

PHYSICS OUTREACH & ENGAGEMENT

Letter from the Chair

As we prepare for another academic year, it is my time to reflect and share my thanks and gratitude to all of you who are broadening interest in, understanding of, and excitement for physics through outreach and public engagement. We as a community of physicists, physics educators, and physics enthusiasts have all witnessed the importance of public engagement with science. Physics is fundamental to so many of our current technologies and our overall understanding of the universe. And yet, we are witnessing an increase in distrust of science and scientists. Our FOEP membership as well as the broader APS community is helping all of us to address this distrust.

During our March meeting, FOEP along with CIP and APS' Public Engagement Office held multiple sessions on countering misinformation in physics and science more broadly. The common theme among these sessions is that we all have to practice empathy and respect rather than belittling those we disagree with. If we are, as scientists, to build trust with the general public, we must demonstrate that we value them as human beings. Practicing our listening skills and kind feedback can help in these endeavors.

To support the next generation of physicists in their efforts to engage the public, this past year we started offering FOEP travel grants for graduate students presenting public engagement related talks at the March and April meetings. In 2023, three graduate students were awarded this support. We encourage graduate students to [submit abstracts for the 2024 meetings](#).

Continued on p.2

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.

VOL. 9 NO. 2 SEPTEMBER 2023

In this issue



Letter from the chair
- 1 -



Spotlight on Outreach and
Engaging the Public
with oSTEM
- 3 -

Empowering Future Scientists: Enhancing
the PhysicsQuest Program
- 5 -

Medals & Awards
- 7 -

FOEP at March 2023 Meeting
- 11 -

Wiki Scientist Program
Feedback
- 12 -

*A publication of The Forum on Outreach and
Engaging the Public - FOEP -
A forum of the American Physical Society*

FOEP also offered mini-grants to support outreach and public engagement efforts for the first time in 2023. Here are the awardees for 2023.

- "Not-So-Simple Machines: The Fascinating Physics of Bicycles," PI Plummer, \$1410, funded in full
- "First Man, Science Skepticism, and the Impact of Personalized Information," PI Schmidt, \$2500, funded in full
- "Stories of Women in Fluids Initiative: Anthology Book Series," PI Hendrickson, \$2500, funded in full
- "Voices in Physics," PI Frank, \$1100 for ground transportation to select interviews, misc. equipment, and Otter.ai subscription
- "Summer Mini Program 'Intro to Quantum Physics and Research Opportunities,'" PI Khain, \$1000 for scholarships only
- "Go with the Flow," PI Liu, \$1000 for video production only

We look forward to hearing more about these efforts at the 2024 March and April meetings. Please consider [applying for these funds](#) if you have an interesting public engagement and outreach idea.

And lastly, I would like to introduce Emily Ward, our new editor for the FOEP newsletter. Emily is a junior at Rowan University, where they major in physics with minors in astronomy and math. Currently, they work in the MarsCloud Lab doing astronomical image processing and analysis. Emily is also passionate about science communications and writing, which led to their interest in FOEP and the position of editor. They hope to highlight some great outreach work through this newsletter, particularly outreach that serves communities underrepresented in physics. We are excited to welcome Emily and look forward to working with all of you as we continue to show the general public the amazing world of physics.

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

continued
the Chair
continued

Attendees of the APS Division of Plasma Physics Meeting this October 30 - November 3 in Denver should keep an eye out for a contributed session on Science Education, Public Engagement and DEIA Efforts. Precise time and location to be announced soon!

Spotlight on Outreach and Engaging the Public with oSTEM

One of this newsletter's spotlights is on oSTEM, an organization for LGBT+ people in STEM, featuring one of their social coordinators, Kelsey Endicott.

Q: What is oSTEM Global?

oSTEM global is a non-profit organization that works to promote diversity and inclusion of LGBTQ+ individuals in STEM fields.

Q: Describe what you do with oSTEM Global.

I am a social coordinator for the asexual/aromantic community. I get to work on outreach to these specific groups. I am also a volunteer for the annual conference happening in Anaheim this year.

Q: What resources does oSTEM Global offer to LGBT+ individuals in STEM fields?

There are many resources available to promote more diversity in the workplace, such as an instruction manual on educating others on the use of pronouns and another on how to advocate for gender inclusive restrooms in your place of work or college campus. We also utilize the THRIVE lifeline, an LGBTQ+ lifeline that people can call or message during times of crisis to assist them.

Q: You also are on the executive board for your campus's oSTEM chapter! What has that experience been like, and what kinds of impacts do you see it having on your local LGBT+ STEM community?

