

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES
COLLOQUIUM

Friday, August 28
3:00 – 4:00 PM
Maria Sanford, Room 101

**THE DIVERGENCE THEOREM,
GRAVITY, AND GEODESY**

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Abstract: This talk introduces some key ideas from the field of geodesy, the study of both the shape and gravitational field of the Earth. This requires many mathematical ideas, such as the divergence theorem, which relates integration over the volume of the Earth to integration just on its surface. Because measurements are easier to make above ground than below, this has applications in the Earth sciences. Other topics covered are Gauss's law for gravitation, Poisson's differential equation for the gravitational potential, satellite gravimetry, Newton's shell theorem, and the effect of centripetal acceleration on Earth's gravitational field. The final example discusses which mountain peak is the farthest away from the center of the Earth, and the answer is **not** Mount Everest, as one might guess. If you enjoy applications of mathematics, then come to this down-to-earth talk.

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For further information: gotchevi@ccsu.edu; 860-832-2839; <http://mathcolloquium.sites.ccsu.edu/>