



Collaborative Graduate Specialization in  
**Computational  
Science and Engineering**

# WEEKLY COLLOQUIUM

Tuesday, 12 February 2008

2:30-3:30 in RM101, Jeffery Hall

**Speaker:** Rebecca Sanders, M.Sc. Candidate  
Computing and Information Science, Queen's University

**Title:** How Scientists Develop and Use Software

**Abstract:** Scientific software is used to advance knowledge in both research and industry, yet there have been few recent studies on how this software is developed and used by scientists. We executed a qualitative study of developers and users of scientific software in a variety of science and engineering fields. Analysis of the results has revealed common trends and trade-offs among those we interviewed. Topics discussed will include the selection of programming languages (especially procedural vs. object-oriented ones), the development cycle of scientific software and how it impacts (and is impacted by) the scientific models being implemented, common approaches and pitfalls in testing, different tactics used for version control and documentation, and common issues with commercially available scientific software.

**About the speaker:**

*Rebecca Sanders is a graduate student at Queen's University. Her research interests are software engineering methods as applicable to the development of scientific application software. She has worked part-time for Amibug Inc, a Montreal-based international management consulting firm specializing in software engineering process improvements, since 2006. She has a BSc in computer science from McGill University.*