REU Seminar Series

Wednesday 2:30pm, Nesbitt Room June 14

Shiliang Gao
(Mentor: Shira Zerbib Gelaki)
Title: ***Family of disks in R^2 with the (4,3) property***
Abstract: A family F of sets is said to have the (p, q) property if among any p elements in F there exist q elements that intersect. I'm going to talk about the piercing number of family of disks in R^2 with the (4,3) property.

Wu Han & Roi Orzach
(Mentor: Alexander Barvinok)
Title: ***Approximations of Permanents***
Abstract: We look to find a way to apply our algorithm which approximates permanents in quasi polynomial time, by trying to find a criterion that determines when the approximation algorithm will work for complex, positive semidefinite, hermitian matrices.

Ryan Britton
(Mentor: Beatrice Vritsiou)
Title: Volume Concentration and the Family of Centroid Bodies for the N-Dimensional Regular Simplex
Abstract: For convex bodies (that is, convex compact sets with positive volume) in a Euclidean space, an interesting question is where volume tends to concentrate. In the case of the n-dimensional Euclidean ball, for example, if n is large, a surprising portion of the volume is found near the boundary. Moreover, due to volume concentration we should expect the following: if we have a subset A of a convex body K that already has volume half that of K, and we consider a small neighborhood of A in the form A+B for some suitable convex subset B of K (that is, we take any sum of a vector in A and a vector in B), then the volume of A+B could be very close to the total volume of K, and in fact much larger than the sum of vol(A) and vol(B).

It turns out that if we are looking for the optimal family of convex subsets B(p) for p≥2 so that vol(K) - vol(A+B(p)) will decay exponentially in p, then the best hope is to consider a family of bodies called the centroid bodies of K (which will be defined in this talk). One goal of my REU is to understand the centroid bodies for the n-dimensional regular simplex, which is defined to be the convex hull of n+1 evenly spaced points in R^n (the convex hull of a set of points is just the smallest convex body that contains them). By adapting methods that have already been used to find the centroid bodies of other convex bodies, we have determined them to within absolute constants.

REU Seminar Series

Wednesday 2:30pm, Nesbitt Room **June 28**

Kartik Prasanna
Title: Graduate school, particularly at the University of Michigan
Abstract: ABSTRACT

Han Wu
(Mentor: Jinho Baik)
Title: ***TALK***
Abstract: ABSTRACT

Shubhankar Sahai
(Mentor: David Speyer)
Title: ***TALK***
Abstract: ABSTRACT

Erika Pirnes
(Mentor: Karen Smith)
Title: ***TALK***
Abstract: ABSTRACT

REU Seminar Series

Wednesday 2:30pm, Nesbitt Room **July 5**

Brian Burks
(Mentor: Brendan Pawlowski)
Title: ***TALK***
Abstract: ABSTRACT

Jiachang Liu
(Mentor: Ilker Kocyigit)
Title: ***TALK***
Abstract: ABSTRACT

Sung Hyup Lee
(Mentor: David Fernandez-Breton)
Title: ***TALK***
Abstract: ABSTRACT

Jeremy D'Silva
(Mentor: Marisa Eisenberg)
Title: ***TALK***
Abstract: ABSTRACT

REU Seminar Series

Wednesday 2:30pm, Nesbitt Room **July 12**

Jingzhen Hu
(Mentor: Robert Krasny)
Title: ***TALK***
Abstract: ABSTRACT

Daniel Solano
(Mentor: Silas Alben)
Title: ***TALK***
Abstract: ABSTRACT

Jaewon Hur
(Mentor: Eduardo Corona)
Title: ***TALK***
Abstract: ABSTRACT

Dean Young
(Mentor: Harm Derksen)
Title: ***TALK***
Abstract: ABSTRACT

REU Seminar Series

Wednesday 2:30pm, Nesbitt Room **July 26**

Izak Oltman
(Mentor: Eduardo Corona)
Title: ***TALK***
Abstract: ABSTRACT

Adam Holeman & Jennifer Natalia Jones Baro
(Mentor: Harrison Bray & Caleb Ashley)
Title: ***TALK***
Abstract: ABSTRACT

Xuenan Li
(Mentor: Charles Doering)
Title: ***TALK***
Abstract: ABSTRACT

Ben Gould
(Mentor: Wouter van Limbeek)
Title: ***TALK***
Abstract: ABSTRACT

REU Seminar Series

Wednesday 2:30pm, Nesbitt Room **August 2**

Jordan Katz
(Mentor: Diana Hubbard)
Title: ***TALK***
Abstract: ABSTRACT

Jincheng Wang
(Mentor: Andreas Blass)
Title: ***TALK***
Abstract: ABSTRACT

Wianxing Liu
(Mentor: Daniel Burns)
Title: ***TALK***
Abstract: ABSTRACT

Natalia Pacheco-Talla
(Mentor: Nicholas Vlamis & Kevin Schreve)
Title: ***Thurston's norm for 2-generator groups***
Abstract: We will discuss an implementation of an algorithm for drawing the unit ball associated to the Thurston norm of a 2-generator group and theorem of Thurston on what polygons in the plane can occur. We will give some examples and necessary definitions.