

# STEM - FIT

## FORUM FOR INCLUSIVE TEACHING

05/03/2021

### CONCEPT

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#### The Integrated Peer Leadership Program

The novel Integrated Peer Leadership Program (IPLP) model, created by Drs. Morris and Jensen from the Department of Physics & Astronomy, and later tested with the assistance of Dr. Ghosh Hajra from the Department of Mathematics & Statistics, is designed to encourage teamwork as a means to implement both in-class active learning and create a network of peer support and accountability among students. Every student is given the chance to serve as a peer leader (PL) for one week, requiring them to deeply engage with assigned material and providing them the opportunity to gain valuable leadership and mentoring experience as they help their peers with the classwork.

### TIPS AND TOOLS

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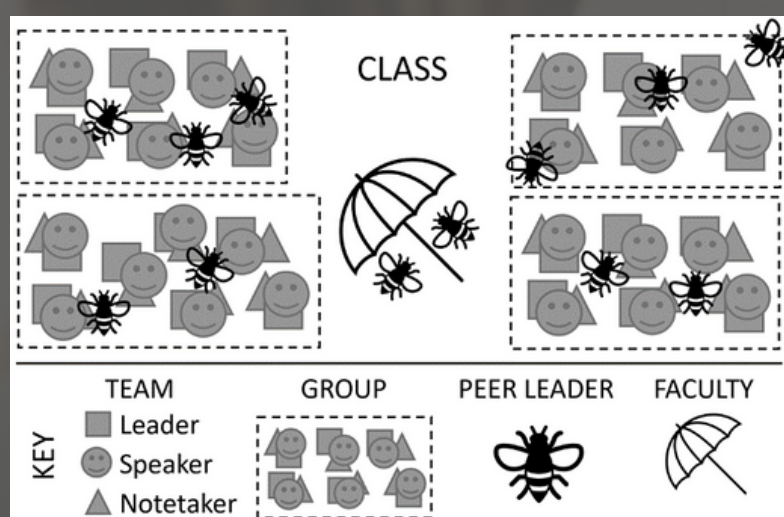
PHYS11A: General Physics - Mechanics is a large enrollment (~80 students), introductory course for physics, chemistry, geology, and engineering majors. Class time is structured to include 1) lectures introducing new modules, 2) collaborative quizzes, and 3) team-based, problem-solving sessions. Classroom activities are coupled with out-of-class discussion forums and pre-lecture assignments that introduce each new module and prepare students for the active learning classroom activities.

#### The IPLP model

*Teams and Peer Leaders (Figure 1):*

- Students are placed into heterogeneous teams of three, based on responses to a start-of-semester survey.
- Each student is also designated as a Peer Leader (PI). In this role, they facilitate group work and serve as a liaison between groups and the instructor for the duration of one chapter.
- PIs complete the chapter reading, pre-class assignments, and an additional worksheet ahead of time to be better prepared to help others.

Figure 1: IPLP model



*Structured Discussion:*

The class utilizes a structured discussion format, which focuses on a problem or set of problems selected by the instructor based on the performance on the chapter's quiz.

The discussion format consists of four rounds:

- *Self-reflection round:* Students are given time to individually reflect on the problem and record their thoughts and ideas.
- *Team round:* Team members each select a role as either leader, notetaker or speaker. These roles often persist throughout the semester but can change as the team dynamics change.
- *Group round:* The chapter PIs moderate as the team speakers report on misconceptions that emerged during the team round, as well as any agreed-upon solutions.
- *Class round:* Each PI reports a summary from their group round, drawing attention to the similarities and differences in problem-solving strategies between the different teams, common misconceptions that emerged, and finally the agreed-upon solution to the problem.

*Outcomes:*

Improvement in student outcomes is positive in IPLP classrooms, both in terms of formative learning assessments and reduced student failure rates. The model is implemented without any additional staff or funding allocated to the course and could be adapted to other courses, disciplines and institutions, particularly those seeking low-cost structures to implement in-class peer support in classes of diverse students.

### RESOURCES

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Please see the STEM-FIT Canvas Course for additional information about the IPLP model.  
<https://csus.instructure.com/courses/71792>