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## Guest Editorial: Hidden Figures: Propelling the Next Generation

Trina L. Coleman, PhD

Anticipation, excitement, camaraderie; all of these emotions oozed from everyone mingling inside of the Virginia Air & Space Center on December 1st as we gathered for the VIP screening of *Hidden Figures*. The buzz surrounding the incredible story told by Margot Lee Shetterly of three amazing women – Katherine Johnson, Mary Jackson, and Dorothy Vaughan – and their contributions to the “Space Race” makes native Hamptonians such as myself giddy with pride. This pride comes from knowing that the true embodiment of science, technology, engineering and mathematics (STEM) required to propel the first Americans into space happened in Hampton, VA, home of the first NASA site. More importantly, pride because these three brilliant, Black women were groundbreakers that opened doors for scientists and mathematicians like me, although they were historically anonymous until recently.

The mechanics of the movie *Hidden Figures* were executed flawlessly; extraordinary writing, a stellar cast, attention to detail, great soundtrack, and a winning, feel good ending. That’s the experience that most will take away when they see it. What most will not experience is the incredible opportunity to watch the screening of *Hidden Figures* with the REAL star of the



Trina L. Coleman, presenting a photo of African American Women in Physics to Katherine Johnson.

movie, Katherine G. Johnson. Having had the honor and privilege of meeting and briefly speaking with her before, I immediately sensed extreme clarity in her, as well as the intrinsic characteristic of intellectual order that great minds possess.

While watching the events unfold onscreen, I was

*continued on page 3*

## M. Hildred Blewett Fellowship: Past Recipient Updates

The Blewett Fellowship was established with a generous bequest from M. Hildred Blewett, an accelerator physicist, who died in 2004. Hildred Blewett was passionate about physics and wanted to help women overcome obstacles by establishing the fellowship to enable women to return to physics research careers after interrupting those careers. The fellowship consists of a one-year award of up to \$45,000 for dependent care (limited to 50% of the award), salary, travel, equipment, and tuition and fees. The application deadline is June 1, 2017.

See what last year’s recipients have been up to and how the award has helped them!

### Nicole Lloyd-Ronning

Since the conclusion of my Blewett Fellowship, I have continued to work with the computational physics group at Los Alamos National Labs, investigating a number of different aspects of massive stellar deaths and relativistic outflows. Lately, I have been focusing

*continued on page 12*

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**Publication Information**

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## CSWP Awards \$10,000 to Women in Physics Groups

The APS Committee on the Status of Women in Physics (CSWP) provides Women in Physics Group grants to support the CSWP mission of recruiting and retaining women in physics at the undergraduate level. Women in Physics (WiP) groups are uniquely able to address this mission by encouraging and supporting the participation of women in their departments. The purpose of the grant program is to improve recruitment and/or retention of women in physics through (1) the establishment of new WiP groups, (2) expansion or strengthening of existing groups, and (3) improvement in sustainability within new and existing groups.

Last year, 14 groups received funds to host alumni talks, speaker series, programs for high school students, mentorship programs, socials, journal clubs, community outreach, professional development workshops, and lab tours.

This year, the CSWP awarded \$10,000 to 11

Women in Physics groups. Congratulations to

- City College of New York
- Colby College
- Drexel University
- Georgia Institute of Technology
- Rutgers University
- University of Colorado Boulder
- University of Northern Iowa
- University of Oregon
- University of Wisconsin-Madison
- Virginia Military Institute
- Western Washington University

For more information about applying for a Women in Physics Group Grant, please visit [go.aps.org/wipgrants](http://go.aps.org/wipgrants).

