



Speaker: David Radnell
Aalto University, Finland

Wednesday, March 16, 2016

4:00 PM

117 Hayes-Healy Hall

Title: New developments in Teichmueller theory motivated by conformal field theory

Abstract:

Conformal field theory (CFT) is a special class of two-dimensional quantum field theories that appears in statistical mechanics and string theory. Understanding its rich mathematical structures has led to developments in many branches of mathematics, from algebra to stochastic analysis. Our focus will be on the rigorous analytic and geometric foundations of CFT which are deeply tied to the infinite-dimensional Teichmueller theory of bordered Riemann surfaces and geometric function theory in general. Moreover, ideas from CFT have led us to results in Teichmueller theory, such as a fiber structure on Teichmueller space, and a new refined infinite-dimensional Teichmueller space on which the Weil-Petersson metric converges. Assuming only minimal background I will discuss some of these new interactions between CFT, geometry and analysis.