

FORUM ON GRADUATE STUDENT AFFAIRS

AMERICAN PHYSICAL SOCIETY

Co-editors Anashe Bandari and Midhat Farooq welcome you to the FGSA Winter 2019 Newsletter

We hope everybody had a great Fall semester and a wonderful start to 2019! This Winter issue is technically what was supposed to be our Fall issue—coming in late due to some hiccups along the way.

In this issue, we focus on outreach. A guest piece from the Forum on Outreach and Engaging the Public tells us about the importance of outreach in physics, and grad students Chelsea and Katie write about their own unique experiences with outreach. We also have a fun article about physics and Wakandacon by Dr. Jessica Esquivel, as well as our usual career column by Dr. Crystal Bailey.

As always, your comments are welcome! Let us know if there are any topics you'd like to see discussed, or if you'd like to submit feedback. You can email FGSA at fgsaexec@aps.org, or send us comments through our [Google Form](#).

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NEWSLETTER

Winter 2019

Why Do Outreach?

About the Author:

James Kakalios is the Taylor Distinguished Professor in the School of Physics and Astronomy at the University of Minnesota, and the author of *The Physics of Superheroes* (Avery, 2009), *The Amazing Story of Quantum Mechanics* (Avery, 2010) and *The Physics of Everyday Things* (Crown, 2017). His efforts at outreach have been recognized by the American Institute of Physics' 2016 Andrew Gemant Award for Significant Contributions to the Cultural, Artistic or Humanistic Dimension of Physics and the 2014 American Association for the Advancement of Science Award for Public Engagement with Science.

By James Kakalios

The March 1962 episode “Little Girl Lost” of the television anthology program *The Twilight Zone* added some speculative inter-dimensional physics to a suspenseful science fiction tale.[1] In this story a small child rolls out of her bed in the middle of the night and disappears. Her parents become frantic when they can hear her calls for help, but cannot see or touch her. Fortunately they know what to do in just such an emergency – they call for their neighbor Bill, who is a physicist. He determines that the girl has accidentally fallen through a portal into another dimension. With his aid, and the help of the family dog, they manage to retrieve their daughter. Whether this portal was one of the extra dimensions predicted by String Theory is open to interpretation, but the show clearly demonstrated the utility of a friendly neighborhood physicist.

Indeed, in the early 1960's, the U.S. Government had similarly concluded that it was worthwhile to have physicists and other scientists on call. Following the Manhattan Project; the development of radar; and the proximity fuse in World War II the value of scientists and engineers to national security was accepted by the general public. In 1942 West Virginia Senator Harley Kilgore had proposed legislation calling for federal support of scientific research and in 1945 Vannevar Bush's report *Science, The Endless Frontier*; [2] forcefully argued that it was in the nation's best interest to develop and maintain strength in what we now would refer to as STEM fields. In 1950 Congress responded with the establishment of the National Science Foundation.

The situation today is very different. There is no longer broad agreement among the public of the value of scientific research.[3] Which is ironic, for this same public has enthusiastically embraced personal electronics and technology that is enabled, in part, through federally funded research. As expressed a few years ago by a Dean at M.I.T., never before in human history have so many become so wealthy solely through education.[4]

It is clear that in the 21st century, physicists can no longer rely on the good will engendered during the middle of the 20th century. Rather than simply curse the darkness, some have taken to lighting candles, devoting time and effort to communicating the fruits of scientific research to the general public. I would argue that it is in the best interests of the physics community to support and encourage science outreach and engagement with the public, many of whom are voters and taxpayers.

Though sometimes conflated, outreach is not the same as education. Improving science education, particularly at the K-12 level, is of course vitally important. But as noted by Dr. Neil deGrasse Tyson: “The problem is adults not knowing science. They outnumber kids 5 to one, they wield power, they write legislation.”[5] We're familiar with the concept of an elevator pitch, where you find yourself on an elevator with a powerful person, such as a captain of industry, and have only eleven distraction-free seconds to make a proposal. Do you use your time to teach this individual some aspect of physics, or to try to convince them of the value of scientific research?

There are many demands on the attention of the general public, and windows of opportunity for engagement are rare. Of course I would like everyone to know some physics and indeed most outreach involves relating some aspect of physics or a recent discovery to a

general audience. But in communicating science, I would argue that an important goal is to instill a positive attitude toward science and scientific research. After all, everyone loves their smart phones, even though few know (or care) what goes on ‘under the hood.’

