Course Syllabus

Course Title: Seminar in Molecular Virology, Biochemistry 910
Credits: 1
Canvas Course URL: https://canvas.wisc.edu/courses/75370
Course Designations and Attributes: Weekly seminar course training students in cutting-edge molecular virology research topics and science communication skills
Meeting Time and Location: Thursdays, 12:10PM – 1:00PM
Instructional Mode: All face-to-face

Specify how Credit Hours are met by the Course: We use the traditional Carnegie definition – One hour (i.e. 50 minutes) of classroom or direct faculty/instructor instruction and a minimum of two hours of out of class student work each week over approximately 15 weeks, or an equivalent amount of engagement over a different number of weeks.

INSTRUCTORS AND TEACHING ASSISTANTS

2018 Course Director: Nathan Sherer, Assoc. Professor
Additional instructors: Institute for Molecular Virology Professors Paul Ahlquist, Paul Friesen, Robert Kalejta, and Ann Palmenberg
Instructor Availability: Dr. Sherer holds office hours 1-5 pm Thursday or by appointment.
Instructor Email/Preferred Contact: nsherer@wisc.edu

OFFICIAL COURSE DESCRIPTION

Course Description: The goals of this seminar course are; (1) to train students to understand, evaluate, and discuss current topics in molecular virology, (2) to promote the exchange of scientific information amongst U.W.-Madison virologists, students, and other scientists, and (3) provide students and postdoctoral fellows with the opportunity to acquire more experience in reading primary research literature and presenting seminars to larger, well-educated scientific audiences.
Thus, the Molecular Virology Seminar series includes presentations by Ph.D. students (from different campus programs), postdoctoral fellows, local Madison Virology Program faculty, and visiting off-campus virologists.

**REQUISITES:** This course is offered to graduate and professional students fulfilling seminar attendance and/or presentation requirements in accordance with their biomedical training programs.

**SEMINAR FORMAT:** Each seminar presentation should last 40-45 minutes. Each speaker should anticipate a 5-minute question and answer period after their talk – so plan accordingly (we need to exit the room by 1:05 PM). All talks should be prepared in PowerPoint (or equivalent) and presented by using a laptop computer provided and tested by the speaker in the auditorium (preferably a day or so before the presentation).

**ATTENDANCE:** At each seminar, all students registered for Biochem 910 must sign the clipboard provided at the back of the auditorium. More than one unexcused absence will lower a student’s grade. If an absence is anticipated, contact the course instructor so that you may be excused.

**STUDENT TOPIC SELECTION:** Students can present either their own research or a literature review. Unless the student talks about their current Ph.D. research project, student-chosen topics for presentation must be approved in advance by the faculty organizer. Final titles must be provided no later than 6 weeks before the presentation.

**READINGS:** Students receive 1-2 relevant primary literature research papers and a review article one week prior to each seminar and are required to read these papers in advance of each seminar session. Readings familiarize students with the molecular virology literature, promote science literacy, and prepare students to understand seminar topic(s) and participate in discussions.

**TYPES OF PRESENTATIONS:**

1. **Research Presentations:** Students whose research is in an area of virology and is well developed may present their project results and discuss their significance. Such results should be chosen in consultation with your major professor and be presented in a way that will be appreciated by a general virology audience.

2. **Literature Reviews:** Students can also present results selected from the recent literature – high profile publications are the best and expected by the audience. Such a presentation usually reviews a significant and recent advance(s) in the field of virology and involves a critical discussion of 2-3 related publications. To avoid overlap with other presenters, students planning a literature review should seek approval of their topic from the organizer as soon as possible.

**PRACTICAL ISSUES:** Seminar presentations will be held in the Biochemical Sciences Auditorium, Room 1211 (this room). A video projector, microphone, and laser pointer will be available. All seminars start promptly at 12:10 PM. Presenters should arrive at least 15 minutes early to connect their laptop computer, learn use of the computerized lighting controls, learn about the microphone. The formal presentation should conclude by 12:55 PM to allow time for questions and discussion by the audience. The clock on the wall of the auditorium will help you keep time.

The auditorium should be unlocked at least 20 minutes before each seminar. If you would like to enter before this time or on a day prior to your presentation, please contact Kate Ryan (Graduate Student Services Coordinator, Integrated Program in Biochemistry, Department of Biochemistry, 420 Henry Mall, 1142F Biochemistry Building, email: cryan7@wisc.edu) to schedule a practice time – the room has a heavy schedule (afternoons are the lightest)
PRESENTATION EVALUATION AND FEEDBACK: Immediately after student seminars, the seminar organizer will meet with the student speaker to provide critical assessment of the presentation (mostly style, delivery, eye-contact, volume, quality and effectiveness of slides, etc.). If schedule conflicts arise, another faculty member will be designated to supervise the seminar and provide this important feedback.

