

# Yale Department of Physics

Yale Physics Newsletter

February 22, 2019

For further information on any of the items included here or if you would like to contribute to the next newsletter, send email to [Daphne Klemme](mailto:Daphne.Klemme).

## Hints & Tips!

Welcome to our new hints and tips section! Please email [daphne.klemme@yale.edu](mailto:daphne.klemme@yale.edu) with any helpful tips that will help us work to our best ability.

From the desk of Susan dos Santos:

### Enrollment Verification

Enrollment verifications for students in Yale College and in the Graduate School of Arts and Sciences can be requested by mail, fax, email, or in person at 246 Church Street using a [Request For Enrollment Verification \(PDF\) form](#). Allow 3–5 days for processing and mailing. Students on non-disclosure must submit a signed request.

### Degree Verification

Current students and alumni of Yale College and the Graduate School of Arts and Sciences can request verifications from our office using a [Request For Degree Verification \(PDF\) form](#). After your request is received, it is generally processed and sent in 3-5 business days.

### Climate and Diversity Committee News

A Note from the [Climate and Diversity Committee](#) (CDC).

This week we celebrate one of our own. Prof. Meg Urry's 2005 Washington Post Essay (<http://www.washingtonpost.com/wp-dyn/articles/A360-2005Feb5.html?noredirect=on>) has inspired Karen McFarlene Holman, a Professor of Chemistry at Willamette University, to write this song (<https://www.youtube.com/watch?v=95wwHMol1j0>) for her all-female punk band, Hot Sheets. Prof. McFarlene Holman is their guitarist and singer. Remember, everyone should kick back from time to time and just dance or sing their heart out - Its VERY cathartic!

The CDC convenes once a month. If interested in joining please contact Helen Caines ([helen.caines@yale.edu](mailto:helen.caines@yale.edu), Chair of CDC). You may contact the whole committee at [physics-cdc@mailman.yale.edu](mailto:physics-cdc@mailman.yale.edu)

### Save the Date

The 2019 Graduate Open House is scheduled for Thursday, March 28-Friday, March 29, 2019.

### Seminars

#### Monday, February 25

- 1:15pm in Sloane Physics Lab 56. Special Theoretical Physics Seminar. Vladimir Rosenhaus, Institute for Advanced Study, "New Solvable Quantum Field Theories". Host: Jack Harris.
- 2:30pm in Mason Lab 107. Department of Mechanical Engineering & Materials Science Seminar. Dr. Adrián Lozano-Durán, Stanford University, "Can energy-eddies of 100 meters size be understood from eddies of 1 centimeter size?". Host: Prof. Udo Schwarz.
- 4:00pm in Sloane Physics Lab 57. 42<sup>nd</sup> Annual Hanan Rosenthal Memorial Lecture. Immanuel Bloch, Max-Planck Institute of Quantum Optics, "Realizing Feynman's Dream of a Quantum Simulator". Host: Nir Navon. There will be a reception before the talk in the Sloane Physics Lab 3<sup>rd</sup> Floor Lounge.
- 4:00pm in Sterling Chemistry Lab 111. Department of Chemistry Lecture in Inorganic Chemistry. Prof. Thomas Jaramillo, Stanford University, "New Catalysts for the Sustainable Production and Use of Fuels and Chemicals".

#### Tuesday, February 26

- 11:00am in Yale Quantum Institute Seminar Room. Yale Quantum Institute Colloquium. Immanuel Bloch, Max-Planck Institute of Quantum Optics. "From Topological Order to High Energy Physics: Probing Quantum Matter in New Regimes and with New Tools". Hosts: Steve Girvin and Nir Navon.
- 12:00pm in Steinbach Hall. Dark Matter Discussion Group (DMDG). Dark Matter Discussion Group (DMDG) meetings are open to everyone interested in understanding dark matter, and we hope that graduate students, post-docs and faculty will all attend with enthusiasm. Bring your own lunch.
- 3:00pm in Mann Student Center, Dunham Lab 107 at 3:00pm. Dissertation Defense. Dandan Ji, Yale University, "Modeling of the dynamics large-scale coherent structures in the system of Rayleigh-Bernard Convection". Thesis advisor: Eric Brown.