Being the vice president on campus has been a great experience and I feel like we have really been able to reach out to LGBTQ+ students in STEM and give them an outlet to talk about their identity and experiences, something that is typically hard to discuss in STEM spaces.

Q: How was the oSTEM Conference last year?

The conference was great, there were lots of workshops for many different groups of people and the venue was made very accessible to everyone there.

Continued on p.4



Kelsey Endicott (he/they)
Rowan University
oSTEM Global Social Coordinator

Q: How would students, faculty members, and other members of the APS community go about getting involved with oSTEM Global?

The easiest way would be to go to our [website](#) and look into becoming a member or becoming a volunteer. Anyone is always welcome and we'd love to have people show support in any way they can.

Q: Do you have any recommendations for our readers when it comes to advocating for LGBT+ people in physics?

Assert yourself in your department, your identity is important. There are lots of people who think you just need to be able to do the work and they're succeeding as a boss or a mentor, but they need to understand who you are as well to really be inclusive.

Visit ostem.org for more information and resources. Additionally, check out information about the 13th Annual oSTEM Conference being held in Anaheim California November 9-12th, 2023!

Empowering Future Scientists: Enhancing the PhysicsQuest Program

The PhysicsQuest program is one of the hallmarks of Public Engagement at the American Physical Society (APS), serving teachers and children across the United States and internationally for almost two decades. To continue inspiring the next generation of physicists and promoting physics as a fun and accessible subject, we seek support to continue developing PhysicsQuest kits. With your support, we aim to enhance the program's digital content, expand the reach of our kits, and strengthen connections between industry and other organizations connecting to students' future career paths, all while promoting diversity and inclusion in the field.

Introduction

Since its inception, the PhysicsQuest program has distributed more than 250,000 free laboratory activity kits to classrooms across the U.S. We have received overwhelmingly positive feedback from teachers and students, which indicates there continues to be a real need and enthusiasm for fun and accessible physics material to engage students. To meet this growing demand, we have made strides in diversifying the program's offerings, incorporating underrepresented populations in physics as role models and amplifying the voices of young women and minority students through our partnership with the STEP UP program. Building upon these successes, we hope to encourage more students to see physics as a viable academic and career path. Therefore, we have improved our model to partner with physicists and professionals in the field to build content that is aligned with current topics. For example, the 2024 kits have been designed in partnership with the Division of Plasma Physics, for 2025 we are looking to partner with groups and organizations around quantum, and we are interested in developing a kit centered around the topic of medical physics. Additionally, we work with teachers to provide guidance in aligning the lesson to best practices in the classrooms.

Objectives

PhysicsQuest provides self-contained kits of four hands-on activities on physics-related topics, designed for a middle school audience. Each activity is structured to fit a 45-minute classroom module. While the activities are interconnected through the corresponding physics topic of the year, each can be taught as a standalone activity. For each of the activities we provide all necessary curricular materials for teachers and students (e.g. implementation guidelines, explanation of the science, full lesson plans, modifications/extension activities for teachers to adapt



Dr. Claudia Fracchiolla, APS
Head of Public Engagement



Nicole Schrode, APS Public
Engagement Programs Manager

the PhysicsQuest lessons for younger or older audiences, and connection to national science standards).

Recently, we have enhanced the PhysicsQuest online presence to make it accessible to broader audiences. We have included: 1) biographies of scientists from underrepresented populations in physics to present as role models to students and 2) pedagogical best practices for amplifying the voices of young women and minority populations in STEM classes. For this purpose, we partnered with the STEP UP program. STEP UP has research findings showing that exposure to counter-narratives about who does physics and why one does physics significantly increases high school students'—especially women's—physics-related identity and career intentions. These counter-narratives facilitate connections with students' career plans and help in analyzing the causes for the continued minoritization of women in physics.

These changes and additions address feedback we have received from teachers indicating that there is an increasing interest and need to incorporate connection between the science content and the skills used to collect data and solve problems, along with possible career paths. We want to continue improving the content delivery and make the connection with career paths more explicit. For this purpose, we intend to continue to partner with members and other organizations to develop kits.

