

PHYSICS OUTREACH & ENGAGEMENT

Letter from the Chair

Happy 2023! As I sat down to write my Chair's letter, I realized that being chair of FOEP is only possible through the mentoring and help from previous chairs and executive committee members. I'd like to give a special thanks to Shireen Adenwalla and Shannon Greco. Shannon completed her final year as part of her chair process in 2022. She ushered us through covid which is no small task for a group of people dedicated to interacting with the public! But don't think that Shannon is enjoying a restful retirement from education simply because she has left our Executive Committee, she is busy preparing to host a CUWiP conference this January. Shireen has continued her amazing efforts in education and outreach. The Physics Fiesta that she held in Chicago in 2022 was so popular that she is continuing it at the March meeting in 2023. The excitement that this event sparks in participating youth for physics has been recognized by an anonymous funder who has pledged money to support this event over the next 3 years.

I'd like to thank Chistina Love and Artemis Spyrou who completed their terms on the Executive Committee in 2022. We are excited to continue working with Taviarre Hawkins – Chair Elect, Mike Bennett and Michael Smith. All of these members of the leadership team were a tremendous help in planning for the March and April meeting as well as advocating for physics outreach and public engagement during a period when we have witnessed the dire need for physics outreach to counter scientific misinformation.

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JOIN US

To join FOEP at no cost prior to renewing your APS membership, send an email to membership@aps.org with your request to add FOEP to your membership. Please note that if you currently belong to two or more forums, FOEP will be added at no charge for the remainder of your membership term. On your next membership renewal notice, you will see a Forum subtotal that will include \$10 for every Forum membership over two.

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None of our work would be possible without the tireless efforts of our Secretary/Treasurer, Heide Doss. Heide is the person who keeps FOEP running. She consistently reminds us of our goals, needs, upcoming events, and budget. In addition, she is the editor of our newsletter. She does all of this work with grace and kindness that keeps us all motivated.

As I look towards 2023, I am excited to work with our new members. Frances Kraus will serve as our Vice Chair beginning in 2023 and Gerceida Jones – a recent APS fellow, and Lindsay House will serve as our members-at-large. These three new members bring a diverse set of experience and leadership related to physics outreach and public engagement and I know they will make FOEP stronger for it.

We are excited to announce that the FOEP Outreach Mini-grants are now available. We hope these mini-grants supported some innovative physics outreach efforts, particularly from our early career participants. To further support early career physicists, we are now offering travel support to the March and April meetings for graduate students who are presenting in a FOEP session. Please encourage your graduate students to submit abstracts. Both applications can be found at the [FOEP prizes and award web page](#).

We look forward to seeing many of you at the March and April meeting where we have invited speakers who are experts in scientific communication, particularly as it applies to countering misinformation. As members of the FOEP Executive Committee we hope that these talks help each of you in your public engagement and physics outreach endeavors. Please help us increase our membership by inviting friends and colleagues to these sessions so they can see the benefits of FOEP! Please note that our FOEP annual business meeting will be held directly after the invited speaker session on Wednesday March 8th at 6 pm. I wish you all a wonderful new year and cannot wait to hear about the amazing outreach our physicists have planned for 2023.

Yours in Outreach,
Roxanne Hughes, Ph.D.
Director of the Center for Integrating Research and Learning
National High Magnetic Field Laboratory



Roxanne Hughes
National High Magnetic
Field Laboratory

Letter from the Chair, continued

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the Chair
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Spotlight on Outreach and Engaging the Public with 2022 Nicholson Medal for Outreach Winner

This newsletter's spotlight is on the Dwight Nicholson Medal for Outreach winner, Chandralekha Singh from the University of Pittsburgh with the citation:

"For work in broadening access to physics through research and removing barriers to success in the field faced by marginalized groups and how to overcome them, by addressing those challenges directly through meaningful, research-based action."

Please describe for our readers the research you have done and the actions you took that has helped remove barriers for marginalized groups in physics.

I have been conducting physics education research focused on diversity, equity and inclusion in physics. Physics is a discipline with deeply entrenched stereotypes about who belongs in it and who can excel in it. These stereotypes and biases negatively affect students from traditionally marginalized backgrounds who lack role models, unless the physics community makes intentional efforts to create an equitable and inclusive learning environment. For example, our research in a two-semester large introductory physics course sequence for physical science and engineering majors shows that women with A grade, on average, have the same self-efficacy as men with C grade. (The 2018 article in Phys. Rev. Educ. Res. can be accessed with this [link](#).)

It is important to note that regardless of grades, self-efficacy is critical for retaining students from marginalized groups such as women. Our research also shows that women drop out of STEM disciplines with higher grades than men. (The 2022 article in the phys arxiv. can be accessed with this [link](#).)

We have implemented a short ecological belonging intervention that is one positive step in creating an inclusive learning environment. More information about this intervention can be found here: [link to 2020 Psychological Science article](#).



Chandralekha Singh
University of Pittsburgh

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Q: What motivated you to do this work?

The need to improve the culture of physics and make this discipline, that I love so much, more equitable and inclusive motivated me to do this work. For example, this [2021 Scientific American opinion](#).

