CHEM 4820

BIOMEDICAL SCIENCE RESEARCH SEMINARS & PRESENTATIONS

FALL SEMESTER 2018 CALL NUMBER: 94827
FRIDAYS (2:00 – 3:40) PM IN KING HALL LECTURE HALL 2
CALIFORNIA STATE UNIVERSITY, LOS ANGELES

COURSE INSTRUCTORS
Dr. Linda M. Tunstad  Annenber Rosser Hall 222D  (ltunsta@calstatela.edu; 343-2307)
Dr. Cecilia Zurita-Lopez Annenber SC La Kretz Hall 251 (zuritalexla@calstatela.edu; 343-2314)
Dr. Krishna Foster  Annenber SC Rosser Hall 222E (kfooder@calstatela.edu; 343-2309)
Dr. Jamil Momand  Annenber SC La Kretz Hall 270 (jmomand@calstatela.edu; 343-2361)
Dr. Edith Porter  Annenber SC La Kretz Hall 335 (epporter@calstatela.edu; 343-6353)
Dr. Robert Vellanoweth  Annenber SC La Kretz Hall 272 (vllnwh@calstatela.edu; 343-2148)
Dr. Katrina Yamazaki  Annenber SC La Kretz Hall 312 (kyamaza@calstatela.edu; 343-2086)
Dr. Carlos Gutierrez  Annenber SC Rosser Hall 221C (cgutier@calstatela.edu; 343-2356)

COURSE LEARNING OBJECTIVES
The goals of this course include development of listening and critical skills so that students become active participants in dialogues with seminar presenters. Research seminars are an important medium for presentation of new scientific results, frequently before they have been published. The intent here is that the student will learn to critically evaluate new information presented in the seminar format, and participate in the give-and-take of scientific discourse. The second goal is that students become skilled in presenting aspects of their research projects in both the poster format, and as brief (15-20 minute) oral presentations.

This weekly seminar series is by design multidisciplinary, and provides opportunities to broaden students’ scientific perspectives. These seminars cover the work of academic and industrial biomedical, behavioral, and mathematical scientists. There are also opportunities for students to develop their own communication skills through presentation in poster sessions and oral talks. The course requires your active participation.

FALL 2018 SEMINARS
A version of the schedule below is at http://www.calstatela.edu/centers/moreprograms/biomed_sem.htm. Clicking on a seminar title links you to an abstract provided by the speaker, and bibliographic reference to pertinent publications. Clicking on the speaker’s name connects you to the speaker’s website. Clicking on the presenter’s department links you to the speaker’s departmental webpage. Plan to come to each seminar prepared to participate. Please check this website throughout the semester. It will be updated as missing information (such as seminar abstracts, titles) is received.

August 24  Do Scientists Need Art More than Artists need Science? The Role of Creativity in Science
Dr. Carlos G. Gutierrez, Distinguished Professor of Chemistry and Founding Director MORE Programs California State University, Los Angeles

August 31  Carbon dioxide, computers and chemistry: Exploring the electronic and vibrational structure of CO2
Professor Olaseeni Sode, Department of Chemistry & Biochemistry, Cal State LA

September 7  Novel therapeutic targets in Acute Myeloid Leukemia
Professor Houda Alachkar, Department of Pharmacology and Pharmaceutical Sciences, USC

