The Physics Observer

April 7th, 2021

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UPCOMING EVENTS

- April 2, 2021, 4:00pm:

Alexander Piers (Advisor: Alvaro Chavarria) General Exam

- April 5, 2021, 4:00pm:

Physics Colloquium: Sid Goyal (U. Toronto)

- April 12, 2021, 4:00pm:

David Hertzog: g-2 First Results

- April 19, 2021, 4:00pm:

Physics Colloquium: Stephanie Palmer

- April 26, 2021, 4:00pm:

Physics Colloquium: Eva Andrei (Rutgers)

- May 3, 2021, 4:00pm:

Physics Colloquium: Gordon Berman (Emory)

- May 18, 2021, 6:00pm:

Frontiers of Physics Public Lecture, William D. Phillips

- June 1, 2021, 11:00am:

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 report that Emeritus Professor Joseph Rothberg passed away last month. Joe was a long-time member of our elementary particle experiment group and worked on the ALEPH experiment at the LEP collider in CERN, Geneva, before joining the later ATLAS collaboration where he made many contributions to the ATLAS muon spectrometer. He was an excellent teacher and a valued colleague. He will be missed. More information on our website and at the Seattle Times.

This month we should see expanding access to Covid vaccination in the Seattle area, with all adults eligible to be vaccinated by April 15. I encourage everyone to schedule their vaccination as soon as possible.

Last week I received a query from Robert Jaeger, a UW Physics alumnus from the late '70s, who wished to send a note of appreciation to Emeritus Professor Isaac (Ying) Halpern. His note, reprinted here with permission, conveys the profound and lasting impact that those who teach may have on their students --- something all faculty should hope to achieve:

My dear Professor Halpern,

I hope you and your family are well.

I do not expect you to remember me, however I had the pleasure and honor to be a student of yours in 1976/77, in the first year honors physics sequence which you taught at that time. I encountered you a few times in the halls of the old and new physics buildings over the years. I even had the pleasure of being invited to your home during the afternoon of a beautiful summer day, likely in 1977, with others from the honors physics class. One of my memories of that afternoon is that our enthusiasm resulted in damage to an interesting sports toy you offered to us, which you called an 'Indiaca', as I recall. I have forever regretted that we damaged that toy, and have extremely fond memories of that day.

When I met you and I was your student, I was 18 years old. I am now 62. I have lived in several parts of the US, and have worked in multiple countries, including Taiwan, Russia, Bulgaria, and visited others. I have plans for more professional and personal visits, abroad as well as in the US, so that story continues.

I mention this aspect of geography, due to the impacts you had on me, in the past, and their continuing impacts and positive influence, through today.

Throughout my long time in school and unusual life path since then, I have often remarked to myself and to a few others about the exceptional gifts I have been given in this life. Highest among those gifts, I consider to be meeting multiple absolutely exceptional people. These people are the giants upon whose shoulders I have stood in my own life, and to whom I extend all possible credit for all of the few and modest accomplishments I have been able to achieve. It seems that for unknown reasons I have been blessed with an unusually large number of those giants, compared with others with whom I've talked. I have no idea why this is true, however I am eternally grateful for this guidance and inspiration in my life.

Professor Halpern, I did not know, when I was your student in 1976, how exceptional a teacher, and a man, you were. Yes, I liked you and benefited from your abilities, but the full significance of what you offered would only appear to me after much more maturation and experience. In short,

General Exam: William Byron (Advisor: Alejandro Garcia)

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please simply understand that in my experience, you have exemplified the epitome of the best a professor could be. Your teaching has inspired and guided me, your personality has been a model of outstanding capability and life experience combined with modesty, and more.

All of the above is an incomplete and poor quality attempt to offer to you what you have deserved for most of my life; my sincerest and deepest thanks and appreciation for all you offered and the impacts you made, many years, ago. I have made my own extremely small offerings to the overall body of knowledge, to the end of the Cold War, and to multiple other philosophical and commercial efforts, over the last years. All of those activities, without exception, were facilitated and improved by your efforts to teach me, and memories of you and some of the other students in your class have accompanied me in all of the places I've touched, across the globe. The world is different in multiple ways due to your investments, and for all of this I thank you.

You have my eternal thanks for all you have contributed to my life, Professor Halpern. I would be honored to be of any assistance to you or your family which I may offer. Please do not hesitate to let me know, at any hour, ever, if I may be of service to you.

With deepest thanks and appreciation,

Robert Jaeger

Research Awards & Grants

- Professor Gerald Miller received 815K from the US Department of Energy (DOE) for Theoretical Nuclear Physics.
- Professor Kai-Mei Fu received 121K from the Brookhaven National Laboratory for Center for Co-design of Quantum Computing.
- Professor Subhadeep Gupta received 12K from National Science Foundation (NSF) to support students to attend the 2021 APS-DAMOP conference.

