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# Physics Digest

News, info, and updates for Ph.D. students in Physics at UW–Madison

August 13th, 2021

## Announcements

### **Professor Kevin Black, Associate Chair for the Graduate Program**

Professor Kevin Black, Professor of Physics, is the new Associate Chair for the Graduate Program. Black has been involved in graduate education since he joined the faculty at UW-Madison in 2018. He led the PhD graduate program committee and the climate and diversity committee this past academic year. Black will work closely together with Dr. Jeff Schmidt, Director of Graduate Study (DGS), and Michelle Holland, Graduate Program Coordinator to provide leadership and vision for the PhD Program. Please join us in welcoming Professor Black to his new role!

### **New Graduate Certificate in Science Communication**

The UW-Madison Department of Life Sciences Communication has announced a new [Graduate Certificate in Science Communication](#) this Fall. The department is [building on the success](#) of their [Ph.D. Minor in Life Sciences Communication](#) by increasing access to a transcriptable certificate in science communication that is open to students in any graduate program at UW-Madison. To view open classes in this program and for more information, click [here](#). Contact [Tera Holtz Wagner](#) with any questions.

### **Open Seats in Physics 805 for Fall 2021**

Physics 805: Introduction to Neutrino Physics and Astrophysics is being offered this Fall semester. No background in neutrino physics, astrophysics, or field theory is required. If you are interested in this course please note that it will very likely not be offered again until 2023 or 2024. You can register for variable credits. If you have any questions please contact Professor [Baha Balantekin](#).

### **Campus Mask Mandate**

Chancellor Rebecca Blank instituted a campus-wide mask mandate effective August 5th. Under this policy, all students, employees, and visitors must wear masks when inside campus buildings. The full policy contains a list of scenarios in which masks may be removed and you can review it [here](#).

### **Payroll Schedule Changes Are Here**

The UW system has moved employees and graduate students on the monthly payroll schedule to the biweekly payroll schedule. The first change was a partial monthly paycheck on July 30 for time worked July

1 – July 17. On August 12, employees received their first biweekly paycheck for time worked July 18 – July 31. [Here are some notes about deductions and taxes:](#)

- Due to the transition, the paycheck received on July 30 had full benefits deductions for the month of July.
- The next paycheck, on Aug. 12, had no benefits premiums deducted.
- Beginning with the following biweekly paycheck on Aug. 26, half of the benefits premiums will be deducted from each of the first two biweekly paychecks each month. These include health, dental, vision, life, income continuation, and accident insurance.
- In months when there are three pay periods, benefits deductions will not be taken from that pay period with the exception of Wisconsin Retirement System, Tax Sheltered Annuity 403(b) and Wisconsin Deferred Compensation 457 contributions.

Visit the [Single Payroll resources web page](#) for frequently asked questions, budget planning information and [updated 2021 payroll schedules](#). Additional resources include [pay date models, guides on updating contributions and withholdings](#), and a [paycheck estimator](#).

### **Fall 2021 Enrollment Happening Now!**

[Fall 2021 enrollment began on April 12th](#). If you need to enroll in Physics 990, please review the instructions for adding by course number and the Physics 990 course numbers for Fall 2021 [here](#). The Graduate School maintains a policy page on [minimum enrollment requirements](#). For questions, contact [Jackson Kennedy](#).

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## **Thesis Defenses**

### **High-Energy Cosmic Neutrinos as a Window to the Universe**

*Date: August 16th, 2021; 2:30 PM*

Qinrui Liu (Francis Halzen, Faculty Advisor), Physics PhD Graduate Student will defend their thesis.

### **Untriggered Searches for Astrophysical Neutrino Transients Using Data from the IceCube Neutrino Observatory**

*Date: August 19th, 2021; 2:00 PM*

Will Luszczak (Albrecht Karle, Faculty Advisor), Physics PhD Graduate Student, will defend their thesis.

### **Coherent and Cavity-Based Measurement of Two-Particle States**

*Date: August 23rd, 2021; 4:00 PM*

Joelle Corrigan (Mark Eriksson, Faculty Advisor), Physics PhD Graduate Student, will defend their thesis.

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## **Upcoming Events**

### **Department of Physics Event Calendar**

See the departmental events calendar to be sure you don't miss any of the upcoming seminars, workshops, or journal clubs, workshops!

### **Student Affairs: Campus Happenings**

See the UW Student Affairs news website and scroll to the "current happenings" listing each week.

### **U.S. Department of Energy Launches 2022 Geothermal Collegiate Competition**

The U.S. Department of Energy (DOE) announced the launch of the 2022 Geothermal Collegiate Competition, organized by the National Renewable Energy Laboratory and funded by DOE's Geothermal Technologies Office (GTO). This national competition encourages students to develop innovative solutions for geothermal applications through a year-long project that engages collegiate school teams to analyze geothermal energy for a community or campus application. Full details can be found on the [competition website](#).

