

Euclidean Geometry & Education

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Project Description: This project is intended for students interested in teaching high school geometry one day. We will start with a 3-week long mini-course introduction to Euclidean Geometry. Then students on the project will choose (with the help of the faculty mentor) a sub-topic of Euclidean Geometry to focus on more deeply.

The students on this project will collaboratively create a virtual, interactive mini-textbook (using R, geogebra, or some other medium) on the focus topic. Examples of such topics could be: definitions of and theorems about congruency, straight-edge and compass constructions (or a particular subset of interest thereof), comparison of different axiomatic systems in Euclidean and/or non-Euclidean Geometry, definitions and theorems on area measurement, similarity and trigonometry, geometry of circles, triangle centers, wall-paper groups, a classification of planar isometries, etc.

The skills developed in this project will include proving and problem-solving, writing expository mathematics, finding and using mathematical resources, and creating interactive virtual materials.

Prerequisites: Math 217 or similar proof-writing experience, a declared major in education or other demonstrable interest in education.