



TPCB Research in Progress Seminar Series

Overview

The TPCB Research in Progress Seminar Series is an important component of our graduate training program. It provides students with opportunities to learn about chemical biology research being carried out in other TPCB labs, to identify new potential collaborations, and to receive advice and feedback about their own research. In addition, student presenters gain invaluable experience in developing high-quality oral and visual presentations suitable for a broad scientific audience. This experience can then be translated to other presentations at scientific conferences and thesis defenses.

Attendance and Participation Requirements

TPCB students who have completed their PhD candidacy exams (ACE/TRP) are required to present at least once per academic year. Presentations may be scheduled to serve as practice talks for other seminars that the student will be giving at conferences or their thesis defense.

All TPCB students are required to attend all Research in Progress seminars as part of their training and are expected to participate actively in the discussions. Any absences must be approved *in advance* by the TPCB Program Director and a makeup assignment completed, consisting of a one-page written summary and critical analysis of published work presented by the seminar speaker or another related paper from that laboratory.

Format and Feedback

Each student seminar will consist of a **25-minute oral presentation**, followed by a 5-minute question-and-answer period. Questions may also be asked during the oral presentation. Students are expected to prepare a polished presentation designed specifically for a *broad scientific audience*. In other words, this should not simply be a copy of your last group meeting talk, but should include a scholarly discussion of the overall background and rationale for your work, as well as a discussion of your research progress to date and future directions. TPCB faculty thesis mentors have been asked to assist their students in preparing and reviewing these presentations.

Each presentation should also contain an explicit self-assessment of the rigor and reproducibility of the work and how the research was conducted responsibly (one slide each at the end of the presentation).

Rigor and Reproducibility is essential to ensuring that experiments can be reproduced by other scientists, thereby validating the original results and readiness to progress to

the next phase of research. Elements to be assessed include, but are not limited to: use of suitable controls, statistical analyses, blinding of research samples, data and resource sharing, availability of detailed experimental protocols, validation and characterization of chemical and biological reagents, consideration of biological variables in animal experiments, and reproduction of the experiments by other scientists in the lab or elsewhere. For more information, see: <https://www.nih.gov/research-training/rigor-reproducibility>.

Responsible Conduct of Research ensures that the work adheres to ethical and professional norms. Elements to be disclosed may include, but are not limited to: electronic manipulation of images, laboratory safety protocols (especially protocols specific to the work), funding sources, intellectual property, conflicts of interest (for student, coworkers, PI), appropriate citation of collaborators and literature precedents, ensuring animal welfare and protection of human subjects, ethical implications for scientists and society. For more information, see: <https://oir.nih.gov/sourcebook/ethical-conduct/responsible-conduct-research-training>

Each seminar will be attended by selected TPCB faculty members, including the thesis mentors of the students presenting, who will provide candid, constructive feedback on both the scientific content and oral and visual aspects of each student's presentation. The attached evaluation form will be used to provide detailed feedback to each student.

General Tips for PowerPoint Slide Design

- Depending on how much material you put on each slide, you should have absolutely no more than 25 slides (1 min/slide), and ideally 12–15 slides (1–2 min/slide)
- Include an outline slide at the beginning of the talk and/or a summary slide at the end
- Use descriptive slide titles that summarize the take-home message of each slide – this can also be accomplished using subtitles, headings, or summary bullet points
- Develop and use a clean, consistent layout for all slides, titles, text, and figures
- Number all slides in the lower right or left corner for easy reference
- Use color, font formatting, and animation judiciously to emphasize key items
- Avoid layouts that are overly sparse (white space) or overly dense (no spaces)
- Use at least 14-point font on slides (12-point is acceptable for references)
- Use hanging indents for bullet lists; use concise phrases instead of long paragraphs
- Avoid using the ACS format for ChemDraw structures – for a PowerPoint presentation, structures should be 25–50% larger, with thicker lines, and larger atom labels
- Use regular, 120° bond angles where appropriate for ChemDraw structures

General Tips for Oral Presentation

- Rehearse your presentation several times prior to your seminar; shorter talks should be rehearsed more times to ensure that you adhere to time limits
- Avoid reciting from notes or text from your slides; memorize your talk and use information on the slides to cue your verbal statements
- Avoid colloquialisms such as: “you know”, “I mean”, “like”, “um”, “ah”, “sort of”, etc.
- Use a strong laser pointer and guide the audience step-by-step through each slide
- Speak authoritatively and confidently - avoid raising the inflection of your voice at the ends of sentences, as if you are unsure and asking a question
- Be dynamic in your oral presentation and convey your enthusiasm to the audience

Online Resources

- The Craft of Scientific Presentations – Assertion-Evidence Approach (Springer)
<http://www.writing.engr.psu.edu/csp.html>
- Communicating Science: Giving Talks (Burroughs Welcome Fund)
<http://www.bwfund.org/career-tools/communicating-science-giving-talks>
- Designing Effective Scientific Presentations (Susan McConnell, PhD)
<http://www.ibiology.org/ibioseminars/techniques/susan-mcconnell-part-1.html>
- TED Talk: Talk nerdy to me (Melissa Marshall)
<https://www.presentyourscience.com/>