#### Wednesday, February 27

- 10:30am in Sloane Physics Lab 51. Graduate Methods Seminar. Joe Sullivan, Yale University, "Homology, cohomology, and obstructions to exactness"
- 12:00pm in Sloane Physics Lab 56. Special Biological Physics Seminar. Andrew J. Mugler, Purdue University, "Physics of cell-cell communication and collective behavior". Host: Nicholas Read.

1:00pm in Wright Lab 216. Nuclear Particle Astrophysics (NPA) Seminar. Akira Konaka, TRIUMF, "Precision measurement of neutrinos at Hyper-Kamiokande". Lunch will be served in Wright Lab-Connector 245 from 12:00-1:00pm. [RSVP required](#).

1:15pm in Sloane Physics Lab 51. Special Theoretical Physics Seminar. Austin Joyce, Columbia University, "Exploring Beyond the Standard Cosmological Model". Host: Jack Harris.

2:00pm in Sloane Physics Lab 52. Atomic Physics Seminar. Kazuo Fujimoto, University of Tokyo, "Non-thermal fixed points in a one-dimensional antiferromagnetic Bose gas". Host: Nir Navon.

4:00pm in Sterling Chemistry Lab 160. Molecular, Cellular and Developmental Biology Seminar. Julie Claycomb, University of Toronto, "Argonomics: Understanding the functions of small RNA pathways in a whole animal model". Host: Josien van Wolfswinkel. Tea at 3:45pm.

4:00pm in William L. Harkness Hall 116. IEEE Electrical Engineering Month. Hong Tang, Yale University, "Microelectronics". Food will be served.

#### Thursday, February 28

9:00am in Watson Center A-74. Dissertation Defense. Meredith Powell, Yale University, "The Environments of Accreting Supermassive Black Holes". Thesis Advisor: Meg Urry.

1:00pm in Sloane Physics Lab 52. Condensed Matter Seminar. Dominic Blosser, ETH-Zürich, "Quantum critical dynamics in one-dimensional magnets".

2:30pm in Watson Center A-51. Yale Astronomy & Astrophysics Colloquium. Pieter van Dokkum, Greg Laughlin, Marla Geha, Hector Arce and Priya Natarajan, Yale University, Each will speak for 10 minutes.

7:30pm in Loria Center 250. Yale Quantum Institute and Franke Program in Science and the Humanities. Spencer Topel, Sound Artist & Composer, "Immaterial Waves: Light, Sound, and Architecture".

#### Friday, March 1

9:00am in Sloane Physics Lab 48. Dissertation Defense. Matthew Steinecker, Yale University, "Sub-Doppler Laser Cooling and Magnetic Trapping of SrF Molecules". Thesis Advisor: David DeMille.

1:00pm in Wright Lab 216. Wright Lab Workshop. 3D Printing Workshop: Introduction to design and fabrication, [RSVP Requested](#). Contact James Nikkel at [james.nikkel@yale.edu](mailto:james.nikkel@yale.edu) for more information.

4:00pm in Kline Geology Lab 123. Geology & Geophysics Colloquium. Zhiming Kuang, "Some applications of linear response in atmospheric dynamics".

For more seminars see: <http://physics.yale.edu/calendar>

## News

### Yale Finance News

#### eShipGlobal upgrade

The University's express shipping tool, eShipGlobal, that has supported over 54,000 transactions since 2017, will be upgraded with improved compliance and use features in March 2019.

Yale's upgrade includes:

- The ability for authorized non-Yale shippers to create eShipGlobal transactions for their shipments to Yale.
- The ability to save multiple COA charging instructions to your profile to simplify choosing the proper COA combination on transactions.

