



MARQUETTE
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HELEN WAY KLINGLER
COLLEGE OF ARTS AND SCIENCES

Department of Mathematics, Statistics and Computer Science

COLLOQUIUM ANNOUNCEMENT

Cardinal Characteristics and Computability

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2:00 PM, Friday November 9th, 2018

Cudahy Hall, Room 401

Abstract

Set theory properly began with Cantor's proof that the set of reals and the set of naturals have different cardinalities. This raised the natural question of whether there was anything in between the two. The claim "Every uncountable set of reals is as big as the whole set of reals itself" became known as the *continuum hypothesis* (CH), and - although it ultimately turned out to be unsolvable in a precise sense - it was a driving force in set theory up until the early 60s. Along the way, though, various "alternate flavors" of the continuum popped up. For example, how many functions from naturals to naturals do you need before every function from naturals to naturals is dominated by one in your collection? It's easy to see that we need at least uncountably many, and at most continuum-many, but beyond that things get murky. "Natural" possible counterexamples to CH are called *cardinal characteristics of the continuum* - I'll describe the general subject, and then talk about how despite their purely set-theoretic nature they wind up playing a role in computability theory.

1313 W. Wisconsin Avenue, Cudahy Hall, Room 401, Milwaukee, WI 53201-1881

For further information: see <http://www.marquette.edu/mcs/resources-colloquium.shtml>

or contact Dr. Debbie Perouli #414-288-3889, despoina.perouli@marquette.edu

POST COLLOQUIUM REFRESHMENTS SERVED IN
CUDAHY HALL, ROOM 342 AT 3:00 P.M.