



# **UMD REU 2022**

## **Modern topics in pure and applied mathematics**

**Kick-off meeting**

**Maria Cameron**

**University of Maryland**

**June 13, 2022**

# Senior and junior personnel

- **Faculty:**

- Maria Cameron, [mariakc@umd.edu](mailto:mariakc@umd.edu)
- Wojtek Czaja, [czaja@umd.edu](mailto:czaja@umd.edu)
- Dio Margetis, [diom@umd.edu](mailto:diom@umd.edu)

- **TAs**

- Luis Suarez, [lcsuarez@umd.edu](mailto:lcsuarez@umd.edu)
- Luke Evans, [evansal@umd.edu](mailto:evansal@umd.edu)
- Margot Yuan, [jyuan98@umd.edu](mailto:jyuan98@umd.edu)

# Schedule

- **Weeks 1—2** (06/13—06/24):
  - Daily Tutorials/Computer Labs. *Each REU student is expected to choose a particular project by themed of Week 2.*
- **Weeks 3—8** (06/27 — 08/05):
  - Working on particular projects
  - **Monday:** Lunchtime Workshop (MATH lounge)
  - **Wednesday:** Exposure Seminar (2–3 PM, MATH3206)
  - **Friday:** Update Seminar (1:30—3:30 PM, MATH3206)
- **Wednesday, August 3:**
  - *Poster Competition*
- **Friday, August 5:**
  - *Symposium*

# Lunchtime Workshop

Mondays, 12—1 PM, MATH lounge

- ***June 27:*** How to give a talk
- ***July 11:*** How to apply to graduate schools and for graduate research fellowships
- ***July 18:*** How to write a paper
- ***July 25:*** How to design a good poster
- ***August 1:*** How to prepare the final presentation for the Symposium

# Exposure Seminar

Wednesdays, MATH 3206, 2–3 PM

- **June 29:** Haizhao Yang, *Reinforcement Learning*
- **July 6:** Yanir Rubinstein, *Convexity and Positivity*
- **July 13:** Wojtek Czaja, *Harmonic Analysis meets ML*
- **July 20:** Stuart Antman, *The PDEs of continuum physics: the virtue of ignorance*
- **July 27:** Deep Ray, *Deep Learning aided Bayesian inference*
- **August 3:** Jonathan Rosenberg, *The mathematics of crystals and quasicrystals*

# Update Seminar

Fridays, MATH 3206, 1:30—3:30 PM

- REU students will give 15-minute talks on their projects
- In each seminar, 2—4 students from each group will speak
- Each REU student is expected to give at least two talks besides the Symposium

## Symposium

Friday, August 5, MATH 3206

- Each REU student will give a 20-minute talk: *what project she/he was working on, what did she/he learn, what are the research results*

# Poster Competition

Wednesday, August 3, Rotunda

- Each research mini-team working on a particular project is expected to present a poster
- Graduate students not involved in the REU will judge the poster competition

## Written Report

Due day: Friday, August 5

- Each REU student is expected to write a report on her/his work. *This report can be a draft of a paper, a research write-up, or a summary of what the student has learned.*

# Social activities

- **Tonight** (Monday, June 13): visit **The Board and Brew**, address: *8150 Baltimore Avenue, College Park, MD 20740*, time: **6:30 PM** (*refer to a reservation by **Maria Cameron***), *self-paid*.
- A **hike** near Potomac Falls. Tentatively the weekend of June 25—26.
- TBA