



# The Physics Observer

Oct 8, 2021

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## UPCOMING EVENTS

- **October 11, 2021,  
4:00pm, PAA A102**

[Physics Colloquia: Atoms  
and Photons: Quantum](#)

[Technology Meets](#)

[Fundamental Physics:](#)

Monika Schleier-Smith,  
Stanford University

- **October 12, 2021 -  
3:00pm, C421**

[Particle Theory: Solar  
Neutrinos: from background  
to signal:](#) Tien-Tien Yu,  
University of Oregon

## 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)

The three winners of the 2021 Nobel prizes in physics were announced this week. Two of the awardees, Syukuro Manabe and Klaus Hasselmann were recognized for their groundbreaking work developing physics-based models of Earth's climate, which underpin nearly all modern climate science. The third awardee, Giorgio Parisi, was recognized for his contributions toward understanding the interplay of disorder and fluctuations in physical systems.

In the popular press coverage of the awards, it is striking that descriptions of the climate science contributions are reasonably clear and substantive, while those of Giorgio Parisi's work are, to put it nicely, exceptionally sketchy. This is a shame, as much of Parisi's work has been deep, elegant and influential. It is also remarkably wide-ranging, with seminal contributions including the use of scale dependent parton distribution functions in the description of high energy scattering processes, uncovering deep connections between asymptotic high order behavior of perturbation theory in quantum field theory and certain non-trivial solutions of classical field equations, and especially contributions to the understanding of so-called "spin glasses", materials with randomly placed magnetic impurities whose interactions lead to an extremely complicated free energy landscape with many deep minima separated by large barriers. The resulting models of spin glasses form a key part of our understanding of many complex and chaotic systems. I'm pleased that the Nobel committee chose to recognize Giorgio Parisi -- even though describing his contributions in laymen's terms is challenging!

## Milestones & Arrivals

- ❖ CENPA Office Manager [Ida Boeckstiegel](#) celebrates 20 years with the UW.

## Research Awards & Grants

- ❖ [Professor Miguel Morales](#) received 128K from the National Science Foundation (NSF) for collaborative research: 21 cm Reionization Science with MWA.
- ❖ [Associate Professor Kai-Mei Fu](#) received 53K from the US Department of Energy for cold plasma surface passivation for charge-state control and stabilization of quantum

➤ **October 18, 2021 -**  
**4:00pm, PAA A102**

Physics Colloquia:  
Synthesis, characterization  
and control of quantum  
defects for quantum network  
applications: from deep  
centers in diamond to  
shallow impurities in ZnO:  
Kai-Mei Fu, University of  
Washington

➤ **October 19, 2021 -**  
**1:00pm, PAB C-520**  
**and ZOOM**

Physics Department:  
General Exam: Samantha  
Tetef (Advisor: Gerald  
Seidler), University of  
Washington

➤ **October 20, 2021 -**  
**7:30pm, Youtube**  
**Livestream**

Frontiers of Physics:  
Gravity: the biggest open  
question in fundamental  
physics: Eric Adelberger,  
Blayne Heckel, & Jens  
Gundlach (2021  
Breakthrough Prize in  
Fundamental Physics  
Winners), University of  
Washington

➤ **October 25, 2021 -**  
**4:00pm, PAA A102**

defects in diamond.

- ❖ Professor Jens Gundlach received 288K from the National Science Foundation for Torsion-Balance Searches for Ultra-Light Dark Matter.
- ❖ Professor Gordon T. Watts received 190K from the National Science Foundation for a subaward for the proposed NSF Center “Institute for Research and Innovation in Software in High Energy Physics” (IRIS-HEP).
- ❖ Professor Martin J. Savage received 145K from the US Department of Energy for the Quantum Science Center.
- ❖ Associate Professor Shih-Chieh Hsu received 4.5 million from the National Science Foundation for HDR Institute: Accelerated AI Algorithms for Data-Driven Discovery.

## Department Resources & News

Physics students are encouraged to join the **American Physical Society**. See [here](#) for more information. First year membership is **free!**

With the new quarter we have a lot of **DUSC news and activity** in the coming days. If you'd like to subscribe to DUSC events, please click this [link](#).

