

Department of Physics and Materials Science

Holiday 2023-2024 Newsletter

Dear friends, colleagues, and alum,



I am very pleased to be able to share with you our winter 2023 newsletter that is filled with success stories from our faculty, students, and staff as well as some of the community outreach and engagement efforts that we have been involved with. We have had an amazing semester, and I am very

proud of each and every individual that makes up our department. As we close out the year, and I reflect on what our Department has achieved, I can say that the future is bright! I would like to end by quoting Sir Isaac Newton "If I have seen further, it is by standing on the shoulders of Giants." I am looking forward to seeing what we can accomplish in 2024. Wishing you all a peaceful, successful, and joyful New Year!

Firouzeh Sabri, Professor-Chair

Faculty Member Awarded MRI Grant



Congratulations to **Dr. Sanjay Mishra**, Co-PI, NSF-MRI grant and team members for securing funding to acquire a Micro Computed-Tomography (microCT). This will significantly enhance the materials characterization capabilities on our

campus. For more information please visit memphis.edu/mediaroom/releases/2023/september/uofm-wins-instrumentation-investment.php

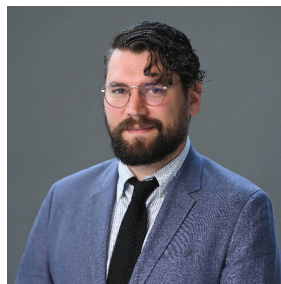
Faculty Member Awarded NASA Citizens Science Grant



Dr. Francisco Muller-Sanchez was awarded a NASA Citizen Science/Astrophysics grant to perform the project: "GAMER: An extension to Galaxy Zoo for the classification of galaxy mergers using two-dimensional stellar kinematics." This

project aims to provide a more robust identification of such mergers, far better than simple visual appearance. He was also granted the **Tigers Ascending to Excellence Award**, by which he was made the honorary coach during a Tiger home football game. For more information, please visit memphis.edu/physics/newsletters/index.php. Dr. Muller Sanchez also presented on black holes to a group of UofM students at the M.D. Anderson Planetarium at the UofM Lambuth Campus in Jackson, TN on Dec. 2nd.

Faculty Member Delivers Lectures at Advanced School in Spain



Dr. Benjamin Keller delivered lectures on astrophysics at the highly selective IAA-CSIC Severo Ochoa Advanced School on Star Formation in Granada, Spain. This program, funded by the Spanish National Research Council, provides a unique international forum on star formation.

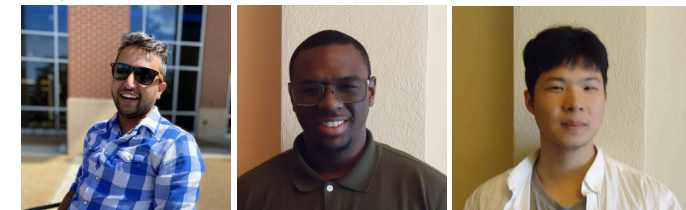
Ph.D. Student Awarded Research Fellowship at Caltech



Mason Ruby was awarded the 2024 IPAC Visiting Graduate Fellowship at Caltech. His project title is "Mining a Billion Objects in NED with Machine Learning." Mason Ruby will spend

six months at CalTech exploring galaxies in the NASA/IPAC Extragalactic Database using machine learning techniques. Many congratulations, Mason!

Physics Ph.D. Graduates



We are pleased to announce the following Ph.D. graduates during 2023: **Abash Sharma** (Advisor: **Dr. Mohamed Laradji**), **Trae Staggers** (Advisor:

Dr. Shawn Pollard), and Yu Zhu (Advisor: Dr. Mohamed Laradji).

P&MS Department Celebrates Space Week

To cap off the World Space Week celebrations (Oct. 4th–10th, 2023), we invited the community to experience the scale model of the Solar System. The model dramatically illustrates the sizes of—and separations between—the objects in the Solar System. Participants received a pair of eclipse solar glass to prepare them for the solar eclipse viewing.

Solar Eclipse in Memphis

Among the natural events that dazzle, delight, and puzzle us, the solar eclipse stands out. While Memphis did not lie inside this year's path of totality, it was still a remarkable event.

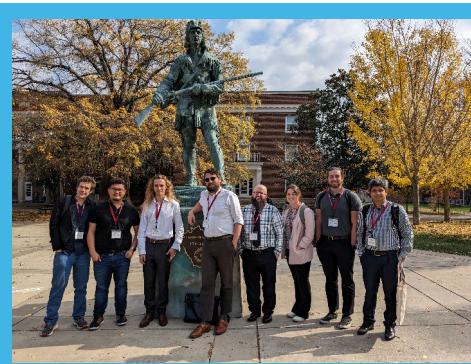


Our Department celebrated this event by offering tours of our Voyage Solar System (top image, acknowledgements: **Instructor Joanne Rhodes** and **Dr. Gustav Borstad**), and by visiting the Bartlett Public Library (bottom image, acknowledgements: **Dr. Xiao Shen** and **Dr. Samuel Mensah**).



Do not miss the solar eclipse on April 8th, 2024, which will pass just west of Memphis in Arkansas!

Department Well-Represented at SESAPS 2023 Meeting



The 2023 Southeastern Section of the American Physical Society (SESAPS) Meeting, was held at Eastern Kentucky University in Richmond,

KY (Nov. 11th–13th). Students and faculty enjoyed presenting their research and meeting colleagues and peers from other universities. **Joseph Duncan**

(UG) and **Zahir Islam** (Grad, both from the Pollard group), **Brianna Miller** (Grad), **John Mullen** (UG, both from the Sabri group), **Kenneth Rymanowicz** (Grad, Muller Sanchez Group), and **Joseph Zeron** (UG, Keller group).

UofM Gingerbread House Competition: P&MS Recognized for Its Innovative Use of Materials



P&MS won the competition in the category of “Innovative Use of Materials”. We want to acknowledge **Gabrielle Hunter-Davis**, **Courtney Paulino**, and **Dr. Firouzeh Sabri** for applying principles of stability and equilibrium to edible materials representing materials that harness solar energy.



P&MS Holiday Lunch 2023



Physics faculty enjoying a meal after the completion of the Fall Semester.

Happy Holidays!



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