Bridging Lecture and Lab
Instructional Modality

Lecture
• Instructor driven.
• Focus on the theoretical.
• Students are usually passive learners.
• Student learning (generally) assessed by exams.

Laboratory
• Student practice driven.
• Focus on practical skills.
• Large active learning component.
• Learning generally assessed using reports/problem solving.
Labs to Strengthen Student Learning

• Ideally students should be exposed to background theory for lab in their lecture sections.

• What happens when lecture doesn’t adequately prepare students to succeed in lab?
  • Peculiarities of the CUNY calendar – sometimes labs meet before the corresponding lecture.
  • Some lecturers push off material to lab instruction only.
  • Other reasons…?
"The Gap Problem"

• Nowacyzk, S., et al. (2007) Mind the Gap! Bridging the Gap between Theory and Practice in Laboratory Assignments.

• “…a situation where the information, the understanding and the skills that students have are not what is needed for performing the laboratory assignments.”

• “…there is some knowledge which students are expected to have (and, often, are believed – by teachers – to have), but which they are, in fact, missing.”
Reflection - “The Gap Problem”

• Where have you witnessed or experienced a “gap” in your own experience as a student or instructor?

• Take a few minutes to reflect and list some examples.

• How did you mitigate the “gap” or how could the “gap” have been mitigated in hindsight.
Is “The Gap Problem” Unidirectional?

• Is the ”gap” always from the theoretical to the practical?
  • What about gaps in students’ practical skills?
    • Microscopy.
    • Instrumentation.
    • Coordination.

• Think of examples of the following in your own discipline or laboratory practice:
  • A gap that goes from lecture content to lab.
  • A gap from lab to lecture.
  • A gap that goes both ways.

• Think about ways that you, as a lab instructor can strengthen student learning.
Getting to Work – Development of a Bridging Prelab Activity

• Consider where a specific gap in a student’s knowledge or skills may exist between the lab and lecture portion of your course.

• Develop a student-centered prelab activity that will help mitigate this gap.

• Now, get to work. Start drafting. Post any comments or questions in the workshop slack channel: #labworkshop.