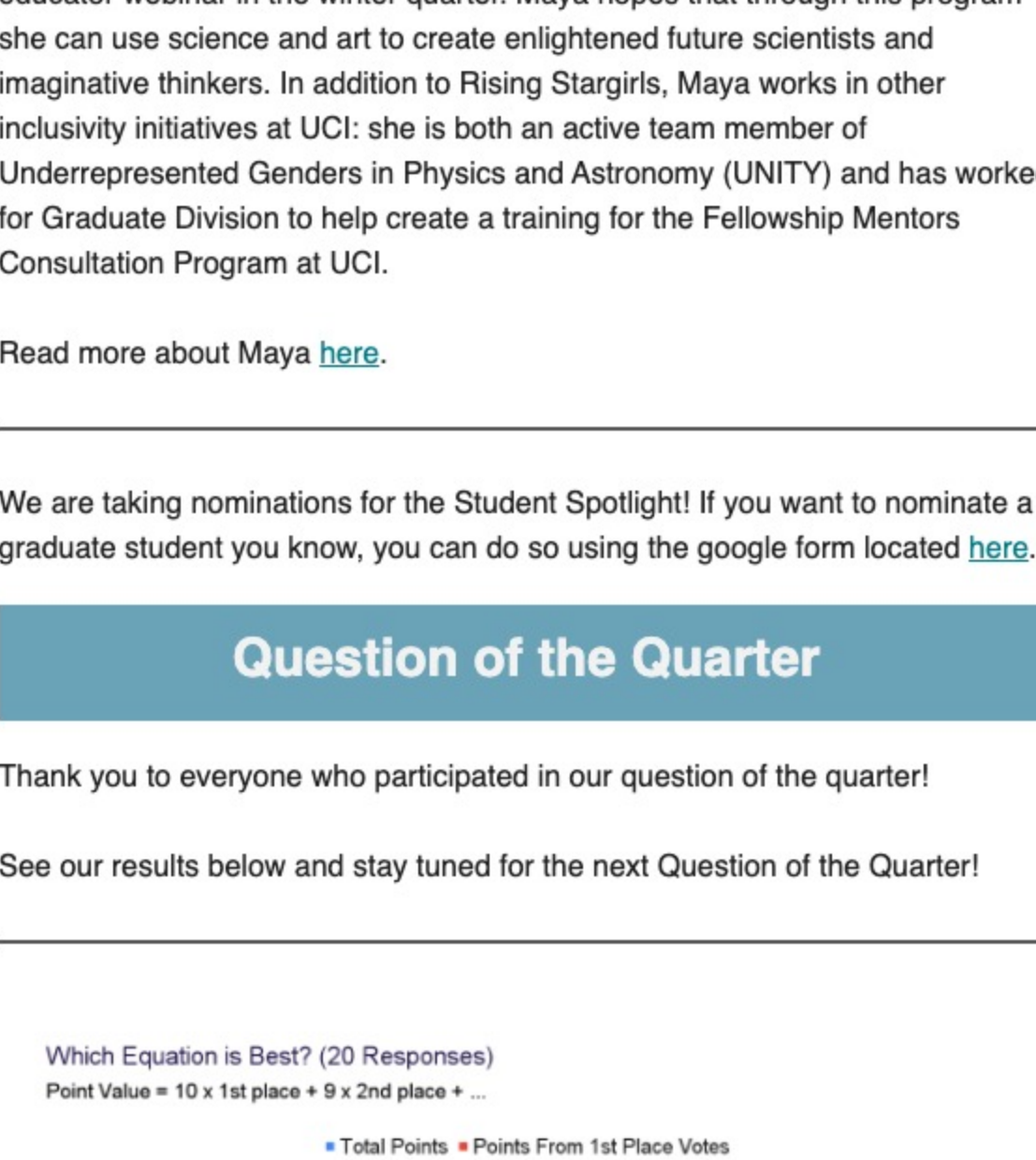


UCI Physics and Astronomy Blog

2022/2023 Fall/Winter Quarter Newsletter Volume 5, Issue 1

Student Spotlight



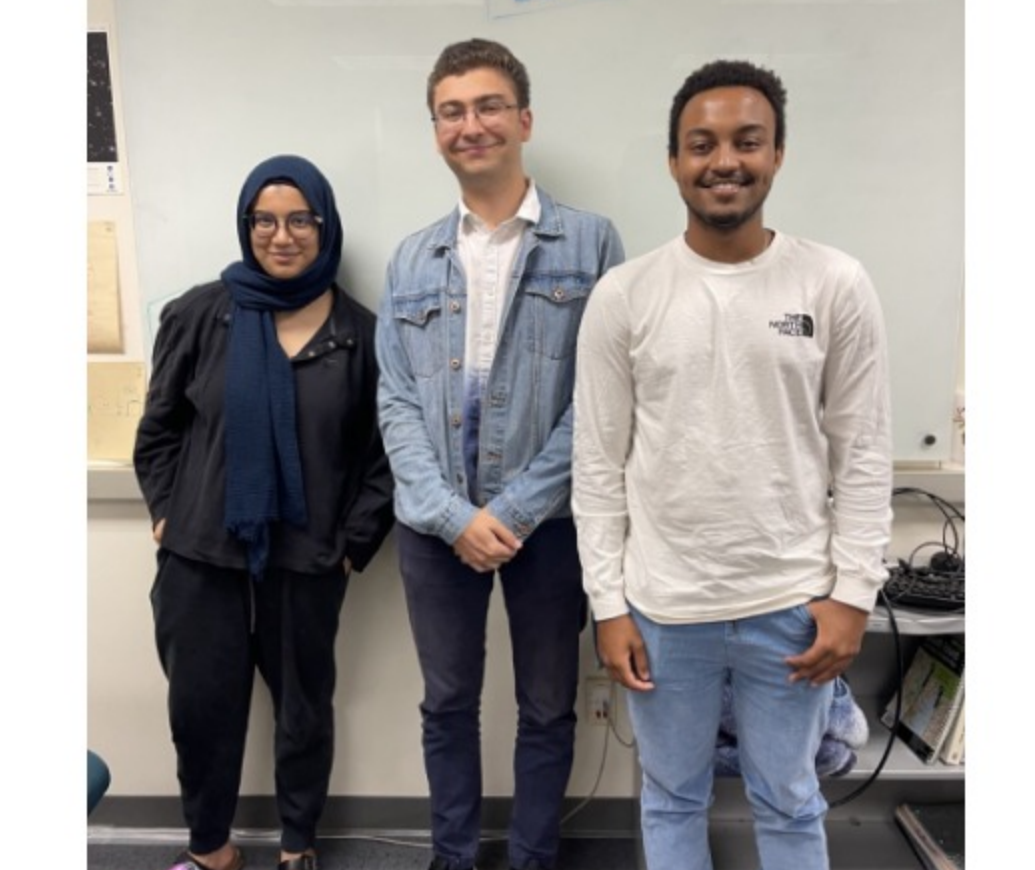
Maya Silverman is a 4th year graduate student studying theoretical astroparticle physics, specifically studying observable quantities of the Universe to constrain properties of dark matter. Maya has been integral in her leadership and involvement in Rising Stargirls, which is an astronomy and astrobiology outreach program for middle-school girls from groups traditionally underrepresented in the sciences. She worked as the program coordinator for the Rising Stargirls workshop over the summer, and will be leading a public educator webinar in the winter quarter. Maya hopes that through this program she can use science and art to create enlightened future scientists and imaginative thinkers. In addition to Rising Stargirls, Maya works in other inclusivity initiatives at UCI: she is both an active team member of Underrepresented Gender in Physics and Astronomy (UNITY) and has worked for Graduate Division to help create a training for the Fellowship Mentors Consultation Program at UCI.

Read more about Maya [here](#).

We are taking nominations for the Student Spotlight! If you want to nominate a graduate student you know, you can do so using the google form located [here](#).

Question of the Quarter

Thank you to everyone who participated in our question of the quarter!
See our results below and stay tuned for the next Question of the Quarter!



Out of 20 Responses we had a clear winner - Heisenberg's Uncertainty Principle!

A somewhat controversial vote was Noether's Theorem - which had the most 1st place votes by a good margin, but was otherwise ranked quite low.

Research Content

Corey Beard was awarded a Future Investigators in NASA Earth and Space Science and Technology (FINESST) fellowship.

Rae Holcomb is spending this Fall at the Flatiron Institute, participating in the [Center for Computational Astrophysics Pre-Doctoral Program](#)

Jack Lubin was just named an [ARCS Scholar](#).

Ph.D. student Abby Bault was awarded a US Dept. of Energy Graduate Research Fellowship and recently completed 5 months at Lawrence Berkeley National Laboratory, leading an effort to improve the 5000 robotic fiber positioners (shown below) that are used to collect data for her thesis.

