

Mentor Lecture Series

Organizer: Daniel Erman and Bianca Viray

Monday, 4:10–5:00pm, 60 Evans

Jan. 30 **Yuval Peres**, UCB
Bernoulli Convolutions

The Bernoulli convolutions are measures first studied by Wintner and Erdős in the 1930s. The question when they are absolutely continuous is still open, with intriguing connections to Algebraic number theory (Pisot and Salem numbers) and geometric measure theory (projections of fractals). The last decade has seen major progress. I will present some of the history, results, and open problems. In the second half of the talk, I will survey some other projects I have worked on with Berkeley Grad students and postdocs, and what problems they lead to. For instance, given a coin with unknown bias p , for which functions f can you produce a "coin" with bias $f(p)$?

The Mentor Lecture Series is designed for first and second year graduate students. The series aims to acquaint beginning graduate students with potential dissertation supervisors whom they might not otherwise closely encounter, and to impart a taste of research activity in the mathematics department in order to help beginning students choose fields of specialization.