There already exist excellent channels for science communication, from *NOVA* on public broadcasting to popular science magazines on the newsstand to exhibits and events at science museums. These are all necessary, but not sufficient. Those who are reached via these means typically already have a positive attitude toward science. While it is important to preach to the choir, we must also find ways to grow the congregation.

One method of outreach involves mining topics of entertainment, such as NASCAR, professional sports, Hollywood blockbusters, television sitcoms or superheroes, and using these subjects as springboards for discussions of science. Another method involves embedding the science directly into the source of recreation, an effort championed by the National Academy of Science’s Science & Entertainment Exchange [6] that connects academics with television and movie creators, with the goal of improving both the science content and representation of scientists in popular entertainment. Other approaches involve the creation of content that can then be broadly disseminated via the internet. But just as we are driven to innovate in our research, creative new methods for outreach are needed, particularly to reach underserved low-income and minority populations.[7]

While improvements in engagement with the public will, in my opinion, benefit all of us in physics, I am not arguing that everyone in physics should be active in outreach. Every member of a professional baseball team is a highly trained and skilled athlete, but rarely would a center-fielder do well if called upon to pitch, or even play shortstop. We all have our strengths and weaknesses, and just as not every physicist is best suited for research in String Theory or for working in a femtosecond laser spectroscopy lab (though sometimes it does seem as if every physicist

is working on graphene), not everyone need be involved in outreach.

Years ago my wife (who is not a physicist – it’s a mixed marriage) and I attended a general audience public talk by a distinguished physicist. I was able to follow his talk, though with effort. As we left the auditorium after the presentation, my wife commented: “Well, I learned one thing tonight. He belongs to a club that does not want me as a member.” It takes considerable effort and practice to communicate effectively to a non-scientifically trained audience. A few years ago I was fortunate to see first hand the training and devotion that a group of young assistant professors and research physicists put into short presentations of their research for a general audience as part of a Physics Slam event associated with a Particle Physics conference held in Minneapolis. During this event the physicists would have ten minutes to convey their complex fields of study. In preparation they received guidance and instruction from professors in theater studies, and the attention to craft paid off in their presentations, rewarded by an enthusiastic response from the audience.

Physics graduate students have great demands on their time, with the most pressing being the need to finish their dissertation research and complete their advanced degree. The energy, enthusiasm and creativity of graduate students make them wonderful ambassadors of science to the general public, but of course any outreach efforts they undertake should not come at the expense of their academic progress.

Often I will hear physicists lament the public’s lack of appreciation of the value of their research, typically followed by a related complaint concerning the dearth of research funding. As a community we should support (and not just tolerate) those who make an effort to do the hard work of engaging with the public, and at least not make their jobs harder.

After all, you never know the next time that someone’s daughter will fall through a breach in the spacetime continuum.

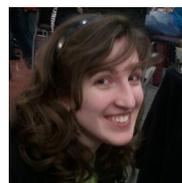
(see references on page 5)

Physics Magic

By Chelsea Hendrus

Physics is a little bit like magic. You can harness its power, and use it to bend the world around you to your will. I love knowing the intricate details about how the universe operates, and as a grad student, I’ve come to find that the most rewarding moments come from sharing that magic with others. At the very least, sharing the magic I came here for makes me feel better about the society I live in, as I get to watch and have fun with others as they get the chance to explore. For some, I get to see the exact moment they recognize how something works, and how empowered they feel knowing that they’ve learned some arcane secret about the universe that they didn’t know before. In performing outreach, we get to show people that magic (physics) is everywhere.

I think about demonstrating physics just about any time I’m in a public space. While attending a concert, I’m thinking about bringing in a bunch of oscilloscopes and a wave generator, to teach people the physics behind how their instruments work. I go to the art museum, and



About the Author:

Chelsea is 5th year graduate student, who splits her time between the University of Michigan, and Oak Ridge National Lab, studying Neutron Beta Decay. When she’s not traveling, she enjoys art, music, and tabletop games.

I think of talking about how light and pigments interact to produce the beautiful colors we see, or the mechanism behind sight in general. On the rare occasion I attend a sporting event, I think about slowing down the replay and talking about how the forces on an athlete’s body allow them to accomplish their feats. I attend a comic-con and I think, “You know what this place needs? More physics demonstrations.”

