Name: Patti Hunter
Title of Project: Blended Learning in Introductory Statistics

Please check here to indicate that your department chair has reviewed and approved this proposal.

Use of funds (check all that apply):
- Stipend
- Expenses (including student wages)
- Release time (see below for additional information needed)

Course(s) this innovation would enhance Please list by course number and name (e.g., MA-005, Introduction to Statistics). If you will be developing a new course, provide a tentative name for the course, what department would offer it, and how you anticipate it fitting into the curriculum (e.g., course for mathematics major, GE course for Thinking Historically, elective course for Communication Studies).

MA-005 Introduction to Statistics

Brief description of the innovation you plan to develop or introduce (up to 50 words)

We are interested in doing a pilot study to investigate the impact on student learning of an Open Learning Initiative (OLI) online statistics course. This course has been developed by Carnegie Mellon researchers. The OLI is based at Stanford University.

Details of the innovation. Describe what you plan to do, providing any appropriate details about implementation (up to 300 words).

We propose to combine the resources of the OLI course with our existing face-to-face Introduction to Statistics course (MA-005). The OLI course includes a text, practice activities, self-assessments, and graded assessments. The practice and self-assessment opportunities have tailored feedback that aim at increasing the student’s understanding of the skills or concepts involved. Activities deliver feedback as students are working, allowing them to focus on concepts that they have not yet mastered. Information about student participation and performance at both the class and individual-student level is provided to the instructor so that instructors can see which topics are confusing for multiple students or how individual students are progressing.

Students enrolled in MA-005 will be invited to participate in the study. Those who choose to participate will be randomly divided into two groups. All participants will engage in the standard learning and assessment activities of our MA-005 courses. One group (the “treatment group”) will also engage in the activities of the OLI course. This information will be used to provide additional instruction to students as relevant, but it will also provide a basis for further
exploration of ways a combined online/face-to-face course might be operationalized in the future.

Two student tutors will be trained to offer technical support for the online course as well as for traditional tutoring in the course material. They will staff two weekly help sessions open to all MA 5 students.

**Outcomes.** Identify the expected impact of this innovation, how it would benefit students or the college, and why you anticipate this outcome (up to 200 words).

I hope that students participating in the OLI course will demonstrate greater understanding of the course material than the students who don’t participate.

The design of the OLI online course is based on learning science research. By providing tailored feedback to individual students and additional activities to address gaps in their understanding, it should improve students’ skills and knowledge. Feedback available to the instructor should enhance the instruction she is able to provide in and outside of class.

**Evaluation** Describe how you will determine whether the innovation has had the desired impact (up to 100 words).

The scores on course exams of the treatment group will be compared with scores of the control group.

**Rationale for release time** (if applicable). Explain why the requested teaching reduction is appropriate for the proposed project, and why more intensive work over a semester is important (compared to the normal pace of regular scholarship expected of all faculty). Include a work plan that provides evidence of your ability to complete the proposed project during the semester in which the release time is taken.

**Appendices**
- Curriculum vitae;
- Itemized budget with brief rationale for each line (up to one page);
- 2016-17 load report (If requesting release time, please have your department chair complete the 2015-16 load report accounting for a reduction to your load. Spreadsheet for the load report available from Bill Wright).

Please submit proposal and appendices electronically to phunter@westmont.edu.
Appendix: Itemized Budget

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<tr>
<th></th>
<th>Number of students</th>
<th>Cost per unit</th>
<th>Number of hours</th>
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<td></td>
<td>$750</td>
</tr>
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<td>Student incentives</td>
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<td></td>
<td>$300</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td><strong>$1710</strong></td>
</tr>
</tbody>
</table>

**Student Fees:**

The OLI courses are free for students choosing to use them on their own. A fee of $25 per student provides the instructor with access to the learning data.

**Student incentives:**

To overcome the barrier students may feel to trying something new, we will provide modest gift cards to participants (those in the treatment group and those in the control group).

**Student research assistant**

The research assistant will assist the faculty member in implementing the experiment, and in collecting and analyzing the relevant data. I expect the assistant to spend approximately two hours setting up the experiment at the start, approximately one hour every three weeks over the course of the semester, and approximately three hours at the end of the semester.

**Student teaching assistants**

Teaching assistants will each staff one 2-hour help session per week of the semester. The sessions will be open to all students in the course (treatment group, control group, and non-participants). These sessions will enable us to provide any needed technical assistance with the online system of OLI. It will also provide a level playing field by giving curricular support to all students.