to mentor undergraduates in research and regard this course as important to their professional training.

**21. POSITIVE AND NEGATIVE IMPACTS**

Please specify **positive** and **negative** impacts on other courses, programs and departments resulting from the proposed action.

Positive: This course and the paired CHEM 288 (Introduction to Chemical Research) provide essential skills to undergraduate and graduate students in these programs and formally provide excellent skills that complement the existing professional training.

This course (offered as a trial in Spring 2015) has been successful in preparing students for the required CHEM 488 (Chemical Research) course.

Negative: This course requires 2 units of faculty workload and lab and lecture space in the chemistry department (see above).

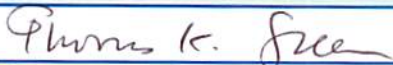

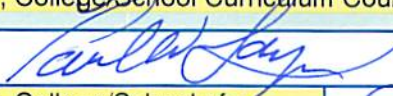
**JUSTIFICATION FOR ACTION REQUESTED**

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

Soft skills are increasingly prized in the workplace, regardless of career track, and CHEM 686 focuses on formally building mentoring skills in graduate students as part of their professional development. This course provides both formal mentoring training and hands-on experience mentoring mid-career undergraduate students (enrolled in CHEM 288). Graduate students will refine and articulate their understanding of the research process through teaching research-planning related lectures as well as mentoring a few (1-3, depending on enrollment) undergraduate students throughout the course. Graduate students in this course will formally mentor mid-level undergraduate students (enrolled in CHEM 288) through planning and executing a research project. Mentoring is a key skill that will serve our graduates throughout their professional careers.



**APPROVALS: Add additional signature lines as needed.**

	Date	9-18-15
Signature, Chair, Program/Department of: CHEMISTRY & BIOCHEMISTRY		
	Date	9-28-15
Signature, Chair, College/School Curriculum Council for: CNSM		
	Date	9/28/15
Signature, Dean, College/School of: CREN		

**Offerings above the level of approved programs must be approved in advance by the Provost.**

	Date	
Signature of Provost (if above level of approved programs)		

**ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE**

	Date	
Signature, Chair Faculty Senate Review Committee: ___Curriculum Review ___GAAC ___Core Review ___SADAC		

**ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)**

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for:		
	Date	
Signature, Dean, College/School of:		

**ATTACH COMPLETE SYLLABUS (as part of this application).** This list is online at:  
<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

#### **SYLLABUS CHECKLIST FOR ALL UAF COURSES**

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

##### **1. Course information:**

☐ Title, ☐ number, ☐ credits, ☐ prerequisites, ☐ location, ☐ meeting time  
(make sure that contact hours are in line with credits).

##### **2. Instructor (and if applicable, Teaching Assistant) information:**

☐ Name, ☐ office location, ☐ office hours, ☐ telephone, ☐ email address.

##### **3. Course readings/materials:**

☐ Course textbook title, ☐ author, ☐ edition/publisher.  
☐ Supplementary readings (indicate whether ☐ required or ☐ recommended) and  
☐ any supplies required.

##### **4. Course description:**

☐ Content of the course and how it fits into the broader curriculum;  
☐ Expected proficiencies required to undertake the course, if applicable.  
☐ Inclusion of catalog description is *strongly* recommended, and  
☐ Description in syllabus must be consistent with catalog course description.

##### **5. ☐ Course Goals (general), and (see #6)**

##### **6. ☐ Student Learning Outcomes (more specific)**

##### **7. Instructional methods:**

☐ Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

##### **8. Course calendar:**

☐ A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

##### **9. Course policies:**

☐ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

##### **10. Evaluation:**

☐ Specify how students will be evaluated, ☐ what factors will be included, ☐ their relative value, and ☐ how they will be tabulated into grades (on a curve, absolute scores, etc.) ☐ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":

[http://www.uaf.edu/files/uafgov/Info-to-Publicize-C\\_Grading-Policy-UPDATED-May-2013.pdf](http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf)

##### **11. Support Services:**

☐ Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

**12. Disabilities Services:** Note that the phone# and location have been **updated**. <http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

☐ State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655) to provide reasonable accommodation to students with disabilities.

