Extreme Programming Practices in the First CS Courses

Most of the practices of Extreme Programming are beneficial to students in their computer science courses. For example, pair programming has already been shown to be pedagogically valuable (http://www.pairprogramming.com/WilliamsUpchurch.pdf). There are also simple ways that students can learn to make increasingly good estimates of the time required for assignments. Are there simple ways that enable students to learn iterative development early? Are there simple ways for students to learn other beneficial practices that are part of "agile" methods?

Those of us who believe in the increasing importance of agile software development are also convinced that pedagogical changes are needed as early as CS1. This workshop seeks participants who have significant ideas for changes that can be made in the early computer science courses that involve integrating any of the practices of Extreme Programming. During the workshop, participants will critically discuss the ideas that have been suggested and explore any new ones that arise.

Goals
This workshop will examine ideas for integrating XP and other practices of agile methodologies into early computer science courses. Each idea will be evaluated on its merits in connection with an existing course in terms of how well it blends with topics that are already being taught, how easily faculty can use the idea in their teaching, and how effective the idea is in actually teaching an agile practice.

Participants
Would-be participants should send in a short position paper outlining one or two ideas they have for teaching agile practices in the early computer science courses. Keep in mind that any ideas are constrained by curricula that are usually already overloaded and taught by faculty who may not be easily trained to do radically new things. Participants will agree to allow their ideas to be shared via a web page to be posted in various CS educational resources repositories.

Organizers
Joe Bergin has 30 years experience in teaching and more than 15 with object technology. He has recently given several Extreme Hours at conferences and in the class room. His students use various forms of XP experimentally to test the edges of the do-able. He has been an advocate for many years of capturing good pedagogy as a member of the Pedagogical Patterns community. Active learning and team based (collaborative) approaches are central to his pedagogy. He has presented workshops recently at OOPSLA 2001, XP Universe 2001, and SIGCSE 2002. He is currently the Working Group coordinator for the ITiCSE 2002 conference of ACM in Aarhus, Denmark.

Jim Caristi is a professor of math and computer science at Valparaiso University. He presented a very successful tutorial on Extreme Programming at SIGCSE 2002, and gave an invited address at Butler University on the same subject as part of their lecture series on software engineering. He co-authored a paper, "Extreme Programming and the Software Design Course", presented at

XP Universe 2001, and is co-chair of the educator's symposium for XP Universe 2001 and XP Agile Universe 2002. He was the 1990 winner of the Sears-Roebuck Foundation Teaching Excellence and Campus Leadership Award, and the 1999 winner of the Distinguished Teaching Award of the Indiana Section of the Mathematical Association of America.

Daniel Steinberg is the Director of Java Offerings for Dim Sum Thinking and an adjunct faculty member of John Carroll University. He has taught introductory courses in Java using the XP practices and coaches faculty and students interested in using the methodology. He helped introduce XP to a software engineering course at John Carroll and has co-authored a book on the subject for Prentice Hall. In addition to consulting and training, Daniel also co-authored the Java 2 Bible and the Java 2 Bible Enterprise Edition for Hungry Minds. He writes a monthly column on Java on Mac OS X for O'Reilly Network's Mac DevCenter. He hosts the Java on the Mac sessions at the semi-annual MacWorld Expos and manages the Mac FAQ for jGuru. He is a regular contributor to JavaWorld Magazine and IBM developerWorks and is a contributing editor for the Developer's Area of the MAA's Journal of Online Mathematics and its Applications.