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<th>Date</th>
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<th>Event</th>
<th>Speaker</th>
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<tr>
<td>Monday, January 04</td>
<td>2:00pm</td>
<td>RTG Seminar on Number Theory</td>
<td>Eric Stubley (University of Chicago)</td>
<td>Locally Split Galois Representations and Hilbert Modular Forms of Partial Weight One</td>
<td>Virtual</td>
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<td>Sam Mundy (Columbia University)</td>
<td>TBA</td>
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<td>Thursday, January 07</td>
<td>2:00pm</td>
<td>RTG Seminar on Number Theory</td>
<td>Owen Barrett (University of Chicago)</td>
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Abstracts for the week of January 3rd, 2021 - January 9th, 2021

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 Ghat 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. Ghat 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 Ghat and Vatsal's result to this situation.

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