## The 2017 Conferences for Undergraduate Women in Physics Were a Big Success and 2018 Sites Have Been Selected

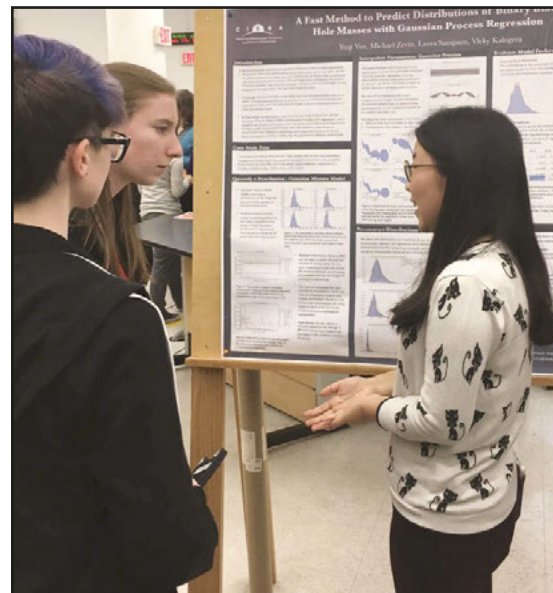
APS Conferences for Undergraduate Women in Physics (CUWiP) help undergraduate women continue in physics by providing them with the opportunity to experience a professional conference, get information about graduate school and professions in physics, and meet other women in physics of all ages with whom they can share experiences, advice, and ideas. On January 13-15, 2017, these conferences were hosted simultaneously at 10 sites across the U.S. and Canada, with over 1,600 students in attendance. The keynote was simulcast to all 10 sites, and featured Professor Nergis Mavalvala of MIT, who is best known for her work on the detection of gravitational waves.

In January 2018, CUWiP will be hosted at 12 sites, including:

- Arizona State University
- Cal Poly Pomona/Pomona College/Harvey Mudd College
- Columbia University
- George Washington University
- Iowa State University
- Rochester Institute of Technology
- Queen's University (Canada)
- University of Kansas
- University of North Florida
- University of Oregon

- University of Toledo
- University of Virginia

Student registration will open September 1, 2017. If you are interested in hosting a conference at your institution in 2019, please visit [www.aps.org/cuwip](http://www.aps.org/cuwip) and fill out an Expression of Interest form by September 1, 2017.



Undergraduate student poster session at Virginia Tech. Photo: Kate Scholburg



## Hidden Figures *continued from page 1*

wondering how Mrs. Katherine was processing what was going on. Was she doing the calculations in her head? Was she reliving the “light bulb” moment of the trajectory solution presenting itself to her? Was she reminiscing about her close friendship with Mary Jackson and Dorothy Vaughn? Was she thinking about the racial divide that existed to constantly remind her that she was a “Negro,” despite the fact that she was an integral and necessary part of the success of the Friendship 7 mission and missions to follow?

What occurred to me during the movie was the reality that the trajectory of her life, the other West Area Computers’ lives, and the necessity of inclusion were strongly dependent on the competition between the US and the USSR. Winning was everything, and the white, male dominated research and development teams realized they were at a critical stage. A broader, collective intelligence would be required while serving the common goal, so NASA/Langley had to step outside of the boundaries of the “zone of white, male privilege” to enlist more manpower and computing power. Desperation apparently breeds tolerance and tolerance breeds opportunity.

Opportunity allowed me, a sophomore physics major, to intern at NASA/Langley in 1985. On my first day, I was escorted to a remote location where I would spend my summer working. My mentor had two structures assigned to him: a one-story lab, and next to it a domed concrete building. We walked into the concrete dome where he stored the chemicals that would be the focus of my project (I still have the code I wrote), and he casually stated that the first astronauts trained here. I was actually standing inside of the Human Centrifuge location, intrigued but not yet fully appreciative of its historical significance.

My second internship placed me in the Non-destructive Evaluation (NDE) unit, in the summer of 1986. Various materials were subjected to controlled expansion and compression for measuring stress and

strain. During that summer, our unit received pieces of the Challenger remains.

I would also spend time at NASA/Langley while working on my M.S. research in Materials. It was not uncommon to run into now astronaut Leland Melvin; his office was on the same floor as my advisor’s.

