

# Philadelphia Area Number Theory Seminar

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*p*-adic aspects of modular forms and L-functions

**Abstract:**

I will discuss recent developments and ongoing work for  $p$ -adic aspects of modular forms and L-functions, which encode arithmetic data. Interest in  $p$ -adic properties of values of L-functions originated with Kummer's study of congruences between values of the Riemann zeta function at negative odd integers, as part of his attempt to understand class numbers of cyclotomic extensions. After presenting an approach to proving congruences and constructing  $p$ -adic L-functions, I will conclude the talk by introducing ongoing joint work of G. Rosso, S. Shah, and myself (concerning Spin L-functions for  $\mathrm{GSp}_6$ ). I will explain how this work fits into the context of earlier developments, including constructions of Serre, Katz, Coates–Sinnot, Deligne–Ribet, Hida, E–Harris–Li–Skinner, and Liu. I will not assume the audience has prior familiarity with  $p$ -adic L-functions or Spin L-functions, and all who are curious about this topic are welcome.

**Tuesday, October 18, 2022**  
2–4 PM

Swarthmore College  
Department of Mathematics & Statistics  
500 College Ave  
Science Center, Room 149

Informal refreshments at 2PM – Talk at 2:30PM