I like to put on a show. I’ve gotten to launch, levitate, burn, freeze, explode, crush, and whack things in public, for science. Many universities possess libraries of physics demonstrations that are meant to support classroom lectures. The one at the University of Michigan is incredible. We have demonstrations for just about any kind of physical phenomenon you’d like to show somebody, and if you can think of something they’re missing, they’ll find a way to help you make it real. I am always looking for excuses to borrow their things. Going down into their shop is like entering a wizard’s basement. It’s full of odds and

ends, and you can just tell that all the things on their shelves spring up and teach you something. Monika Wood is our resident Wizard. She started working for the Demo Lab in November of 2010, and is always around to suggest what sort of demo to take out next. Her advice on her favorite demonstrations:

“Demos like the Tesla Coil, the Ping Pong Vacuum Cannon, and Shattering the Wine glass are always exciting and there is a great deal of physics going on in each of those demos. But, I really like the simple geometric optics demos, like the laser tank, optical model of the eye, and our stress kit because optics was always my favorite subject when I was studying physics and it is exciting to hear people’s reactions when something optical is explained or their brain is tricked.”

“I enjoy building and repairing things in the machine shop and being the “librarian” of physics experiments.” says Monika, about her awesome job, “But most of all, I like the variety of people that come to use the Demo Lab services. Whether that be professors for regular scheduled classes, students and their mentors going places to perform demos at the many outreach events, or when professors assign a student project where they need to further describe something discussed in class and they need to take a closer look at a demo... It is a positive place to be and I am glad to have had the opportunity to be a part of it,” she concluded.

I’m incredibly lucky to attend an institution that seriously supports community outreach. If you are a scientist looking for an audience, there are people here that can show you how to find it. There are at least 5 other programs I can think of and have interacted with in some way that support or encourage the development of the public communication of science. These organizations regularly sponsor development workshops, video productions, and community “pub talks,” where you can build and practice your skills as a science communicator. My fellow physics graduate student, Joe Iafrate works with RELATE (Researchers Expanding Lay Audience Teaching and Engagement), and taught some of these development workshops.

“I already knew I liked getting people excited about science,” says Joe, “but I might like even more getting people excited about communicating science. That leads to more people overall getting excited about science in the end. If we can excite researchers about science communication, they’ll talk awesome science with their communities, and everyone wins.”

Astronomouse

By M. Katy Rodriguez Wimberly

“I didn’t know that was a job!” “I wanna do that job, too!” “You make it so fun!” Comments like these are some of the most rewarding parts for me of doing outreach and popular science communication. Under the pseudonym AstronoMouse, I regularly communicate astronomy topics and news to non-scientists through platforms like Instagram and Facebook using written posts and videos. For example, last year I made a 5 part series of super short SciComm videos on my first, first-authored research paper! Additionally, to reach kids not on any types of social

Stephanie Hamilton is another fellow physics grad who fosters a community of science communicators: “Being a scientist simply means being curious about the world and pursuing that curiosity, and I wholeheartedly believe that anyone can do that.”

This fall, Stephanie helped bring ComSciCon-MI to the University of Michigan campus. ComSciCon (short for Communicating Science Conference) is an organization that holds a national conference every year, but also encourages universities to hold more localized franchise versions throughout the year. ComSciCon-MI brought together local experts, postdocs, and students to spend two days talking about science communication, its role in society, and tools for communicating one’s own science.

“We received overwhelmingly positive feedback about the conference, which was so satisfying to see,” Stephanie recalls. If you’re interested in attending or helping to organize a ComSciCon near you, you can check out ComSciCon.com for more information. Tweeting with #SciComm also tends to draw out members of the science communication community, that can offer you a wealth of advice on how to get started and find your voice.

When you can bring the physics to people, and show them what’s relevant to their daily life, it becomes something friendly, familiar, and easy to engage with. It can even be entertaining. There are SO many people out there that lack any kind of real model about what a scientist is, what they look like, or what they do every day, and it’s hard to trust what you don’t know. It’s one of the reasons that so many people find it easy to say they simply “don’t believe in science.” Communicating physics, at its heart, is about building a community that trusts and understands how closely entangled the physics and its community are. As physicists, and especially as cool young physicists, we have the power show people the physics that is integral to the way they live their lives.

I encourage you to get involved with your community, and find a way to get the people that surround you interested in the physics that surrounds everything you do. Talk at that pub, write that science blog, make that video, or put on that magic show!



About the Author:

M. Katy Rodriguez Wimberly is a physics grad student at UC Irvine. Her galaxy evolution research focuses on how galaxies stop forming new stars. Outside of work, she watches a lot of TV & cartoons, hikes and exercises! Also, there’s lots of snuggling with her dog and laughing with her hubby that goes on in her life.

media, I visit classrooms and schools (both in person AND virtually) in areas similar to my own childhood neighborhood to inform and illustrate to kids that science is for everyone!