5/21/2013



**CHEM 686: Chemical Research Mentoring**

**Course Name:** CHEM 686: Chemical Research Mentoring  
**Credits:** 2 credits  
**Prerequisites:** Graduate standing in scientific discipline  
**Lecture:** Monday 11:45- 12:45, REIC 138  
**Lab:** Monday 2:15-5:15, REIC 245  
**Discussion:** Friday 1-2pm, REIC 300

**Instructor:** Dr. Sarah Hayes  
**Office:** Reichardt 188  
**Phone:** 907-474-7118  
**Email:** s.hayes@alaska.edu  
**Office Hours:** TBD, By appointment, or drop by when my door is open

**Blackboard Link:** <http://classes.uaf.edu>

**Course website:** <http://chemresearch.community.uaf.edu>

**Required materials:** On Being A Scientist: A Guide to Responsible Conduct in Research, 3<sup>rd</sup> ed.  
The National Academies Press: Washington DC. ISBN: 978-0-309-11970-2  
**\*\* text book on reserve in Rasmussen Library for 2 hr in-library\*\***

**Catalogue Course Description:** This course provides graduate students the opportunity to mentor undergraduates in chemical research within a structured environment, from developing a research idea to executing a small research project. The focus of this course is to refine mentoring skills that contribute to the professional development of maturing chemical professionals.

**Expanded Course Description:** This course is paired with CHEM 288 (Introduction to Chemical Research) and provides graduate students in scientific disciplines the opportunity to mentor undergraduates in chemical research within a structured environment. Graduate students mentor mid-level undergraduate students (enrolled in CHEM 288) in all phases of planning and executing an independent research project. Students in this course will mentor undergraduates in developing a research idea, reviewing topical primary literature, posing a testable hypothesis, planning an experiment, and executing a small research project. The focus of this course is to refine mentoring skills that contribute to the professional development of maturing colleagues. Mentoring skills are an important part of professional training regardless of your future career path.

**Instructional Methods:** Students will each be assigned 1-3 undergraduate students (depending on enrollment in CHEM 288 and student interests) to mentor in developing and executing a research project. The emphasis of this course is on planning a research project and students will also be responsible for presenting lectures to CHEM 288 students providing information on topics relevant to project planning.

**Course Goals:** Students will mentor undergraduate students in developing and testing a hypothesis to develop mentoring skills. Through teaching research relevant skills, students will refine their own understanding of the research process.

**Student Learning Outcomes:**

## CHEM 686: Chemical Research Mentoring

- Improve mentoring skills and be ready to mentor junior students in their own research groups.
- Refine understanding of the research process that can be applied to their own research project.

**Instructional Methods:** Students will each be assigned 1-3 undergraduate students (depending on enrollment in CHEM 288 and student interests) to mentor in developing and executing a research project. The emphasis of this course is on planning a research project and students will also be responsible for presenting lectures to CHEM 288 students providing information on topics relevant to project planning.

**Example CHEM 288 Student Projects:** Student project topics will vary based on the expertise of graduate students and vary each semester.

- Investigation of toxic metals present in mine tailings as a function of particle size, which affects transportability, solubility, and bioaccessibility. This would involve drying soils, size separation using sieves and settling rate in water. Each size fraction could then be analyzed for elemental composition using bulk X-ray Fluorescence by preparing a pressed pellet.
- Investigation of chemical moieties present in size fractionated aerosol particulate samples by acid digestion and subsequent analysis by Inductively Coupled Plasma- Mass Spectrometry. Determining the size fractions metals are associated with is a critical component of determining the distance traveled by particulate matter.

### Course Evaluation:

There are **500 total points available** in this class. Grades are assigned as follows: 500-450 A, 450-400 B, 400-350 C, etc.

Assignment	Points
Research introduction	50
Participating in mentoring discussion group	50
Lab rotation plan, execution, and reflection	100
Feedback on mentee assignments	50
Lecture	200
Mentoring evaluation	50
<b>Total</b>	<b>500</b>

Research introduction- Prepare and deliver a 10-15 minute presentation on your research area and project.

Mentoring discussion group- Students will participate in weekly mentoring discussion group based on the Howard Hughes Medical Institute short course entitled "Entering Mentoring."

Lab rotation activity- Students will design and execute an informative and engaging lab-based activity for CHEM 288 students to participate in their research project. Students are encouraged to select an experiment that involves using an interesting instrument (fluorescence microscope, GC-MS, etc). Afterwards, students will perform reflection activities.