- Additional research compliance verifications for some research material shipments.

In February, the program team will conduct a study with select members of the Yale community to ensure communications, training, and support are ready and available for the eShipGlobal community.

Watch for more information on training and support, to be distributed in the coming weeks.

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**Meng Cheng** (Assistant Professor of Physics) and **Nir Navon** (Assistant Professor of Physics) have been awarded 2019 Sloan Research Fellowships. From Yale News, "Four Yale faculty members have been awarded a \$70,000 Sloan Research Fellowship to advance their work."

[Click here for full story in Yale News](#)

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**Priyamvada Natarajan** (Professor of Astronomy) research in the news. From Yale News, "The heavens delivered a bit of scientific vindication to Yale professor of astronomy and physics Priyamvada Natarajan recently, when her 20-year-old theory about winds from distant black holes was proven correct." [Click here for full story in Yale News](#)

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**Fabio Pacucci** (Postdoctoral Associate with Nico Cappelluti) research in the news. From Yale News, "Researchers have discovered the brightest quasar yet known, detected from the period when the universe's star-making hydrogen gas became ionized, known as "reionization"." [Click here for full story in Yale News](#)

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**Robert Schoelkopf** (Sterling Professor of Applied Physics) research in the news. From Yale News, "The potential of Yale's research to drive economic growth and produce jobs took center stage on Jan. 24, as Yale startup company Quantum Circuits Inc. (QCI) opened its New Haven development and testing facility for quantum computing." [Click here for full story in the Yale News](#)

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**Shany Danieli** (Graduate Student with Pieter van Dokkum) research in the news. From Yale News, "Much as a ripple in a pond reveals a thrown stone, the existence of the mysterious stuff known as dark matter is inferred via its wider cosmic influence. Astronomers cannot see it directly, but its gravity sculpts the birth, shape and movement of galaxies. This makes a discovery from last year all the more unexpected: a weirdly diffuse galaxy that seemed to harbor no dark matter at all." [Click here for full story in Yale News](#)

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**Emily Coates** (Associate Professor of Theater Studies) and **Sarah Demers** (Horace D. Taft

Associate Professor) research in the news. From Yale News, “Emily Coates, *associate professor of theater studies and of directing*, and Sarah Demers, *the Horace D. Taft Associate Professor of Physics*

(Yale University Press)

From stepping out of our beds each morning to admiring the stars at night, we live in a world of motion, energy, space, and time. How do we understand the phenomena that shape our experience? How do we make sense of our physical realities? Two guides — a former member of New York City Ballet, Emily Coates, and a CERN particle physicist, Sarah Demers — show how their respective disciplines can help us to understand both the quotidian and the deepest questions about the universe.” [Click here for full story in Yale News](#)

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**Jane Cummings** (Ph.D. 2016, Yale University) research in the news. From Yale News, “Stephen Lawlor and David Hunt have witnessed a lot of bullying. Among the principal victims, in their experience, are young, first-time mothers, who are sometimes so intimidated that they’re unable to eat. Isolating their tormentors in a separate group isn’t a solution, Hunt told me: “They just knock the crap out of each other.” [Click here for full story in the New Yorker](#)

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**Laura Newburgh** (Assistant Professor of Physics) research in the news. From Yale News, “Assistant professor of physics [Laura Newburgh](#) is part of a Canadian-led experiment that has detected the second-known example of a repeating fast radio burst (FRB) originating far outside the Milky Way galaxy.” [Click here for full story in Yale News](#)

#### Announcements

[Please click here for updates on the Yale Science Building, including a new logistics plan.](#) The project encompasses the construction of a new state of the art sciences laboratory at the approximate location of the demolished J.W. Gibbs building, a comprehensive renovation of the KBT Plaza, a lecture hall, and a common area at the south end of KBT Plaza.