page 1
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 14</td>
<td>A little bit nervous: the role of neurons in organ formation, regeneration, and disease</td>
<td>Professor Sarah Knox, Department of Cell and Tissue Biology, Helen Diller Family Comprehensive Cancer Center, UC San Francisco</td>
</tr>
<tr>
<td>September 21</td>
<td>MORE Programs Research Retreat</td>
<td></td>
</tr>
<tr>
<td>September 28</td>
<td>Base Editing: Performing Chemistry on the Genome</td>
<td>Professor Alexis Komor, Department of Chemistry &amp; Biochemistry, UC San Diego</td>
</tr>
<tr>
<td>October 5</td>
<td>Development of a hybrid imaging and sensing system for biological studies</td>
<td>Professor Yixian Wang, Department of Chemistry &amp; Biochemistry, Cal State LA</td>
</tr>
<tr>
<td>October 12</td>
<td>TBA</td>
<td>Professor Chuck Yeaman, Department of Anatomy and Cell Biology, University of Iowa</td>
</tr>
<tr>
<td>October 19</td>
<td>Proteins on the Edge (of the Lipid Bilayer)</td>
<td>Professor Melanie Cocco, Department of Pharmaceutical Sciences, UC Irvine</td>
</tr>
<tr>
<td>October 26</td>
<td>Water generation by electrochemical CO2 reduction for future Mars missions</td>
<td>Professor Jillian Clinton, Postdoctoral Fellow – Department of Chemistry, California Institute of Technology</td>
</tr>
<tr>
<td>November 2</td>
<td>Reduce to tears: how fundamental studies of tear protein secretion and the &quot;tearome&quot; may advance diagnosis and treatment of disease</td>
<td>Professor Sarah Hamm-Alvarez, Ophthalmology and Vice Chair for Basic Research at the USC Roski Institute, and Associate Dean, Basic and Translational Sciences, USC Keck School of Medicine. Dr. Hamm-Alvarez holds a secondary faculty appointment as Professor of Pharmacology and Pharmaceutical Sciences at USC's School of Pharmacy. She also directs the Office of Research Development at the Southern California Clinical and Translational Science Institute (SC-CTSI)</td>
</tr>
<tr>
<td>November 9</td>
<td>Quantifying Protein Translocation into the ER with Proximity Labeling</td>
<td>Professor Joseph Genereux, Department of Chemistry, UC Riverside</td>
</tr>
<tr>
<td>November 16</td>
<td>The concepts of Learning and Memory as the basis of plasticity in the spinal cord</td>
<td>Professor Michael Selvan Joseph, School of Kinesiology and Nutritional Science, Cal State LA</td>
</tr>
<tr>
<td>November 30</td>
<td>TBA</td>
<td>Professor Gentry Patrick, Department of Neurobiology, UC San Diego</td>
</tr>
<tr>
<td>December 7</td>
<td>Learning Drug Design from Nature: The Structural and Synthetic Biology of Polyketide and Fatty Acid Synthases</td>
<td>Professor Sheryl Tsai, Department of Chemistry, UC Irvine</td>
</tr>
</tbody>
</table>

**Administrative Notes**
These seminars are opportunities for you to interact with a broad range of academic and industrial biomedical scientists and their work. Some speakers also serve as graduate school recruiters, and can provide an initial contact between you and prospective graduate programs. The University provides some funds for students to join seminar speakers for lunch or dinner. Please contact Lisa Bautista, MORE Programs Grant Project Administration Coordinator (lbautis3@calstatela.edu; 343-2395) a week in advance if you are interested in taking advantage of this opportunity to further interact with a speaker.

Every seminar is critiqued as a developmental activity. Each session you will receive a form to critique the seminar. The completed critique form, including your signature, is the official attendance document, and record of your development as an active listener. Please be sure to turn it in at the conclusion of the seminar to get credit for your participation in that seminar (it will not be accepted at any other time). You must pick up an evaluation form at the start of the seminar to get credit. If there are multiple speakers, a critique form will be provided for each.

The seminars start at 2 PM. Please be there on time, particularly as a courtesy to the speaker.

**CELL PHONES, LAPTOPS, iPADS/TABLETS**

Plan on giving your full attention to the speakers and their work. Keep your laptops and iPads turned off. Please put your cell phones on “vibrate” mode or turn them off during seminar. If you receive a call, ignore it if possible, and call back after the seminar. If you must take the call, discreetly exit the lecture hall, and return after the call.

**YOUR ROLE AS ACTIVE PARTICIPANT**

Your role in the Biomedical Sciences Seminar Series is not as part of a passive audience but rather as an active participant. Indeed in its best result, the seminar is a dialog between the presenter and the participants. You are expected to be actively involved extracting information from the seminar and contributing to the dialog. Look at seminars as occasions to explore interesting topics in a more active and satisfying way than either reading or listening to lectures. Research on learning shows that we remember far more of what is orally discussed than what is passively listened to or read.

