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# A Message from the Chair

Greetings! I am looking forward to seeing many of you in Anaheim as well as at the virtual Joint March Meeting and April Meeting: Global Physics Summit. As you'll see below, DMP has organized an exciting program and has a significant presence at the meeting through our many Focus Topic sessions. DMP Focus Topics gather contributed and invited talks together in sessions that spotlight areas of current interest and importance. Please join me in thanking our Chair-Elect, Junqiao Wu and his incredible team of Focus Topic organizers who worked diligently to assemble an excellent program. You will find more details about the Focus Topic sessions later in this Newsletter.

Now is the best time to propose new Focus Topics for next year's Joint March Meeting and April Meeting (currently planned for March 16-20, 2026 in Denver, CO). To submit your proposals, please reach out to our Vice-Chair, Quanxi Jia, who will serve as the DMP Program Chair for 2026, or our Secretary, Ni Ni. Detailed instructions are provided later in this newsletter. We also encourage you to suggest invited speakers for these Focus Topics, once the selections and organizers are announced.

Our Vice Chait Quanxi Jia, Chair-Elect Junqiao Wu, Past-Chair Yuri Suzuki, and I have also organized three exciting invited symposia, including:

- The **DMP Past Chair's Symposium** (MAR-C08), featuring Tsuyoshi Kimura, George Sawatzky, Nicola Spaldin, Liu Tjeng, and Roser Valenti.
- The DMP Prize Session (MAR-J10), showcasing two of the three James C.
   McGroddy Prize winners George Jackeli and Hidenori Takagi, the Adler award

winner Sergei Kalinin, and the IUPAP C-10 Young Scientist Prize winner Niels Schröter.

• The 'Physics for Everyone' Symposium (MAR-W10), featuring Stefan Estreicher, Timothy Gay, Jeremy Wagner, and Ivan Schuller.

Mark your calendars for the annual DMP/DCMP joint business meeting in Anaheim, scheduled for Tuesday evening, March 18, 2025. The evening will kick off at 6:15 PM with a joint DMP/DCMP awards recognition ceremony, celebrating graduate students, post-doc travel award recipients, DMP Image Contest winners, and new DMP/DCMP fellows.

Following the awards and reception, we'll move into the joint DMP/DCMP business meeting presentation. Key topics will include new Focus Topics for the 2026 Global Physics Summit and upcoming APS events.

We encourage you to attend and take this opportunity to provide direct input into the agenda for the 2026 Global Physics Summit.

DMP also plays an important role in recognizing the stellar scientific achievements of our members through awards and election to APS Fellow. The two major awards are the David Adler Lectureship Award and the James C. McGroddy Prize for New Materials. Nomination packages for these are due 6/2/2025. Complete information on the <u>nomination process</u> is available online. I urge you to help us by nominating an excellent and diverse slate of colleagues who have advanced scientific frontiers in materials physics.

As you can imagine, it takes a dedicated team of volunteers to keep all these DMP activities running smoothly. My contributions to the DMP Chair-line would have been incredibly challenging without the wisdom, advice, and support of several executive committee members, especially Yuri Suzuki (Past-Chair), Ni Ni (Secretary-Treasurer), and Peter Schiffer (APS Councilor).

Yuri will be stepping down from the DMP Executive Committee in March. Please join me in giving her a huge round of applause for her outstanding leadership and dedication to the DMP community! Many thanks to Peter Schiffer who is also finishing his term as Councilor for DMP. I also want to extend my gratitude to the DMP Executive Committee Members at Large who are completing their terms, Prineha Narang and Xiuling Li. Their efforts in organizing Focus Topics and serving on various DMP committees over the past three years have been invaluable.

It has been an honor to serve as DMP Chair this past year. I am deeply grateful for the opportunity to contribute to the Division and for your support.

James M. Rondinelli, DMP Chair

**New Members of the Executive Committee** 

The following members were elected to serve on the DMP Executive Committee:

- Vice Chair: Judy Cha (Cornell University)
- Councilor: Rachel Goldman (University of Michigan)
- Member at Large: Johanna Palmstrom (Los Alamos National Laboratory)
- Member at Large: Nini Pryds (Technical University of Denmark)

Judy, Rachel, Johanna and Nini will join the Executive Committee following the 2025 Global Physics Summit. We congratulate the new members of the Executive Committee and look forward to their participation and leadership!

