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# Physics Digest

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

August 27th, 2021

## Announcements

### **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](#).

### **Open Seats in EMA 601/NE 602**

EMA 601/NE 602: Quantum Engineering with Atoms and Photons is being offered this Fall semester. This 50% grad course is intended to cover fundamental concepts in quantum, atomic, and optical physics relevant to sensing, communication, and computation applications, as well as experimental techniques and engineering challenges in near-term quantum technologies. Please contact professor [Jennifer Choy](#) with any questions and click [here](#) for more details on the course.

### **Open Seats: Women & Leadership in Science, Health, & Engineering**

This course is only taught in the Fall semester and will be taught this coming Fall by Drs. Megan Moreno (Professor and Vice Chair of Academic Affairs, Department of Pediatrics) and Beth Meyerand (Professor, Department of Medical Physics and Vice Provost for Faculty and Staff Affairs). A highlight of the course is the opportunity to engage with women leaders from across campus. Click [here](#) for more information.

### **Open Seats in MS&E 803**

MS&E 803: Quantum Materials and Devices is being offered this Fall semester. This course aims to introduce the fundamentals of quantum materials and survey of their critical device applications, which offer

new approaches and great benefits to electronics and photonics. Click [here](#) to learn more and contact Professor [Jun Xiao](#) with questions.

### **Open Seats in Integrated Science 605**

This course aims to help new TAs gain skills in scientific teaching to be effective and efficient in their roles. You will get just-in-time support as you work with students, share experiences and innovative ideas with fellow TAs, and enhance your knowledge about teaching and learning. The course focuses on learning the core themes of scientific teaching (active learning, assessment, and diversity) and applying them to the courses that TAs are teaching. Click [here](#) to learn more and click [here](#) to request permission to enroll.

### **CQE: Graduate Students Wanted to Host Educational Videos**

*Deadline: August 31st, 2021*

The Chicago Quantum Exchange (CQE) is working to produce educational videos on the subject of quantum science and engineering to be posted on the CQE website as well as the CQE Youtube channel. They are seeking two enthusiastic CQE graduate students to host these videos. These videos are aimed at enthusing high school students with an understanding of quantum science and by an emotional/personal connection and excitement that may motivate a future career in quantum science. The hosts will briefly discuss their educational journeys to become quantum scientists, explain fundamental quantum concepts, and lead tours and/or discussions with researchers in CQE facilities, in a way that connects to an audience of high schoolers as they start to think about their upcoming career paths. Graduate students interested in this outreach opportunity should contact [Joe Heremans](#) and [Katherine Harmon](#) to arrange for a brief remote "audition." Filming will take place in late September/early October, at locations to be decided.

### **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](#).

### **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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## **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.

### **Welcome Back Reception for Second-Year Graduate Students**

*Date: September 13th, 2021; 4 PM - 6 PM CT*

The Graduate School Office of Professional Development is thrilled to invite second-year graduate students at UW-Madison to a special reception on Monday, Sept 13 from 4:00 – 6:00 pm at the Pyle Center Rooftop (rain location: Pyle Center Alumni Lounge) at 702 Langdon St. The event is free of charge, but there is limited capacity. Click [here](#) to register to attend.

### **UW-Madison Three Minute Thesis Competition**

*Deadline: October 14th, 2021*

The UW-Madison Graduate School will be hosting the 2021-2022 Three Minute Thesis Competition this Fall. Students in research-based master's and PhD programs from all disciplines are eligible to compete. The deadline to register for the competition is October 14, 2021 and you can click [here](#) to register and for more information.

### **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**

### **QED-C Student Research ePoster Sessions**

The Quantum Economic Development Consortium hosts monthly Student Research ePoster Sessions in which students present on their research in quantum computing to a diverse audience of researchers, employers, students, and QED-C community members. Presentations last 10 minutes followed by a 5-minute Q&A session. This is a fantastic opportunity to expand on your presentation skills and to display your prowess in the field of quantum computing. If you are interested in participating, contact [Jackson Kennedy](#).