To get something out of a seminar, be prepared to put something in:

a) **Do prior reading.** Background information on the seminar - an abstract provided by the seminar speaker, and bibliographic references to pertinent publications - is available to you in advance by clicking on the seminar title on the MORE Programs Biomedical Sciences Seminar web page (http://www.calstatela.edu/centers/moreprograms/biomed_sem.htm). If you have no background at the time you come to the seminar, you will be unprepared to be part of the discussion that is the essence and purpose of the seminar.

b) **Listen carefully.** An important, and obvious, requisite for success in getting a lot out of a seminar is active listening. Stay focused on the topic.

c) **Take notes** - particularly with a view to points on which you would like to get further clarification or support. You may find useful the article on taking effective seminar notes: Walker, J.H. “Taking notes in seminars - a new improved method” *Biochemical Education* 1999, 27, 211-213. You may consider keeping a journal of your seminar notes.

d) **Ask questions.** Be prepared to make your views known. You may feel ill informed or not entirely comfortable with the topic, but what you ask may prompt someone else to speak, and then someone else. Through this process, you and your colleagues will begin to become better informed. There is a hierarchy of questioning (low= 1; high= 5):

1. questions dealing with simple facts and classification
2. questions about simple fact relationships
3. questions about more complex (such as necessary/sufficient) relationships
4. questions about causal relationships or hypotheses, questions about experimental outcomes, 
    questions about controls, questions about relationships between variables, questions about 
    experimental trouble shooting
5. questions formulated with well-defined variables; questions that offer a solution or prediction (that 
    have an embedded hypothesis).

e) **Present a Poster.** All MORE and LSAMP-BD participants will present at either of Spring Semester 
    2019 Poster Sessions. Students not in these programs but in research groups are encouraged to present.

f) **Present a Seminar.** If you are a graduating senior or second year MS student, plan on presenting your 
    work in the Spring Semester. Students that did off-campus research will present a poster in the Spring.

g) **Suggest.** We welcome suggestions for speakers or topics for future seminars. Please send these to Dr. 
    Linda Tunstad at ltunsta@calstatela.edu or to Lisa Bautista at lbautis3@calstatela.edu. We also welcome 
    suggestions for improvement of the series. Contact any of the course instructors, or alternatively use the 
    “Comments or Suggestions” box on the seminar webpage 
    http://www.calstatela.edu/centers/moreprograms/biomed_sem.htm.

**OFF-CAMPUS SEMINAR OPPORTUNITY**

You may substitute any one seminar in the schedule for a seminar at another institution. UCLA, UC Irvine, 
UC Riverside UC Santa Barbara and UC San Diego, USC (main campus and health sciences campus), the City 
of Hope, and Caltech are likely sites. Peruse their seminar web pages and plan to attend. Please note that the 
intent is to introduce you to the broader Southern California research community: other Cal State LA seminars 
are not eligible for credit.

If you plan to take advantage of this opportunity, please let your Course Coordinator (list on pages 5/6) 
know by email at least one week in advance, with a copy to your faculty research mentor. To receive credit for 
attending that seminar, you must turn in to the MORE Programs Office not later than a week after the missed 
Cal State LA MORE seminar a completed seminar evaluation form that has been countersigned by your faculty 
research mentor.

Seminar websites for UCLA, UC Irvine, UC Riverside UC Santa Barbara, UC San Diego, USC and Caltech 
are at the end of this syllabus. Website page URLs change frequently. If you are having difficulties accessing 
the seminars web pages with the URLs provided, just go to the home page of the institutional department you 
are interested in looking up and click on their seminars link.

**LUNCH OR DINNER WITH THE SEMINAR SPEAKERS**

The University provides a small fund for interested students to accompany seminar speakers to lunch or 
dinner. The intent here is to give students who are particularly interested in the seminar speaker’s research 
topic, or the speaker’s institution for PhD study, the opportunity to meet and interact with the speaker in an 
informal setting. If you are interested in going to lunch with a speaker, please let Lisa Bautista know 
(lbautis3@calstatela.edu) not later than one week prior to the seminar.

**HOSTING THE SEMINAR SPEAKER**

Participating students manage the seminars. A student will be asked to be the official host for the speaker. 
We will try to match the student host’s interest with the seminar speaker’s research area. The student host will 
organize the group of interested students that take the seminar speaker to lunch (the MORE Programs Office 
will provide the funds for lunch). The student host introduces the speaker before the seminar, and manages the 
question and answer session. The student host gives preference to student questions, allowing faculty members 
to ask questions after student questions are exhausted. If you are interested in serving as host to a certain off-
campus speaker, let Lisa Bautista know (lbautis3@exchange.calstatela.edu) as soon as possible, but not later 
than one two weeks prior to the presentation of the seminar. Student hosts for on-campus speakers will be 
selected from the presenter’s research group.
SPRING 2019 POSTER SESSIONS

To develop skills presenting their research results in a poster format, and to give all seminar participants a sense of the breadth of research conducted by their colleagues, three seminar periods in the Spring Semester are devoted to poster sessions on your research:

• Poster Session I, February 1, 2019. Posters will be presented by MORE Students that spent the summer of 2018 conducting research off-campus. Note that you will also present a poster on your Cal State LA research in either Session II or III.