Lecture- Students will use materials provided to design and deliver one lesson on a research topic of their selection from the topics covered in the course.

Feedback on mentee writing- Students will review undergraduate assignments and provide substantive comments, both positive and negative, and concrete suggestions for improvement. Assignments that will be reviewed include: literature review, project plan, research proposal.

## **CHEM 686: Chemical Research Mentoring**

**Mentoring Evaluation**- An overall evaluation of mentoring skills will be provided through mentee and course evaluations, and self-reflection. Students will submit a written self-reflection, then meet with the instructor to go over written comments from mentees at the end of the semester.

Points associated with the **Lab Rotation**, **Lecture**, and **Mentoring Evaluations** will be assigned by the instructor, with based on of student preparation for the activity (materials submitted by CHEM 686 students), delivery of activity either based on instructor judgment or directed evaluations from undergraduates in CHEM 288, and on the basis of student self-evaluations.

### **Course Policies:**

**Classroom Behavior and Late work** - Students are expected to conduct themselves in a professional manner at all times. Disrespect of the classroom learning environment, instructors or mentees, and fellow students will not be tolerated! Late work is not accepted in an effort to keep the entire class moving though the projects efficiently. Continued attendance to class indicates each student agrees to the policies set forth in this syllabus.

**Instructor-Initiated Withdrawals**- Any time up to and including Friday, March 13, the instructor has the right to withdraw a student that "...has not participated substantially in the course."

**Honor code and Academic integrity**- Students are expected to conduct themselves in accordance with the UAF Honor code. The Chemistry Department policy states: *Any student caught cheating will be assigned a course grade of F. The students' academic advisor will be notified of this failing grade and the student will not be allowed to drop the course.*

**Disability Services**- I will work with the Office of Disabilities Services (208 Whitaker Bldg, 474-5655) to provide reasonable accommodation to students with disabilities. It is the student's responsibility to make an appointment with me to discuss appropriate accommodations within the first two weeks of the first class meeting. A letter from disabilities services must be provided for discussion at that time.

**Veteran Support Services**- Walter Crary (wecrary@alaska.edu) is the Veterans Service Officer at the Veterans Resource Center (111 Eielson Building, 474-2475). Fairbanks Vet Center 456-4238. VA Community Based Outpatient Clinic at Ft. Wainwright is 361-6370.



**CHEM 686: Chemical Research Mentoring**
**Tentative Schedule**

Date	Week	Task(s)		
		Lecture (M 11:45-12:45)	Lab (M 2:15-5:15)	Mentoring (TBD)
Jan 26	1	Introduction and course details	288- Safety training (Spencer Library) 686- Mentoring training (Runcorn Room)	
Feb 2	2	Introduction to planning research and safety in the research lab <b>686: Lab rotations plan</b>	Mentor research introductions <b>686: Research introductions</b>	Intro to mentoring
Feb 9	3	Project funding <b>288: Mentor preferences</b>	Lab rotations 1	Expectations and communication
Feb 16	4	Keeping records <b>288: ID funding target &amp; template</b> <b>686: bring notebooks as example</b>	Lab rotations 2	What is a mentor?
Feb 23	5	Surveying primary literature <b>288: research topic</b> <b>288: lab rotation summaries</b>	Literature search 1 <b>686: lab rotations self reflection</b>	Scientific Ethics
Mar 2	6	Stating a testable hypothesis	Literature search 2	Challenging situations
Mar 9	7	Experimental design <b>288: project idea</b>	Brainstorming projects <b>686: brainstorming notes (after lab)</b>	Addressing problems
Mar 16-20		Spring Break		
Mar 23	8	IRB, IACUC and Compliance issues <b>288: literature review</b>	Planning experiments	Diversity
Mar 30	9	Writing a procedure <b>686: bring a procedure example</b>	Planning experiments <b>686: lit review feedback</b>	Evaluating progress
Apr 6	10	What is science? <b>288: Project Plans- SOP and safety</b>	Review project plans <b>686: project plan feedback</b>	Elements of good mentoring
Apr 13	11	Statistical analysis of data <b>288: revised project plans &amp; lit rev.</b>	Experiments	Helping students communicate
Apr 20	12	Scientific ethics, research ownership, authorship	Experiments	Sharing philosophies
Apr 27	13	Science and society <b>288: research proposal</b>	Peer review and proposal revision <b>288/686: peer review of proposal drafts</b>	Teaching science
May 4	14	Careers in Science <b>288: Final proposal</b>	Practice presentations with mentors <b>288/686: course evaluations</b>	
May 7 Thurs		Final Exam 10:15-12:15: <b>CHEM 288 student presentations</b> Final Exam 1-3pm: mentor exit interviews		

