Welcome. Please sit in groups of three or four, with people you do not know and make the groups as heterogeneous as possible.
Getting Started

Managers

• Read and carry out the “Instructions to Managers” found in the black folder
Objectives and Outcomes

This session is designed for those with limited or no previous exposure to POGIL. Participants will:

• engage in POGIL activities
• observe facilitation strategies
• learn about POGIL implementation at other schools
• discuss common barriers to implementation

After attending this session, participants will be able to:

• name crucial elements of POGIL pedagogy and philosophy
• list desirable student learning outcomes from a POGIL classroom
• create strategies to begin implementing POGIL in their classrooms
The POGIL Project

• Launched by sequential NSF (2003-2012) and other grants
  • Based on curricular work done by a variety of like-minded people in the mid-90’s

• Became a not-for-profit organization in 2010
  • The mission of The POGIL Project is to connect and support educators from all disciplines interested in implementing, improving, and studying student-centered pedagogies and learning environments.

• The POGIL Project is run by
  • A 6-member Board of Directors
  • Director (Rick Moog, Franklin & Marshall College)
  • Steering Committee of experienced practitioners (7 college and high school faculty)
  • 6 Part-time Staff
The POGIL Project

- Offers faculty development
  - Workshops each year for high school and college faculty
  - Institutes for workshop facilitators
- Actively involves individuals each year
  - workshop attendees
  - workshop facilitators
  - curriculum developers
- Has touched 1000’s of people
  - >1000 people are implementing POGIL pedagogy across multiple disciplines
A POGIL Classroom Experience
“Clicker” Question

Assume that in Model 2 the Pension Fund purchases insurance for $2 billion/year from Bank B. In this case, how much profit or loss will the pension fund have made at the end of five years, assuming that Bank A fulfills its obligation?

1. $10 billion profit
2. $5 billion profit
3. $2.5 billion profit
4. $0 profit
5. $10 billion loss
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5. $10 billion loss
Whole Class Discussion

Incorporate reporting out of answers in a POGIL classroom.
Reflector’s Report

Reflectors, report to your group:

• One strength of the group and why that is an important characteristic for an effective group

• One area of improvement for the group and a suggestion of how that improvement can be made

(2 minutes total)
Any volunteers willing to share your Reflector’s Report with the workshop participants?
Student Outcomes

Other than content knowledge, what might your students gain from this type of learning environment?

- Individually: 1 minute
- Group: 2 minutes
- Presenters report out
What is POGIL?
What is POGIL?

Process Oriented (cooperative learning): conscious commitment to development of important process skills

Process Oriented Guided Inquiry Learning
Process Skills

- Information Processing
- Critical Thinking
- Problem Solving
- Communication
- Teamwork
- Management
- Assessment
What is POGIL?

Guided Inquiry (constructivism): learning cycle activities

Process Oriented Guided Inquiry Learning
Learning Cycle Activities

- Exploration
- Concept invention
- Application
What is POGIL?

Process Oriented (cooperative learning): conscious commitment to development of important process skills

Guided Inquiry (constructivism): learning cycle activities
Information Processing Model

Constructivist Model of Learning

• “Learning is not the transfer of material from the head of the teacher to the head of the learner intact, (but) the reconstruction of material in the mind of the learner.”
• “It is an idiosyncratic reconstruction of what the learner...thinks she understands, tempered by existing knowledge, beliefs, biases, and misunderstandings.”

New Paradigm

• Knowledge results only through active participation in its construction.
• Students teach each other and they teach the instructor by revealing their understanding of the subject.
• Teachers learn by this process...by steadily accumulating a body of knowledge about the practice of teaching.

Teaching is enabling.
Knowledge is understanding.
Learning is active construction of subject matter.

Guided Inquiry Approach

- Students work in groups
- Students construct knowledge
- Activities use Learning Cycle paradigm
- Students teach, discuss, and learn from other students
- Instructors facilitate learning
Meta-Activities
Process Skills and Classroom Facilitation

• Meta-Activity: Process Skills (7 min)
  • Complete page 1 and wait for your assignment for Model 2
• Report out
The development of Process Skills is facilitated by the instructor in the classroom.

- Complete Meta Activity: Classroom Facilitation (5 min)
- Report out
Analysis of Student Outcomes

Data on the use of POGIL in a variety of academic settings.
POGIL—Anatomy & Physiology at King College

- Spring 2008 – lecture
- Fall 2008, Spring 2009, Fall 2009 - 3 semesters of POGIL (50% of lectures replaced with POGIL activities)
- Same instructor
- Compare course grade (AB’s vs DF’s) and final exam grade distributions
POGIL—Anatomy & Physiology at King College (TN)

A/B’s vs D/F’s

Final Exam grades

POGIL—Organic 2 at a Tier 1 Midwest Liberal Arts College

Comparison of grades in a single section of Organic 2 taught with lecture style

- Some students took POGIL Organic 1
- Some students took lecture Organic 1
- Some students from each cohort did not enroll in Organic 2
- Compare grade distributions
Is Guided Inquiry Organic 1 Preparation for Organic 2 Lecture?

Grade in Organic 2, Winter Quarter

<table>
<thead>
<tr>
<th>Grade</th>
<th>% of Students</th>
<th>Students from section GI, Fall quarter</th>
<th>Students from section L, Fall quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/A-</td>
<td>10</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>B+/B</td>
<td>35</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>B-/C+</td>
<td>20</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>C/C-</td>
<td>15</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>D/F/ Drop/Late</td>
<td>5</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>Did not go on to Organic 2</td>
<td>5</td>
<td>Blue</td>
<td>Green</td>
</tr>
</tbody>
</table>
Questions?

• Take one minute to write down any questions that you have, then think about which question is most important to you.

• As a group, take three minutes to discuss your questions and come up with a list of up to three questions you would like to ask, in rank order of importance.

• Answers to many questions are on the POGIL website