

## SCHEDULE WEEK 8

All times are CDT

August 9 – August 13

<http://math.uchicago.edu/may/REU2021/EIGHTH.pdf>

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THIS IS THE LAST WEEK

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SPECIAL TALKS:

TUESDAY and THURSDAY, 11:00: Daniil Rudenko

Title: Coxeter's Forgotten Theorem and Scissors Congruence

Abstract: I will talk about a remarkable theorem of Coxeter relating orthoschemes  
Speaker: higher-dimensional analogs of right triangles and configurations of points  
on a line. Its planar version is the famous Pentagramma Mirificum of Gauss. At  
the end I will explain some applications of these results to the theory of scissors  
congruence.

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Otherwise, the week is entirely devoted to participant talks!

Monday:

11:00am: Michael barz. "The Moduli Space of Lattices and Seigel's Mean Value  
Theorem"

11:45am: John Hopper. "Who put this physics in my math: Probability Theory  
of Ferromagnetic Phase Transition"

1:00pm: George Turer: "Closed Geodesics and Infinite-Dimensional Calculus"

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Tuesday:

3:45pm: Keyer Thyme. "Markov's Constructive Mathematics"

4:30pm Ryan Wandsnider. "Pseudo-Arc: The Ugliest Continuum You've Never  
Seen"

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Wednesday:

11:00am: Andrey Shapiro. “The Averaging Approach to Frankl’s Conjecture”

11:30am: Christian Liu. “From Random Walks to Brownian Motion: the Functional Central Limit Theorem”

1:00pm: Jacob Parish. “An introduction to Error-Correcting Codes”

1:30pm: John Naughton. “Introduction to Schubert Calculus”

2:30pm: Lucy Horowitz. “The Lorentz Group”

3:00pm: Rachel Kyu Yeon Lee. “Properties of the Lemniscate”

4:00pm: Ryan Tamura. “Elliptic Curves”

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Thursday:

9:00am: Wilson Lee (in China). “Number Rigidity in Perturbed Lattices”

9:30am: Ruochuan Xu (in China). “Intersection of Brownian Paths in  $R^n$ ”

1:00pm: Chen Lin. “An Introduction to Minimal Surfaces in  $R^3$ ”

1:30pm: Judson Kuhrman. “Gropes in 4-Manifolds”

2:30pm: Cindy Zhang. “Quadratic forms and the Hasse-Minkowski theorem”

3:00pm: Geoffrey Baring. “Representation theory and  $U_q(sl(2))$ ”

4:00pm: Andrew Burke. “What is a Chow ring”

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Friday:

9:00am: Gabrielle Li (in China). “A note on the Bockstein and Adams spectral sequences”

9:30am: Alex Ghorbani. “Tame Geometry: O-Minimal Structures and the Monotonicity Theorem”

10:00am: Marc de Fontnouvelle. “Descriptive Complexity: a Logician’s Insight into the P vs. NP Problem”

1:00pm: Adam Zheleznyak. “Discrete Morse Theory and Finite Topological Spaces”

1:30pm: Elle Bower. “Cellular  $E_k$  Algebras”

2:30pm: Ciprian Bonciocat. “Complex cobordism and formal group laws”

3:00pm: Joseph Hlavinka. “Motivic homotopy theory and cellular schemes”

4:00pm: Connor Lehmacher. “Most Homology Theories aren’t Cycles Modulo Boundaries”

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