Growing up, I had no idea being a research scientist (or just research science) is an actual job. Because of that and other such educational disadvantages, I didn’t begin to pursue astrophysics until I was in my mid-twenties. Then as I moved along in my new academic career, I reflected upon my lack of Latina Scientist role models and what I wish

I had in grade school. At my undergrad institution, California State University, Long Beach, I was presented with opportunities to participate in outreach that focused on local underserved populations - primarily Latinx grade school students. Through these events, I saw many students become excited about physics for the first time. The girls especially saw me as a type of new role model. It was incredibly motivating! This is what sparked my passion with outreach and science communication. My hope is to intercept kids on a similar path to the one I had, and inspire them toward a more direct course toward a career they can love and feel proud to own.

Now that I've been doing outreach for over 5 years, I've realized how useful it is to me as a research scientist! Most of it comes from the old

idea that teaching something is the best way to learn it yourself. From non-Newtonian fluid and dry-ice comet demonstrations to talking to kids about galaxies and how they work, I've gained a deeper knowledge of fundamental material. Through this work, I'm also able to consistently improve my written, verbal and visual communication skills. Also, it just makes me happy! Kids are always entertaining and thoroughly curious, and invoking anyone's curiosity is always rewarding.

Outreach is both immediately rewarding and fulfilling in the longterm. It would mean the world to me to be a role model to an aspiring career scientist! The icing on the cake to all of this work, is that it helps diversify STEM and is a way for me to give back for all the privilege I have been afforded during my academic career.

Wakandacon



About the Author:

Dr. Jessica Esquivel is a biracial black, mexican lesbian physicist working at Fermilab on the Muon g-2 experiment. She graduated with her PhD in physics from Syracuse University and her graduate research was studying neutrinos using the Micro-BooNE experiment. She believes physics should be accessible to all underrepresented minorities and strives to do everything she can to increase representation by participating and organizing panels, discussions and outreach events. For more information or to contact Dr. Esquivel visit JessicaEsquivelPhD.com

By Dr. Jessica Esquivel

The first time I watched Black Panther I cried. The idea of a black man being a super hero, of black women being powerful and beautiful and bad ass, and a young black female being the brains behind all of the technology of an uncolonized African country was just so amazing and something I had never seen before. I walked out feeling inspired and moved, but alas it was just a movie. However, representation matters and this movie was the fire that sparked [Wakandacon](#), the brainchild of the Barthwell siblings. Wakandacon is an independently self-funded community-focused inclusive event that celebrates black culture. The tag line was "A place where you can nerd about anything—pop culture, gaming, tech, womanhood, politics, or your own beautiful Blackness." David Barthwell during the closing remarks let it be known how much Black Panther changed his life and why he and his siblings decided to create this space for black people. Through choked tears he disclosed that he had been saving for years to put a down payment on a house, and that after Black Panther decided to use that money to fund Wakandacon, putting all faith and trust in the black community of Chicago to embrace and celebrate this event, and boy did we! One thing I really appreciated about this event was how focused it was on community. There were panels about women in STEM, how LGBTQ people would be received in Wakanda, and discussions concerning the current climate from the lack of diversity and inclusion in media to the water crisis still plaguing Flint, Michigan. There were seven areas of focus to the event that were in line with the seven tribes of Wakanda.

The three tribes that peaked my interest were the mining tribe, the panther tribe, and the dora milaje. The mining tribe focused on education and

this was highlighted at the convention with three full days of panels, discussions, and presentations where one could learn and nerd out about anything and everything. The panther tribe focused on technology and featured panels that included black in STEM, women in STEM, and black tech and gaming. Lastly, the dora milaje focused on feminism and Wakandacon made sure that black women had a voice and a seat at the table.

When I heard about Wakandacon I reached out to the founders and asked if there was any way I could participate and was welcomed to the family the Barthwell siblings created with open arms! I gave a presentation on what it means to be a physicist and an introduction to particle physics, neutrinos, the MicroBooNE Experiment and the Muon g-2 Experiment. I had a crowd of around 30 people with the age ranging from 5 years old to over 60. I discussed the lack of representation in physics and how there are only around 150 black women with their PhD in physics, including myself. I talked about how much Black Panther moved me and how amazing it was to see Shuri, a young black female doing amazing "never been done before" science and how I wanted to share the parallels of my experience as a young black female physicist doing "never been done before" physics and how they could do so as well. I made amazing connections and got great questions from the kids that were in the room, my favorite being "Which type of physics has more to be discovered, Astrophysics or Particle Physics!" This life changing convention was spawned from a movie in which black people were front and center. Representation matters and that weekend, we were representing in full force!

