Remote Teaching in Biological Sciences

The BSCD Governing Committee met on Monday to discuss teaching remotely. I here summarize the ideas of the committee and some teaching models in the hopes that it can be helpful. In all cases we are striving for a combination of **synchronous** and **asynchronous** teaching.

For all options, please remember that students are taking 3+ classes and all of their instructors will be coming up with different plans. Therefore, it is important that the students have a clear understanding of the format of the course and of each class session, and that it be as simple as possible. Also, there must be some ways for students to connect with their instructors, either through synchronous sessions, recitations, office hours, video chats and/or email. Finally, the more asynchronous the class, the more important that there be checkpoints (ie graded quizzes, meetings, psets) to keep the students on track.

Also, please find an excellent tutorial about using Panopto for embedding pre-recorded lectures in canvas (and other remote teaching advice) from Instructional Professor Dmitry Kondroshov here : https://uchicago.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=68a09415-48aa-4ee5-afb0-ab7f0168a166

FOR LARGE LECTURE CLASSES 50+:

NOTE: Even for very large classes where the instructor plans to pre-record the lectures, there should ideally be one initial synchronous meeting (recorded) in the assigned class time so the instructor can introduce himself/herself and explain the instructional plan to the students, emphasizing how they will be able to ask questions and get help along the way, and hear any of the students' concerns.

While this situation is forced upon us, it is also an opportunity to break away from the lecture mode and try some more interactive teaching approaches.

Option 1:

Asynchronous: Lectures recorded so that students in multiple time zone and varying connectivity can access the material.

Synchronous: Students come together with the instructor to ask questions or participate in activities during the course's official timeslot. This is essentially a flipped classroom, where class time is devoted to group work, activities and discussion rather than lecture. Activities might be problem solving or data analysis. Since lecture time is considered to be contact time, these live meetings could be of short duration (ie 30-40 minutes twice a week) and supplemented with virtual office hours. Students could be split into breakout groups using the zoom function, with TAs as moderators in each breakout group. The whole class could come back together to go over answers or present the results of each breakout group. Instructors or TAs might also run recitations to help students with i.e. problem sets.

Option 2:

Asynchronous: Zoom sessions are recorded

Synchronous: Lectures are presented in the classes allotted timeslot. In this case, the session is recorded on Zoom so that students with technical problems can find it later as needed. Lecture is broken up into 10-15 minute "chunks", with student questions in between. This can be done by calling on students who virtually raise their hand using the function in Zoom, or instructor can enable the Chat function and accept written questions and answer them before proceeding with the lecture. As above, recitations to help with problem sets and test preparation could be held.

Option 3 (Thanks Mike LaBarbara):

Asynchronous/Synchronous: Prerecord lectures and release each one at the canonical lecture

time for the course. Instructor will host the initial screening of the lecture in a Zoom chat session so students can ask questions as it plays (at which point he/she will stop the playback and talk to the class). Instructor will then make the lecture video available on Canvas for people who don't or can't attend the session.

FOR INTERMEDIATE SIZE CLASSES (26-50):

While this situation is forced upon us, it is also an opportunity to break away from the lecture mode and try some more interactive teaching approaches.

Option 1:

Asynchronous: Zoom sessions are recorded

Synchronous: Lectures are presented in the classes allotted timeslot. In this case, the session is recorded on Zoom so that students with technical problems can find it later as needed. Lecture is broken up into 10-15 minute "chunks", with student questions in between. This can be done by calling on students who virtually raise their hand using the function in Zoom, or instructor can enable the Chat function and accept written questions and answer them before proceeding with the lecture. Students can also be divided into smaller breakout groups with TA oversight to discuss i.e. problems or figures in a paper. They can then come back together for student representatives of each group to present their work.

Option 2:

Asynchronous: Lectures to provide background material are recorded for students to watch on their own in preparation for synchronous meetings. Students can be assigned to contact each-other outside of class time for group work (i.e. using Canvas Discussions).

Synchronous: Students discuss a paper based on the background from the lecture and their own reading. Pre-assigned group present to the group with instructor and peer feedback.

SMALL CLASSES (5-15):

Option 1**:**

Asynchronous/Synchronous: Small classes can work well as Zoom conferences, and therefore it is possible to have live discussion groups similar to those that would occur in a normal quarter. However, instructors must plan for technical difficulties for all or just a few students. Therefore, there could be more emphasis on written critiques of papers, development of mock grant proposals, and preparation of formal presentations that review each paper that could be shared as ppt files.

Option 2:

Asynchronous: A small class might have a grand project the forms the basis of the course and is guided by the instructor, in which case there could be very few synchronous sessions but many exchanges of emails and sharing of drafts/materials. An example would be a large grant proposal tackling a specific scientific problem, in which students or student groups are assigned to write background, identify best approaches, define experiments and best methodologies.

Option 3: If there is a significant lecture component, any of the options for intermediate classes could be used for small classes as well.