**Society of Physics Students (SPS):** With operations moving back in person we hope to greatly expand the activities and community of the SPS. SPS is excited about rebuilding the undergraduate community as we return to campus in the fall: Come and get involved! If you have ideas for ways to reconnect, would like to get involved in planning activities, or simply want to get on the mailing list for future events, please contact [uwspsofficers@gmail.com](mailto:uwspsofficers@gmail.com). To stay in on the latest discussion join the [Mailing List](#), hop in on the [Discord](#) channel and give SPS a follow on [Instagram!](#)

**UW Combined Fund Drive First Week to Give:** We've got a \$5 Starbucks card – courtesy of WSECU – for anyone who makes a new gift of \$5 or more, increases an existing gift by \$5 or more OR logs an hour of volunteer time during our first week to give, **October 6 - 12, 2021**. Do good, drink coffee. Win-Win. Donate [here](#).

**UW Combined Fund Drive Virtual Auction:** We are delighted to host our first virtual auction this year! Bidding will be open from **October 12 – 16, 2021**. Check out some of our amazing packages, including:

- ★ “Pinot Experience” Wine Tasting and tour for 8
- ★ Jim Gaffigan: The Fun Tour at The Paramount Theater
- ★ UW Tailgate Party swag package
- ★ Trophy Cupcakes gift card
- ★ Whidbey Island Getaway

**UW Combined Fund Drive Holiday Wreath Fundraiser:** We are again partnering with Sherwood Forest Farms on a fundraiser to support [LIHI's Tiny Houses program!](#) Support our featured nonprofit by purchasing a mixed Evergreen wreath or Noble Fir door swag, with pick-up locations on UW main campus and delivery to the UW Bothell and UW Tacoma. Order between **October 6 – November 7, 2021** via *credit card*.

**October is National Cyber Security Awareness Month:** Learn how to protect your personal and UW institutional information from online threats with these tips from the Office of the Chief Information Security Officer.

**UW NetID recovery options:** Add your mobile number and email address so you can regain access to your UW NetID if you forget your password or get locked out.

**Back-to-campus technology guide:** Learn what to update on your computer, dispose of tech you're no longer using, connect to wifi, update the UW Directory and more.

The **regional public transportation system** is undergoing major changes this fall that will impact how you commute to campus and travel around the University District. Here's what you should know:

➤ **November 1, 2021 - 4:00pm, PAA A102**

## [SOCIAL MEDIA](#)

[Instagram](#)

[Facebook](#)

[YouTube](#)

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

[Pinterest](#)

- **Transit Service Changes:** UW commuters should plan for changes to their transit commute that will occur shortly after the start of the academic year begins.
- **Northgate Link opening:** **Oct. 2** marks the opening of the Northgate Link extension, which includes three stations at Northgate, Roosevelt and the U District.
- **Construction impacts:** The 43rd Ave and Montlake Bridge maintenance projects will result in continued detours and rerouting in the University District after the service changes in October.

The **Montlake Bridge** will be closed on the weekends of Oct 9-10, Oct 23-24, Oct 30-31, and Nov 20-21.

## Assorted Talks & Meetings

SPS will be resuming their **Weekly Lunchbox Seminars** in the SPS lounge (PAB B135) **Mondays at 12:30**, where you get a chance to get your research/physics career questions answered by the departmental colloquium speakers in an inviting and informal setting and then, if you wish, stay for pizza (to be eaten outside).

**[UW Combined Fund Drive Nonprofit Virtual Expo](#):** Mark your calendars for **Tuesday, October 12 from 11 am – 1 pm** when you will have the opportunity to chat live with dozens of nonprofit representatives from organizations in the Combined Fund Drive. Participants include: LIHI, Treehouse, Ronald McDonald House of Alaska and Washington, Make-a-Wish, Seattle Humane, KEXP, Neighborhood House, KCTS 9, Wonderland, Doctors Without Borders, Habitat for Humanity, Cocoon House, Easter Seals Washington, Special Olympics Washington, Northwest Harvest, Heifer International, and many more!

**SPS** will be holding their **First Social Event** on **October 13th, 2021**. So come drop by, chill, meet some new people and become part of an amazing physics community! Watch for signs in the building.

**[ANNUAL PRESIDENT'S ADDRESS](#)**, **Tuesday, Oct. 19, 2021, 10–11 am**. UW President Ana Mari Cauce will share her perspective on the road ahead as we work together to recover from the pandemic and support equity and well-being for our community of faculty, staff and students. Attend in person at *wələb?altx<sup>w</sup>* – *Intellectual House* or watch the livestream on this [page](#). Questions can be submitted in advance and during the event to [presofuw@uw.edu](mailto:presofuw@uw.edu).