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 to get on the SPS mailing list.

Quantum Mechanics for a General Audience: Physics Professor Miguel Morales has penned a math-free tour of quantum mechanics and technology.

Assorted Talks & Meetings

April 12 to 16, 2021: Young Quantum Information Scientist (YQIS-6) conference: The Sixth International Conference for Young Quantum Information Scientists will be held online and is hosted by the Facility for Rare Isotope Beams / National Superconducting Cyclotron Laboratory (FRIB/NSCL) at Michigan State University. YQIS provides a venue for young researchers (graduate students, post-doctoral researchers) to share their research and strengthen ties to the quantum information community. YQIS welcomes submissions from all areas of theoretical and experimental quantum information science.

April 17-20, 2021: APS April Meeting: Convene with a global audience of physicists, scientists, and students representing 20 APS units and committees and explore groundbreaking research from industry, academia, and major labs, virtually, from anywhere in the world.

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.

Funding Announcements

The Association for Advancement of Research on Open Problems in Nuclear Physics & Particle Physics (OPRA) solicits applications for grants of up to 70K/year for innovative research in nuclear and particle physics. Deadline **April 15, 2021.**

Applications open for flexible funding grants from the Gordon and Betty Moore Foundation as part of their Emergent Phenomena in Quantum Systems Initiative, $300K-1/5M. More information here. Deadline **April 25, 2021**.

Applications open for NRC Research Associateship Programs. The National Academies of Sciences, Engineer, and Medicine administers postdoctoral and senior research awards at multiple federal research labs. Application deadline for next review cycle: **May 1, 2021**.

Applications open for the DOE Office of Science Graduate Student Research Program, which provides supplemental awards supporting doctoral thesis research carried out at facilities at DOE national labs (including PNNL). See here for priority research areas. Applicants must be US citizens or permanent residents. Application deadline: **May 5, 2021**.

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 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 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 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**.

Job Opportunities

- Assistant Researcher-Experimental Nuclear Physics, University of California Berkeley
- Research Associate in Physics/Chemistry, Michigan State University
- Assistant Project Scientist in Physics, University of California Berkeley
- Visiting Assistant Professor of Physics, Whitman College

Selected Publications

“Interlayer electronic coupling on demand in a 2D magnetic semiconductor”, N. Wilson, J. Cenker, J. Fonseca, X. Xu et al., https://arxiv.org/abs/2103.13280.

“On the speed of sound and baryon cumulants in heavy-ion collisions”, D. Oliinychenko, L. McLerran et al., https://arxiv.org/abs/2103.07365.

“Gravitational contributions to the electron g-factor”, A. Cohen, D. Kaplan, https://arxiv.org/abs/2103.04509.

“Defect-Induced Magnetic Skyrmion in Two-Dimensional Chromium Tri-Iodide Monolayer”, X. Xu et al., https://arxiv.org/abs/2103.03149.

“Deep generative selection models of T and B cell receptor repertoires with soNNia”, G. Isacchini, A. M. Walczak, T. Mora, and A. Nourmohammad, https://www.pnas.org/content/118/14/e2023141118.

"Optimal Evolutionary Control for Artificial Selection on Molecular Phenotypes", A. Nourmohammad, C. Eksin, https://journals.aps.org/prx/abstract/10.1103/PhysRevX.11.011044.

UW Coronavirus Response Information

Current Healthy Washington status: Phase 3

As of March 22, the University of Washington's Bothell, Seattle and Tacoma campuses are in Phase 3 of the COVID-19 recovery, in accordance with the state's Healthy Washington plan and its Campus Reopening Guide.

- Face coverings are required on all campuses, even if you've been fully vaccinated.
- The majority of courses are offered remotely. Further guidance on study spaces and expanded in-person co-curricular opportunities will be shared at the beginning of spring quarter.
- Telework is supported through Sept. 10, 2021. 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.

Planning for a safe return to in-person learning

In light of current and expected coronavirus case counts in Washington, more than 90% of class sections on the Seattle campus are remote during spring quarter, with similar percentages at UW Bothell and UW Tacoma. Only classes that cannot be taught remotely will be held in person, with appropriate safety measures and physical distancing in place.

The University intends to return to largely in-person instruction in autumn quarter 2021 and will be issuing additional information to guide this transition over the course of the spring and summer.

Estimated timeline for COVID-19 vaccine availability to Washington residents

On April 15, all Washingtonians 16 and older will be eligible for the COVID-19 vaccine. Prior to that, the Washington Department of Health is allocating vaccines based on eligibility.