REU: Complex Systems and Pattern Formation

Summer 2022: June 16 - July 27

Pattern formation is the study of mechanisms that lead to the appearance of simple or complex spatial-temporal patterns. It is motivated in part by the observation of strikingly similar patterns in apparently unrelated physical systems. In this REU, participants will conduct mathematical research in the area of pattern formation from a viewpoint of dynamical systems and differential equations motivated by applications to the sciences, using both analytical and computational tools.



Program Description:

- Six weeks (June 16 July 27, 2022) on the U of Minnesota campus in Minneapolis.
- Use mathematical analysis and numerical simulations to gain insight into dynamics of patterns
- Projects will be guided and can be tailored to student interest
- Students will be mentored by Professor Arnd Scheel, as well as graduate students Olivia Cannon, Sally Jankovic, and Montie Avery

Participants will receive a stipend of \$3,000 and up to \$2,000 for travel, room, and board.

Successful Applicants:

- Are motivated undergraduate students
- Need no prior research experience
- Should have had a course in differential equations or dynamical systems
- May have higher-level coursework
- May have familiarity with or an interest in learning Mathematica or Matlab
- Must be US citizens or permanent residents
- Must not complete their undergraduate degree before summer 2022



Contact: Arnd Scheel (scheel@umn.edu). Program sponsored by the NSF. Application Deadline: February 7, 2022. For more information and to apply, go to: http://www.math.umn.edu/~scheel/reu/reu-opportunities.html