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## **Professional Development**

### **Effective Teaching: Make Your Learning Outcomes Drive Instruction**

*Date: August 16th, 2021; 1 PM - 2:30 PM CT*

Want to make sure your students are leaving your class with the knowledge they need? Build effective lesson plans by starting with student-centered learning outcomes that you will learn from this Delta Program workshop. To register, click [here](#).

### **CQE: Getting Quantum Measurements Up and Running in the Lab Workshop**

*Date: August 17th, 2021; 11 AM CT*

The Chicago Quantum Exchange (CQE) will be hosting Zurich Instruments as they present on the techniques and requirements for qubit control and measurement for a few different qubit types, including superconducting qubits, spin qubits, and NV centers. To register to attend, click [here](#).

### **Chicago Quantum Exchange Summer Workshop Series**

*Date: August 19th; 12 – 1 PM CT*

The Chicago Quantum Exchange, NSF QLCI on Hybrid Quantum Architectures and Networks (HQAN), and Q-NEXT are pleased to invite our members and partners to our joint Summer Workshop Series: a virtual series on different perspectives on quantum technology commercialization and career pathways. The final workshop will be held on August 19 at 12pm CST, with optional networking afterward. Please click [here](#) to register.

### **Teaching Inclusively & Equitably from the First Day of Class**

*Date: August 24th, 2021; 12:30 PM - 2:30 PM*

First impressions matter, and research demonstrates that building a student's sense of belongingness is key to their academic success. So how can we, as classroom leaders and facilitators, ensure our students' first impression of class makes them feel comfortable and empowered to learn? In this Delta Program workshop learn how to set expectations and make a great impression starting on day one. To register, click [here](#).

### **UW-Madison Teaching Academy: 2021 TA-LEaP**

*Date: August 25th-26th, 2021*

LEaP into teaching! Learn the basics of how we learn along with the 7 things UW-Madison students want most from their instructors! Explore the basics of syllabus, assignment and rubric design. Discuss assessment and learn the most common mistakes instructors make on exams, and how to avoid them!

Learn simple active learning techniques that you can apply in your classroom immediately and start developing materials for your own course while you learn! Become part of a community of practice with colleagues in all disciplines and get connected to other teaching and learning programs across the campus through the Teaching and Learning Collaborative.

#### **Remote and On-site Office Hours That Students Use**

*Date: August 25th, 2021; 10 AM - 12 PM CT*

As instruction returns to in person, many educators are offering onsite office hours, and some will continue remote office hours that offer flexibility for students. Attend this Delta Program workshop to get concrete ideas and plan how you'll run your office hours to ensure your students get their needs met, and take advantage of collaborative opportunities while managing technical challenges. To register, click [here](#).

#### **CQE: Quantum Sensing in Atomic and Solid-State Systems**

*Date: September 2nd, 2021; 11 AM CT*

The Chicago Quantum Exchange (CQE) will be hosting Hamamatsu. In this talk, Jennifer Choy, Ph.D., of the University of Wisconsin-Madison describes the realization of quantum sensors in two material platforms: neutral alkali atoms and artificial atoms in diamond. To register to attend, click [here](#).

#### **Women in Science Conference**

*Date: September 18th-19th, 2021*

The Women in Science Conference (WISC) invites graduate students to attend and to apply to present their research. WISC is a conference led by graduate students with the intent of providing other women and gender minorities in STEM with an opportunity to highlight their research, as well as providing networking and career development opportunities with leading professionals in the field. Those attending the conference will be able to present their research through poster and oral presentations, participate in career development workshops and events, and attend three keynote talks by leading professional women in STEM. Registration is due by September 8th and applications to present and for grants to cover the cost of attendance are due August 20th. For more information, click [here](#).

#### **Rising Stars Symposia**

*Date: September 2021*

The University of Chicago invites applications for its 2021 Rising Stars Symposia, which will recognize the achievements of early career researchers working in the fields of Soft and Biological Materials, Quantum Science and Technology, and Experimental Particle Physics. For more information and to apply, click [here](#).

#### **CQE: Open Quantum Initiative Workshop**

*Date: September 22nd - 23rd; 2021*

The Open Quantum Initiative (OQI) is a group of researchers, educators, and leaders among the Chicago Quantum Exchange (CQE) that champions the values of diversity, equity, and inclusion in quantum science. This virtual workshop will discuss the prevailing issues and barriers in the emerging field of quantum computing. Specifically, the workshop will help the CQE develop a program for undergraduate scientists early in their quantum careers to gain research experiences and build professional networks. Workshop participants will learn how they can engage with these efforts and become a more informed member of and advocate for an open quantum community. To register to attend, click [here](#).