### **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**

### **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](#).

### **Princeton University: Robert Dicke Fellowships Postdoctoral Positions**

*Deadline: October 22nd, 2021*

The Princeton University Physics Department seeks exceptional recent Ph.D. recipients in experimental physics for an honorific postdoctoral fellowship program. Candidates from all areas of experimental physics will be considered and selected through an annual competition. The selected scholars are expected to work with the existing experimental groups in the department, although those who wish to pursue a specific independent research program will also be considered. Princeton has experimental research programs in Atomic Physics, Biophysics, Condensed Matter Physics, Cosmology & Gravitation, High Energy Physics, and Particle Astrophysics. In their application, applicants are encouraged to discuss potential research group or groups that they would be interested in working with. This year the Physics Department will select

two postdoctoral research scholars with annual appointments including salary, benefits, and \$9,000 in discretionary funds. For more information and to apply, click [here](#).

#### **UCLA: QuBiT Lab Postdoctoral Position**

The Quantum Biology Tech (QuBiT) Lab at UCLA, is searching for postdoctoral candidates with quantum optics/spin physics experience. The QuBiT Lab's mission is to establish the extent to which quantum mechanics accounts for biologically relevant phenomena, and can be manipulated to technological and therapeutic advantage. For more information, click [here](#) and contact [Clarice Aiello](#) to apply.

#### **Utah State University SDL: Quantum Sensing and Timing Scientist**

The Quantum Sensing and Timing (QST) group at Space Dynamics Laboratory focuses its efforts on building inertial measurement devices, atomic clocks, and other photonics-based quantum sensors. Laboratory activities involve laser cooling of atomic gases, optical tweezers, frequency combs, optical communication, and frequency metrology. This position is first to understand the mission (Position, Navigation, and Timing applications), and then to imagine what sort of photonic/atomic device could address the mission, work with the team to design the overall sensor concept (utilizing appropriate modeling platforms), and ultimately build the sensor. Click [here](#) to apply.

#### **ENS Paris: PhD Scholarship and Postdoctoral Position**

The Kastler-Brossel Laboratory at ENS Paris is hiring a two-year postdoctoral position and is offering a three-year scholarship working with Ultracold 1D Fermi Gases. Click [here](#) for more information and to apply.

#### **ColdQuanta: Quantum Physicist**

ColdQuanta would like to hear from experimental physicists, preferably with an expertise in Atomic Molecular and Optical (AMO) physics. Candidates having experience with Rydberg atoms, cold and ultracold atoms, and/or ion-trapping are strongly encouraged to apply. This position will collaborate on R&D projects and support development of new concepts and approaches for future investigation and will work closely with a team consisting of fellow physicists, engineers, and technicians. Click [here](#) for more information and to apply.

#### **CQE: Assistant Director of Industry Partnerships**

The Chicago Quantum Exchange (CQE) is hiring an Assistant Director of Industry Partnerships. The Assistant Director of Industry Partnerships will be responsible for developing and assisting in the management of a portfolio of industry partners for the CQE. This position will assist in cultivating and maintaining strategic partnerships for the CQE and assist in operational planning and execution for various activities related to industry engagement, including the development of processes for tracking, and streamlining partner engagements. Click [here](#) to apply.

#### **Zurich Instruments: Multiple Openings**

Zurich Instruments is seeking candidates for two Marketing & Sales positions: one in Boston, and one in Zurich, Switzerland. As an Application Scientist, this position will have the opportunity to apply technical expertise to solve new technical challenges. This is a great chance to transition directly from an academic path into a role within a dynamic company environment that allows you to stay at the cutting edge of technology. To apply for the Boston position, click [here](#) and click [here](#) for the Zurich position.

#### **University of Chicago: Postdoctoral Researcher in Quantum Materials Modeling**

A position is available in the group of Giulia Galli at the University of Chicago for a postdoctoral scholar focusing on the study of quantum materials for energy efficient neuromorphic computing. The DOE-funded project, which is part of the Energy Frontier Research Center [QMEENC](#) will be in close collaboration with experimental colleagues at the University of California, San Diego and with other QMEENC participants. Further information on the position is available [here](#). Interested candidates should email Professor [Giulia Galli](#) with a full CV, including list of publications and contacts for at least two references and a cover letter of intent with "Postdoctoral application: Neurom." in the subject line.

#### **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 Math Department: Graders**

The Math Department at UW-Madison is hiring graders for 400-level and above courses. The hourly pay for graders is \$21.57 and the positions do not provide tuition remission. The number of hours will vary depending on the course. To apply, click [here](#). For any questions, contact [Bobby Grizzard](#).

For questions about grader positions, contact Bobby Grizzard at [grizzard@math.wisc.edu](mailto:grizzard@math.wisc.edu)

#### **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](#).

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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**

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*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.*