

William Moss | bmoss@clemson.edu
Lisa Benson | lbenson@clemson.edu
Beth Stephan | bethste@clemson.edu
Scott Schiff | schiffs@clemson.edu
Sherrill Biggers | bsherri@clemson.edu
Marisa Orr | mkikend@clemson.edu
Clemson University
Clemson, South Carolina, USA

Matthew Ohland | ohland@purdue.edu
Purdue University
West Lafayette, Indiana, USA

Enhancing Student Learning Using SCALE-UP Format

Description

SCALE-UP (Student-Centered Activities for Large-Enrollment Undergraduate Programs) is a highly collaborative, hands-on classroom format where the primary emphasis is on learning by guided inquiry instead of by listening. The session will feature an overview of SCALE-UP, a sample lesson taught in SCALE-UP format, and a group reflection activity.

Objectives

The SCALE-UP teaching format requires a student-active teaching style, and this presentation will provide background information as well as first-hand experience to help educators apply it. Upon completion of this workshop, participants will be able to:

- plan a SCALE-UP lesson
- guide activities during class periods
- maximize the effectiveness of learning assistants
- assess student learning during class periods

Participants will receive a hand-out with the essential components of a SCALE-UP lesson and suggestions for assessing learning.

Activities:

1. An overview will be presented of the theory and practice behind the SCALE-UP format as applied by our research team in engineering and mathematical sciences. We will present evidence of its efficacy, such as the percentage of students who received a D or F letter grade or withdrew from the course, and student performance on standard conceptual tests. (10 minutes)
2. Participants will be lead through a lesson taught in SCALE-UP format, to illustrate the teaching and learning contexts of SCALE-UP. The lesson will teach how to develop algorithms (or a set of instructions), which are used in many disciplines and therefore will be useful and manageable for attendees

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from a variety of backgrounds. In teams of 2 - 3, participants will be given a set of interlocking building blocks and a diagram of a finished structure. Each team will write an algorithm defining how to put their structure together. Teams will exchange algorithms, using them to build each other's structures without the benefit of the assembly diagrams. (20 minutes)

3. Participants will have the opportunity to make observations about how the lesson was conducted, and ask questions about adapting the SCALE-UP format to a variety of disciplines. (10 minutes)

4. Working in groups from similar disciplines, participants will be asked to outline a collaborative, hands-on classroom activity that they could apply in a current or future course. (5 minutes)