• General Poster Session I, April 2019

• General Poster Session II, April 2019

Students will present a poster on their research results in one of the two Spring Semester General Poster Sessions. Those individuals that have been in research training less than one semester will make a prospective presentation on what their project will be. If you have questions, please consult your CHEM 4820 coordinator listed on page 5 of this syllabus.

Spring Semester Poster Presenters: Plan to have your poster printed on our large-format printer well in advance, as there will surely be a rush on its use close to the poster session date.

If you are part of the group that conducted research off-campus and will present at the January poster session, email your file ready for printing to Lisa Bautista lbautis3@calstatela.edu not later than noon Wednesday, January 23. Contact Lisa far in advance to arrange for printing, since she also has other responsibilities and is not always available (http://www.calstatela.edu/centers/moreprograms/tech.html for instructions). Expect the occurrence of glitches, and build into the process sufficient time to resolve them.

Be sure your poster is up in its assigned space in the lobby of the La Kretz Building by 1:30 PM and that you are there ready to discuss your work and answer questions at 2 PM.

3-Minute Presentation. At least one of the course instructors will come by your poster. Since there are some 10-25 presentations in any given poster session, they will not have much time to spend at your poster. Please prepare and be ready to give a Three Minute Presentation that addresses the following:

a. What is the hypothesis that organizes your research?
b. What experiments did you perform to test the hypothesis?
c. What do you think the results mean, and what further studies do they suggest?

This is a difficult exercise that will likely take you some time to accomplish. It is difficult to organize your thoughts into such a limited time so that they convey the sense of your work to an educated but non-expert audience. Achieving the clarity that the exercise demands will train you in precise and effective communication that will serve you well as you prepare to attend conferences, graduate school interviews, or just conversations about your work with peers and faculty members.

You may want to visit the following URLs that offer tips on preparing effective research posters.


Creating a Poster Using MS PowerPoint University of Washington School of Public Health and Community Medicine http://depts.washington.edu/mphpract/ppposter.html

Creating Effective Poster Presentations George R. Hess (NC State University) and Leon H. Liegel (Oregon State University). Includes several examples incorporating various design features along with additional presentation and design resources. http://www.ncsu.edu/project/posters/IndexStart.html

Creating Posters for Humanities & Social Sciences Lewis-Clark State College. Suggestions on poster design and presentation. http://www.lcsc.edu/ss150/poster.htm

Creating Large Format Posters Using PowerPoint Department of Biomedical Communications, Wake Forest University School of Medicine. http://www wfubmc.edu/biomed/tipsheets/ppt_poster.html
Guidelines for Preparing Scientific Posters in the Digital Age, SciFor Inc. -- some good design ideas from an online service that offers poster preparation and printing services. Their Poster Gallery offers some good design examples. http://www.scifor.com/Guidelines.htm

Creating a Large-Format Poster in PowerPoint, Social Science Research Lab, Brown University. http://ssrl.brown.edu/support/design/large_posters

If you ARE NOT scheduled to present a poster on a specific poster session, you are required to do on-the-spot brief critiques of two posters, and a more detailed analysis of a third poster. Instructions for the brief critiques, and for the more detailed analysis of posters are available on the Biomedical Sciences Seminar Series webpage < http://www.calstatela.edu/centers/moreprograms/biomed_sem.htm.

 COURSE GRADING
The course is graded Credit/No Credit (Cr/NC) based on your participation, which is evaluated by:

1) The degree of your involvement as gauged by the quality of your answers to the seminar critique form (sample attached to this syllabus). This is a developmental activity; graduate students are expected to provide more sophisticated answers than undergrads; those that have been in the MORE Programs a while are expected to write better answers than newer student participants.

Attendance. To participate, you must be present. Please schedule your other commitments, including conducting research so that it does not conflict with your participation in the seminar course. Attendance is measured only by your turning in a completed critique form. Missing more than one seminar unexcused will result in a NC grade. There are, of course, several situations that are reasonable for missing a seminar, such as medical emergencies, and travel to professional meetings. If you plan to be absent and seek to be excused, please contact your Course Coordinator (listed below) before the seminar. Only these individuals are authorized to excuse an absence. Please do not make your request to the MORE Programs Office Staff; they are not authorized to entertain this.

