Friday, Oct. 13 at 10:30 am
***Lecture by Keagan Callis* (University of Maryland, US)**

Title: Absolutely Periodic Billiard Orbits of Arbitrarily High Order

Abstract: We show that for any natural number n, the set of domains containing absolutely periodic orbits of order n are dense in the set of bounded strictly convex domains with smooth boundary. The proof that such an orbit exists is an extension to billiard maps of some results of a paper by Gonchenko, Shilnikov, and Turaev, where it is proved that such maps are dense in Newhouse domains in regions of real-analytic area-preserving two-dimensional maps. Our result is a step toward disproving a conjecture that no absolutely periodic billiard orbits of infinite order exist in Euclidean billiards and is also an indication that Ivrii's Conjecture about the measure set of periodic orbits may not be true.