### Monday, November 23, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Seminar</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>4:00pm-5:00pm</td>
<td><strong>Algebraic Topology</strong> -- Danny Shi (University of Chicago)</td>
<td>Models of Lubin-Tate spectra via Real bordism theory</td>
<td>Virtual</td>
<td>online</td>
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<tr>
<td>4:00pm-5:00pm</td>
<td><strong>Midwest Dynamics and Group Actions</strong> -- Andreas Wieser (ETH Zurich)</td>
<td>Simultaneous supersingular reductions of CM elliptic curves</td>
<td>Virtual</td>
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<tr>
<td>4:00pm-5:00pm</td>
<td><strong>Colloquium Series</strong> -- David Rowe (Mainz University)</td>
<td>Emmy Noether: Mathematician Extraordinaire</td>
<td>Zoom: 956 7073 6807  Passcode: 909629 East Hall</td>
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### Wednesday, November 25, 2020

<table>
<thead>
<tr>
<th>Time</th>
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<td>4:00pm-5:00pm</td>
<td><strong>Algebraic Geometry</strong> -- Joshua Lam (Harvard)</td>
<td>Calabi-Yau varieties and Shimura varieties</td>
<td>Zoom</td>
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Algebraic Topology
Monday, November 23, 2020, 4:00pm-5:00pm
online Virtual
Danny Shi (University of Chicago)
Models of Lubin-Tate spectra via Real bordism theory

In this talk, we will present Real-oriented models of Lubin-Tate theories at $p=2$ and arbitrary heights. For these models, we give explicit formulas for the action of certain finite subgroups of the Morava stabilizer groups on the coefficient rings. This is an input necessary for future computations. The construction utilizes equivariant formal group laws associated with the norms of the Real bordism theory. As a consequence, we will describe how we can use these models to prove periodicity theorems for Lubin-Tate theories and set up an inductive approach to prove differentials in their slice spectral sequences. This talk is based on several joint projects with Agnès Beaudry, Jeremy Hahn, Mike Hill, Guchuan Li, Lennart Meier, Guozhen Wang, Zhouli Xu, and Mingcong Zeng.

Midwest Dynamics and Group Actions
Monday, November 23, 2020, 4:00pm-5:00pm
Virtual
Andreas Wieser (ETH Zurich)
Simultaneous supersingular reductions of CM elliptic curves

In joint work with Menny Aka, Manuel Luethi and Philippe Michel, we study the simultaneous reductions at several supersingular primes of elliptic curves with complex multiplication. We show - under additional congruence assumptions - that the reductions are surjective on the product of supersingular loci when the discriminant of the order becomes large. The goal for this talk is to explain this result while emphasizing the role of homogeneous dynamics.

Zoom link: https://iu.zoom.us/j/661711533?pwd=RTFVTjMrQ1pYTCtZlZlVvVvODV2QT09
password is 076877 if needed.
Emmy Noether is famous as the "mother of modern algebra," but her influence extended far beyond algebra alone. This talk, based on my recent book with the title above, will focus on Noether's broader influence as an international figure in the 1920s. Beyond her immediate circle of students, Noether's courses drew talented mathematicians from all over the world. Four of the most important were B.L. van der Waerden, Pavel Alexandrov, Helmut Hasse, and Olga Taussky. Noether's classic papers on ideal theory inspired van der Waerden to recast his research in algebraic geometry. Her lectures on group theory motivated Alexandrov to develop links between point set topology and combinatorial methods. Noether's vision for a new approach to algebraic number theory gave Hasse the impetus to pursue a line of research that led to the Brauer-Hasse-Noether Theorem, whereas her abstract style clashed with Taussky's approach to classical class field theory during a difficult time when both were trying to find their footing in a foreign country. Hermann Weyl, her colleague before both fled to the United States in 1933, fully recognized that Noether's dynamic school was the very heart and soul of the famous Göttingen community.

Two recent books on Emmy Noether
- Emmy Noether - Mathematician Extraordinaire
- Proving It Her Way: Emmy Noether, a Life in Mathematics

Zoom Link: https://umich.zoom.us/j/95670736807
Passcode: 909629
Algebraic Geometry
Wednesday, November 25, 2020, 4:00pm-5:00pm
Zoom
Joshua Lam (Harvard)
Calabi-Yau varieties and Shimura varieties

Calabi-Yau (CY) varieties are certain special varieties which have been the subject of intense studies by algebraic geometers in the last few decades. I will try to explain some arithmetic properties of these varieties; more specifically, I will discuss two results on the Attractor Conjecture which was formulated by Greg Moore in 1998. Throughout I will emphasize the difference between CYs with and without Shimura moduli. Time permitting, I will discuss what one can (conjecturally!) expect from CYs with and without Shimura moduli. I will not assume familiarity with CYs or Shimura varieties.