

Seminar Description

The mathematical focus of the seminar is dependent on the interests of the attendees. The topic will shift week-to-week, as per the particular interests of the discussion leader, who will propose a topic and present relevant background information for the group to analyze, deconstruct, and help each other build a foundational understanding. The discussion leader is only a leader insofar as they bring to the table expertise in their particular topic, though the format is designed to create a classroom setting where all attendees are equally teaching and learning, as we all develop and practice techniques for effective mathematical communication. We encourage participation from all mathematical interests and levels of background and insist that all participants pose inquiries as they come, no matter how big or small. We value all perspectives and skill sets and will be practicing — alongside inquiry-based mathematics — active inclusivity in the mathematics classroom.

Outline of Goals

- Build community centered on improving our mathematical practice
 - *Tool:* Critical inquiry of traditional mathematical practices in seminar talks, collaborative problem solving and research, teaching, workshops, etc.
 - *Praxis:* Attendees give math talks, facilitate problem solving sessions, workshop mathematical ideas and teaching practices, etc.
- Explore and experiment with nontraditional methods of mathematical communication — namely those which center the re-humanization of mathematics
- Encourage proactive and positive communication that brings the whole room into a conversation
 - Base communication on the idea that everyone in the room — regardless of mathematical background on a particular topic — has something of value to contribute to the discussion

(Tentative) Schedule (email Erik, Liza, or Saud to sign up)

25 JANUARY 2024

Discussion leaders: Erik Herrera, Liza Jacoby, Saud Molaib

Topic: Community agreements; group's intentions for the seminar

Summary + links + list of values:

1 FEBRUARY 2024

Discussion leader: Erik Herrera + Saud Molaib

Topic: Coherent Sheaves

Summary: [to be completed after each session by non-leading attendee]

8 FEBRUARY 2024

Discussion leader: Audrey Rosevear

Topic: Deformations of Contact Manifolds I

Summary:

15 FEBRUARY 2024

Discussion leader: Liza Jacoby

Topic: The Heesch Tiling Problem, Orbifolds, and Minimal-Diameter Isohedral Tilings

Summary:

22 FEBRUARY 2024

Discussion leader: Audrey Rosevear

Topic: Deformations of Contact Manifolds II

Summary:

29 FEBRUARY 2024

Discussion leader: Saud Molaib

Topic: Constructing explicit examples of Ramanujan graphs

Summary:

7 MARCH 2024

Discussion leader: Catherine Cannizzo

Topic: Moduli spaces in the Fukaya category

Summary: The Fukaya category is a symplectic invariant which is defined in a geometric way. We start by visualizing compactifications of moduli spaces of disks. Then we see how these compactifications produce A_∞ relations in the Fukaya category.

14 MARCH 2024

Discussion leader: Erik

Topic: Hopf Algebras

Summary:

21 MARCH 2024

Discussion leader:

Topic:

Summary:

28 MARCH 2024 (no meeting; spring recess)

4 APRIL 2024

Discussion leader: Audrey

Topic: Canonical implies smooth?

Summary:

11 APRIL 2024

Discussion leader: Saud

Topic: Galois Descent

Summary:

18 APRIL 2024

Discussion leader:

Topic:

Summary:

25 APRIL 2024

Discussion leader:

Topic:

Summary:

2 MAY 2024 (last meeting of the semester)

Discussion leader:

Topic:

Summary: