

USCDornsife
College of letters, arts
and sciences

CHEM 599
Special Topics:
Scientific Proposals in Physical Chemistry

Units: 4
Spring 2021
Monday /Wednesday—2:00 - 3:20 p.m
Location: online
Instructor: Andrey Vilesov
Office: SSC 723
Office Hours: TBA
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Course Description

Effective preparation of scientific publications, proposals, and presentations are an essential prerequisite for a successful career of a Ph.D. graduate. This interactive class will highlight effective pathways for preparation of these skills. It will start with the review and discussion of the instructor's scientific proposals and will contain some in depth discussion of the x-ray scattering experiments on helium droplets. Each student will then be tasked with development of their own written proposal and presentation on the topic to be proposed by students and refined upon discussions with an instructor and in class presentation. The proposals will be reviewed by instructor and peers. Each student will give two presentations in class followed by critical review by instructor and the class. This class is intended for second year graduate students specializing in physical chemistry.

Learning Objectives

This class will facilitate the development of the student's skills on:

- * how to get into a new field of research
- * how to develop potential research ideas in this field
- * how to acquire sufficient scientific background to be able to contribute to this field
- * how to develop ideas for a proposal in a new field
- * how to pitch the research ideas either in a talk or a written proposal
- * how to give compelling scientific presentations

This class will provide basic skills for students to develop their own qualification exam proposals.

Prerequisite(s): none

Co-Requisite (s): none

Concurrent Enrollment: none

Recommended Preparation: Successful completion of the mandatory graduate classes in physical chemistry.

Assignments and Exams

Material will be distributed weekly for review and in class presentation and discussions. There will be a graded proposal and in class final presentation.

Technological Proficiency and Hardware/Software Required

Students are required to download and install Microsoft Office from the USC ITS website. This software is free for registered USC students.

Required Readings and Supplementary Materials

These will be regularly distributed by the instructor.

Grading

Assignment	Points	% of Grade
Review of the peers' proposals	200	20
In class discussion	100	10
Proposal	300	30
Final presentation	400	40
Total	1000	100

Assignment Submission Policy

The assignment texts should be submitted via e-mail.

Additional Policies

All assignments should be completed in a timely manner.

Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Readings/Preparation	Deliverables
Week 1	Introduction. Components of a proposal and presentation. Funding of science in US.		
Week 2	X-ray diffraction experiment with Free Electron lasers	Articles to read will be distributed	In class discussion
Week 3	X-ray diffraction experiment with Free Electron lasers	Articles to read will be distributed	In class discussion
Week 4	Review of instructor's proposals	The texts will be distributed	One page critical review for each proposal
Week 5	Review of instructor's proposals	The texts will be distributed	One page critical review for each proposal
Week 6	Students start developing their proposals. Choosing the topic.		In class presentation of the main ideas. Discussions. One page summary of the proposal.
Week 7	Students continue developing their proposals. Formulating main ideas.		In class ppt presentation of the main ideas. Discussions. One page summary of the proposal.
Week 8	Start working on the text of the proposal. Components of the proposal.	Literature will be assigned depending on the proposal's topic	10 minute ppt presentation on the state of the art and proposal's outline
Week 9	Continue working on the text of the proposal. Working with the literature.	Literature will be assigned depending on the proposal's topic	10 minute ppt presentation on the state of the art and proposal's outline
Week 10	Working on the Introduction and Technique sections	Reading and critique of others' proposals	First draft of the proposal
Week 11	Working on the proposed research section	Reading and critique of others' proposals	First draft of the proposal
Week 12	Completing the proposal	Reading and critique of others' proposals	Final draft of the proposal
Week 13	Completing the proposal	Reading and critique of others' proposals	Final draft of the proposal
Week 14	Working on the proposal's presentation		In class final presentation
Week 15	Working on the proposal's presentation		In class final presentation
FINAL			Refer to the final exam schedule in the USC <i>Schedule of Classes</i> at classes.usc.edu .

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking

needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.