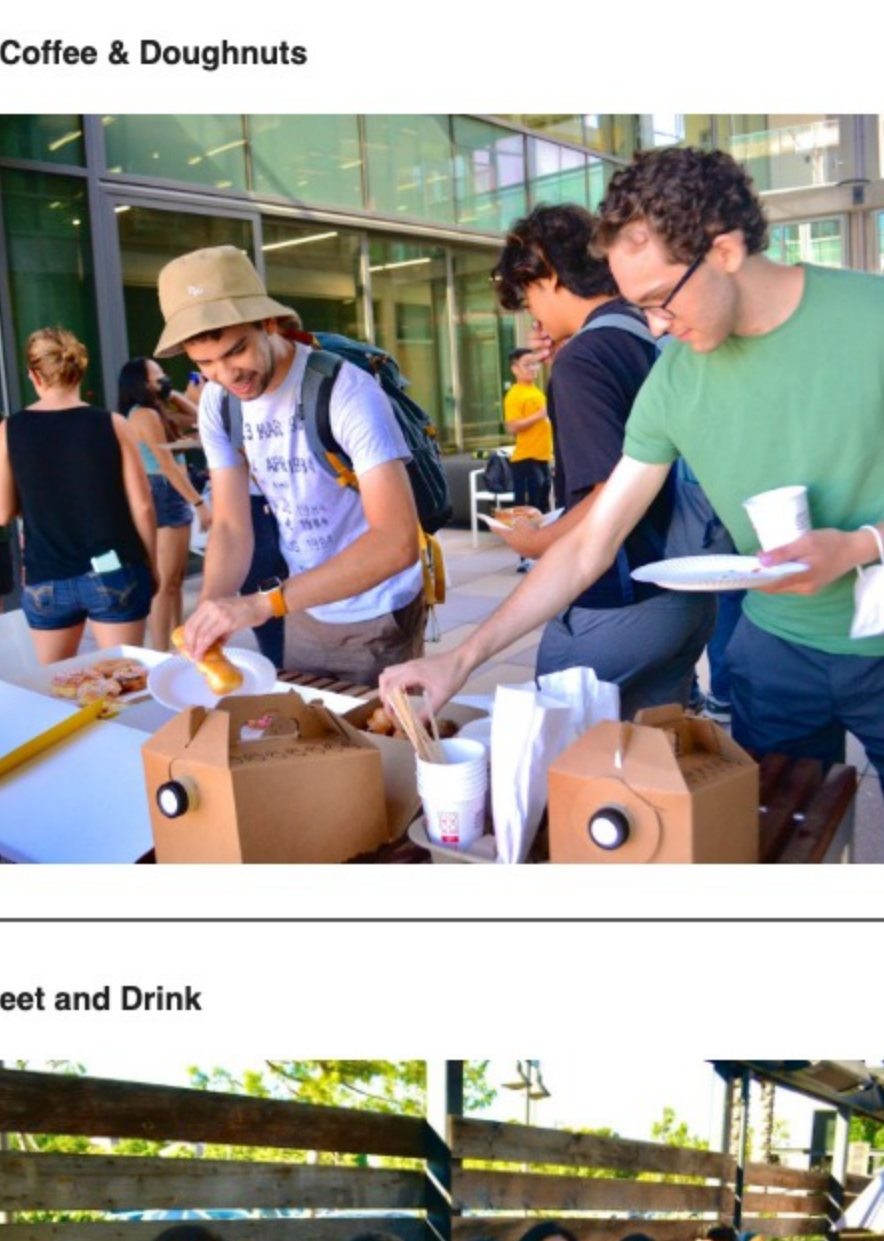


PhD student Dylan Green and physics undergrads Naol Tulu and Nora Khokhar (pictured below) participated in the recent [Observable Data Jam](#) and won first place (and \$3,000) for their study of whether biases in the education system explain the income wealth gap. They presented their results at [Observable Insight](#).

