



The Physics Observer

Sep 13, 2022

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UPCOMING

EVENTS

Thursday, September 29,
2022- 11:00 am in PAT
C-520

[Physics Department: General Exam](#)

Dean Huang (Advisor:
Paul Wiggins)

Tuesday, November 8,
2022-7:30 pm, Kane 130
[Frontiers of Physics Public Lecture: TBA](#)

Art McDonald (2015
Nobel Laureate)

Welcome

The Physics Observer is a periodic bulletin of happenings in and around UW Physics. Our goal is to share information of notable happenings, events, and news associated with the department. Please feel free to pass this newsletter to anyone who may be interested. Readers wishing to subscribe, or unsubscribe, may do so [here](#). Previous newsletters may be found on the physics website at [The Physics Observer Newsletter](#). Information for future editions may be sent to the editor, physrecp@uw.edu.

Chair's Corner (L. Yaffe)

The start of a new academic year is nearly upon us, with large new cohorts of students, postdocs, and several new research faculty arriving soon. I'm hoping that the coming academic year will be a little smoother and less chaotic than last year!

Although I do not regard purported rankings of universities and individual departments as highly meaningful, it was still nice to see UW Physics ranked within the top 20 physics departments anywhere according to the [Global Ranking of Academic Subjects](#).

Several Physics staff members have moved on to new positions elsewhere this summer. We are sorry to lose Alexis Hall, our newsletter editor/office manager/events planner & much else, to the King County Environmental Lab, as well as Susan Miller to the Dean's office and Paula Newcomer to Astronomy. We wish them all the best and thank them for their contributions to this department.

Milestones & Arrivals

- ★ Assistant Coordinator Alexis Hall is leaving the University of Washington Physics to be an Administrator at the King County Environmental Science Lab.

I want to thank everyone in the Physics Department for the incredible work we got to do the last 7 years, especially the social events! I came here a couple of years after graduating college and have grown so much working with the undergraduate & graduate students, staff, postdocs and faculty. I am very thankful for the time I had here. I wish the department much success in your future work in Physics and much fun outside of Physics.
~ Alexis Hall

- ★ Professor Sanjay Reddy will serve as the next director of our Institute for Nuclear Theory.

Research Awards & Grants

- ❖ Assistant Professor Armita Nourmohammad received \$360k from the National Institutes of Health for learning a molecular shape space for the adaptive immune system.
- ❖ Assistant Professor Armita Nourmohammad received \$180k from the National Science Foundation for emergence of functional organization in the adaptive immune system.
- ❖ Professor Miguel Morales received \$140k and \$500k from the National Science Foundation for collaborative research of 21 cm reionization science with MWA and next generation radio telescope calibration.
- ❖ Associate Professor Shih-Chieh Hsu received \$4.4M and \$1.25M from the National Science

SOCIAL MEDIA

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[Pinterest](#)

- Foundation for accelerated AI Algorithms for data-driven discovery.
- ❖ Professor Xiaodong Xu received \$450k from the US Department of Energy for ultrafast control of emerging electronic phenomena in 2D quantum materials 2020.
 - ❖ Professor Xiaodong Xu received \$400k and \$700k from the US Department of Energy for quantum engineering exciton dynamics in 2D-heterostructures and ultrafast control of emerging electronic phenomena in 2D quantum materials.
 - ❖ Professor Xiaodong Xu received \$1.5M from the Air Force Office of Scientific Research for New Science from two-dimensional magnetic heterostructures.
 - ❖ Professor Xiaodong Xu received \$100k from the US Department of Defense and Clarkson Aerospace Corp for magnetic van der Waals heterostructure photo-spintronics
 - ❖ Assistant Professor Alvaro Chavarria received \$185K from the National Science Foundation for the search for light dark matter with DAMIC.
 - ❖ Professor Henry Lubatti received \$750k from the National Science Foundation for beyond the standard model physics.
 - ❖ Affiliate Professor Margaret Cheung received \$800k from the National Science Foundation for emergent protein assemblies in cytoplasm.
 - ❖ Associate Professor Suzanne White Brahmia received \$260k from the National Science Foundation for measuring and improving physics quantitative literacy throughout the undergraduate curriculum.
 - ❖ Assistant Professor Quentin Buat received \$440K from the National Science Foundation for beyond the standard model in the electroweak sector with tau leptons.
 - ❖ Assistant Professor Natalie Paquette received \$750k from the US Department of Energy for the mathematical foundations of holography.
 - ❖ Associate Professor Gray Rybka received \$190k from the National Science Foundation for novel cavity haloscopes for axion dark matter at cm-wavelengths.
 - ❖ Assistant Professor Matthew Yankowitz received \$600k from the US Department of Energy for atomic-scale characterization of mechanically-deformable moiré quantum simulators.
 - ❖ Associate Professor Marilena Loverde received \$260k from the US Department of Energy for discovering dark energy, dark matter, and neutrino properties with cosmic structures.
 - ❖ Associate Professor Samu Taula received \$40k from the University of California, San Francisco for mapping magnetic field and tissue parameters using the elliptical signal model of balanced steady state free precession MRI.
 - ❖ Professor Subhadeep Gupta received \$170k from the National Science Foundation for optical lattice engineering for enhanced interferometry and sensing with Yb atoms
 - ❖ Associate Professor Boris Blinov received \$172k and \$5k from the National Science Foundation for the experimental study of quantum jumps with a single trapped ion.
 - ❖ Associate Professor Kai-Mei Fu received \$130k from the National Science Foundation for semiconductor electron-nuclear spin qubits with optical access.
 - ❖ Professor Gordon Watts received \$23k from the Heising-Simons Foundation for support for the Seattle Snowmass Summer Study 2022.