Project Activities

With your support, we will develop digital content for the annual PhysicsQuest kits, in addition to sending physical kits free of charge to schools across the U.S. We will feature stories of medical physics professionals from diverse backgrounds and connections to careers in medical physics. With new funding we would:

- Enhance digital content to bolster the PhysicsQuest program's online presence, making it accessible to broader audiences and adapting to changing classroom settings. The inclusion of digital elements will enrich the learning experience and enable remote learning opportunities.
- Expand reach and inclusivity: By sending free physical kits to schools across the U.S., we will continue to democratize access to quality physics education. Moreover, the inclusion of diverse professional profiles will serve as powerful role models, inspiring students from all backgrounds to pursue careers in science.
- Give out "Mini grants" for APS members/medical physics professionals who have innovative ideas for developing engaging PhysicsQuest activities. These grants will help bring exciting new content to the kits.
- Collaboration and development with APS members, medical physics professionals, and teachers to develop new medical physics-themed activities. These activities will incorporate both hands-on experiments and digital guides, ensuring a comprehensive learning experience.
- We will organize a special Physicist to Go event, where medical physics professionals will be trained on how to engage with young audiences virtually and foster meaningful connections between students and professionals in the field.

Contributed by Dr. Claudia Fracchiolla and Nicole Schrode

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 Mini-Grants

The Forum on Outreach & Engaging the Public of the American Physical Society (APS) supports APS members who broaden and deepen physics awareness and understanding. To this end, we invite applications for 2024 APS Forum on Outreach & Engaging the Public Mini-Grants.

The FOEP mini-grants are designed for individuals or groups who are working on projects and/or resources to bring physics awareness and engagement to their communities. We request that if funded you share your project, your experiences, and the outcomes through a live or virtual presentation with the forum (at a March or April Meeting in the forum's contributed session) or by submitting a virtual presentation that can be shared with the forum. The mini-grants have a maximum award amount of \$2,500 and a total funding available of about \$15,000.

All proposals will be considered. FOEP encourages proposals related to quantum physics in preparation for the International Year of Quantum Science and Technology and the 100th year of Quantum Mechanics. Extra consideration will be given to those projects which seek to support students/groups that are traditionally marginalized in physics.

Selection criteria for the mini-grants include the following:

- **Membership in APS Forum on Outreach and Engaging the Public (FOEP).** Applicants should be members of the FOEP by the application deadline. APS members can join the Forum at no additional cost. For students (undergraduate and graduate), the first year of APS membership is free. For more information on how to become an APS member, please see [APS Membership FAQs](#). To join (online or by mail), see [APS Membership](#). If you are already an APS member, you can join the Forum on Outreach and Engaging the Public for free [here](#).
- **Timeline.** Proposals are solicited starting January 1 through February 15. Proposals are reviewed and awardees notified by March 15. Proposals should be ready to begin in a reasonable timeframe if funded. Specifically, projects with an end goal or deliverable within the same calendar year will be prioritized. The extent to which funds could immediately be used will be a consideration. Proposals should include funding, if needed, to travel to either the March or April meeting the following calendar year to present the outcome of their project if awarded.
- **Broader impact.** For projects, applicants should demonstrate how this support will impact the community. Extra consideration will be given to those projects which seek to support students/groups that are traditionally marginalized in physics. Applicants should describe the immediate effects these funds could provide.
- **Additional considerations.** Extra consideration will be given to applicants who may not have access to other types of support. These include, but are not limited to: undergraduate students, graduate students, post-docs, adjunct faculty, and instructors at academic institutions. In addition, we strongly encourage under-represented identities to apply.

FOEP mini-grants will be funded by disbursing funds to the individual creating the application, not to institutions. Please make sure you consider this in your budgetary decisions.

To apply for a FOEP mini-grant, you will be required to submit a completed template located [here](#). The template includes items such as:

- 1) Budget and corresponding justification of the budget.
- 2) What will this mini-grant enable you to do, and on what timescale? (Timeliness criterion).
- 3) What is the larger impact of your work or project? (Broader impact criterion).
- 4) What else would you like the selection committee to know about your project? (Additional consideration criterion)

The name, title, and affiliation of project awardees will be published on the FOEP website.

Applications open Jan 1 – Feb 15.

Deadlines

The due date for all applications is Feb. 15, at 11:59 PM PST. Proposers will be notified of the status of their proposal by March 15. Awardees are asked to share the results of their proposal at a FOEP contributed session at the March or April meeting the following calendar year, or submit a virtual presentation that can be shared with the forum. We will continue to award mini-grants until the allocated funding runs out.

We are committed to supporting as many of our FOEP members as possible. Due to the anticipated response, it is likely that many applications will be partially funded.

We will update applicants as events warrant.

More Award Information

If your application is awarded, you will receive an email from the Secretary-Treasurer of your award with instructions on how to fill out a payment request form and a citizenship-appropriate tax form.

Awarded grants will be approved by the Secretary/Treasurer of FOEP before proceeding with the payments. The Secretary-Treasurer will send awardees a W-9 or W-8BEN to submit to APS Accounts Payable. The W-9 is for U.S. citizens and provides information to the IRS about this award. The W-8BEN is for non-U.S. citizens and is a certification to APS that a foreign person is not subject to U.S. taxation.

