SDSU Mathematics Colloquium Distinguished Lecture Series

How Many Cards Can Avoid a SET?

Monday, November 7, 2022 4pm–5pm, GMCS 405
Departmental Tea at 3:30pm

SPEAKER: Dr. Mohamed Omar
Harvey Mudd College; Department of Mathematics

ABSTRACT: SET is a popular real-time card game where players search for special triples of cards among a table of cards that are face-up. A common issue when playing the game is not having a SET among the face-up cards. What is the maximum number of cards that can be face-up while avoiding a SET? Surprisingly, this question is at the heart of a decades old central problem in extremal combinatorics and additive number theory that had a major breakthrough in 2017. In this talk, we describe the breakthrough, and how the presenter used ideas in its development to make headway on a range of disparate problems in combinatorics.

BIO: Dr. Mohamed Omar is an associate professor of mathematics and the Joseph B. Platt Chair in Effective Teaching at Harvey Mudd College. He has received national awards for his research, including being the inaugural recipient of the American Mathematical Society's Claytor-Gilmer Fellowship and an inaugural recipient of the Karen EDGE Fellowship, both celebrating mid-career research. He has also earned the Henry L. Alder Award, the preeminent junior faculty national prize given by the Mathematical Association of America. He is the author of over 30 peer-reviewed articles in internationally recognized journals, studying the interaction between algebra and combinatorics.