These experiences were special and an integral part of my academic path, but it wasn’t until recently that I could see the true connection between my journey and the bigger picture. I was sitting in the theater with Katherine Johnson, watching her story unfold on screen while concurrently reflecting on mine. That is one awesomely indescribable feeling. It won’t, however, negate the sense of loss that I feel because I wasn’t allowed to engage with her as a student, a student on-site at NASA while she was still there. I am extremely grateful, nonetheless that I had the opportunity to meet her.

If traveling around the city of Hampton, one will notice seven bridges with the names of the original seven astronauts: Grissom, Carpenter, Slayton, Cooper, Shepard, Schirra and Glenn. Bridges, as defined, are built to ensure safe passage from one point to another. Metaphorically speaking, the names Katherine Johnson, Dorothy Vaughn and Mary Jackson are bridges of diversity for generations of young, Black, brilliant women that so desperately need safe pass across many of the same obstacles they faced. I think the City of Hampton should put the names of these women on individual bridges; we have 39.

*Dr. Trina Coleman is an educator, scientist, entrepreneur, author and public speaker. Dr. Coleman earned a B.A. in Physics from Hampton University in 1987; M.S. in Condensed Matter Physics from Hampton in 1993; and a Ph.D. in Theoretical Nuclear Physics from Hampton in 2001. Dr. Coleman is the founder of Coleman Comprehensive Solutions, LLC and Math-gustics, LLC. She is also the Technical Executive Officer of the National Society of Black Physicists.*

## Hidden Figures Sheds Light on the Experiences of Black Women in STEM - Now What?

*By LaNell Alexandria Williams, Fisk University-Vanderbilt University, Graduate Student, TLSAMP Fellow  
NSF Graduate Research Fellow*

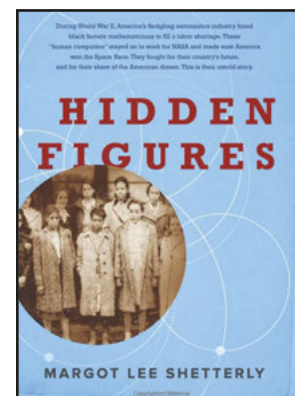
**H**idden Figures is an inspiring movie that captures the struggles and accomplishments of three black women who navigate their environment at NASA during a time when segregation was ever-present. Katherine Johnson, a mathematician played by Taraji P. Henson; Mary Jackson, an aspiring engineer played by Janelle Monáe; and their supervisor, Dorothy Vaughan played by Octavia Spencer each contributed a significant piece to the successful launch of *Sputnik I*. The contrast between their experiences and the experiences of many black women in STEM fields today was

a grim reminder that our paths are and have always been different than our white peers. But despite being bombarded with adversity in its many forms, we have always found ways to survive.

One scene that was particularly chilling for me was the scene in which Katherine Johnson was confused for “janitorial staff” instead of the talented mathematician that she was. It reminded me of the many times that I was confused for “visiting a friend” in



*Mrs. Katherine G. Johnson, whose life and career was portrayed in the movie, Hidden Figures, based on Margot Lee Shetterly’s book by the same name*





LaNell A. Williams

**As women of color in STEM we are not allowed to co-exist as equals in our fields. We are only accepted once we excel beyond our peers.**

the physics department during my undergraduate program. And after discovering that their assumptions about her status were incorrect, she continued to have her intelligence constantly undermined by her peers on a daily basis. Even today, many black women experience the same type of undermining from both their peers and their mentors. Whether this is done intentionally or not, we as a society have not fully accepted the idea that women of color are as talented in STEM as our white and Asian male counterparts. Nevertheless, Katherine was able to overcome the assumptions made about her capabilities as a mathematician by simply being the best.