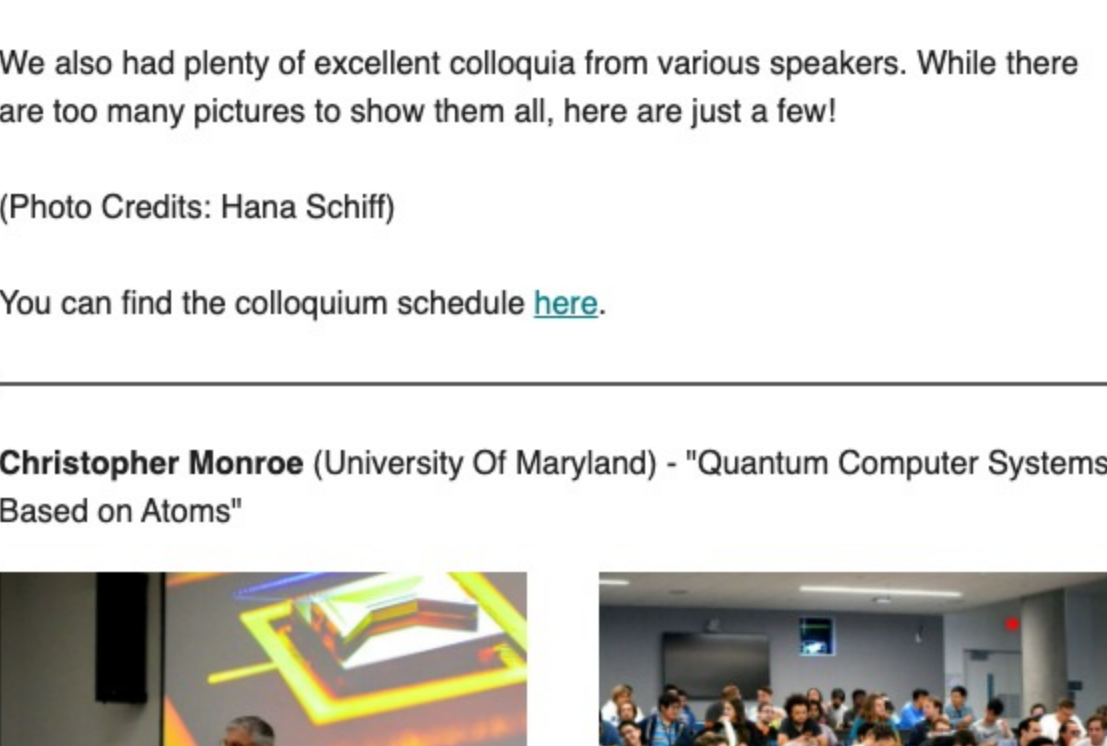


Ph.D. students Eric Nelson and Kyle Chesnut, of Prof. Chris Barty's lab, traveled to Jeju Island in South Korea to present their research at the International Conference of Ultraintense Lasers (ICUIL 2022).

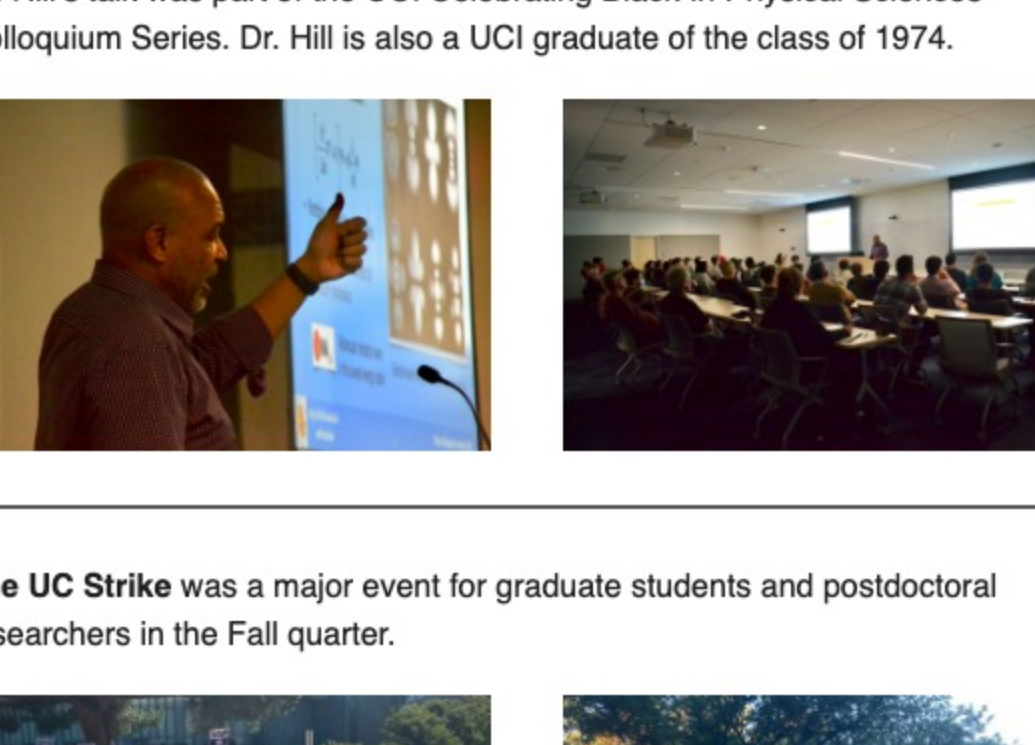
Eric's poster, "*Foci of Petawatt Class Space-Time Entangled Beams*," examined how Petawatt laser facilities can shape their beams to explore new parameter spaces in high-field science.