Q: What suggestions do you have for our readers on actions they can take to help remove barriers?

They should read about research findings related to diversity, equity and inclusion in physics and other related STEM disciplines and get involved in making physics more equitable and inclusive.

Q: What areas regarding barriers to the physics community do you think still need to be further researched?

We have a long way to go. Researching how to change the culture of physics would be great. Also, investigating the culture and diversity, equity and inclusion issues in trans-disciplinary fields such as quantum information science would be valuable.

Q: What advice or recommendations can you give to our readers?

Each physicist should reflect upon these issues and how they can make physics more equitable and inclusive. For example, see this [Nature 2022 article](#), titled, “Want to promote diversity in science? Offer better support.”

Dwight Nicholson Medal for Outreach

This award recognizes the humanitarian aspect of physics and physicists created through public lectures and public media, teaching, research, or science related activities. Recognition consists of a stipend of \$3,000, the Nicholson Medal, and a certificate which includes the citation for which the recipient has been recognized. Up to \$1,500 will be available for the recipient's travel expenses to the meeting at which the Nicholson Medal is presented. It will be presented annually.

Establishment & Support

The Nicholson Medal was established in 1994 by the [Division of Plasma Physics](#) and the [Forum on Physics and Society](#). It was originally named the Nicholson Medal for Humanitarian Service, and is currently administered by the [Forum on Outreach and Engaging the Public](#). The Nicholson Medal is sponsored by the friends of Dwight Nicholson, and through generous gifts from Professor Herb Berk, the Nicholson Medal will be awarded with a stipend of \$3,000.

Rules & Eligibility

The Nicholson Medal for Outreach shall be awarded to a physicist who either through public lectures and public media, teaching, research, or science related activities,

1. has successfully stimulated the interest and involvement of the general public on the progress in physics, or
2. has created special opportunities that inspire the scientific development of students or junior colleagues, or has developed programs for students at any level that facilitated positive career choices in physics, or
3. has demonstrated a particularly giving and caring relationship as a mentor to students or colleagues, or has succeeded in motivating interest in physics through inspiring educational works.

Nominations are active for up three years.

Nomination & Selection Process

The nomination must include:

- A letter evaluating the nominee's qualifications and how the nominee has gone above and beyond in meeting one or more of the three criteria above should be no more than 5,000 characters.

In addition, the nomination should include:

- A biographical sketch.
- A list of the most important publications.
- At least two, but not more than four, seconding letters.
- Up to five reprints or preprints.

To start a new or update a continuing nomination, please see the [Prize & Award Nomination Guidelines](#).

Deadline: June 1

FOEP Nominations for APS Fellows

What

APS Fellowship constitutes recognition by one's professional peers of exceptional contributions to the physics enterprise. Only a small fraction of the APS members reach the level of fellows and therefore this is an important recognition.

Who

Only APS members who are members of FOEP can be nominated for fellowship through FOEP. The deadline for Fellowship nominations is usually June 1. We strive to have a diverse group of nominees and encourage the nomination of members of all underrepresented groups

How

Nomination is done entirely on-line. Complete instructions for the nomination are available at:

<http://www.aps.org/programs/honors/fellowships/nominations.cfm>

The process consists of: providing the nominee's contact and professional information, uploading nomination letters documenting the accomplishments of the nominee and explain why he or she is deserving of recognition. Note that it is the responsibility of the nominators to provide a compact however complete nomination.

Evaluation

Nominations are evaluated by the FOEP nomination committee, reviewed by the full APS Fellowship Committee, and finally submitted for approval to the APS Council.

Subject

Outreach is a broad enterprise, spanning academia, industry and national laboratories, as well as freelance professionals such as writers, journalists and bloggers. Outreach activities are often overlooked and undervalued. Thus, it is important to think about and propose people who have an exceptional track record in this area.

Why

Nominating someone for APS fellowship takes time; however, it is a great way to emphasize the importance of reaching out to and engaging with the public. At the personal level it is very satisfactory to get recognition of your peers.

Deadline: June 1, 2023

Contributed by: Ivan K. Schuller

FOEP at the March and April Meetings 2023

FOEP is sponsoring three sessions at the March meeting this year.

In person March:

[Session A33](#) includes presentations that broaden our concept of what physics is and what it can be. This expanded definition of physics is so important to outreach and public engagement since it can help you make physics more relevant to your audiences.

[Session A33](#) Monday March 6, 8:00 – 11:00, Room 225: Expanding the Definition of Physics

In FOEP's Invited Speaker session ([Session Q12](#)), you will hear from prominent experts in the field of science communication. Jevin West is the Director of the University of Washington's Center for an Informed Public and focuses on countering misinformation. Michael Cacciatore researches media depictions of science and the role of social media in science communication. Lee McIntyre is a philosopher and the author of "How to talk to a Science Denier". Yasmin Tayag is a science journalist who will talk about confronting science misinformation. This session is incredibly timely and important for all members.

[Session Q12](#) Wednesday March 8, 3:00-6:00, Room 235: Countering Misinformation in Physics Outreach and Public Engagement

FOEP's business meeting (Wednesday 6:00 pm Room 235) will follow Session Q12.