Department Resources & News

[Title IX videos](#): The Office of the Title IX Coordinator has developed several brief videos to provide students, faculty and staff with guidance on creating safe, respectful and inclusive learning and work environments.

Funding Announcements

Applications open for [Optica Foundation 20th Anniversary Challenge](#), 100K. Deadline **September 15, 2022**.

Applications open for UW MEM-C Materials Research Seed Grants, up to 75K, applications due to uwmemc@uw.edu by **September 21, 2022**.

Applications open for [DOE Office of Science Graduate Student Research fellowships](#), funding research at DOE national labs. Application deadline **November 9, 2022**.

Application assistance workshops on [September 15 \(general overview\)](#) and [October 20 \(Q&A, application assistance\)](#).

Nominations solicited for [Blavatnik National Awards for Young Scientists](#). Internal UW deadline **October 12, 2022**.

Applications open from Sloan, Moore, Templeton and Simons Foundations for innovative proposals for [small-scale experiments that advance fundamental physics](#). Letters of intent due **October 21, 2022**.

Applications open for [AAAS Science and Technology Policy Fellowships](#). Deadline **November 1, 2022**.

Applications open for [Two Sigma PhD Fellowships](#). Deadline **November 4, 2022**.

Applications open for [APS Congressional Science Fellowships](#). Application deadline **December 1, 2022**.

Job Opportunities

- [Assistant Professor of Physics, University of Oregon](#)
- [Assistant](#) or [Associate Professor](#), Physics and Astronomy, UC Riverside
- Assistant Professor of Physics, [experimental quantum information](#) or [condensed matter/AMO](#), NYU.
- [Lecturer in Physics](#), UC Riverside
- [Teaching faculty](#), laboratory manager, Physics & Astronomy, University of Minnesota

Selected Publications

- Measuring the speed of sound using cumulants of baryon number, A. Sorensen, D. Oliinychenko, L. McLerran, V. Koch, <https://arxiv.org/abs/2209.04957>.
- First observation of cyclotron radiation from MeV-scale epm following nuclear beta decay, W. Byron, H. Harrington, W. DeGraw, N. Buzinsky, B. Dodson, A. Garcia, G. Garvey, B. Graner, K. Khaw, K. Knutsen, E. Novitski, H. Robertson, G. Rybka, E. Smith, M. Sternberg, D. Storm, H. Swanson, B. VanDevender, X. Zhu, et al., <https://arxiv.org/abs/2209.02870>.
- Hydrodynamic magnetoresistance in graphene Corbino devices, A. Andreev, et al., <https://arxiv.org/abs/2209.02710>.
- Top-down holography in an asymptotically flat spacetime, N. Paquette, et al., <https://arxiv.org/abs/2208.14233>.
- The Fundamental Nature of Low-Energy Pion-Nucleon Interactions, G. Miller, <https://arxiv.org/abs/2208.12873>.
- Probing neutrino interactions and dark radiation with gravitational waves, M. Loverde, Z. Weiner, <https://arxiv.org/abs/2208.11714>.
- The high-resolution in vivo measurement of replication fork velocity and pausing by lag-time analysis, D. Huang, B. Sim, T. Lo, P. Wiggins, et al., <https://arxiv.org/abs/2208.06775>.
- On Baryon and Lepton Number Violation, V. Cirigliano, et al., <https://arxiv.org/abs/2208.00010>.

UW Coronavirus Response Information

[How To Travel the World and Stay Safe From COVID-19](#): Get tips from Dr. Cristopher Sanford, associate professor of family medicine and global health, and Dr. Paul Pottinger, an infectious diseases expert.