Serving the Next Generation of Physicists at APS Meetings

About the Author:



Crystal Bailey is Head of Career Programs at the American Physical Society. She completed her PhD in nuclear physics in 2009 and has been working on ways to help students broaden their career horizons ever since. You can reach her at bailey@aps.org.

By Crystal Bailey, Head of Career Programs

According to the AIP Statistical Research Center, less than a quarter of physics PhD graduates will end up in permanent faculty jobs[8]. And even though most well intentioned mentors would like to be able to provide information and resources to help prepare their students for eventual careers outside of academia, many of them do not have networks or experience which tie them to private sector careers, nor are they aware of resources which they could point their students to in order to get their questions about non-academic careers answered.

Given that APS Meetings bring together so many physicists across all subfields and sectors, they present a great opportunity to bridge that gap. Graduate students and early career physicists often have questions about what private sector careers are like, how the culture in those environments differs from that within academia, what kinds of problems physicists are working on, and what kinds of extra preparation (if any) are needed for them to do well in private sector careers. APS provides an opportunity for students to get answers to these questions through informal Q&A panels with industry physicists at our Annual meetings.

At the 2019 APS March Meeting in Boston, the Forum on Industry and Applied Physics (FIAP) is hosting a panel focused on careers in industry called “Meet Your Future: An Interactive Session on Industrial Careers for Physicists.” This event is hosted at every March Meeting, and routinely draws upwards of 250 graduate student and early career physicists, and affords an excellent opportunity to learn first-hand about careers in industry, as well as to network with prominent industrial physicists. APS also hosts a career panel and networking event at the APS April Meeting, with speakers spanning a variety of employment sectors and backgrounds.

Also planned for the APS March Meeting is a comprehensive workshop hosted by celebrated author and science coach Peter Fiske (author of “Putting Your Science to Work!”), a widely read career development book for early career scientists and engineers which will give attendees information on how to transition into the workforce from a perspective uniquely tailored to a graduate level scientist. This highly popular event focuses on important topics like career planning and self-assessment, effective networking, writing a good resume, and negotiating your best offer – and it also includes a strong message that early career physicists

are highly motivated, smart individuals who can have a powerful role in shaping the world for the better (a statement which is borne out by the statistic from the AIP SRC that physics PhD graduates have an unemployment rate of less than 4%!). Every year, this event receives extremely positive feedback, and many participants state that this empowering message is one of its most useful aspects – so please plan on attending if you are going to the APS March Meeting!

APS also uses Annual meetings as an opportunity to connect job seekers and employers who are actively recruiting for positions. Every year, APS holds a Job Expo at the March Meeting in which participating employers can post and interview for jobs directly on site. The event consistently attracts academic and national lab employers, and in recent years we have seen increased industry participation. The March Job Expo is a great opportunity to network with employers and learn about the skills that are in demand in today’s workforce.

Career and Professional Development events at APS Meetings are an invaluable resource for students who may otherwise have difficulty learning about paths outside of what is (incorrectly) considered to be the “traditional” academic route. As one attendee of the March Industry Career Panel stated, “The talks presented were vital in assuring me that I didn’t make a major mistake in my life decision to follow my love of physics...that I will be able to provide for my family and myself without much worry of being able to get a job, being poor all the time, and having to work with people who aren’t science minded.” APS is glad to be able to provide this broader perspective to our early career members and boost the career confidence of the next generation of physicists.

To learn about career events taking place at APS March and April Meetings, look for the “Career” track in the APS Meeting app, or under the “Career Events” page of the main Meeting webpage. Or you can email me, Crystal Bailey, at bailey@aps.org.

You can also learn about the Future of Physics Days Events, which are special events we hold for Undergraduate students at the APS March and April Meetings, by visiting <http://www.aps.org/meetings/events/futurephysics/index.cfm>.