Travel and other grants are taxable to the recipient and they will receive a 1099 if the total receipts within a calendar year are greater than \$600.

The awardee submits these forms to APS Accounts Payable and they receive a check or direct deposit, according to their preference.

Please contact any member of [FOEPs executive committee](#) if you have any questions (include in the subject line: FOEP mini-grant).

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, 2024

Contributed by: Ivan K. Schuller

FOEP at the March Meeting 2023

The FOEP invited speakers session, Countering Misinformation in Physics Outreach and Public Engagement, was held on Wednesday, March 8th from 3 – 5:30 p.m. PST. Over 100 people attended the session. Our speakers provided a complementary and comprehensive discussion of scientific misinformation in publishing and media, as well as providing helpful strategies to mitigate the negative impact that science misinformation can cause.

Dr. Jevin West, presented his talk, titled: "Mitigating Misinformation in and about Science." Dr. West is an Associate Professor in the Information School at the University of Washington and the co-founder of the Center for an Informed Public. He is also the co-author of *Calling Bullshit: The Art of Skepticism in a Data-Driven World*, published in 2020. His talk focused on issues that journals and editors face when determining the accuracy of submitted publications. He also discussed issues with current improvements in Artificial Intelligence and how that will affect publishing.

Dr. Michael Cacciatore was our second speaker, who titled his talk, "Depictions of Science in Media and Resulting Opinion Formation." Dr. Cacciatore is Co-Director of the Center for Health & Risk Communication as well as an Associate Professor in Public Relations at the University of Georgia. His research focuses on media depictions of science and risk issues, paying particular attention to the role of social media in the communication process and the formation of public opinion. His session highlighted historical data collected by the Pew Research Center showing that scientists are actually more trusted by the public than other groups such as politicians. Consequently, if scientists can engage in respectful active listening with people who are citing science misinformation, there are opportunities to begin to change their outlook.

Dr. Lee McIntyre was our final speaker. His talk was titled, "How to Talk to a Science Denier: What I Learned at the Flat Earth Convention." Dr. McIntyre is a Research Fellow at the Center for Philosophy and History of Science at Boston University and a recent Lecturer in Ethics at the Harvard Extension School. He is the author of many books including, *How to Talk to a Science Denier*. Dr. McIntyre provided the audience with an inspirational talk where he advocated how it is best to start countering misinformation with those who you already have a trusting relationship with (e.g., family, friends). Like our other speakers, he told the audience that these conversations work best when scientists demonstrate respect for the other person rather than belittling them or their ideas.

The Q&A session that followed was lively with dozens of attendees asking questions. Many were concerned about how long it takes to develop trusting relationships to begin to counter misinformation. All of the speakers acknowledged this constraint but argued that to not engage with folks, could risk the spread of misinformation.

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

Wiki Scientist Program Feedback

I was genuinely excited to hear that I was accepted for the APS wiki scientist course. First, I sincerely acknowledge the FOEP, as the unit sponsored me for this course. I also sincerely thank the American Physical Society (APS). At the beginning of the course, I scheduled to spend some time on this course. Although it was challenging to participate in the class at 4 am (Australian local time), I could manage to get up from sleep and participate. The course tutor, Will Kent, taught us how Wikipedia provides valuable information and how some people work for Wikipedia without any salary. He then introduced us to copyright materials, plagiarism, and ethics/violations; how to edit an existing Wikipedia article in the visual editor, how to add a reference to an article, how to add pictures/media to the articles, and how to interact other Wikipedia's editors respectfully. Next, he taught us how to create a new Wikipedia article that does not exist in Wikipedia, create a draft in the sandbox for the article, and finally move the report to the live-in Wikipedia. I reviewed and edited a few articles, such as "Climate of Nigeria". I also created two drafts of articles in the sandbox: 1. Impact of climate change in Bangladesh, and 2: Perception of climate change among Bangladeshi people. I published the first article I drafted in the sandbox (Impact of climate change in Bangladesh). Overall, this course is beneficial because I learned how to put climate science information to the people using my scientific knowledge/available resources and correct some misinformation about climate change.

Thank you.

Enamul Haque
Monash University
APS CIP Member

For more information on APS Wiki Courses and related resources, visit <https://www.aps.org/programs/outreach/wiki-editing.cfm> or email public-engagement@aps.org. Full scholarships are available through FOEP and other units and divisions of APS.

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) WAGNER COLLEGE

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)

MEMBER-AT-LARGE: MICHAEL B. BENNETT (01/22 - 12/23) UNIV OF COLORADO

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.