#### **DMP Executive Committee Members for 2025-2026**

The Executive Committee Officers and Members-at-Large for the 2025-2026 year, (who begin their terms following the Global Physics Summit):

#### Officers:

- Chair: Junqiao Wu (03/25 03/26), University of California, Berkeley
- Chair-elect: Quanxi Jia (03/25 03/26), State University of NY Buffalo
- \*Vice-chair: Judy Cha (03/25 03/26), Cornell University
- Past Chair: James M. Rondinelli, (03/25 03/26), Northwestern University
- Councilor: Rachel Goldman, (01/25 12/28), University of Michigan
- Secretary/Treasurer: Ni Ni, (03/23 03/26), University of California, Los Angeles

## **Members-at-Large:**

- Paul Sokol, Indiana University Bloomington (03/23 03/26)
- Bharat Jalan, University of Minnesota, Twin Cities (03/23 03/26)
- Harry B. Radousky, Lawrence Livermore National Laboratory (03/24 03/27)
- Dagmar Franziska Weickert, Physikalisch-Technische Bundesanstalt (03/24 03/27)
- \*Johanna Palmstrom, Los Alamos National Laboratory, (03/25 03/28)
- \*Nini Pryds, Technical University of Denmark, (03/25 03/28)

# **Call for DMP Focus Session Topics for the 2026 APS March Meeting**

# (March 16 - 20, 2026 in Denver, CO)

The Division of Materials Physics sponsors many diverse Focus Topics for the 2025 APS Global Physics Summit. These topics span multiple sessions, offering an in-depth look at cutting-edge materials physics research and connecting invited speakers with related contributed abstracts. Each year, the existing slate of Focus Topics is evaluated for inclusion in the next year's program. In addition, new candidate Focus Topics are solicited and considered based on timeliness, an assessment of the community interest, and

<sup>\*</sup>Newly elected

uniqueness with the existing DMP program and those of sister units. Ideas coming from the broad DMP community are crucial to the success of this process.

To that end, the DMP Executive Committee solicits your input for the 2026 Focus Topics Slate. New Focus Topics should represent a significant topic that would support three or more APS Global Physics Summit sessions (each session typically has one invited talk and 12 related contributed talks).

Please send proposals for new focus topics to DMP Chair-Elect Quanxi Jia (<u>qxjia@buffalo.edu</u>) or DMP Secretary/Treasurer Ni Ni (<u>niniphy@g.ucla.edu</u>) by 5 p.m. EST on Friday, March 21, 2025. Please include:

- Descriptive title of the focus topic
- The nominator's name, affiliation, and email address
- A brief abstract noting timeliness and uniqueness of the topic relative to the existing program
- A description of the intended audience that supports the size and scope of a focus topic
- Suggestions for possible organizers
- Any additional information you would like to provide that will help the DMP Executive Committee in its decision-making process will be appreciated. For your reference, a list of the 2025 DMP focus topics is included below.

If you have any questions or would like assistance in the preparation of your proposal, please contact DMP 2026 Program Chair Quanxi Jia (qxjia@buffalo.edu).

# **DMP Focus Topics at the 2025 APS Global Physics Summit**

- 07.01.01 Topological Materials: Synthesis, Characterization and Modeling
- 07.01.02 Dirac and Weyl semimetals
- 07.01.03 Topological Superconductivity: Materials, Measurement, and Modeling
- 07.01.04 Magnetic topological materials
- 08.01.01 Dopants and Defects in Semiconductors
- 08.01.02 Metal Halide Perovskites from Fundamentals to Applications
- 08.01.03 Multiferroics, magnetoelectrics, spin-electric coupling, and ferroelectrics
- 08.01.04 Exploring Complex Chalcogenides: Properties, Synthesis, and Applications
- 09.01.01 Fe-based Superconductors
- 11.01.01 4d/5d transition metal systems: Spin-orbit driven emergent phases and

### phenomena

- 11.01.02 Light-Induced Dynamical Control of Electronic Phases
- 12.01.01: 2D Materials: Formation Pathways and Mechanisms, Heterostructures, and Defects
- 12.01.02 2D Materials: Frontiers of Van der Waals Assembly and Moiré Materials
- 12.01.03 2D Materials: Advanced Characterization
- 12.01.04 2D Materials: Correlated states: Superconductivity, Density Waves, and Ferroelectricity
- 13.01.01 Optical, Acoustic/Elastic, Thermal, and Nanophononic Metamaterials
- 13.01.02 Electron, Exciton, and Phonon Transport in Nanostructures
- 13.01.03 Complex Oxide Interfaces and Heterostructures
- 13.01.04 Design and Synthesis of New Bulk and Thin-Film Quantum Materials
- 13.01.05 Ultrawide-Bandgap Semiconductors: Growth, Characterization, Theory, and Devices
- 16.01.12: Computational Design, Understanding, and Discovery of Novel Materials