**What Worked and What Didn't**  
**Proposed CHEM 288/CHEM 294: Introduction to Chemical Research**  
**Proposed CHEM 686/CHEM 694: Mentoring in Chemistry**  
**Spring 2015**

The goal of this course was to create a gateway for students to get involved with research earlier in their educational careers and better prepare them for the required course Chemical Research (CHEM 488) while maintaining a sustainable amount of effort on the part of the faculty. This led to the development of two paired courses, CHEM 294: Introduction to Chemical Research and CHEM 694: Mentoring in Chemistry. This model effectively lowers the activation barrier for undergraduates to get involved in research earlier in their education, provides mentoring training an experience for graduate students, and requires a sustainable amount of effort from faculty in the department.

The first offering of these courses in Spring 2015 were highly successful, based on anonymous exit surveys held until grades were posted and personal communications, popular with students in both courses and all students either agreed or strongly agreed they "would recommend this course to their peers." Of the 8 students in the initial offering, 5 have submitted their proposals and ALL have been funded, some on multiple times. After completing CHEM 294, all students strongly agreed that they "feel better prepared for CHEM 488: Chemical Research."

The only requested changes or expression of dissatisfaction from students were in website organization and in the lack of an individualized schedule for turning in assignments. I plan to improve the website based on specific student comments before the next offering as well as offer better tutorial of website navigation on the first day of the course. The individualized progression of students through the course will, I believe, be less of a problem in future offerings. In the first offering, we had students taking the course who were applying to graduate school and students who had never set foot in a research lab. We were able to meet the needs of all students successfully, but I envision that, as this course becomes an established part of the curriculum, students will likely be mostly the second year students we are targeting.

Below find quotes from students taking CHEM 294 and CHEM 694 in Spring 2015. These quotes were selected on the basis of being the most concise or articulate. Students unanimously loved this course!

**CHEM 294: Introduction to Chemical Research**

The CHEM 294/694 as a whole was probably the most professional class I have ever taken. It was challenging however it remained enjoyable with a goal and a consistent workload. The class felt empowering and I learned a lot. I would definitely recommend it to my peers.

I actually felt like I was part of a team effort. I felt like I was contributing to the field as a whole, in a tiny way. I felt like I was getting exposure to how it is to be a chemist. This was all very exciting and informative.

I feel like CHEM 294 gave me an understanding of research.... I feel much more prepared for CHEM 488 now and will be more efficient in conducting my research because of this class.

This class is an introduction to a whole new world... Having our own project seemed liberating and encouraged me to learn and succeed.

Great class for students who want to do research.



It was a great confidence boost having someone to work with and refer to if I had any questions or needed help.

“Tapping” their [mentor’s] experience for a smoother transition into research was priceless!

This class was my Segway into grad school and scientific research.

Intro to research not only allowed me to break the ice and network with amazing graduates, but personally develop the skills and confidence needed to tackle a research project that once seemed too intimidating. The academic mentor I met through CHEM 294 not only was an invaluable resource for my undergraduate research, but became a personal friend as well. Dr. Hayes was crucial for making that connection possible, and going above and beyond to help 10+ students/mentors develop and grow together.

### **CHEM 694: Mentoring in Chemistry**

I appreciated the formal training in mentoring, especially being able to have one day a week to consult with peers and go through case studies. It was also a great opportunity for me to share my research and get experience in planning a lab and lecture.

I would definitely recommend this course to my peers. I think it was very worthwhile, although doing the course and TAing stretched me a bit thin last semester. I feel like I gained a lot from it, including practice in developing and delivering a lecture, which is a skill I hope to use more frequently in the future.

Great tools were provided to enhance my ability to succeed in mentoring relationships.

Surprisingly, I learned more about improving myself as a mentee.

I learned a number of things about the scientific process and mentoring skills.