Kyle's talk, titled "*Review of Chirped Pulse Juxtaposed with Beam Amplification as a Route to Exawatt Peak-power Lasers*," covered the design work done to date of a potential Exawatt peak-power laser to produce record focused laser intensity that would open new avenues of QED research. His two posters, "*Analysis of Higher-Order Phase Distortions from a Six-Grating Chirped-Beam Compressor for Exawatt-class CPJBA*" and "*Multi-pass Regenerative Stretcher to Produce Simultaneously Spatially and Temporally Chirped Pulses*," the latter of which won a Student Poster Award, explored the details of two sub-systems of this laser.



Department News



Congratulations to the following former Ph.D. students who defended their theses since our last newsletter publication!

Dr. Jason Arakawa: "Nonstandard Lore in Dark Matter and Baryogenesis"

Dr. Cody Combs: "Mechanotyping Cells Through Microfluidics and Machine Learning"

Dr. Daniel Lin: "Experimental Fast Ion Research on DIII-D"

Dr. Shawn Strasser: "Optimal Conditions for a Cryptochrome Based Magnetic Compass"

Dr. Mishu Khan: "Non-Reciprocal Wave Propagation in Magnetic Systems"

Dr. Likun Wang: "Single Molecule Coherence With Femtosecond THz-STM"

Dr. Genevieve Degrandchamp: "Ion Cyclotron Emission on the DIII-D Tokamak"

We had plenty of social events this year amongst the graduate students!

PGC Beach Day: With lots of volleyball, football, s'mores, and swimming

PGC x UNITY Halloween Pumpkin Painting

UNITY Coffee & Doughnuts

PGC Meet and Drink

Race and Queer-Feminist Theory perspectives on the philosophy of physics (RQFT) 1st Meeting:

We also had plenty of excellent colloquia from various speakers. While there are too many pictures to show them all, here are just a few!

(Photo Credits: Hana Schiff)

You can find the colloquium schedule [here](#).

Christopher Monroe (University Of Maryland) - "Quantum Computer Systems Based on Atoms"

Wendell Hill (University of Maryland) - "Precision Measurement of the Quantum Vacuum with Petawatt Lasers"

Dr. Hill's talk was part of the UCI Celebrating Black in Physical Sciences Colloquium Series. Dr. Hill is also a UCI graduate of the class of 1974.

The UC Strike was a major event for graduate students and postdoctoral researchers in the Fall quarter.

Events

Frederick Reines Lecture: Samuel Ting

Samuel Ting discovered the J/ψ meson, a major milestone in particle physics.

He received the Nobel Prize for this discovery and will be speaking at the NAS Beckman Center on **February 21 at 6:30 PM**.

Race and Queer-Feminist Theory: perspectives on the philosophy of physics, or RQFT for short, will be held Tuesdays at 3:30-4:30pm in FRH 2153 (corner room) on odd weeks this winter quarter. No prior experience with philosophy is necessary, just come out and have a good time!

Resources

To keep up to date on department seminars and colloquia, you can subscribe to the seminar listserv to get announcements in your inbox. Subscribe here: <https://maillists.uci.edu/mailman/listinfo/physics-astronomy-seminars>

Interested in communicating science to a public audience? The UCI Physics and Astro Blog is accepting guest submissions of "bite-sized" physics articles to feature on our website! These are short, jargon-free articles on some aspect of physics or astronomy, whether it be a recent [research paper](#) or [something more creative](#). Anything aimed at a broader audience is welcome to be considered. You can send an email to physastroblog@uci.edu with any submissions, ideas, or questions about writing a guest article.

Contact us: physastroblog@uci.edu

Our mailing address is:
University of California, Irvine
Department of Physics and Astronomy
Irvine, CA 92697