Unfortunately, as women of color in STEM we are not allowed to co-exist as equals in our fields. We are only accepted once we excel beyond our peers. Jamelle Watson-Daniels, an engineer at Boeing and a graduate of Brown University in Physics and Africana Studies, calls this the “requirement of exceptionalism”; a concept where most black women are forced to be exceptional to be considered equal to their white male counterparts. This expectation is very dangerous to women of color and is often used as a means to “move the finish line” as Dorothy Vaughn stated during the movie. Even now as I successfully transition into graduate school, I continue to find that this expectation is placed upon me as I walk into meetings, as I sit inside

my classrooms, as I go to conferences, and as I navigate every space where I am unfortunately “one of the few”.

In recent years, there has been a push for more representation in STEM fields without much of a focus on the livelihood of underrepresented populations. And after we begin to further critique the environments that we are placed in, we are often met with the assumption that we are somehow ungrateful for the opportunities that we were given. In other words, it is assumed that we should be “grateful for having a job” or a particular opportunity in the first place as Vivian Michaels, played by Kirsten Dunst, states in *Hidden Figures*. Watson-Daniels further explains that this scene represents the response we often receive when we begin to further question underrepresentation in the scientific community. So far, we have done a great job at improving the number of underrepresented groups that pursue and continue on in STEM fields; however, we have failed to focus on improving the environments they are placed in. Although many things have changed since Katherine, Mary, and Dorothy’s time, we have a long way to go before we truly begin changing the environment and culture for black women who pursue STEM. No one person, group, or program has all of the answers to solving this problem, but we each have the opportunity to take part in the solution.

## Let Us Know What You Think Promotes an Inclusive Environment

The Committee on the Status of Women in Physics and the Committee on Minorities are reviewing and updating their best practices for recruiting and retaining women and minorities in physics. Since these were originally compiled several years ago, we believe that our community’s understanding of the issues has improved significantly and that as times have changed, so too should the guidelines. While the goal of these suggestions is to support members of underrepresented groups, many will benefit the department as a whole.

We would like to encourage the community to participate in this work by letting us know how the best practices have been working for you. You can review both sets of best practices at [go.aps.org/women-physicsbestpractices](http://go.aps.org/women-physicsbestpractices).

What practices or activities at your institution are especially effective for recruiting women and minorities and promoting an inclusive environment? What ideas do you have for a policy or policies that would help improve the physics experience?

Examples of the best practices updates we are considering include:

- An annual review of graduate student progress towards degree completion by someone other than their advisor.
- Effective strategies for recruiting underrepresented minorities to departments at all levels
- Education about the impact of unconscious or implicit bias and ways to counter it.
- Suggestions for how to make departmental social activities inclusive of all (e.g. timing of activities, selection of food, advertising through multiple platforms)

If you have any thoughts or suggestions, please email the CSWP chair ([Patricia.Rankin@colorado.edu](mailto:Patricia.Rankin@colorado.edu)) or the COM chair ([Edmundo.garcia@cern.ch](mailto:Edmundo.garcia@cern.ch)) with your suggestions.

**LinkedIn**

**Join the Conversation in the Women in Physics & Minorities in Physics LinkedIn Groups!**

Get updates from APS about: career development opportunities • jobs • conferences  
• articles related to women and minorities in physics

## APS Adopts Code of Conduct For All Meetings

Theodore Hodapp, Director of Project Development and Senior Advisor to the Department of Education and Diversity

Professional meetings are an opportunity to speak freely, ask questions, and participate. No one should feel that they are being attacked either verbally or physically. Unfortunately, as has been seen in a few highly visible cases in the past few years, and in numerous other undocumented cases – this is not always true. Verbal harassment, physical harassment, and sexual harassment does occur, and can contribute to individuals feeling that perhaps this profession is not for them.

