



Sam Houston State University

A Member of The Texas State University System

DEPARTMENT OF MATHEMATICS AND STATISTICS

December 22, 2015

Dear Drs. Rob Beezer, Tom Judson, and Vilma Mesa:

Please accept this application letter to participate in the UTMOST project. This is a joint application between four tenure-track faculty in the Department of Mathematics and Statistics at Sam Houston State University. Several faculty in our department including the four faculty in this proposal and our department chair have been involved in diverse teaching activities that share the same goals of the UTMOST project. For example, every semester we teach several courses with open source or free textbooks. We have taught calculus, discrete mathematics, linear algebra, mathematical thought, and abstract algebra using this type of textbooks. We also built a Sage cluster and have incorporated Sage in some of our courses. Below, we include the requested information.

1. Participants:

Brandy Doleshal (Assistant Professor),
Luis David Garcia-Puente (Associate Professor),
Martin Malandro (Associate Professor),
Daniel Wang (Assistant Professor).

2. Courses:

Brandy Doleshal – Linear Algebra in Spring 2017 (pilot program)
Luis David Garcia-Puente – Abstract Algebra in Fall 2018
Martin Malandro – Abstract Algebra in Fall 2017
Daniel Wang – Linear Algebra in Spring 2018

Note: Garcia-Puente and Malandro are available to teach abstract or linear algebra on any semester that would be more beneficial to the program. So their current choices are only a first suggestion.

3. Previous experience:

Brandy Doleshal has taught abstract algebra once and she used Judson's Abstract Algebra: Theory and Applications. She has not taught linear algebra before, but she taught a differential equations class using an open source book. She does not have experience using mathematical software in her courses but she does have some experience using SageMathCloud in her research.

Luis David Garcia-Puente has taught abstract algebra several times. He has not used Judson's textbook yet. He traditionally lectures using Hungerford's Abstract Algebra textbook. He has not taught linear algebra before. He has taught discrete mathematics, and abstract algebra using Sage. He has used the Sage server at SHSU instead of SageMathCloud. However, he has several ongoing research projects in SageMathCloud. He has also directed several REU summer programs using Sage and SageMathCloud.

Martin Malandro has taught linear algebra several times. He has lectured using Lay's Linear Algebra and its Applications and also Beezer's A First Course in Linear Algebra (without incorporating Sage). He has also taught Abstract Algebra once. He has used Sage as the focal point of an advanced undergraduate elective (Mathematical Programming), in which students conceived of a personal math-programming project and implemented it in Sage. He has been a Sage user since 2009 and has used Sage in several research projects. He has some experience with SageMathCloud.

Daniel Wang has never taught linear algebra or abstract algebra. He has used Sage in a calculus class during lectures with no student involvement. In general, he has used Sage sporadically and has never used SageMathCloud.

4. University Description:

One of the fastest growing universities in Texas, Sam Houston State University is a comprehensive public institution of higher education located in historic Huntsville, 60 miles north of Houston in the Piney Woods region of East Texas. The university has an enrollment of approximately 18,000 and over 650 faculty. The Department of Mathematics and Statistics has 28 tenured or tenure track faculty positions in mathematics, mathematics education, and statistics. We serve approximately 100 mathematics majors the majority of whom are also secondary-education minors.

Each semester we offer one 20-student section of abstract algebra and up to two 30-student sections of linear algebra. Primarily mathematics and computer science majors populate the linear algebra course. Mathematics majors with a secondary education minor populate the abstract algebra course almost entirely.

Sincerely,

Brandy Doleshal,
Luis David Garcia-Puente,
Martin Malandro,
Daniel Wang



Sam Houston State University

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DEPARTMENT OF MATHEMATICS AND STATISTICS

Brian M. Loft
Associate Professor and Chair

December 24, 2015

Rob Beezer
Department of Mathematics and Computer Science
University of Puget Sound
Tacoma, WA 98416-1042

Re: UTMOST Application


Dr. Beezer,

On behalf of the Department of Mathematics and Statistics at SHSU, I would like to offer my firm support for our participation in the UTMOST program.

For many years, several faculty in our department have been proponents of active learning in its many guises, from Inquiry-Based Learning (IBL) to flipped classrooms. We have written our own IBL course materials, used IBL course notes in many different courses, and have happily experimented with many different techniques in the hopes of further engaging our students in mathematics.

I am aware of the commitments required by our department in the attached proposal, and am fully prepared to support these commitments throughout the funding period. These commitments include agreed-upon numbers and times of sections of particular courses as well as the sizes of these sections.

Sincerely,



Dr. Brian M. Loft