<table>
<thead>
<tr>
<th>Date</th>
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<tr>
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<td>2:00pm-3:50pm</td>
<td>RTG Seminar on Number Theory -- Eric Stubley (University of Chicago) <em>Locally Split Galois Representations and Hilbert Modular Forms of Partial Weight One</em> -- Virtual</td>
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RTG Seminar on Number Theory  
Monday, January 04, 2021, 2:00pm-3:50pm  
Virtual  
Eric Stubley (University of Chicago)  

Locally Split Galois Representations and Hilbert Modular Forms of Partial Weight One

Pre-talk for graduate students: 2pm  
Weight One Modular Forms in Ordinary Families

Abstract: I'll sketch a proof (due to Ghate and Vatsal) that an ordinary family of modular forms which admits infinitely many classical weight one specializations must have complex multiplication. I'll aim to introduce and emphasize some ways of thinking about weight one forms, ordinary families, and their associated Galois representations.

Main talk: 3-3:50pm

The Galois representation attached to a p-ordinary eigenform is upper triangular when restricted to a decomposition group at p. A natural question to ask is under what conditions this upper triangular decomposition splits as a direct sum. Ghate and Vatsal have shown that for Galois representations coming from families of p-ordinary eigenforms, the restriction to a decomposition group at p is split if and only if the family has complex multiplication. In their proof, the weight one members of the family play a key role.

I'll speak about work which aims to answer similar questions in the case of ordinary Galois representations for a totally real field which are split at only some of the primes above p. In this work Hilbert modular forms of partial weight one play a central role. I'll discuss what is known about partial weight one forms and the new techniques used in generalizing Ghate and Vatsal's result to this situation.
RTG Seminar on Number Theory  
Tuesday, January 05, 2021, 2:00pm-3:50pm  
Virtual  
Ian Gleason Friedberg (UC Berkeley)  
*On the geometric connected components of moduli of p-adic shtukas*

Pre-talk for graduate students: 2pm  
Main talk: 3-3:50pm

Through the recent theory of diamonds, P. Scholze constructs local Shimura varieties and moduli of p-adic shtukas attached to any reductive group. These are diamonds that generalize the generic fiber of a Rapoport–Zink space. It is widely expected that these interesting spaces realize in their cohomology instances of the local Langlands correspondence. In this talk, we describe the set of connected components of moduli spaces of p-adic shtukas. The new ingredient of this work is the use of specialization maps in the context of diamonds.

Pre-talk Title: The specialization map in the context of Huber's adic spaces

RTG Seminar on Number Theory  
Wednesday, January 06, 2021, 2:00pm-3:50pm  
Virtual  
Sam Mundy (Columbia University)  
*The Skinner--Urban method and the symmetric cube Bloch--Kato conjecture*

Pre-talk for graduate students: 2pm  "Ribet's converse to Herbrand's theorem"  
Main talk: 3-3:50pm

I will explain the Skinner--Urban method, which constructs nontrivial elements in Selmer groups attached to certain p-adic Galois representations, assuming the vanishing of their L-functions at the central critical point. Then I will describe some work-in-progress which carries out this method for symmetric cube Galois representations by p-adically deforming Eisenstein series on the exceptional group $G_2$.

RTG Seminar on Number Theory  
Thursday, January 07, 2021, 2:00pm-3:50pm  
Virtual  
Owen Barrett (University of Chicago)  
*The derived category of the abelian category of constructible sheaves*

Pre-talk for graduate students: 2pm  
Main talk: 3-3:50pm

Please see titles and abstracts attached below.