Philadelphia Area Number Theory Seminar

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Capacity Theory, The Fekete-Szego Theorem

**Abstract:** Let $E$ be a compact subset of the complex numbers. Fekete and Szego showed that using the "capacity" of $E$, a measure of the size of $E$ which arises in potential theory, one can decide whether there are finitely many or infinitely many monic polynomials in $\mathbb{Z}[x]$ having all their roots in $E$. In this talk I will sketch a proof of the Fekete-Szego theorem, and give several ways of thinking about how it relates to potential theory and to the geometry of numbers. Time permitting, I plan to discuss generalizations of the Fekete-Szego theorems to adelic points on $\mathbb{P}^1$, and give several examples of how one can use these theorems.

Wednesday, June 8, 2016
2:40–4:00PM
Bryn Mawr College
Department of Mathematics
Park Science Center 328
Tea and refreshments at 2:20PM in Park 355