

Dear Awards Committee,

UNC's Open Educational Resources committee would like to nominate the School of Mathematical Sciences at the University of Northern Colorado for the *Outstanding ZTC Department* award. For many years now, the School has been committed to addressing higher education affordability through the adoption and creation of OER resources for our courses, including textbooks and the use of open source software.

Here are some of the highlights:

- For many years, the School has used *WeBWorK* as a free (open source) alternative for homework assignments in many lower level math courses. Some courses have also used *MyOpenMath* for this purpose.
- In 2016, the School adopted *Active Calculus* by Matt Boelkins, for Calculus 1 and 2 (MATH 131/132). This replaced the use of Hughes-Hallett's *Calculus* which costs students over \$170. The calculus sequence is coordinated and includes graduate students as instructors, so this adoption as implications beyond our students: when graduate students move on to faculty positions elsewhere, they already have had good experiences teaching out of an open source textbook.
- In 2019, Angela Steele successfully applied for an internal OER adoption grant (through UNC's OER grant from CDHE) and used it to adopt *Math in Society* by David Lippmann for MATH 120 (Math for Liberal Arts). This is a popular LAC/gtPathways course for non-majors. In the 2019-2020 academic year, the adoption saved 377 students close to a collective \$60,000. Again, this coordinated course is also taught by adjuncts and graduate students, so the adoption has potential impacts beyond UNC.
- The Topics in Calculus (MATH 176) course has used OER materials off-and-on for a few years, but in 2019 materials from Oklahoma State University were officially adopted and WeBWorK was used for online homework.
- The Mathematics for Elementary Education sequence (MATH 181/182/283) is currently being reworked to use OER materials. This has huge impacts on students, as elementary education is one of the largest majors on campus and these courses are required for all those students. Additionally, the materials being developed will be useful at other universities; these courses do not currently have much in the way of OER materials available.
- In Fall 2020, Nancy Geisendorfer will adopt an OER textbook for STAT 250 (Statistics for Life Sciences), after successfully applying for an internal OER adoption grant.
- Mid and Upper level courses also regularly use OER materials: including MATH 221 (Linear Algebra), MATH 228 (Discrete Mathematics), MATH 233 (Calculus 3), CS 301 (Algorithms and Data Structures), MATH 321/322 (Abstract Algebra), MATH 341/342 (Modern Geometry), MATH 350 (Elementary Probability Theory), and STAT 411 (Fundamentals of Data Science). Most of the math courses in the Master's program are also taught using free and open source materials.
- Faculty in the School are active in the development of OER materials. Dr. Oscar Levin's OER textbook *Discrete Mathematics: an Open Introduction* has been adopted at over 70 universities around the world and is endorsed by the American Institute of Mathematics' Open Textbook Initiative. Faculty have participated as research participants in the UTMOST NSF grant researching the use of open source textbooks by students and instructors, and have contributed

to and organized workshops to develop new software to improve OER textbooks, including a recent AIM-sponsored workshop on the automatic generation of Braille textbooks from open source texts.

As we hope you can see, the School of Mathematical Sciences is very active in the OER community, with impacts both for students at UNC and beyond. We hope you given them serious consideration for this prestigious award.