#### **Quantum Creators Prize Symposium**

*Date: September 29th -30th, 2021*

The University of Chicago is hosting the first annual Quantum Creators Prize Symposium which aims to promote the achievements of early-career researchers working in exciting new directions of quantum science and increase the diversity of researchers in the field. Researchers who are selected will receive an honorarium and a prize certificate for their participation in the symposium. Graduate students from any institution are encouraged to apply. Applications for the Quantum Creators Prize Symposium are due August 15, 2021. To learn more about the symposium and how to apply, click [here](#).

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## Employment Opportunities

### **Society for Science: Physics Sciences Staff Writer**

*Deadline: August 16th, 2021*

The Society for Science is hiring a Physics Sciences Staff Writer. This writer will be able to handle quick turnaround news on a wide variety of topics as well as enterprising features for the Web and print magazine. The ideal candidate will be eager to experiment with content across platforms, collaborating with our digital team on video and interactive infographics, as well as reaching new audiences through social media. To apply, click [here](#).

### **IAIFI Postdoctoral Fellowship Competition**

*Deadline: September 21st, 2021*

The Institute for Artificial Intelligence and Fundamental Interactions has opened its Postdoctoral Fellowship competition for early-career scientists. These Fellows will spark vital interdisciplinary, multi-investigator, multi-subfield collaborations. IAIFI aims to appoint three new postdoctoral IAIFI Fellows each academic year, for a three-year fellowship term each. To apply, click [here](#).

### **Thermo Fisher: Multiple Openings**

Thermo Fisher is hiring a [scientist](#), a [data scientist](#), and an [applications scientist](#) at their Madison site, which builds Raman, FT-IR and X-ray spectrometers and microscopes. The advanced technology team, composed of PhD scientists, is focused on generating innovative ideas, testing them in the lab, and working with engineers to productize them. Qualified candidates straight out of a PhD will be considered, and extensive experience in spectroscopy is not required. To apply, click on the links for each position above. Contact recent UW Physics alum [Julian Irwin](#) with any questions.

### **UW-Madison Department of Astronomy: TA Positions**

The Department of Astronomy at UW-Madison is looking for a physics graduate student to TA for Astronomy 103 with Professor Amy Barger. To apply, contact [Heather Sauer](#).

### **UW-Madison Math Department: LTTAs**

The Math Department at UW-Madison is hiring Limited Term Teaching Assistants (LTTAs) for the Fall Semester. Rehire after the Fall Semester is dependent upon the number of TAs required in a particular term and prior TA performance. To apply click [here](#) and send any questions to [Kathie Brohaugh](#).

### **IDA: Research Staff Analyst**

The Naval Warfare Group at the Institute for Defense Analyses (IDA) is hiring a full-time Research Staff Member. IDA is a non-profit Federally Funded Research and Development Center (FFRDC) under contract

with the Department of Defense to provide independent, objective, and rigorous analyses of national security issues. They are interested in American citizens who are either graduate students or post-docs who will be available this summer. For more information and to apply, contact Project Leader [Steve Rabinowitz](#).

#### **UW-Madison ECE: Graduate Student Researchers**

The UW-Madison Department of Electrical & Computer Engineering is hiring graduate students for research starting Fall 2021. The open research positions are in the areas of material growth, device design, and fabrication for electronics, optoelectronics, bio-photonics, and quantum applications. Research expenses, tuition, and stipend will be covered. For more information, click [here](#). To apply, contact [Professor Shubhra Pasayat](#) with relevant coursework, specific research interests, and your resume/CV.

#### **CNM: Postdoctoral Appointee**

The Center for Nanoscale Materials (CNM) is seeking a postdoctoral researcher for the Dissipation-aided Microwave-Optical Entanglement program. The program aims to develop a high-frequency superconducting piezo-optomechanical system combined with dissipation engineering technique to generate highly entangled microwave-optical photons. For more information and apply, click [here](#) and search for requisition number 410139. For questions, contact [Dr. Xu Han](#).

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### **Useful Links**

[Dates and Deadlines from the Office of the Registrar](#)

[Warrant Request Form](#)

[Graduate School Degree Deadlines](#)

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#### **Connect with us!**



#### **[Department of Physics](#)**

1150 University Avenue, Madison, WI 53706

*This newsletter is for Ph.D. students in Physics at UW–Madison; we update the mailing list at the start of each semester. Please contact [phddigest@physics.wisc.edu](mailto:phddigest@physics.wisc.edu) with any questions.*