ATOEC Meeting Agenda
Tuesday, September 12, 2017
3:30-5:00 pm, HUB119

1) Approve May Minutes

2) Attendance

3) Introduction of Guests

4) Old Business:
   a. 2017-2018 ATOEC Committee Introductions
      i. Members
         1. Michael Davidson (2017-2020)
         2. Robin DeRosa (2015-2018)
         3. Wilson Garcia (2017-2020)
         4. Lynn Johnson (2017-2020)
         5. Mary Beth Ray (2016-2019)
         6. Francis Williams (2015-2018)
         7. Christin Wixson (2016-2019)
         8. Donna Driscoll (2017-2018)
         9. Student (Open – Faculty Senate Selection)
         10. Student (Open)
         11. Student (Open)
         12. Director of Client Services: JoAnn Guilmett
         13. Assistant Vice President & Chief Information Officer of Information Technologies: Richard Grossman
         14. Academic Affairs Officer: Robyn Parker
         15. Director of the Applications & Development (A&D) Team (non-voting): Ken Kochien
         16. Observer: A M A Elman Bashar

   b. 2016-2017 TIP funding recipients (see attached – separate document)
      1. Recipients
      2. Expectations

5) New Business:
   a. Update on Center for Transformation
   b. Recommendations for Student representatives
      i. Faculty Senate Selection (Update)
      ii. Process for nominating for "at large" students
   c. Technology Innovation Proposals
      i. WebWork Installation (attached) – Justin Wright (4:00 pm)
   d. Discussion Items – Robin DeRosa
      i. Yammer, the Panther app, and the plan for University online communication.

  ii. Academic Technology Steering Committee for USNH (membership, roles, etc)

e. Creation of Online/Distance Learning Policy Review Work Group
f. Preparation for October Meeting: Reviewing ATOEC Bylaws: Function
  i. Review Current Function (see attached)
  ii. Revisiting the Technology and Innovation White Paper (2016): https://www.plymouth.edu/committee/faculty/faculty-committees-and-appointed-groups/academic-technology-and-online-education-committee/discussions/
g. Announcement: Posting of Minutes
h. Other

Next Meeting: Tuesday, October 10, 2017 3:30-5:00 pm HUB 119

Technology Innovation Project Proposal Outline

Your Name: Dr. Justin Wright & Dr. Emma Wright **Email address:** jpwright1@plymouth.edu & emwright@plymouth.edu

Project Name: WeBWork Installation

Purpose and description of the project
Provide a purpose statement and a description of the activities and outcomes of the project

WeBWork is a 100% free open source online homework system that is supported by the NSF and Mathematics Association of America (MAA). Access to WeBWork includes a large library of questions from a variety of upper level math courses and some science courses. Further, WeBWork provides a platform that allows instructors to develop their own original open questions and construct assignments for courses.

Justin Wright is currently using the one year trial period of WeBWork for a course with two sections in Fall 2017. Because the system is open source with a vast library of documentation and tutorials, he has already found the system to be easier to use than Moodle's Quiz options or other homework platforms that are not free. WeBWork offers a multitude of built-in procedures that allow for questions with numerical and symbolic solutions. It should be noted that while Moodle has some allowance for randomized numerical question, the options aren't nearly enough to compensate the needs of a mathematics course.

The preferred method for using WeBWork is for colleges or universities to download the system and host it locally on their own servers.   We are requesting that this download and installation be permitted. This download is free and can be integrated with Moodle (though we are not necessarily asking that this integration be established and used). Alternatively, the MAA will host the system on their own servers for a cost of several hundred dollars a year.

Project Impact
Describe the impact of the project and how it will be reported including how students will be affected. Describe how the project is innovative and how it advances practice in the University.

The initial impact of using WeBWork will be small. During AY2017, Justin and Emma hope to use WeBWork in some capacity for teaching MA2250 Math for CS (2 or more sections) and MA4140 Abstract Algebra. In particular, they would like to use WeBWorK as a reading quiz platform so that they may flip their classrooms. No learning platform exists for their adopted texts, and Moodle does not have the capacity needed to assess abstract mathematics.

Justin and Emma are potentially beginning a cluster project in Spring 2018 that will impact MA2560 Calculus 2 and MA3540 Calculus 3, and they are hoping to use WeBWork as the primary student assessment tool for that project. If successful this project will impact three or more sections every academic year.