(see references below)

References

- [1] “Little Girl Lost,” directed by Paul Stewart and written by Richard Matheson, *The Twilight Zone*, originally aired Mar. 16, 1962.
- [2] *Science, The Endless Frontier*, A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development, July 1945.
- [3] Shawn Otto, *The War on Science: Who’s Waging It, Why It Matters, What We Can Do About It* (Milkweed, 2016).
- [4] Marc Kastner, private communication.
- [5] While the original youtube video from which this quote is obtained is no longer available, Dr. Tyson expresses similar views in “Children Are Not the Problem”: <https://www.youtube.com/watch?v=vDFgLS3sdpU>
- [6] Erich Schwartzel, “Scientists Help Movie Writers Make Films ‘Plausible-ish,’” *Wall Street Journal*, Jan. 10, 2016. Information about the National Academy of Sciences’ Science & Entertainment Exchange can be found at <http://www.scienceandentertainmentexchange.org>
- [7] Emily Dawson, ““Not Designed for Us”: How Science Museums and Science Centers Socially Exclude Low-Income, Minority Ethnic Groups,” *Science Education* 98 981 (2014).
- [8] AIP Statistical Research Center, Focus on Physics Doctorates Initial Employment, March 2016.

FGSA Updates:

SAVE THE DATE

ANNOUNCING THE CANADA-AMERICA-MEXICO CONFERENCE 2019

Hosted by Laurentian University and SNOLAB, July 24-27, 2019
Sudbury, ON Canada

CAM is a biennial conference held by the North American physics associations: APS, Sociedad Mexicana de Física (SMF), Canadian Association of Physicists (CAP), and joining just last year, [Sociedad Cubana de Física](#) (SCF). The conference covers all physics discipline and is organized largely by and solely for graduate students, with notable senior scientists invited for panel discussions and plenaries. This year CAM will be held in Sudbury, ON and offer the opportunity for a tour of world-class physics experiments, presentation skills, and opportunities for international collaboration. Abstract submission will open in early 2019.

Announcement website: <https://www.cap.ca/congress-conference/cam/>.

If you would like to learn more, here is a [review article](#) of CAM2017

HOW PHYSICISTS COMMUNICATE WITH FORUM ON THE HISTORY OF PHYSICS (FHP)

Tuesday, March 5: 11:15am-2:15pm

Speakers:

- Prof. Harry Collins, School of Social Sciences, Cardiff University - Sociological Perspectives on the Confirmation, Analysis and Communication of Results in the Physical Sciences
- Michelle Baildon, MIT Collections Strategist for Arts & Humanities - Capturing Communication of Physicists Through the Archive
- Prof. Chanda Prescod-Weinstein, Department of Physics at the University of New Hampshire - Whisper Networks in Astrophysics
- Leena Ahktar, PhD, The Greater Us - History of Sexual Harassment Within STEM

LAUNCHING A SUCCESSFUL CAREER AS A PHYSICIST WITH FORUM ON EDUCATION (FED)

Wednesday, March 6: 11:15am-2:15pm

Speakers:

- Larissa Bifano, JD - Undergraduate degree in physics and now lead partner of the patent prosecution group in the DLA Piper Boston Office
- Christopher Ryan, PhD in Biophysics from UC Berkeley - Now Data Scientist
- Aaron Osowiecki - Physics Teacher at Boston Latin School

PUBLISHING IN AREAS OUTSIDE OF PEER REVIEWED JOURNALS WITH FORUM FOR EARLY CAREER SCIENTISTS

Monday, April 15: 1:30pm-3:15pm

Speakers:

- Writing about BICEP 2 in Book Form — Losing the Nobel Prize — Brian Keating, Center for Astrophysics & Space Sciences (CASS) in the Department of Physics at UCSD
- Writing Void, a book about the physics of nothing — James Weatherall, Professor of Logic and Philosophy of Science at the University of California, Irvine
- Capturing LIGO Through Cartoons — Nutsinee Kijbunchoo, LIGO, PhD Physics Student
- How to Pitch Your Book Idea to an Academic Press — Jeremy Matthew, Acquisition Editor for the Physical Sciences for The MIT Press

FGSA TRAVEL AWARDS

DID YOU KNOW THAT FGSA OFFERS TRAVEL AWARDS FOR OUR MEMBERS EACH QUARTER OF THE YEAR?

Here are the winners from FGSA's 3rd Quarter (2018) Travel Awards:

Rachel Osofsky: University of Washington
Jun Li: University of Illinois at Urbana-Champaign
Andrea Welsh: Georgia Institute of Technology
Peter Beaucage: Cornell University

CONGRATULATIONS TO YOU ALL!

To learn more about the travel award or to apply, visit our website

HAVE FEEDBACK?

Would you like to write for us?

Let us know by filling out the [Google Form](#)