SEMINAR DELIVERY: Delivering an effective seminar presentation requires attention to many important details, including careful selection of the topic, the particular results to be presented, good organization, well-designed slides, and sufficient practice. Many resources are available to help you prepare and present a high quality seminar presentation. MOST IMPORTANTLY, get help, input, and advice from your own lab members by presenting your seminar to them several days in advance so that you can make revisions as needed.

Learn from other seminar speakers: both good and bad: Other seminars that you attend are an excellent source of ideas for planning and improving your own presentations. As you listen to a seminar, consider what aspects of the presentation were particularly effective and why. Similarly, consider how any less effective points could be improved. Be willing to offer suggestions to your colleagues when it is their turn to present.

Content and organization: One of the most important aspects of preparing a good seminar is to select the most essential points and to eliminate unnecessary details and dispensable (though often interesting) side issues. One strategy to help select and organize the most essential results is to begin at the end and work backwards (often the most critical results are at the end of the presentation or publication). This method will allow the speaker to first decide what major conclusions he/she wants to cover. Next, decide what essential results must be presented in the body of the talk to clearly establish these conclusions. Remember: all presentations MUST have a conclusion or summary slide(s). Although the audience will be knowledgeable in many aspects of virology, very few if any will be experts on the speaker’s topic – thus, teach your topic to them – they are there to learn with you as the instructor.

PowerPoint slides: Audiences generally absorb material much more effectively when the important points are presented both as visual images and as spoken words. Consequently, proper design of slides has a major effect on the effectiveness of a presentation. Slides should be clear, easily readable, and as concise and simple as possible. Experienced speakers often spend considerable time refining slides, usually making them progressively simpler to concentrate on the most essential points. The transitions between slides (and thoughts) are often the most difficult to handle – well-crafted slides help the speaker the transition to the next topic or experiment.

Practice, practice – but not too much! There is no substitute for practicing the spoken delivery of your talk. Sentences and explanations that seem clear and effective when written often have a different effect when delivered by a speaker. Practice sessions will identify points that are difficult to illustrate or explain, awkward transitions, etc., so that they can be resolved. It is usually helpful to give early practice presentations to one or more colleagues who have agreed to provide constructive comments. Such comments often identify issues that otherwise would not be apparent to the speaker. Work to solicit comments from your colleagues early in your seminar preparation so that you have time to respond to the issues and suggestions raised. Cumulative, long-term speaking experience also pays off in big ways. If you give frequent seminars, teach classes, etc., you will find that your presentations progressively become easier and more effective at communicating to the audience and to that job interviewer.
LEARNING OUTCOMES

Course Learning Outcomes:

1. **Students will appreciate and understand important current topics, cutting edge research approaches, and next challenges relevant to the exciting and quickly moving field of molecular virology.** Molecular virology is the study of viruses at the molecular level using biochemical approaches, structural biology, cell-based assays, and both light and electron microscopy. Viruses are obligate intracellular parasites and major pathogens of people, plants, animals, and cellular microorganisms. In humans, viruses are associated with devastating diseases including cancers, gastrointestinal and respiratory illnesses, immunodeficiency (e.g., AIDS), encephalitis and hemorrhagic fevers. For this course, students will read and understand primary research papers and review articles on diverse topics in molecular virology and participate in discussions of new research topics presented by emerging scholars and top virologists during the weekly seminar session.

2. **Students will learn how to deliver an effective seminar.** Students will either present and/or critique scientific presentations on the topic of molecular virology from a diverse selection of local, national, and sometimes international scientists at various levels of training. Based on critiquing others and receiving feedback from the course director, students will learn how to organize and deliver effective research presentations relevant to the goals of their graduate training programs.

GRADING: U.W.-Madison Ph.D. or professional students may enroll in Biochem 910 for 1 credit per semester. Letter grades (A, AB, B, etc.) will be earned only in the semesters in which a seminar is presented. Registered students not presenting will receive grades of “S” (satisfactory) or “U” (unsatisfactory) for semesters in which they attend the seminar.

REQUIRED COURSE MATERIALS: Weekly readings will be provided to students by the course instructor at least one week in advance of each seminar and will also be available on the Canvas course website.

Resources for scientific presentations: While not a requirement of the course, we recommend to students that they exploit the internet, most libraries, and book stores to obtain resources that will help them to develop and deliver good research presentations. Many of those most commonly available are oriented toward business presentations, but much of their material is nevertheless useful in preparing for effective scientific presentation. Specific discussions of scientific presentations are also available, such as:


RULES, RIGHTS & RESPONSIBILITIES: Every member of the University of Wisconsin–Madison community has the right to expect to conduct his or her academic and social life in an environment free from threats, danger, or harassment. Students also have the responsibility to conduct themselves in a manner compatible with membership in the university and local communities. UWS Chapters 17 and 18 of the Wisconsin Administrative Code list the university policies...
students are expected to uphold and describes the procedures used when students are accused of misconduct. Chapter 17 also lists the possible responses the university may apply when a student is found to violate policy. The process used to determine any violations and disciplinary actions is an important part of UWS 17. For the complete text of UWS Chapter 17, see this link, or contact the on-call dean in the Dean of Students Office, 608-263-5700, Room 70 Bascom Hall.