Students | Course Coordinators
---|---
MARC U-STAR Scholars | Dr. Linda Tunstad (ltunsta@calstatela.edu; 434-2307); Dr. Cecilia Zurita-Lopez ((zuritalopez@calstatela.edu; 343-2314); Prof. Vicki Kubo-Anderson (vkuboan@calstatela.edu; 433-2324)
RISE Program | Dr. Krishna Foster (kfoster@calstatela.edu; 433-2309);
RISE BS-to-PhD Scholars | Prof. Edith Porter (eporter@calstatela.edu; 343-6353);
RISE MS-to-PhD Scholars | Dr. Jamil Momand (jmomand@calstatela.edu; 343-2361)
NIH Bridges to the PhD Scholars | Dr. Robert Vellanoweth (vllnwth@calstatela.edu; 343-2148)
NSF LSAMP Bridge to the Doctorate | Dr. Katrina Yamazaki (katrina.yamazaki@calstatela.edu; 343-2086)
Other Students | Dr. Carlos Gutierrez (cgutier@calstatela.edu; 343-2356)

2) Interaction with the speaker: asking questions at the seminar; going to lunch or dinner; meeting after the seminar.

OTHER SEMINAR SERIES
We encourage you to attend the weekly departmental seminar series of your major department at Cal State LA. Websites for these series follow:
Chemistry & Biochemistry | http://www.calstatela.edu/dept/chem/seminar.htm
Biological Sciences | http://www.calstatela.edu/academic/biol/bio510.htm

In addition, major research institutions in Southern California offer outstanding seminars in a broad range of biomedical and behavioral disciplines. Below are webpages to many of these. If you are aware of other seminar series that should be listed, please inform Lisa Bautista (lbautis3@calstatela.edu) and provide the URL.
UCLA
Biological Chemistry http://www.biolchem.ucla.edu/Symposia/symposia.htm
Biomathematics/Computational Biology http://www.biomath.medsch.ucla.edu/seminars/
Biostatistics http://www.ph.ucla.edu/biostat/course/seminars/seminars.htm#current
Bioinformatics http://www.bioinformatics.ucla.edu/seminars/seminars.htm
Chemistry & Biochemistry http://www.chem.ucla.edu/dir/twic.html
Human Genetics http://www.genetics.ucla.edu/home/guest.htm
Microbiology Immunology, and Molecular genetics http://www.mimg.ucla.edu/events.html
Molecular Biology http://www.mbi.ucla.edu/Events/nextweek.php

U of Southern California
Chemistry http://chem.usc.edu/dept/events.html
Neuroscience Graduate Program http://www.usc.edu/dept/nbio/ngp/courses/seminars.shtml
Biology http://biosci.usc.edu/seminars/

UC Irvine
Chemistry http://www.chem.ucl.edu/seminars/
School of Biological Sciences http://www.bio.uci.edu/events/
Ecology and Evolutionary Biology http://ecoevo.bio.uci.edu/seminar%20Winter%202003.htm
Molecular Biology and Biochemistry http://www.bio.uci.edu/events/mbb.cfm
Cognitive Sciences http://www.cogsci.uci.edu/colloquia/
Psychology and Social Behavior http://psb.soceco.uci.edu/pages/tags/events

UC San Diego
Chemistry and Biochemistry http://www-chem.ucsd.edu/Se
Biology http://www.biology.ucsd.edu/events/A.html
Psychology http://psy.ucsd.edu/pages/events/index.html

Caltech
Caltech lists all of its seminars on its Calendar at http://today.caltech.edu/calendar/

UC Riverside
Chemistry http://www.chem.ucr.edu/seminars/seminars.html
Psychology http://www.events.ucr.edu/cgi-bin/display.cgi?key=thistmonth&unit=49

UC Santa Barbara
Biomolecular Science and Engineering http://www.bmse.ucsb.edu/seminars/seminars.php
Molecular, Cellular and Developmental Biology http://www.lifesci.ucsb.edu/mcdb/events/events.html
Chemistry and Biochemistry http://www.chem.ucsb.edu/department/calendar.php
Bioengineering http://www.chem.ucsb.edu/%7Ebioengr/page3.htm