

Chemistry Sophomore Research Seminar

Chemistry 2950 (CRN 15667)

Spring 2018

Prerequisites:	Chem 1212K with grades of C or higher (can be corequisite)
Instructor:	Dr. Gigi B. Ray , 212 Courtland North, Tel. (404) 413-5540, gbray@gsu.edu
Class:	Fridays 10:20 am – 11:50 am, 311 Petit Science Center (2-credit hour course) Meet individually with instructor weekly to discuss writing/presentations
Office Hours:	Mondays and Wednesdays 1:00 – 2:00pm, and Fridays 2:30 – 3:30pm Individual appointments: Wed 10am-12pm, Thurs 12:30- 4:30pm, Fri 2:30- 4:30pm
Textbook:: <i>none</i>	Class handouts will be posted on iCollege: CHEMICAL RESEARCH XLS Group RZ Spring Semester 2018
Course Objectives:	Introduction to research in various areas of chemistry: Organic, Medicinal, Physical, Analytical, Computational, Biophysical, Biochemistry, and Geochemistry. Introduction to drug development, biosensors and patents. Explore options for undergraduate research, on and off campus internships, summer research opportunities, dual degree BS/MS program and Honors. Explore potential career paths with a chemistry or biochemistry major, and job searching strategies. Attend professional club meetings and research seminars. Explore the scientific literature by examining a science topic of interest, and the development of a well-known scientist's career. Develop research skills by becoming familiar with use of scientific databases: SciFinder Scholar, Web of Science, PubMed and Medline Plus. Become proficient with use of the EndNote reference management system. Develop the ability to effectively read and write scientific papers, and give short oral presentations to communicate scientific knowledge. Become proficient in the use of ChemBioDraw Ultra software to represent chemical reactions.
Grading:	Total points: 100 25 points each: Two Research Reports (3-4 pages each) 5 points each: Three Research Seminar Synopsis, One Personal Statement 5 points each: Database Assignment #1, ChemBioDraw Assignment #2, two Oral Presentations 10 points: Class attendance/participation
Grading Scale:	A+ 97% A 90% A- 87% B+ 84% B 80% B- 76% C+ 71% C 65% C- 59% D 50% F <50%

Contacts:	<p>Kelsey Jordan, Science Librarian, kjordan44@gsu.edu, Library South, Suite 542</p> <p>Kurt Martin, TA, kmartin59@student.gsu.edu</p>
Activities and Policies:	<p>1) <u>Research Reports</u>: Students will write two research reports, 3-4 pages each, double spaced, with references in ACS style. Three or more reference sources need to be used, with at least two from peer-reviewed journal articles, and only one source can be a webpage.</p> <p><i>Report Topics:</i></p> <p>(i) Discuss science topic of interest to student (approved by instructor).</p> <p>(ii) Describe work of a well-known, living research scientist, who is not at GSU or has not given a seminar recently at GSU.</p> <p>2) <u>Seminars</u>: Students need to attend 3 research seminars during the semester: at least two will be Chemistry seminars, one can be from a related department (Biology, Neuroscience, MBD, CDT), a professional club meeting, or a conference: April 7 – Southeast Enzyme Conference, or April 12 - Georgia State Undergraduate Research Conference (GSURC). Students will sign in at seminars and submit a half page synopsis of the presentation, discussing presentation content and presentation style.</p> <p>3) <u>Posters</u>: Students will present a poster on their first topic at the Undergraduate STEM Research Conference on Friday March 30th.</p> <p>4) <u>Personal Statement</u>: Students will submit a personal statement including why they are interested in science, career goals and plans to achieve goals.</p> <p>5) <u>ChemBioDraw Figure</u>: Using this software, students will create and submit a drawing of a complex pharmaceutical compound and a reaction mechanism.</p> <p>6) <u>Attendance, timely arrival and participation in all class meetings required.</u> If absent, it is the student’s responsibility to makeup missed work. Students must pay attention to speaker (instructor, guest speaker, or classmate), <i>and NOT browse the internet or do other work during class.</i></p> <p>7) <u>Submit hardcopy printouts of all assignments in class on due date.</u> Additionally, electronic copies of research reports need to be submitted online via the dropbox in <i>iCollege</i> that checks for content originality. Late submissions only accepted in person one week past due date (10% points deducted/day late).</p> <p>8) <u>Personal cell phones, iPhones, iPods, Blue tooth devices, and other electronic devices must be OFF during all classes.</u> Laptops and tablets will be allowed during some class meetings.</p> <p>9) <u>Tuesday February 27th is last day to withdraw from the class & receive “W”</u> You are responsible for withdrawing before the deadline if you need to do so. The University requires that faculty members must, on a date after the mid-point of the course to be set by the Provost (or his designee):</p> <ol style="list-style-type: none"> 1. Give a WF to all those students who are on their rolls but no longer taking the class. 2. Report the last day the student attended or turned in an assignment.