After the initial year, Justin and Emma hope to begin converting their service courses, MA1800 and MA2200, to using WeBWork as their primary homework assessment tool. Currently, they use a learning platform that costs students $90 each, and this is on the lower-cost end of mathematical learning platforms. Thus, the implementation of WeBWorK could save students a collective $13500 ($90 x 25 student x 6 sections) each year.

After their service courses, Justin and Emma would like to develop WeBWorK materials for precalculus and the entire calculus sequence, thus making it easier for other math instructors to use. WeBWorK could be especially helpful in courses taught by teaching lecturers for 1) should the TLs adopt it, their courses become more consistent across sections; and 2) TLs are not guaranteed a grader-budget, and thus WeBWorK could allow TLs to grade homework much more quickly and consistently. Both of these results create a better experience for the students.

WeBWorK is not restricted to just mathematical content, and, ideally, instructors in other disciplines could also use it. As WeBWorK is open, it can help instructors create entirely open and free course offerings.

As WeBWork is used for more and more classes, there will be opportunities for student workers to help with debugging and writing new questions. Several recent PSU graduates from the mathematics department are now employed as question programmers for various companies, so we feel that these student jobs will be invaluable experience for students.

Beyond the size of the student population that WeBWork could impact, it would also have a dramatic impact on their learning. WeBWork is growth mindset oriented and, in that capacity, is designed to give students multiple tries and potentially hints on every question. It then instantly grades the question and can provide the student feedback for trying again. Of course, instructors can limit the number of tries, award partial credit, and penalize extra attempts. Once students have completed an assignment the instructor can view a variety of statistics about student performance on the assignment. In truth, many online homework systems offer similar options but they generally cost at least $90 per semester for the students.

Shared Learning
Indicate a commitment to share project results with the University and describe how this will be accomplished. Describe what you will report and how it will be shared.

As Emma is an ATI ambassador, and her ATI project is centered around MA4140, she would love to share her use of WeBWorK as part of her ATI project. Indeed, if the ATI development committee is interested, Justin and Emma would be happy to present at future ATI meetings and help future ambassadors adopt the open platform.

The first several courses for which Justin and Emma plan to develop WeBWorK material are service and calculus courses within the Math Department. Indeed, other instructors teach these courses, including teaching lecturers. Thus, Justin and Emma will present within the Math Department about their developments and encourage their colleagues to try it.

Once they've successfully implemented WeBWorK in their service courses, Justin and Emma would be happy to present at University Days and/or January Jamboree. They could serve as mentors or liaisons for other faculty looking to try the open platform.

Project Support

Describe how technical support for the project will be provided. Is this provided by the project itself? By the ITS Helpdesk? By the CETL team? What technical support will be required to make the project successful?

WeBWork needs to be installed locally and added to the list of approved and supported Academic Technology tools. Regular updates and patching will be necessary. Integration of Moodle and WeBWork along with the creating of relevant support documentation is ideal, though not immediately necessary. This work would need to be done by ITS.

Budget
Provide a detailed budget of proposed expenditures including estimated costs for technology and related costs for implementation. Describe how on-going costs and upgrades will be managed after the initial implementation.

Since WeBWork is free to install, there is no purchase cost. Thus, costs will be incurred by the following:
- the time ITS needs for the installation,
- the server space required,
- the time ITS needs for regular maintenance.

**APPENDIX A – BYLAWS OF THE
PLYMOUTH STATE UNIVERSITY FACULTY
(with revisions through 5-8-2013)**

**Article XI
Committees**

2. Academic Technology and Online Education Committee

b. Function

The Academic Technology and Online Education Committee:
- Considers faculty technology needs, requirements, recommendations, and priorities.
- Considers students' perspectives regarding their technology needs and recommendations.
- Designs and implements processes to ensure fair representation, visibility, and consideration of faculty technology needs when technology priorities and investment decisions are made on campus.
- Influences university strategic planning related to academic technology both in the classroom and online.
- Communicates regularly with key stakeholders to assist with activities that support academic technology adoption and integration.
- Works collaboratively with stakeholders to assess technology used in the academic environment and pedagogy related to online instruction.
- Uses assessment information to inform future academic technology investments.
- Recommends policies for faculty approval related to online education and technology driven changes to pedagogy.
- Advocates for adequate professional development resources for faculty related to use and assessment of technology for teaching and learning, both on campus and through external development opportunities.