



# The Physics Observer

May 5<sup>th</sup>, 2021

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## UPCOMING EVENTS

- May 14, 2021, 1:00pm:

[Final Exam: Topologically Critical Behavior in ZrTe<sub>5</sub>](#), Joshua Mutch (Advisor: Jiun-Haw Chu)

- May 17, 2021, 10:00am:

[Celebrating 61 Years of the Laser: A Virtual Tribute to Dr. Theodore Maiman](#)

- May 17, 2021, 4:00pm:

[Physics Colloquium: \[FRIB physics program\]](#), Hendrik Schatz (MSU)

- May 18, 2021, 3:00pm:

[General Exam: Anthony Ciavarella](#) (Advisor: Martin Savage)

- May 18, 2021, 6:00pm:

[Frontiers of Physics Public Lecture: A new Measure: the Revolutionary Quantum Reform of the Metric System](#), William D. Phillips (1997 Nobel Laureate in

## 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, [Alexis Hall](#).

## Chair's Corner (L. Yaffe)

I am sorry to relate that Pamela Yorks, the long-time librarian for Physics and Astronomy, passed away earlier this year. Pam retired in 2013. Those of us who have been here longer fondly remember Pam. Every year she would meet with the incoming class of students and offer advice and help on the use of UW library resources. She was always happy to assist with unusual searches for references or citations, or respond to requests for new library additions. See [here](#) for Pam's obituary at the Seattle Times. Memorial gifts may be made to the Lois Andes Yorks and Kenneth Preston Yorks Libraries Student Employee Endowed Scholarship fund [here](#).

When the ever-rising costs of journal subscriptions combined with widespread digital publishing and online access to academic journals, the importance of immediate access to printed journals and archived materials diminished, and with it the need for a staffed branch library within our Physics and Astronomy building. The re-purposing of this space was perhaps inevitable, but I miss the lovely reading room which the building architects designed on the top floor of our building, and seeing Pam's cheerful presence every time I went up to our library.

On a lighter, but still serious note, I recommend the NY Times article "Are You Confused by Scientific Jargon? So Are Scientists", available [here](#). It reports a study supporting something I have always preached to students: scientific papers containing lots of specialized terminology are less likely to be read or cited. Avoid excessive jargon and needless abbreviations!

## Milestones & Arrivals

- ❖ [Research Scientist and Senior Computing Specialist Christopher Phillips](#) celebrated 5 years at the University of Washington.
- ❖ [PhD Student Zachary Montague](#) gave a presentation to second graders at the Feynman School, a STEM-focused school in Maryland, on how he used physics to study the human B-cell response to COVID-19. The Feynman school held an in-school STEM-conference where classes were to make a presentation about COVID-19 and whichever field of science they were learning about for the year and they had invited speakers. The second graders were learning about physics, and Zachary Montague was invited based on UW news article. You can read more about his research [here](#).

## Research Awards & Grants

- [Professor Gerald Seidler](#) received 146K from the US Department of Energy for the LERIX-U Engineering Effort. He also received an additional 20K from the US Department of Energy for X-ray characterization of ion pairing in zinc electrolytes.

Physics), National Institute of Standards and Technology & University of Maryland

- May 20, 2021, 5:00pm:

O'Hara Philosophy of Physics Lecture Series: "How Physics Flew The Philosophers' Nest", Katherine Brading (Duke University)

- May 24, 2021, 4:00pm:

Physics Colloquium: Mary Gaillard (UC Berkeley)

- Wednesday, May 26, 2021, 3:30pm:

Physics Virtual Awards

- May 28, 2021, 11:30am:

Final Exam: Nature of the electronic states in monolayer WTe<sub>2</sub>, Bosong Sun (Advisor: David Cobden)

- June 1, 2021, 11:00am:

General Exam: William Byron (Advisor: Alejandro Garcia)

- June 1, 2021, 11:00am:

Final Exam: 3d Bosonization: Flavor-Violated, on a Boundary, Quivered, and Stacked, Kyle Aitken (Advisor: Laurence Yaffe)

- June 1, 2021, 11:00am:

Final Exam: Theoretical models of hybrid light-matter systems and their applications, Kevin Smith (Advisor: David Masiello)

- June 3, 2021, 3:00pm:

Final Exam: Measuring the anomalous precession frequency  $\omega_a$  for the Muon g-2 experiment, Jason Hempstead (Advisor: David Hertzog)

- June 4, 2021, 1:00pm:

Final Exam: Numerical Investigation of The 2D Vortex Whip, Khang Nguyen (Advisor: Robert Breidenthal)

- Professor Emeritus John Rehr received 120K from the US Department of Energy for New Developments in the Theory of Excited States and X-ray Spectra.
- Professor Xiaodong Xu received 240K from the Air Force Office of Scientific Research for Chern Number Engineering in a Layered Topological Magnet.
- Associate Professor Kai-Mei Fu received 108K from the US Department of Energy for the Center for Co-design of Quantum Computing.
- Associate Professor Shih-Chieh Hsu received 26K from the Simons Foundation for FASER: Forward Search Experiment at The LHC.

