Specific activities performed by STLF

1) Professional development
   - Attended STLF meetings (Nov 7, 21, 28)
   - Attended the Lunch Series in Teaching and Learning (Nov 8, 27)
   - Attended the Math Education Research Seminar (Nov 30)

2) Math SEI general meetings/activities
   - Met with Math-SEI group to review current projects and discuss future plans (Nov 7, 14, 21, 28)
   - Met with Malin Hansen to review current projects and discuss future plans (Nov 16)

3) Course-specific meetings/activities

Math 200 – Calculus III
   - I am responsible for developing graphical illustrations, pre-reading materials and supplementary notes for certain topics in multivariable calculus. The graphs used in reading materials and in class are posted in UBC Blog where students can give comments or post questions if needed.
   - A survey on WeBWorK, class activities and supplementary materials is currently up and will end on Dec 5. Some of the results will be provided in the next report.
   - I have talked to the instructors of Math 200 and 253 next term (Brian Marcus and Philip Loewen). They seemed to show a lot of interest in the computer illustrations. We are planning to build a complete collection of graphs possibly with pre-reading materials or activities. We will have further discussions before the term starts.
   - Philip Loewen is also interested in using WeBWorK in his Math 253, but since this course is closely tied with the Mech 2 program, he needs to discuss with the engineering department first before he can decide to use or not. More information will be provided in the next report.

Math 221 – Matrix Algebra
   - I am responsible for developing Webwork assignments for all sections of Math 221. One of the instructors decides the homework questions. Most of these questions are chosen from the public problem library. Some of them require modification. The remaining questions are created based on textbook problems.
   - An end-of-term survey was given on Nov 21 and ended on Nov 28. More detailed results will be provided in the next report, but some preliminary observations are listed below.
     - Students in general think that WeBWorK questions are well related to course materials and are good practices for the preparation of tests.
     - Approximately 40% of students regularly redo closed WeBWorK assignments for their study.
     - Most students do not find syntax as a problem when submitting their answers.
     - Some suggestions from students for the improvement of WeBWorK:
- Some conceptual, geometric and word problems
- Some kind of hints when they go wrong, especially for true-false problems
- Detailed solutions
- Optional problem sets for practice
- Allowing students to see their previous attempts
- Better coordination between instructors. Sometimes assignments are ahead of lectures.
- Discussion forums for students (Piazza?)

- The instructor of Math 152, Ozgur Yilmaz, is planning to use WeBWorK next term. We will reuse most of the questions used in Math 221 and will need to create some more, especially on the topics involving circuit analysis and transition probabilities. We are still figuring out how we should ask questions on MATLAB syntaxes in WeBWorK. The ability of asking essay questions will be a new feature of WeBWorK but I am not sure if this will be implemented in the next system upgrade, which probably happens during term break. If not, we may need to write MATLAB questions as fill-in-the-blanks or multiple-choice.
- The instructor of Math 221 next term (Alexandra Pettet) is also interested in using WeBWorK in her course. We will meet and have a discussion in about 2 weeks.

Math 210 – Introduction to Mathematical Computing
- I have met with the instructor, Brian Wetton, in November. He wants to focus more on computer programming rather than specific math topics in this course. The current learning goals will be modified to accommodate this change. We will have further discussion during these two weeks.
- It was found from last year that the majority of the students in Math 210 are already in their 3rd or 4th year of study. They took this course mainly because of their graduation requirement. This course is meant to prepare students for any computer programming in their subsequent courses, but currently this course is not a prerequisite of any upper-division course.
- I have talked to some faculty members who have taught courses involving computer programming (Richard Froese from Math 307 and Michael Doebeli from Math 360). They generally do not expect students to have any programming background and do not require students to learn programming from their courses. Computer labs and assignments in these courses are usually done by slight modification of existing MATLAB codes. MATLAB tutorials written by Costanza are provided in the course website but are not extensively covered in class.
- I will talk to Anthony Pierce from Math 316 and 405 later this week to discuss his experiences with and expectations of students’ programming skills.

Mathematics Attitudes and Perceptions Survey (MAPS)
- Sandi is going to invite about 3 more students for the validation of the survey questions during the exam period. After this we will create a final draft and will start surveying experts.

Current project status (material prepared by either STLF or other members of the MATH SEI)

MATH 110:
Learning Goals: 3rd draft of learning goals is complete.
Assessments: MAPS/Study Habit survey and Post-diagnostic was completed
New Methods/Materials: New problem-solving based workshops, remedial work on basic skills

MATH 210:
Learning Goals: A new draft will be created with the input of the new instructor
Assessments: End-of-term survey was done.
New Methods/Materials: The MATLAB module is new. Redevelopment of course materials on Maple is complete. Modification of the course materials will be done throughout the term.

MATH 305:
Learning Goals: Complete
Assessments: Final exam done.
New Methods/Materials: None at this point

MATH 200:
Learning Goals: None at this point
Assessments: A diagnostic on calculus materials is given on the first day. Survey is given at the end of the term.
New Methods/Materials: Some pre-reading and supplementary online materials are developed and are posted on UBC Blog.

MATH 221:
Learning Goals: None at this point
Assessments: Midterm and End-of-term surveys on WeBWorK were given.
New Methods/Materials: WeBWorK assignments were developed.

Plan for immediate future work

MATH 200:
1. Analyze survey results.
2. Discuss plans for next term with Brian Marcus and Philip Loewen.

MATH 221:
1. Analyze survey results.
2. Discuss plans for next term with Ozgur Yilmaz and Alexandra Pettet.

MATH 210:
1. Modify the learning goals.
2. Interview Anthony Pierce.
3. Discuss plans for the course with Brian Wetton.

Mathematics Attitudes and Perception Survey:
1. Finalize the survey with Warren and Sandi.
2. Give the survey to experts.