

DEPARTMENT OF MATHEMATICS AND STATISTICS

MISSISSIPPI STATE UNIVERSITY

COLLOQUIUM

Constructing Proofs: Practices of Importance for Undergraduate Mathematics Majors

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Allen 14

Abstract. In recent reform recommendations, proof has garnered great emphasis in undergraduate mathematics education. Undergraduate mathematics majors, including pre-service secondary mathematics teachers, are expected to have mastered the skills required to produce proofs. However, undergraduate students difficulties with proof are well documented. To date, there is a lack of research on undergraduates competencies proving in algebra, analysis, geometry, and number theory domains that are both central to and pervasive in many mathematics courses. In this talk, I analyze results of 16 undergraduate mathematics majors performance in constructing proofs, where the findings suggest that many undergraduates experience difficulty producing a correct proof. Implications of this study suggest that improvements are needed in the teaching and learning of proof in undergraduate mathematics courses and mathematics teacher education programs. Further directions for future research regarding proof in mathematics education will also be discussed.

There will be a reception for Dr. Ko at 3:00 in Allen 467.

Contact Bruce Ebanks, ebanks@math.msstate.edu or (662) 325-7160, for additional information.