

Chemistry Sophomore Research Seminar

Chemistry 2950 (CRN 16572)

Spring 2017

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, TBA
Office Hours:	Mondays and Fridays 1:00 – 2:00pm and Wednesdays 1:00 – 3:00pm
Textbook:: <i>none</i>	Class handouts will be posted on iCollege: CHEMICAL RESEARCH Section 015 Spring Semester 2017 – CHEM 2950
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 Careers Synopsis 5 points each: SciFinder Scholar assignment, ChemBioDraw assignment, 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%

Activities and Policies:

- 1) **Research Reports:** 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.

Report Topics:

- (i) Discuss science topic of interest to student (approved by instructor).
- (ii) Describe work of a well-known, living research scientist, who is not at GSU or has not given a seminar recently at GSU.

**Contact librarian directly for assistance in obtaining appropriate reference material:
Sharon Leslie, Librarian, sleslie@gsu.edu, Library South 5th Floor, Suite 542**

- 2) **Seminars:** 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) or a professional club meeting. Students will attend one research conference: (i) March 31 - Undergraduate STEM Research Conference, (ii) April 8 – Southeast Enzyme Conference, or (iii) April 11 - 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. Students will submit one career options synopsis.

- 3) **ChemBioDraw Figure:** Using this software, students will create and submit a drawing of a complex pharmaceutical compound and a reaction mechanism.

- 4) **Attendance, timely arrival and participation in all class meetings required.**

If absent, it is the student's responsibility to makeup missed work. Students must pay attention to speaker (instructor, guest speaker, or classmate), *and NOT browse the internet or do other work during class.*

- 5) **Submit hardcopy printouts of all assignments in class on due date.**

Additionally, electronic copies of research reports need to be submitted online via the dropbox in iCollege that checks for content originality. Late submissions only accepted in person during office hours (10% points/day late deducted).

- 6) **Personal cell phones, iPhones, iPods, Blue tooth devices, and other electronic devices must be OFF during all classes.** Laptops and tablets will be allowed during some class meetings.

- 7) **Tuesday February 28th is last day to withdraw from the class & receive "W"**

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):

- 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 2017 TENTATIVE CLASS SCHEDULE (Subject to change)

Date	Day	Topics	Meeting
Jan 13	F	<ul style="list-style-type: none"> • Introduction to Course • Searching Databases – SciFinder Scholar and Web of Science • Students select Research Topic for 1st Report 	1
Jan 20	F	<ul style="list-style-type: none"> • Searching Databases: PubMed and Medline Plus • Undergraduate Research, Internships, Scholarships, and Summer Programs • Course planning, Biochemistry Concentration, ACS certification, 5-year BS/MS Dual degree program, and Honors. ➔ <i>Submit SciFinder Scholar Assignment</i> 	2
Jan 27	F	<ul style="list-style-type: none"> • Effective Reading and Writing in the Sciences, Avoiding Plagiarism, and Writing Personal Statements • Speaker: Dr. Victoria Mariani (Personal Statements) ➔ <i>Submit Thesis Paragraph, Article & Outline for 1st Research Report</i> 	3
Feb 3	F	<ul style="list-style-type: none"> • Drawing Structures and Reactions using ChemBioDraw Ultra • Speaker: Maged Henary (Organic Chemistry) ➔ <i>Submit 1st seminar synopsis</i> 	4
Feb 10	F	<ul style="list-style-type: none"> • Drawing Structures and Reactions using ChemBioDraw Ultra • Speaker: Nadine Kabengi (Geochemistry) ➔ <i>Submit 1st Research Report (Science Topic)</i> 	5
Feb 17	F	<ul style="list-style-type: none"> • Oral Presentation Techniques • Careers in Chemistry and Biochemistry, Networking Strategies ➔ <i>Submit ChemBioDraw Assignment</i> 	6
Feb 24	F	<ul style="list-style-type: none"> • 5- minute Student Oral Presentation #1 (3 students) • Speaker: Donald Hamelberg (Computational Chemistry) • Planning for Graduate School ➔ <i>Submit Revised 1st Research Report (hardcopy & iCollege Turnitin)</i> 	7
Feb 28	T	<i>Last day to Withdraw and possibly receive a W</i>	
Mar 3	F	<ul style="list-style-type: none"> • 5-minute Student Oral Presentation #1 (9 students) ➔ <i>Submit 2nd seminar synopsis</i> ➔ <i>Submit Career Options synopsis</i> 	8
Mar 10	F	<ul style="list-style-type: none"> • Using EndNote Reference Management • Speaker: Farshad Guirakhoo, GeoVax Labs (Vaccine Development) ➔ <i>Submit Thesis Paragraph, Article & Outline for 2nd Scientist Report</i> 	9

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Date	Day	Topics	Meeting
Mar 13-19		Spring Break, no class	
Mar 24	F	<ul style="list-style-type: none"> • Preparing Science Posters • Speaker: Jenny Yang (Biochemistry) → Submit EndNote References list for 2nd Scientist Report 	10
Mar 31	F	<ul style="list-style-type: none"> • Speaker: Ming Luo (Structural Biology) • Attend and present Poster at Undergraduate STEM Research Conference (afternoon) → Submit 2nd Research Report (on Research Scientist) 	11
Apr 7	F	<ul style="list-style-type: none"> • 8-minute Student Oral Presentation #2 (2 students) • Speaker: Gangli Wang (Analytical Chemistry) → Submit 3rd seminar synopsis 	12
Apr 11	T	• Attend Georgia State Undergraduate Research Conference (GSURC)	
Apr 14	F	<ul style="list-style-type: none"> • 10-minute Student Oral Presentation #2 (4 students) • Speaker: Matt Henderson, GSU Career Services: Job Searching Strategies and Resumes 	13
Apr 21	F	<ul style="list-style-type: none"> • 10-minute Student Oral Presentation #2 (8 students) • Course Wrap-Up 	14
Apr 28	F	→ Submit Revised 2 nd Scientist Research Report in lieu of Final Exam by 4pm (hardcopy printout & electronic copy via iCollege dropbox)	

Spring 2017 Events:

- Thursday Jan 26 – Science & Technology Career Fair (12 – 3 pm)
- Friday Mar 24 – CGSA Chemistry Research Symposium (all day)
- Friday Mar 31 – Undergraduate STEM Research Conference (12 – 4pm)
- Saturday Apr 8 – Southeast Enzyme Conference (all day)
- Tuesday Apr 11 – Georgia State Undergraduate Research Conference (GSURC)