Abstract submissions open for **[2022 APS April Meeting](#)**, New York, **April 9-12, 2022**. The deadline to submit an abstract is **December 20, 2021**.

**[Conference for Undergraduate Women in Physics \(CUWiP\) at Central Washington University \(CWU\), January 21 – 23, 2022](#):** CUWiP provides undergraduate women and underrepresented groups an opportunity to engage with graduate schools, scientists, researchers, professionals and to meet other women studying and pursuing degrees in physics and related sciences at a conference specifically designed to address their academic, career, lifestyle and professional needs. Check out the full [schedule](#).

## Funding Announcements

Applications open for **[2022 Moore Inventor Fellowships](#)** which seek to provide freedom and support to promising inventors with the most compelling ideas to pursue creative and disruptive innovations. See the [guidelines](#). Limited submission opportunity, internal UW deadline **October 21, 2021**.

**[Research Publication Grants in Engineering, Medicine and Science](#):** Applications open for women scholars to apply for research publication grants from the **American Association of University Women**. 10-35K, US citizens or permanent residents only. Deadline **December 1, 2021**.

Applications open for the [2022 Ford Foundation fellowship programs](#), funding both predoctoral (27K/yr for 3 years), dissertation (28K for one year), and postdoctoral (50K for one year) fellowships. Deadlines **December 9 or 16, 2021**.

## Job Opportunities

- **Assistant Professor** in Gravitational Waves at UC Irvine. Apply [here](#).
- **Assistant Professor** in Soft Condensed Matter at UC Berkeley. Apply [here](#).
- **Assistant Professor** of Artificial Intelligence for Quantum Materials and Quantum Information Science at the University of Florida Department of Physics. Apply [here](#).
- **Assistant Professor** in Fundamental Symmetries at UC Berkeley. Apply [here](#).
- **Assistant Professor** in Experimental Particle Physics at the UPenn. Apply [here](#).
- **Assistant Professor** at Pacific Lutheran University. Apply [here](#).
- **Assistant Professor** at the California State University San Bernardino. Apply [here](#).
- Multiple **Assistant Professor** openings at the University of Chicago. Apply [here](#).
- **Teaching faculty position**, Directory of Introductory Physics at the University of Richmond. Apply [here](#).
- **Teaching assistant professor** at New York University. Apply [here](#).

## Selected Publications

- ❖ "A torsion-balance search for ultra low-mass bosonic dark matter", E. Shaw, M. Ross, C. Hagedorn, E. Adelberger, J. Gundlach, <https://arxiv.org/abs/2109.08822>.
- ❖ "Chirality-dependent topological states in twisted double bilayer graphene", M. He, J. Cai, Y. Liu, Y. Li, D. Cobden, M. Yankowitz, X. Xu, et al., <https://arxiv.org/abs/2109.08255>.
- ❖ "A time-dependent mean field framework beyond the typical mean field approach", A. Bulgac, <https://arxiv.org/abs/2109.07021>.
- ❖ "Surface photogalvanic effect in Weyl semimetals", A. Andreev, et al., <https://arxiv.org/abs/2109.02274>
- ❖ "Giant magnetoconductivity in non-centrosymmetric superconductors", M. Smith, A. Andreev, B. Spivak, <https://arxiv.org/abs/2108.12480>.
- ❖ "Pions in proton structure and everywhere else", M. Alberg, L. Ehinger, G. Miller, <https://arxiv.org/abs/2108.12439>.

## UW Coronavirus Response Information

**COVID-19 vaccinations**: The University of Washington **requires students and personnel to be vaccinated against COVID-19**. The vaccines being administered are safe and effective, and you can be vaccinated at any provider at no cost to you. All Washington residents age 12 and over are eligible to receive a vaccine, as are residents in all states and territories in the United States. Eligibility outside the United States varies by country, so please check with the relevant health department to learn more.

The Pfizer-BioNTech vaccine is approved for anyone 12 years and older. The Moderna and Johnson & Johnson vaccines are approved for people age 18 and over. Children under 12 are not yet eligible; however, clinical trials are currently underway.

UW COVID-19 Vaccination Policy is [here](#).

### **How is the Seattle campus preparing for in-person learning, classes and activities?**

Watch a [video](#) and read an article from UW Facilities on how they have been prepping ventilation systems and deep cleaning in buildings and classrooms.

**Feeling anxious about in-person work, school?** Here's how to ease the transition.