

The Fullerton College Mathematics Colloquium  
presents

**Dr. Bogdan Suceava**  
CSU Fullerton

**“Geometries Induced by Logarithmic Oscillations and their Natural Extensions”**

ABSTRACT:

Introduced originally in 1934, Barbilian’s metrization procedure induced a distance on a planar domain by a metric formula given by the so-called logarithmic oscillation. In 1959, Barbilian generalized this process to domains of a more general form, withstanding not necessarily on planar sets, but in a more abstract setting. We will show that there are more general classes of distances than the ones produced by logarithmic oscillation. As a consequence, we will present the most general form of Barbilian’s metrization procedure. Additionally, we will introduce a new distance on a subset of  $n$ -dimensional real Euclidean space. We will prove it generates an example of Gromov hyperbolic distance on the punctured open unit ball and then study its geometric properties and relations with other remarkable metrics.

Dr. Suceava is a geometer and is the founding organizer of the Fullerton Math Circle. He is a strong advocate for programs at CSUF and in the community that foster increased student interest and excellence in mathematics. He also helps to lead the CSUF Putnam team, and is an award-winning author of several fictional novels.

**Raul Reyes**  
Fullerton College

**“An Alternate Version of the Riemann Hypothesis”**

ABSTRACT:

Ms. Reyes is a second-semester calculus student who has given talks at the Math Colloquium and the Pacific Coast Undergraduate Math Conference. He will capture you with his enthusiasm.

The Riemann Hypothesis (also called the Riemann-Zeta Conjecture), was formulated by B. Riemann in 1859. No one has been able to prove or disprove this statement since then, and the problem of doing so is, since the 1997 finalization of the proof of Fermát’s Last Theorem, is widely considered to be the most famous, and perhaps the most difficult, unsolved problem in mathematics. Riemann invented the definite integral in his doctoral thesis. Mr. Reyes will explain what a definite integral is and reformulate the Riemann Hypothesis in terms of a relationship between the prime counting function and definite integrals. *Mentor: Dr. Dana Clahane*

**Thursday, September 27, 2012**  
**12:45-2:50pm**  
**North Science Building, Room 623**  
**Fullerton College**  
**321 E. Chapman, Fullerton CA 92832-2095**

Cookies and punch provided by ENGAGE in STEM, administered by the Fullerton College Office of Special Programs.