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Award Abstract # 1544011

EAGER: Understanding and Improving Collegiate Persistence and STEM Opportunities for Developmental Mathematics Students

NSF Org: [DUE](#)
[Division Of Undergraduate Education](#)

Initial Amendment Date: August 26, 2015

Latest Amendment Date: August 26, 2015

Award Number: 1544011

Award Instrument: Standard Grant

Program Manager: Teri Murphy
DUE Division Of Undergraduate Education
EHR Direct For Education and Human Resources

Start Date: September 1, 2015

End Date: August 31, 2017 (Estimated)

Awarded Amount to Date: \$299,818.00

Investigator(s): Edgar Fuller ef@math.wvu.edu (Principal Investigator)
Jessica Deshler (Co-Principal Investigator)

Sponsor: West Virginia University Research Corporation
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NSF Program(s): IUSE

Program Reference Code(s): 005Z, 7916, 8209, 9150, 9178

Program Element Code(s): 1998

ABSTRACT

Nationally, approximately half of all students entering college are placed into developmental mathematics courses, which focus on basic arithmetic and pre-algebra topics. In addition, often, the credit hours for developmental mathematics courses do not count toward college graduation hours. Some undergraduates who place into developmental mathematics are interested in pursuing a career in STEM, but get discouraged because they had to start their degree trajectory at the developmental course level. At the same time, the ongoing need for a strong workforce in science, technology, engineering, and mathematics (STEM) makes it important not to lose so many students who started college with an interest in STEM. In Fall 2015, for the first time, the developmental mathematics course at West Virginia University (WVU) will carry credit-bearing weight, offering a special opportunity to study the impact of this change on student success in the course and persistence in subsequent STEM courses.

Building on current work being conducted at WVU across STEM disciplines based on early studies of self-identity situated in disciplines, this project will address the following questions: (1) In what ways do students in developmental mathematics self-identify as STEM learners? (2) At what rate do STEM-intending developmental mathematics students persist in pursuit of a STEM degree? (3) Does a shift to a credit-bearing version of developmental mathematics improve student success rates? (4) What are the factors in developmental mathematics that contribute to (i) persistence as a STEM major and (ii) self identification as STEM learners? (5) How will the introduction of peer mentors affect the learning gains of developmental students? Using survey and institutional data, the project team will track students through their first two years of their degree programs to investigate when and why developmental mathematics students switch out of STEM majors, as well as to identify factors related to student persistence in STEM from this remedial starting point.

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