Postdoc Report to CWSEI and Mathematics Department

**Postdoc**: Richard Liang  
**Period**: December 2009 – January 15, 2010  
**Submitted**: January 15, 2010

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**Specific activities performed by postdoc**

1) Professional development
   - Completed the Math Instructional Skills Workshop.
   - Attended CWSEI reading group sessions in December.
   - Filled in for Ed Perkins for the first two lectures of Math 608D.

2) MATH SEI general meetings/activity
   - Attended weekly progress meeting on January 15.
   - Attended Math SEI group meeting with Carl and Sarah on January 12.
   - Attended the announcement of David Cheriton's gift to CWSEI as well as the Math reception.
   - Assisted in writing an addendum to the Math SEI group's proposal to David Cheriton

3) Course-specific meetings/activities

**MATH 318 – Probability with Physical Applications**

1. Met with Bruce Dunham to discuss ideas for the upcoming semester.
2. Met with Gord Slade to discuss direction and plans for the upcoming semester. We clarified our goals for the semester, which are primarily to introduce some computer demonstrations in the lectures and to include some computer-based exercises on the homeworks, while not making drastic changes to the course.
3. Decided, with Gord, on a computing package to use for the course. Initially we thought we would try using Excel, but this proved to be a bad fit. Instead we are going with Octave, which is very similar to MATLAB (and MATLAB will be accepted too).
4. Suggested some demonstrations for the course, as well as places for the demonstrations to occur in the lecture; Gord has since decided to de-emphasize this idea and put more weight on transforming the homeworks.
5. Suggested some potential homework problems using Octave and drafted solutions.
8. Created Octave code samples for the 318 students to look at and try out.
9. Set up our course section on Vista.
10. Set up lab access for our students in the department.
11. Attended first lecture to address questions re: Octave, and to get a feel for the class.
12. Contacted Ian Mitchell of the Department of Computer Science regarding his beginning-of-semester MATLAB tutorial. He said our students were welcome to attend, and I informed the students.
13. Established a weekly meeting to think up computer-based questions for the assignments: we meet a week and a half prior to the assignment going out.
14. Met with Gord as well as our TA, Roland Bauerschmidt, to establish our grading protocol: I will be grading the computer-based questions on the homeworks as well as the entirety of the tests, while Roland will grade the rest of the homeworks.
15. Set up a discussion board on Vista intended to assist students with using Octave.
16. Drafted a list of our goals for 318 and discussed via e-mail with the Math SEI group.
17. Wrote a rough draft of learning goals for Math 318.

Current Project Status (material was prepared by either STLF or other members of the MATH SEI group)

MATH 318:
Learning Goals: rough draft completed and ready to discuss with various people who I've asked to help (Gord, Bruce Dunham in the Department of Statistics, the Math SEI group)
Assessments: Will record the homework scores on the computer-based exercises separately to the rest of the homework for recordkeeping; will implement one or two questions on each exam that tests Octave knowledge; will perform an attitude survey at the end of the course.
New Methods/Materials: Two problems have been added to each of the first two assignments (one Octave question and one applet question); third assignment is in preparation.

Plan for the semester

MATH 318:
1. Implement exercises on the homeworks which use Octave/MATLAB, probably 1 a week.
2. Also come up with exercises based on playing with simulations at the U of Alabama stat lab (http://www.math.uah.edu/stat/index.xhtml), probably at most one a week.
3. Facilitate students with getting started with Octave: we've already built an Octave help page and have set up a discussion board on Vista.
4. Maintain our Octave help page (http://www.math.ubc.ca/~rhliang/m318/octave/) and keep tweaking and fixing it up as the semester progresses.
5. Insert some amount of computer demonstrations and simulations into the lectures where appropriate.
6. Write learning goals and tweak them over the course of the semester, ready to release to students by the beginning of next year.

Plan for immediate future work

MATH 318:
1. Continue going over new assignments with Gord.
2. Consult with others and revise drafted learning goals.
3. Begin grading assignments.