CHEM 2950 – Spring 2018 TENTATIVE CLASS SCHEDULE (Subject to change)

Date	Day	Topics	Meeting
Jan 12	F	<ul style="list-style-type: none"> • Introduction to Course • Searching Databases –Web of Science and PubMed • Reading Scientific Articles • Students select Research Topic for Report 1 	1
Jan 19	F	<ul style="list-style-type: none"> • Searching Databases: SciFinder Scholar and Medline Plus • Undergraduate Research, Internships, Scholarships, and Summer Programs • Students continue Research for Report 1 → <i>Submit Database Assignment</i> 	2
Jan 23	T	<ul style="list-style-type: none"> • <i>Attend Science & Technology Career Fair (1 - 3), Student Center</i> 	
Jan 26	F	<ul style="list-style-type: none"> • Effective Writing in the Sciences, Avoiding Plagiarism • STEM Course planning, Biochemistry Concentration, ACS certification, Honors • Joining a Research Lab → <i>Submit Outline, and Article for Research Report 1</i> 	3
Feb 2	F	<ul style="list-style-type: none"> • Drawing Structures and Reactions Using ChemBioDraw Ultra • Speaker: Dr. Nadine Kabengi (Geochemistry) → <i>Submit Abstract (Thesis Paragraph) for Report 1</i> → <i>Submit 1st synopsis of seminar attended in January</i> 	4
Feb 9	F	<ul style="list-style-type: none"> • Preparing Oral Presentations, and Delivery Techniques • Speaker: Dr. Samer Gozem (Computational) → <i>Submit Research Report 1 (Science Topic)</i> 	5
Feb 16	F	<ul style="list-style-type: none"> • Writing Personal Statements • Speaker: Makesha Dockery, GSU Career Services Job Searching Strategies, Resumes, Career Options & Planning • Careers in Chemistry and Biochemistry → <i>Submit ChemBioDraw Assignment</i> 	6
Feb 23	F	<ul style="list-style-type: none"> • 5-minute Student Oral Presentation #1 (3 students) • Speaker: Dr. Kathy Grant (Biochemistry) → <i>Submit Revised Research Report 1 (hardcopy & iCollege TurnItIn)</i> 	7
Feb 27	T	<i>Last day to Withdraw and possibly receive a W</i>	
Mar 2	F	<ul style="list-style-type: none"> • 5-minute Student Oral Presentation #1 (10 students) → <i>Submit 2nd synopsis for seminar attended in February</i> → <i>Submit Personal Statement</i> 	8

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Date	Day	Topics	Meeting
Mar 9	F	<ul style="list-style-type: none"> • Preparing Science Posters and Discuss Scientist Report 2 • Dr. David Ashley (Public and Environmental Health) → Submit Articles & Outline for Scientist Report 2 	9
Mar 12-16		Spring Break, no class	
Mar 23	F	<ul style="list-style-type: none"> • Writing Tips, ACS Style Bibliography & Reference Management • Speaker: Dr. Markus Germann (Biophysical / Spectroscopy) → Submit Abstract (Thesis Paragraph) for Scientist Report 2 	10
Mar 30	F	<ul style="list-style-type: none"> • Posters • Graduate School and 5yr BS/MS degree – Dr. Donald Hamelberg • Speaker: Dr. Hans Schanz, Georgia Southern University → Submit 3rd synopsis for seminar attended in March 	11
Mar 30	F	<ul style="list-style-type: none"> • Present Poster at STEM Undergraduate Research Conference 	
Apr 6	F	<ul style="list-style-type: none"> • 10-minute Student Oral Presentation #2 (3 students) • Dr. Maged Henary (Organic) → Submit Research Report 2 (Well Known Scientist) 	12
Apr 12	R	<ul style="list-style-type: none"> • Attend Georgia State Undergraduate Research Conference (GSURC) 	
Apr 13	F	<ul style="list-style-type: none"> • 10-minute Student Oral Presentation #2 (3 students) • Speaker: Dr. Gangli Wang (Analytical) 	13
Apr 20	F	<ul style="list-style-type: none"> • 10-minute Student Oral Presentation #2 (8 students) • Course Wrap-Up 	14
Apr 27	F	<ul style="list-style-type: none"> → Submit Revised 2nd Scientist Research Report in lieu of Final Exam by 4pm (hardcopy printout & electronic copy via iCollege) 	

Spring 2018 Events:

- **Tuesday Jan 23** – Science & Technology Career Fair (11am - 3pm) Student Center, career.gsu.edu
- **Friday Mar 30** – Undergraduate STEM Research Conference (12 - 4pm) NSC 5th Floor, cas.gsu.edu/stem
- **Saturday Apr 7** – Southeast Enzyme Conference (all day) at GSU, sec.gsu.edu
- **Thursday Apr 12** – Georgia State Undergraduate Research Conference, (9am-3:30pm) Student Center gsurc.honors.gsu.edu

Websites:

- GSU STEM Resources: <http://cas.gsu.edu/stem/>
- Chemistry Department webpage: <http://chemistry.gsu.edu/undergraduate/>
- Library Resources: <http://research.library.gsu.edu/chemistry>
- Honors Resources: <http://honors.gsu.edu/research/>
- American Chemical Society: <https://www.acs.org/content/acs/en/careers.html>
- GSU Career Services: <http://career.gsu.edu/>
- Chemistry & Engineering News: <http://cen.acs.org/index.html>