No student may be denied admission to, participation in or the benefits of, or discriminated against in any service, program, course or facility of the [UW] system or its institutions or centers because of the student's race, color, creed, religion, sex, national origin, disability, ancestry, age, sexual orientation, pregnancy, marital status or parental status.

Any student at UW–Madison who feels that he or she has been treated unfairly has the right to voice a complaint and receive a prompt hearing of the grievance. The basis for a grievance can range from something as subtle as miscommunication to the extreme of harassment.

Each school or college has a procedure to hear grievances. Generally, the process involves an informal attempt to solve the problem, if appropriate. If not, more formal proceedings can be undertaken until a resolution is reached. Advisors and school or college offices have detailed information. For assistance in determining options, students can contact the on-call dean in the Dean of Students Office, 608-263-5700, Room 70 Bascom Hall, Monday–Friday, 8:30 a.m.–4:30 p.m.

ACADEMIC INTEGRITY: By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to studentconduct.wiscweb.wisc.edu/academic-integrity/.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: We strictly follow the University’s requirements as outlined in the McBurney Disability Resource Center syllabus statement: “The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.”

http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php

DIVERSITY & INCLUSION: Our course strictly adheres to UW-Madison’s Institutional Statement on Diversity: “Diversity is a source of strength, creativity, and innovation for UW-
Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” https://diversity.wisc.edu/
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<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>Jan. 25</td>
<td>Prof. Nathan Sherer</td>
<td>Organizational meeting Registered students only</td>
<td>U.W.-Madison IMV</td>
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<tr>
<td>Feb. 1</td>
<td>Sam Craven</td>
<td>Bacteriophage inhibition of E. coli cell division</td>
<td>Senes Lab U.W.-Madison</td>
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<td>Feb. 8</td>
<td>Reza Djavadian</td>
<td>CAGE-seq analysis of EBV lytic gene transcription: 3 kinetic classes from 2 mechanisms</td>
<td>Johannsen Lab UW-Madison Cancer Biology Graduate Program</td>
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<td>Feb. 15</td>
<td>Anthony Dawson</td>
<td>Phospho-regulation of the influenza virus replication machinery</td>
<td>Mehle Lab U.W.-Madison Cell and Molecular Biology Graduate Program</td>
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<td>Feb. 22</td>
<td>Nick Van Scriver</td>
<td>Regulation of EBV lytic reactivation by p53 and p63 in epithelial cells</td>
<td>Kenney Lab UW-Madison Cellular &amp; Molecular Pathology Graduate Program</td>
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<td>Mar. 1</td>
<td>Prof. Aurelie Rakotondrafara</td>
<td>The link between RNA sequence, translation and plant viral resistance</td>
<td>U.W.-Madison</td>
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<td>Mar. 8</td>
<td>Bayleigh Benner</td>
<td>Perturbations to HIV-1 frameshifting dictate translational regulation and transcript fate</td>
<td>Sherer Lab U.W.-Madison IMV Microbiology Doctoral Training Program</td>
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<td>Mar. 15</td>
<td>Prof. Betsy Herold</td>
<td>Paradigm Shifting Strategies to Prevent and Treat Herpes Simplex Virus Infections</td>
<td>Albert Einstein College of Medicine</td>
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<td>Mar. 29</td>
<td>Ruben Moreno</td>
<td>Determining the cell of origin for papillomas and squamous cell carcinomas arising in MmuPV1 infected mice</td>
<td>Lambert Lab UW-Madison Cancer Biology Graduate Program</td>
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<td>Apr. 5</td>
<td>Gloria Larson</td>
<td>Host poly-ADP-ribose polymerases mount an antiviral response targeting the influenza virus replication machinery</td>
<td>Mehle Lab U.W.-Madison Microbiology Doctoral Training Program</td>
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<td>Apr. 12</td>
<td>Dr. Jaimee Eckers</td>
<td>TBD</td>
<td>Kimple Lab UW-Madison</td>
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<td>Apr. 19</td>
<td>Prof. Sarah Sawyer</td>
<td>TBD</td>
<td>University of Colorado-Boulder</td>
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<td>Apr. 26</td>
<td>Prof. Vatsan Raman</td>
<td>Designing synthetic bacteriophages for editing microbial communities and</td>
<td>U.W.-Madison</td>
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