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## Department Resources & News

**SPS Lunchbox.** Each **Monday at 12:30 pm**, join other undergraduates to discuss physics and life as a physicist with the department colloquium speaker. Connect to this [Zoom Link](#). This is a great opportunity for community in these unconventional times. Email [uwspsofficers@gmail.com](mailto:uwspsofficers@gmail.com) to get on the SPS mailing list.

Online town hall about the safe return to campus: On **May 12 at 9 a.m. PDT**, President **Ana Mari Cauce** will host a virtual town hall for the UW community of students, families, faculty and staff to discuss the safe return to in-person learning in the fall. Please join President Cauce, along with Provost **Mark Richards**, Dean of the School of Public Health **Hilary Godwin**, Vice President for Student Life **Denzil Suite**, Vice Provost and Dean of Undergraduate Academic Affairs **Ed Taylor**, and Dean of the Graduate School **Joy Williamson-Lott**. They'll address questions about campus safety measures; vaccines; in-person teaching, learning and working; housing; research; and a return to on-campus activities as pandemic restrictions lift.

Employee Photo Contest winners for spring 2021! This April, faculty and staff from across the UW shared photos that embody spring. Check them out.

Required COVID-19 safety training: The University's COVID-19 Safety Training must be completed by all University personnel before or upon returning to work on site at a University location, even if personnel have been performing critical work on site at a UW work location.

Phishing emails may target you with fake job offers: If you are a LinkedIn member, beware of unsolicited job offers that contain attachments or links. Any attachment, including Word documents, PDFs and Zip files, can contain malware.

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## Assorted Talks & Meetings

**June 23 - July 16, 2021:** Rensselaer Polytechnic Institute boot camp and summer school on computational physics, "[Advanced Cyberinfrastructure Training for Modeling Physical Systems](#)" with particular emphasis on applications that require high performance computing. This on-line boot camp/summer school is aimed at advanced undergraduates and all levels of graduate students. Apply [here](#).

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## Funding Announcements

NSF solicits letters of intent for its Inclusion across the [Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science \(NSF INCLUDES\)](#) program, which will fund grants of up to 10M. This is a [limited submission](#) opportunity with internal UW deadline of **May 6, 2021**.

Applications open for James S. McDonnell Foundation [21st Century Postdoctoral Fellowship Awards in Understanding Dynamic and Multi-scale Systems](#). \$200K over 2-3 years. Applicants should be graduate students who are in the final stages of completing their Ph.D. and looking to add new dimensions to their graduate training involving theoretical and mathematical tools contributing to the study of complex nonlinear systems. Deadline **June 11, 2021**.

NSF has recently issued a new program solicitation ([NSF 21-573](#)) "Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowships (MPS-Ascend)" whose

- June 4, 2021, 3:00pm: General Exam: Wan Jin Yeo (Advisors: Jose Kutz and Samu Taulu)

- June 9, 2021, 1:00pm: Final Exam: Enabling the Next Generation of 21 cm Cosmology: Precision Analysis Techniques for Radio Cosmology Observations, Ruby Byrne (Advisor: Miguel Morales)

- June 10, 2021, 9:00am: Final Exam: Improving 21-cm Epoch of Reionization Power Spectrum Limits by Characterizing and Mitigating Radio Frequency Interference, Michael Wilensky (Advisor: Miguel Morales)

- June 10, 2021, 2:30pm: Final Exam: Probing the symmetry-breaking phases in iron-based superconductors with combined strain, transport and x-ray techniques, Joshua Sanchez (Advisor: Jiun-Haw Chu)

- June 12, 2021  
Physics Virtual Graduation Presentation

- June 14, 2021, 10:00am: Final Exam: The Debye Mechanism in Superconductors, Michael David Smith (Advisor: Anton Andreev)

- June 25, 2021, 11:00am Final Exam: Quantum complexity of symmetry-protected topological phases of matter, Tyler Ellison (Advisor: Lukasz Fidkowski)

## SOCIAL MEDIA

[Instagram](#)

[Facebook](#)

[YouTube](#)

[Twitter \(@physicsuw\)](#)

goal is to broaden the participation of groups that are underrepresented in MPS fields in the U.S. More information [here](#). Informational [webinar](#) at 2pm EDT April 12, 2021. Application deadline **June 15, 2021**.