The Physics Fiesta was such a hit last year in Chicago, that it is on again this year! The Physics Fiesta will be held on the evening of Friday March 10th at Clark High School.

Virtual March:

Are you looking for ideas for your own physics outreach? Then this co-sponsored FED and FOEP session is for you. Our speakers will spark your creativity by telling you about the innovative outreach they have done.

[Session AAA01](#) Wednesday March 22, 12:30-2:30, Virtual Room 1: V: Physics Education and Outreach

For those of you who usually attend the April Meeting. Our Invited Speaker session is also focused on countering misinformation in physics and science outreach and public engagement. This session will include: Zach Costan, Outreach Coordinator for Michigan State's Facility for Rare Isotope Beams; Agnes Mocsy, Science Communication specialist and Physics professor at the Pratt Institute; Claire Raftery, Director of Education, Communications and Outreach, National Solar Observatory.

Double your exposure by giving an outreach talk in addition to your science talk!

The Forum for Outreach and Engaging the Public will have contributed talk sessions at the March and April meetings. *Importantly, these talks do not count toward the APS limit of one first author presentation per meeting, so you can still submit a scientific presentation.* We look forward to hearing about your work!

Report from APS Council of Representatives Meeting in November 2022

As the representative for the Forum on Outreach and Engaging the Public, the Forum on Education, and the Topical Group on Physics Education Research to the APS Council of Representatives, I attended that group's semi-annual meeting on November 11, 2022 in DC. The CEO of APS, Jonathan Bagger, updated the Council on a variety of matters, including the [statement](#) that APS Board of Directors (of which I am also a member) issued in June about the Russian invasion of Ukraine. Several APS units have offered funds from their treasuries to assist Ukrainian scientists affected by the war. APS matched those donations, which now total over \$90,000. The funds are managed through the Safe Passage Fund administered by the National Academies.

Some big changes are afoot in regard to the physical presence of APS in various locations, driven in part by APS becoming a "remote first" employer during the COVID pandemic. The publications office on Long Island in New York has moved from Ridge to a new (smaller) location in Hauppauge. The headquarters of APS at the American Center for Physics (ACP) in College Park, which has been largely deserted since the start of the pandemic, has been listed for sale and a lease has been signed on new space in downtown DC. Like ACP, the new space will be shared with the American Association of Physics Teachers and the American Institute of Physics. The move is expected to take place in early 2024.

Publications is another area where significant changes have taken place. APS now has a Chief Publications Officer, Rachel Burley, who is a senior staff member in charge of managing the *Physical Review* suite of journals as well as other APS publications. Randall Kamien of the University of Pennsylvania has been appointed as the new Editor-in-Chief, a reconfigured role that places him in charge of the quality, relevance, integrity, and editorial excellence of APS scientific publications; he will also serve as the ultimate arbiter of editorial appeals and journal-related ethics questions.

Besides publications, another core area of APS activity is the scientific meetings it organizes. The perennial challenge of its largest offering, the March Meeting, continues to receive attention. The strong growth of attendance at the meeting over the years has been a signal of the health of the physics areas it serves, but has made the logistics of the meeting increasingly unwieldy (more than 70 simultaneous sessions!). The advent of virtual and hybrid meetings due to pandemic-related health issues (as well as a desire to make the meetings more accessible) added additional complications. A Task Force on the March Meeting has made a number of recommendations regarding the organization of the meeting that will be implemented in coming years. No doubt the experience with those changes will prompt more changes as APS strives to give over 10,000 physicists the best scientific conference experience possible.

As always, if there are issues that FOEP members would like brought before the Council, please feel free to contact me. I want to make sure that FOEP's voice is heard in APS governance.

Laurie McNeil
University of North Carolina at Chapel Hill
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PHYSICS OUTREACH & ENGAGEMENT

Executive Committee

CHAIR: ROXANNE HUGHES (01/23 - 12/23) NATIONAL HIGH MAGNETIC FIELD LAB

CHAIR-ELECT: TAVIARE L. HAWKINS (01/23 - 12/23) ST. CATHERINE UNIV

PAST CHAIR: SHIREEN ADENWALLA (01/23 - 12/23) UNIV OF NEBRASKA - LINCOLN

VICE CHAIR: FRANCES KRAUS (01/23 - 12/23) PRINCETON PLASMA PHYSICS LABORATORY

SECRETARY/TREASURER: HEIDE M. DOSS (1/22 - 12/24)

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MEMBER AT LARGE: MICHAEL S. SMITH (01/22 - 12/23) OAK RIDGE NATIONAL LAB

MEMBER-AT-LARGE: GERCEIDA JONES (01/23 - 12/24) NEW YORK UNIVERSITY

MEMBER AT LARGE: LINDSAY HOUSE (01/23 - 12/24) UNIV OF TEXAS, AUSTIN

FOEP Membership – Join Today

To join FOEP at no cost prior to renewing your APS membership, you can get your ID badge scanned at a meeting, send an email to membership@aps.org with your request to add FOEP to your membership, or send a letter requesting membership to APS membership department.