#### DMP also co-sponsors the following focus topics led by other APS units:

- 01.01.36 Molecular Dynamics and Deep Learning for Materials Including TMDC & Oxide Moire Structures (DCOMP, DPOLY, DBIO, DMP, DSOFT) [same as 16.01.09, 02.01.54]
- 05.01.01 Advancements and Applications of Density Functional Theory (DCP, DMP, DCMP) [same as 07.01.05, 12.01.05, 09.01.02, 13.01.06]
- 05.01.03 Molecular Polaritonics: Chemical Dynamics and Spectroscopy (DCP, DMP)
- 05.01.07 First Principles Modeling of Excited-State Phenomena in Materials (DCOMP, DMP, DCP) [same as 16.01.03]
- 10.01.03 Spin Transport and Magnetization Dynamics in Metals-Based Systems (GMAG, DMP, FIAP) [same as 22.01.07]
- 16.01.01 Matter at Extreme Conditions (DCOMP, DMP, GCCM) [same as 18.01.01]

- 16.01.04 Machine Learning for Atomistic Simulations (DCOMP, GDS, DMP) [same as 23.01.20]
- 16.01.08 Recent applications and developments in Quantum Embedding (DCOMP, DMP, DCMP)
- 16.01.12 Computational Design and Discovery of Novel Materials (DCOMP, DMP, DCMP)
- 16.01.13 Recent Advances in Computational Methods and Simulation for Fusion Materials (DCOMP, DMP)
- 16.01.15 The Quantum Monte Carlo Sign Problem: Recent Advances and Paths Forward (DCOMP, DCMP, DMP)
- 16.01.19 Modern atomistic modeling of disordered materials (DCOMP, DMP)

# APS Global Physics Summit: DMP/DCMP Business Meetings and Fellows and Awards Reception

A Joint Business Meeting of DMP/DCMP will include an awards reception honoring new APS DMP/DCMP fellows, travel award and DMP Image Contest winners on Tuesday, March 18 from 6:15 – 7:45 pm (MAR-KB04) in Anaheim Convention Center,158 (Level 1). This is your opportunity to interact with the Executive Committee and to become informed of the activities of the Division.

#### **Award and Prize Winners**

# James C. McGroddy Prize for New Materials

**George Jackeli**, Max Planck Institute for Solid State Research in Stuttgart **Hidenori Takagi**, Max Planck Institute for Solid State Research in Stuttgart **Giniyat Khaliullin**, Max Planck Institute for Solid State Research in Stuttgart

For seminal theoretical and experimental research, materials design and discoveries that pioneered the exploration of novel forms of topological quantum matter in spin-orbit assisted Mott insulators realized in transition metal oxides.

#### **David Adler Lectureship Award**

Sergei V. Kalinin, University of Tennessee, Knoxville

For sustained leadership and vision in integrating machine learning methods with physical sciences, particularly in the development of autonomous electron and scanning probe microscopies and applications to nanoscale electromechanics of ferroelectric and energy materials.

#### Mildred Dresselhaus Prize in Nanoscience or Nanomaterials

Marvin L. Cohen, University of California, Berkeley

Steven Gwon Sheng Louie, University of California, Berkeley

For developing theoretical and calculational methods able to predict and explain electronic, optical, magnetic, and topological properties of nanomaterials.

The Dresselhaus Prize is awarded jointly with DCMP.

# IUPAP Young Scientist Prize in the Structure and Dynamics of Condensed Matter (C10)

Niels Schröter, Max Planck Institute of Microstructure Physics in Halle

For his pioneering discovery of chiral topological semimetals, new fermions, Weyl spinmomentum locking, and orbital angular momentum monopoles, enabling groundbreaking advancements with implications for spintronic applications and beyond.

# Richard L. Greene Dissertation Award in Expt. Condensed Matter/Materials Physics

### Kevin P. Nuckolls, Princeton University

For significant contributions to our understanding of the correlated, topological, and superconducting phases of magic-angle twisted bilayer graphene using the scanning tunneling microscopy and spectroscopy.

#### Jeong Min Park, MIT

For pioneering research establishing magic-angle twisted multilayer graphene as a robust family of moiré superconductors.

#### 2024 APS Fellows nominated through DMP

## **Judy Jeeyong Cha**

For pioneering contributions in the development of nanoscale synthesis and characterization methods for topological nanomaterials, resulting in enhanced properties of the topological electronic states for device applications and fundamental studies.

## Jiaqing He

For seminal and sustained contributions to unraveling the relationship between the structure and property of thermoelectric materials and associated physical phenomena.

#### Oana D. Jurchescu

For advancing the understanding of charge transport in organic semiconductor devices, paving the way for improved performance; effective mentoring of junior scientists; and fostering an inclusive research environment.

# **Seth Ariel Tongay**

For outstanding contributions to the development and understanding of two-dimensional semiconductors, heterostructures, and moire superlattices and their properties.