Applications open for the [Army Research Laboratory Distinguished Postdoctoral Fellowship](#). 100K annual stipend. Applicants must be within 5 years of PhD. Application deadline **June 15, 2021**.

Applications open for [Moore Foundation Fundamental Physics Innovation Awards](#). The Gordon and Betty Moore Foundation Fundamental Physics Innovation Awards hope to stimulate ideas on innovative ways in which emerging technologies can be used to address pressing problems in the physics of fundamental particles and interactions. See more info [here](#). Application deadline **July 15, 2021**.

Applications open for proposals to the [John Templeton Foundation](#), which makes both large (>250K) and small grants in multiple areas one of which is "investigating the fundamental laws and structures of nature through mathematics and physics." See [here](#). Deadline for 2021 funding cycle: **August 20, 2021**.

Applications for the next cycle of Royalty Research Fund grants are due to the college by **September 23, 2021**. See <https://www.washington.edu/research/or/royalty-research-fund-rrf/>. Note: teaching faculty are eligible to be PI on an RRF grant, while acting faculty or faculty with temporary appointments may be paid for up to 2 months on RRF grants even though they are not eligible to be PI or Co-I.

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## Job Opportunities

- Visiting Assistant Professor Physics, Pacific Lutheran University. [Apply here](#).
- [Associate/Full Professor in Experimental Applied Physics](#), Yale University Applied Department of Applied Physics

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## Selected Publications

"Measurement of the anomalous precession frequency of the muon in the Fermilab Muon g-2 experiment", H. Binney, M. Fertl, A. Fienberg, N. Froemming, A. Garcia, J. Hempstead, D. Hertzog, Z. Hodge, P. Kammel, J. Kaspar, K. Khaw, J. LaBounty, B. MacCoy, R. Ofosky, M. Smith, H. Swanson, et al., <https://arxiv.org/abs/2104.03247>.

"Genuine empirical pressure within the proton", A. Freese and G. Miller, <https://arxiv.org/abs/2104.03213>.

"Unraveling intrinsic flexoelectricity in twisted double bilayer graphene", Y. Li, X. Wang, D. Cobden, M. Yankowitz, X. Xu, et al., <https://arxiv.org/abs/2104.02401>.

"High-fidelity simultaneous detection of trapped ion qubit register", L. Zukhas, B. Blinov, et al., <https://arxiv.org/abs/2006.12801>.

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## UW Coronavirus Response Information

### [COVID-19 recovery status](#)

- **Bothell and Seattle campuses: Phase 3**
- **Tacoma campus: Phase 2**

Due to case counts and hospitalizations in Pierce County exceeding Phase 3 limits, [Pierce County returned to Phase 2 on April 16](#). UW Tacoma also returned to Phase 2 on this date. UW Bothell and the UW's Seattle campus remain at Phase 3. On May 4, Governor Inslee [announced a two-week pause](#) on counties changing phases. The following items apply to all UW campuses:

- [Face coverings are required](#) on all campuses, even if you've been fully vaccinated.
- The majority of courses are offered remotely. Additional in-person student services and activities are dependent on a campus' current phase.

[Vimeo](#)

[Pinterest](#)

**CONTACT US**

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[amhall2@uw.edu](mailto:amhall2@uw.edu)

- Telework is supported through Sept. 10, 2021. In Phase 2, telework is strongly encouraged. In Phase 3, if an employee can telework and it does not impede operations, they should be allowed to do so.
- All on-site work must adhere to all appropriate safety measures, the [Return to On-site Work Decision Tree](#) and unit [COVID-19 Prevention Plans](#).
- Non-instructional events and gatherings must follow applicable restrictions from the state and University, including limits on attendees based on whether the event is indoors or outdoors.

All Washington residents age 16 and up are eligible to be vaccinated at no cost. Appointments available at UW Medicine and many other providers. [Learn more](#).

The University will require students to be [vaccinated](#) against COVID-19 and expects everyone else in the UW community who can get vaccinated to do so. The vaccines being administered are safe and effective, and you can be vaccinated at any provider at no cost to you.