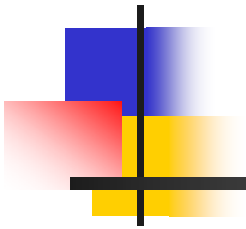

PER Seminar

Organizational Meeting

Monday
August 24, 2009

Tentative Schedule

Date	Speaker	Date	Speaker
Aug 31	AAPT/PERC Debrief	Oct 26	Sytil Murphy
Sep 07	Labor Day Holiday	Nov 02	Mojgan Matloob
Sep 14	Andy Bennett	Nov 09	Chris Nakamura
Sep 21	Pratibha Jolly*	Nov 16	Group Meeting
Sep 28	Dong-Hai Nguyen	Nov 23	Liz Gire
Oct 05	Fall Break	Nov 30	Jackie Chini
Oct 12	Group Meeting	Dec 07	Juma Nasser
Oct 19	Lou Wojcinski	Dec 14	Finals: No seminar

* Colloquium Speaker on September 14.

Format

- Seminar
  - Reactant will be assigned for each seminar
  - 40 mins for speaker
  - 10 mins for discussion led by reactant
  - Speaker focuses not just on completed work – also on work to come – seeks feedback.

- Group Meeting
  - One slide per grad student (and any one else who is interested in sharing)
  - Focus not just on completed work -- also on work to come – seek feedback.

Adrian Carmichael

Summer

- Teaching interviews using pulley simulation
- Gathered information about students' reasoning patterns when using simulation and what scaffolding is needed.
- Most students weren't able to isolate variables when using simulation until prompted. Once prompted, used simulation quickly and effectively.

Fall

- Open-ended teaching interviews using physical & simulation materials.
- Looking at how students use each medium to building understanding.
- Preliminary interviews comparing expert & novice problem solving patterns on pulley problems.
- Hope to find interesting results & follow up with an eye-tracking study.

Jackie

- Summer
  - Assisted Amy with developing pulley test validity interviews
  - Analysis
    - Physical vs. Virtual worksheet responses for Inclined Plane (from S09 PWorld Implementation)
    - Interview Room vs. Classroom (from S09 PWorld and Teaching Interviews with Pulleys)
    - Physical vs. Virtual spoken reasoning for Pulleys (from Amy's interviews)
- Fall
  - Implementations
    - Concepts of Physics (Pulleys- focus on epistemology)
    - PWorld (Inclined Planes and Pulleys)
  - Interviews
    - Open teaching interviews with Physical Inclined Planes (to compare to Adrian's summer interviews with Virtual Inclined Planes)

Nasser Juma: PMI PROJECT

Physical Measurement & Instrumentation

- Summer 2009
  - Started work on the PMI Project
  - Worked on the Speed of Light Capstone Project
  - Learned more about NI ELVIS & LabVIEW Programming
- Fall 2009 & Onwards
  - Develop other Capstone Projects (*X-Ray Spec., Mössbauer Effect, Photoelectric Effect*)
  - Develop *Pre* and *Post*-test Conceptual Questions for each Capstone Project (Test Electronics & Physics Content Knowledge)
  - Collect data during Spring 2010

Mojgan Matloob
NSEUS Project

- **Summer**
  - Emporia site visit report and Edgewood crosscheck
  - Reliability study
  - Analyze data
  - Revise Rubric and Reanalyze
  - AAPT (Poster, paper, talk)
  - Develop content questions
  - Group meeting Alabama
  - Research proposal
  - Table demo

- **Fall**
  - Oral exam, continue with research proposal
  - Report upgrade Alabama
  - Data analysis (few series)
  - Bank of questions
  - Correlations
  - Site visits and related works
  - Stat class
  - Reliability (Modifications)
  - Papers

Nakamura Summer/Fall Activities

Summer Activities

- Generating Materials for Pathway interface (videos, images, question lists etc…)
- Eliciting lists of questions from others (GP II students, other CW dwellers)
- Shooting SI responses
- AAPT/PERC

Fall Activities

- Refine lessons & overall design (fit CMU capabilities)
- Continue making videos (responses and supplements)
- Try get a working interface this semester

Dong-Hai Nguyen

- **Spring 2009**: Interview EP1 students to find out the difficulties they had and the hints they needed when solving problem in different representations in the domain of Mechanics.
- **Summer 2009**: Analyze data from Spring interviews. Completed all of interviews 2 and 4, and half of interview 3. The rest will be completed before starting gathering data in the Fall.
- **Fall 2009**:
  - ✓ Analyze the rest of data from the Spring.
  - ✓ Follow students in the Spring to EP2 class. Interview them with problems in different representations in the domain of Electricity and Magnetism.
  - ✓ Analyze the data along the way. By the end of 2009, have all interview data in hands.
  - ✓ Take the Oral Departmental Exam.