## Stephen D. Wilson

For pioneering studies of new classes of quantum materials, particularly kagome metals, highly frustrated triangular lattice antiferromagnets, and spin-orbit-assisted Mott states.

# **Haidong Zhou**

For outstanding contributions to the synthesis and understanding of frustrated magnetic materials.

## **Division of Materials Physics Ovshinsky Student Travel Awards**

The Ovshinsky Student Travel Awards were established to assist the career of student researchers. The awards are named after Stanford and Iris Ovshinsky, who had a very strong interest in, and commitment to, scientific education. The awards have been endowed by the Ovshinsky family, their colleagues at Energy Conversion Devices (ECD) companies and all their numerous friends from many social, intellectual and business relationships.

We are extremely grateful to the Ovshinsky family for this award. Since the original launch of the award, the family have provided further gifts to endow the awards.

The recipients of the 2025 Ovshinsky Student Travel Awards for Materials Physics are:

Intuon Chatratin University of Delaware

Yizhi Chu Michigan Technological University

G. Wayne Tu University of Michigan

Jackson McClellan University of California, Berkeley

Michele Campbell Northwestern University
Sarah Gavin Northwestern University

Sreejith Pallikkara Chandrasekharan University of Rennes Vivek Anil Cornell University

Ankita Rawat Jawaharlal Nehru University

**Daisy O'Mahoney** Stanford Univeristy

**Rosalin Mohanty** Indian Institute of Science **Trivanni Yadav** The University of Tulsa

Yeryun Cheon Cornell University

Adedamola Aladese University of Memphis

Emma Pappas University of Illinois at Urbana-Champaign

Netanela Cohen Tel Aviv University
Xin Zhang Princeton University

Zhifei Yang University of Minnesota Twin Cities

Chamini Pathiraja University of Houston

Sandra Santhosh Pennsylvania State University

Sreejith Nair University of Minnesota Twin Cities

## **Division of Materials Physics Post-Doctoral Travel Awards**

The DMP Post-Doctoral Travel Awards were established to recognize innovative materials physics research by Post-Doctoral researchers that will be presented at the APS Global Physics Summit. The Awards are supported through the Division of Materials Physics.

The selection of the recipients of the DMP Post-Doctoral Travel Awards is based on the research quality, the impact of the research at the APS Global Physics Summit and the innovative contribution of the post-doctoral researcher.

The recipients of the 2025 DMP Post-Doctoral Travel Awards are:

Safia Alharbi University of Louisville

Vijaya Begum-Hudde University of Illinois at Urbana-Champaign

Francesco Belli State Univ of NY - Buffalo

An-Hsi Chen Oak Ridge National Laboratory

Seung Gyo JeongUniversity of MinnesotaWoncheol LeeUniversity of MichiganXiaoyin LiUniversity of Utah

Saeed Rahmanian Koshkaki Texas A&M University College Station

Vineet Sharma Howard University

Pranava Keerthi Sivakumar Max Planck Institute of Microstructure Physics in Halle

Xiaoyu Song Columbia University

# **Division of Materials Physics Image Contest Winners**

Ryan Baumbach (University of California, Santa Cruz) Kanaya Malakar (Brandeis University)

# **APS Global Physics Summit: DMP Sponsored Symposia & Special Events DMP Invited Symposia**

- Monday, March 17, 3:00 PM 6:00 PM (MAR-C08) DMP Past Chair's Symposium [Tsuyoshi Kimura, George Sawatzky, Nicola Spaldin, Liu Tjeng, Roser Valenti]
- Tuesday, March 18, 3:00 PM 5:24 PM (MAR-J10) DMP Prize Session: IUPAP C-10 Young Scientist Prize [Niels Schröter], McGroddy Prize for New Materials [George Jackeli, Hidenori Takagi], David Adler Lectureship Award in the Field of Materials Physics [Sergei Kalinin]
- Friday, March 21, 8:00 AM 11:00 AM (MAR-W10) Physics for Everyone [Stefan Estreicher, Timothy Gay, Jeremy Wagner, Ivan Schuller]

## **Students Lunch with the Experts**

Tuesday, March 18, 12:30 - 2:00 PM at Anaheim Convention Center, Exhibit Hall B.

Students may sign up on site to enjoy a complimentary box-lunch while participating in an informal discussion with an expert on a topic of interest to them. Sign-up begins on Sunday, March 16 at 3:00pm in the Registration Area (ACC Main Building, Level 1). Tickets are available on a first-come, first-served basis.

### Meet the Editors of Physical Review

The Physical Review editors will also be holding a Tutorial for Authors and Referees, which will be an interactive session about the peer-review and publication process of the APS journals. This event is Wednesday, March 19, 3:00 pm - 4:30 pm (MAR-EV26) in Anaheim Convention Center, 203A (Level 2).