



The UMD REU Kick-off

Modern Topics in Pure and Applied Mathematics

Summer 2023

Maria Cameron

June 12, 2023

Logistics

- **June 12: 10:00 AM -- 4:00 PM Kick-off.** Room: MATH 3206 and the graduate lounge
- **June 13 -- June 23. Tutorials.** Room: TBA
- **Mondays** June 26, July 3, 10, 24, **12:00 PM -- 1:30 PM. Lunchtime workshop.** MATH Lounge
- **Wednesdays** June 28, July 5, 12, 19, 26, **2:00 PM -- 3:00 PM. Exposure Seminar.** Room: MATH 3206
- **Thursdays** (June 15, 22, 29, July 6, 13, 20, 27) **4:00 PM -- 5:00 PM. : Joint seminar with other STEM REUs,** Room: MATH3206
- **Fridays** June 30, July 7, 14, 21, 28, **1:30 PM -- 3:30 PM. Update Seminar.** Room: MATH 3206
- **Monday, July 17. Visit to NSA**
- **Monday, July 31. Joint lunch with other STEM REUs and graduate directors**
- **Wednesday, August 2, 12 PM -- 2 PM. Poster Competition.** Rotunda of the Math Building.
- **Friday, August 4. 10:00 AM -- 4:00 PM. Symposium.** Room: MATH 3206

Exposure Seminar

Wednesdays, 2—3 PM, room MATH3206

- 1. June 28:** Jonathan Rosenberg, *The Bernoulli numbers: how they were first discovered and some of their amazing applications*
- 2. July 5:** Bill Goldman, *Lines of Cubic Surfaces*
- 3. July 12:** Yanir Rubinstein, *Mahler and Bourgain Conjectures - Geometry, Number Theory, and Convex/Complex Analysis*
- 4. July 19:** Rodrigo Trevino, *Swedish royalty and space travel*
- 5. July 26:** Abba Gumel, *Mathematics of Epidemics*

Joint REU SEminar

Thursdays, 4–5 PM, room MATH3206

- 1. June 15:** Erin Molly, *Models and methods for reconstructing population-level evolutionary histories and relationships to tumor phylogenetics*
- 2. June 22:** Najib El-Sayed, *Computational Biology*
- 3. June 29:** Maria Cameron, *Quantifying Rare Events in Stochastic Systems*
- 4. July 6, note special time 3--4 PM:** Dana Dachman-Soled, *Types of Cybersecurity Attacks*
- 5. July 13:** Evan Golub, *How to do bad science*
- 6. July 20:** Victor Yakovenko, *The Statistical Mechanics of Money*
- 7. July 27:** Emily Kaplitiz, *Neurodivergence*

Lunchtime Workshop

Mondays, 12—1:30 PM, MATH Graduate lounge

- 1. June 26:** How to give a talk
- 2. July 3:** How to apply to a graduate school and for graduate research fellowships
- 3. July 10:** How to apply to a graduate school and for graduate research fellowships
- 4. July 24:** How to prepare a poster and write the final report.

Bring your own lunch!

Expectations

- *Work daily 10 AM — 4 PM.* Offices are provided. TAs will be available.
- Each student is expected to **choose a project by Monday, June 26.**
- Projects can be *individual or group projects.*
- I recommend having *at most three students working on the same project.*
- Each student is expected to give **two talks** on the **Update Seminar.**
- Each student is expected to participate in the **Poster Competition** on **August 2, 2023.** A good total number of posters is ~7.
- Each student is expected to give a talk at the **Symposium** on **August 4, 2023.**
- Each student is expected to write a **project report** and submit it to the faculty leader by the end of the summer program.

Calendar

Reference: <https://provost.umd.edu/node/3846>

- June 19, Monday: Juneteenth holiday. Campus closed.
- July 4, Tuesday: Independence Day. Campus closed.
- Tentatively, there will be a hike during the 4th of July long weekend.