



Speaker: Jo Nelson
Columbia University

Thursday, January 25, 2018

4:00 PM

231 Hayes-Healy Hall

Title: Contact Invariants and Reeb Dynamics

Abstract:

Contact geometry is the study of certain geometric structures on odd dimensional smooth manifolds. A contact structure is a hyperplane field specified by a one form which satisfies a maximum nondegeneracy condition called complete non-integrability. The associated one form is called a contact form and uniquely determines a vector field called the Reeb vector field on the manifold. I will explain how to make use of J-holomorphic curves to obtain a Floer theoretic contact invariant, contact homology, whose chain complex is generated by closed Reeb orbits. In particular, I will explain the pitfalls in defining contact homology and discuss my work which provides rigorous constructions and applications to dynamics via geometric methods. This talk will feature numerous graphics to acclimate people to the realm of contact geometry.