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#### Yale Science Building

Please join the YSB construction team on Thursday March 7th at 3:30pm in SPL 57 for a Town Hall meeting and discussion regarding upcoming work.

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#### Message from the YPA

Dear Fellow Postdocs and Associate Research Scientists,

Following the success of our inaugural event last year, we invite you to SAVE THE DATE for the **Second Annual Postdoc Symposium** to be held on

**Friday June 7<sup>th</sup>** in the beautiful Kroon Hall. This event will again be open to postdocs and associate research scientists from all departments. We are happy to announce that our keynote speaker for the event will be [Carl Zimmer](#)!

We are opening a call for abstract submission for oral (10 min and 3 min) and poster presentations from now until **February 22nd**. Please register [>HERE<](#).

We will have a social event at the end of symposium. Details will be updated soon. If you would like to know more about the event or volunteer with symposium organization or on the day, please come to our next general meeting at **BCMM 201 on 5-7 pm of 2nd April**. For more information, please visit our website or contact us at [ypa@yale.edu](mailto:ypa@yale.edu).

Kind regards,

The Symposium Planning Committee  
Yale Postdoctoral Association

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#### Yale University Library

*Student Curator Opportunity (Create and present a “Women at Yale” exhibit based on your research with library collections)*

The selection committee for the 2019-20 Student Research at Yale University Library exhibit is seeking four students to curate one exhibit case each based on a completed paper or research project.

In honor of the [50 Women at Yale 150](#) celebration, the proposals must be related to some aspect of women’s experience and contributions at Yale or in the world.

**The submission deadline has been extended to Monday, Feb. 25.**

This opportunity is open to undergraduate, graduate or professional students. The exhibit will run from October to April in the Sterling Memorial Library exhibition corridor. [Review requirements and submit a proposal.](#)

Please share this message and encourage your students to apply.

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#### Affinity Groups at Yale

*The Future Leaders at Yale Recognition Awards*

Do you know an outstanding mentor and leader? Has someone connected you to others at Yale or in New Haven? Perhaps you have a go-to problem solver who helps you think big? Or maybe your colleague is constantly thinking about how to make Yale more diverse, equitable, and inclusive?

FLY has launched an annual Recognition Awards, and are looking to celebrate amazing colleagues across campus in the following categories:

- **Rising Star:** a mentor, leader, and doer

- **Community Leader:** a connector, partner, and organizer
- **Visionary:** an innovator, problem solver, and dreamer
- **Diversity & Inclusion:** a collaborator, advocate, and change-maker
- **Advocate for Young Professionals:** a champion, voice, or resource for early career staff members

Nominations are being accepted now through February 28. To learn more about the awards, and to complete the submission form, please go to: <https://fly.yale.edu/recognition>. It takes just one person to nominate a colleague and recognize their hard work!

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### **Nominations open for second annual Y-Work awards**

Dean of Yale College Marvin Chun recently announced the second year of the Y-Work Award for Outstanding Undergraduate Student Employees. The award, which is accepting nominations now through March 8, recognizes undergraduates whose dedication to their on-campus jobs has a positive impact on the Yale community.

All Yale faculty and staff who supervise undergraduate student workers are encouraged to [nominate a student employee at the Yale College website](#). All current undergraduates who have worked a term-time job are eligible.

In his announcement, Chun wrote that through on-campus employment, many Yale students “acquire and apply new skills, receive valuable professional mentoring, and improve their readiness for careers after graduation.”

The Y-Work Award seeks to honor those students whose impact through their campus job has been particularly noteworthy. A committee comprising representatives from the Office of Career Strategy, Financial Aid, Public Affairs and Communications, Student Financial Services, and Undergraduate Admissions will select student winners to be honored later this spring. [The 10 winners of the inaugural Y Work Award](#) represented a wide range of Yale departments, laboratories, museums, and resource centers.

[Click here for the full story in Yale News.](#)