### Monday, March 23, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00pm-6:00pm</td>
<td><strong>Student Analysis</strong> -- Malavika Mukundan (University of Michigan) <em>The Harnack Inequality</em> -- Online Event</td>
</tr>
</tbody>
</table>

### Tuesday, March 24, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00am-5:00am</td>
<td><strong>Colloquium Series</strong> -- Sophie Morel (CNRS/ENS de Lyon.) <em>Cancelled</em> -- 1360 East Hall</td>
</tr>
<tr>
<td>3:00pm-4:00pm</td>
<td><strong>Student Geometry/Topology</strong> -- Shubhankhar Sahai (TBA) -- 1866 East Hall</td>
</tr>
</tbody>
</table>

### Wednesday, March 25, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>12:00am-5:30am</td>
<td><strong>RTG Seminar on Geometry, Dynamics and Topology</strong> -- David Fisher (Indiana University) <em>Cancelled</em> -- 3866 East Hall</td>
</tr>
<tr>
<td>4:00pm-5:20pm</td>
<td><strong>Algebraic Geometry</strong> -- Gebhard Martin (University of Bonn) <em>CANCELED</em> -- 4096 East Hall</td>
</tr>
</tbody>
</table>

### Thursday, March 26, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00pm-4:00pm</td>
<td><strong>Commutative Algebra</strong> -- Linquan Ma (Purdue University) <em>Singularities in mixed characteristic</em> -- 1866EH East Hall</td>
</tr>
<tr>
<td>4:00pm-5:00pm</td>
<td><strong>Differential Equations</strong> -- Klaus Kristen (Mathematical Reviews AMS and Baylor University) <em>Spectral zeta functions, conformal transformations and gluing formulas</em> -- 4088 East Hall</td>
</tr>
</tbody>
</table>

### Friday, March 27, 2020

<table>
<thead>
<tr>
<th>Time</th>
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</tr>
</thead>
<tbody>
<tr>
<td>12:00am-12:00am</td>
<td><strong>Geometry</strong> -- David Fisher (Indiana University) <em>Cancelled</em> -- 3866 East Hall</td>
</tr>
<tr>
<td>3:00pm-4:00pm</td>
<td><strong>Applied Interdisciplinary Mathematics (AIM)</strong> -- (TBA) <em>Cancelled</em> -- 1084 East Hall</td>
</tr>
<tr>
<td>4:00pm-5:00pm</td>
<td><strong>Junior Colloquium Series</strong> -- Kevin Nowland and Benjamin Campbell (Cover My Meds) <em>Invitations to Industry series</em> -- 1068 East Hall</td>
</tr>
</tbody>
</table>
Abstracts for the week of March 22nd, 2020 - March 28th, 2020

**Student Analysis**  
**Monday, March 23, 2020, 5:00pm-6:00pm**  
**Online Event**  
**Malavika Mukundan (University of Michigan)**  
*The Harnack Inequality*

This talk will be held via Canvas conferences. Please contact the speaker for instructions on how to access the talk. An abstract is included here as a pdf.

**Student Geometry/Topology**  
**Tuesday, March 24, 2020, 3:00pm-4:00pm**  
**1866 East Hall**  
**Shubhankhar Sahai ()**  
*TBA*

**Colloquium Series**  
**Tuesday, March 24, 2020, 4:00pm-5:00pm**  
**1360 East Hall**  
**Sophie Morel (CNRS/ENS de Lyon.)**  
*Cancelled*

**RTG Seminar on Geometry, Dynamics and Topology**  
**Wednesday, March 25, 2020, 12:00pm-5:30pm**  
**3866 East Hall**  
**David Fisher (Indiana University)**  
*cancelled*

**Algebraic Geometry**  
**Wednesday, March 25, 2020, 4:00pm-5:20pm**  
**4096 East Hall**  
**Gebhard Martin (University of Bonn)**  
*CANCELED*
Commutative Algebra  
**Thursday, March 26, 2020, 3:00pm-4:00pm**  
1866EH East Hall  
Linquan Ma (Purdue University)  
*Singularities in mixed characteristic*  

We discuss recent work on singularities and birational geometry in mixed characteristic. We introduce mixed characteristic versions of klt/plt singularities and multiplier/adjoint ideals, prove their analogous properties, and compare them with the existing equal characteristic singularities. The theory relies on Andre and Gabber's recent work on the existence of weakly functorial perfectoid big Cohen–Macaulay algebras that factor through the absolute integral closure. We then discuss applications, which include a uniform version of the Briancon-Skoda theorem and a klt/plt adjunction for threefolds in mixed characteristic. This talk is based on joint work in progress with Karl Schwede, Kevin Tucker, Joe Waldron and Jakub Witaszek.

Differential Equations  
**Thursday, March 26, 2020, 4:00pm-5:00pm**  
4088 East Hall  
Klaus Kristen (Mathematical Reviews AMS and Baylor University)  
*Spectral zeta functions, conformal transformations and gluing formulas*  

Let M1 and M2 be two Riemannian manifolds each of which have the boundary N. Consider the Laplacian on M1 and M2 augmented with Dirichlet boundary conditions on N. A natural question to ask is if there is any relation between spectral properties of the Laplacian on M1, M2, and the Laplacian on the manifold M (without boundary) obtained gluing together M1 and M2, namely M = M1 \(\cup\) N M2. Using spectral zeta functions, a partial answer is given by the Burghelea-Friedlander- Kappeler-gluing formula for zeta-determinants. This formula contains an (in general) unknown polynomial which is completely determined by some data on a collar neighborhood of the hypersurface N. I will use conformal transformations to understand the geometric content of this polynomial. The understanding obtained will pave the way for a fairly straightforward computation of the polynomial (at least for low dimensions of M). Furthermore it leads to a partial understanding of the heat invariant for the Dirichlet-to-Neumann map, that is for the Steklov problem.

Geometry  
**Friday, March 27, 2020, 12:00am-12:00am**  
3866 East Hall  
David Fisher (Indiana University)  
*cancelled*

Applied Interdisciplinary Mathematics (AIM)  
**Friday, March 27, 2020, 3:00pm-4:00pm**  
1084 East Hall  
*Cancelled*
Junior Colloquium Series
Friday, March 27, 2020, 4:00pm-5:00pm
1068 East Hall
Kevin Nowland and Benjamin Campbell (Cover My Meds)
Invitations to Industry series

CANCELLED