

# **MURPA Seminar: Friday 17 August 2012, 9am**

## **Engaging students in thinking like computer scientists: Peer Instruction**

**Speaker:** Dr Beth Simon

**Venue:** Seminar Room 135, Building 26, Clayton Campus, Monash University

### **Abstract:**

In this talk we will consider the lecture hall and how it can best support the apprenticeship of students into well-prepared computer scientists. In many lecture settings, students listen to the professor explain, describe, or even do examples. Later we may examine their ability to "do" as we do -- by having them create programs, etc. But when do we see how they thought about it? How do we know they considered options or made tradeoffs? That is, how do we engage them in the processes of thinking like computer scientists -- not necessarily just producing an acceptable result?

We discuss how a lecture designed to use Peer Instruction brings the opportunity to support students in developing the analysis and communication skills necessary for students to succeed in the workforce. The value of Peer Instruction is it allows the development of these skills in a scalable way -- even in large courses -- and that it provides students the opportunity to get expert feedback immediately from the professor; that is, a chance to really see not just how professors do things, but how they think about things.

### **Biography:**

Beth Simon is the Director of the Center for Teaching Development and tenured faculty in the Computer Science and Engineering Department at the University of California, San Diego. During 2007-2008 Beth worked as a Science Teaching and Learning Fellow in the Carl Wieman Science Education Initiative at the University of British Columbia. Beth's primary research interests lie in improving the university learning experience through adoption of evidence-based pedagogical practices - notably Peer Instruction. Her current top projects involve developing Peer Instruction materials investigating models of instructor adoption both within university computing instructors and in supporting high school teachers in the US CS10K project. Previously Beth has explored student preconceptions in computing, the emotional experiences of students in doing programming assignments, student debugging ability, the challenges of recent computing graduates in their first software development jobs, and the use of technology to support interactive classrooms.