One way to counter this is to state the obvious, state it clearly, and state it often: harassment of any kind is not tolerated. To begin to take these steps, at the end of 2015, the APS Council passed a code of conduct for all APS meetings:

*It is the policy of the American Physical Society (APS) that all participants, including attendees, vendors, APS staff, volunteers, and all other stakeholders at APS meetings will conduct themselves in a professional manner that is welcoming to all participants and free from any form of discrimination, harassment, or retaliation. Participants will treat each other with respect and consideration to create a collegial, inclusive, and professional environment at APS Meetings. Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants.*

*Participants will avoid any inappropriate actions or statements based on individual characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, or any other characteristic protected by law. Disruptive or harassing behavior of any kind will not be tolerated. Harassment includes, but is not limited to inappropriate*

*or intimidating behavior and language, unwelcome jokes or comments, unwanted touching or attention, offensive images, photography without permission, and stalking.*

*Violations of this code of conduct policy should be reported to meeting organizers, APS staff, or the APS Director of Meetings. Sanctions may range from verbal warning, to ejection from the meeting without refund, to notifying appropriate authorities. Retaliation for complaints of inappropriate conduct will not be tolerated. If a participant observes inappropriate comments or actions and personal intervention seems appropriate and safe, they should be considerate of all parties before intervening.*

Since it was passed, the APS meetings department has been working to bring it to the attention of meeting attendees in various ways: placards, notices hanging outside meeting rooms, in the APS app, and on the webpage. Starting this year, every attendee must acknowledge that they have read and understand the code of conduct before registering for a meeting.

These are the first steps. The Committee on the Status of Women in Physics has been considering and recommending other actions to take to reinforce the message. We hope that a strong code of conduct will prevent harassment from occurring in the first place. That being said, APS has also put in place a process to hear and act on complaints, and trained its meeting staff to know how to deal with reports. We are still learning and adapting, but these first steps will hopefully send a clear message that when you attend a meeting, you need to reflect the professional standards of behavior that allows every physicist to prosper. Let us know if you have other ideas that will help advance these views.



Theodore Hodapp

## Obituary: Professor Marjorie Corcoran

Professor Marjorie Corcoran, one of the 2017 APS CUWiP at Rice University site leaders, died in an accident on February 6, 2017. This is a tragic loss for all who knew Marj.

The Rice CUWiP Local Organizing Committee has this remembrance:

“The Rice CUWiP conference would not have happened without Professor Corcoran. From the very beginning, she brought organization, energy, and drive to our planning committee. During the conference when everyone was stressed and overwhelmed, I never saw her smile break — she was always willing to do what needed to be done, whether it was fixing a name tag, tracking down a mentor, or making an announcement.

Beyond her immense contributions to the conference, Professor Corcoran was an inspiration to young female physicists everywhere. As a previous depart-

ment chair, a research mentor, and the only female professor to teach 1st and 2nd year physics classes at Rice, her impact on undergraduate female physics majors cannot be understated. Her loss is a tremendous blow to all of us who saw her as a role model.”

Her undergraduate students say:

“Professor Corcoran was inspirational to each of us, both as a teacher and as an individual. Every student can attest to her infectious enthusiasm for particle physics and learning. We truly appreciate her patience and her eagerness to teach. The door to her office was always open, welcoming questions about anything — from physics to homework to life advice. Her loss has affected each of us, and we can’t imagine what our undergraduate experience would have been like without Dr. Corcoran.” We send our deepest condolences to Marj’s colleagues, friends and family.



Marjorie Corcoran



## Women and Minorities Named to APS Fellowship in 2016

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### DIVISION OF ASTROPHYSICS

#### *Hiranya Peiris*

**University College London**

For significant contributions to the Wilkinson Microwave Anisotropy Probe project, Planck analyses, and the application of advanced statistical techniques to a wide range of astronomical data.

#### *Miguel Mostafa*

**Pennsylvania State University**

For his participation in the design, development, construction, and operation of the Pierre Auger Observatory and High Altitude Water Cherenkov Observatory, for his contribution to the Auger hybrid reconstruction and derived measurements of composition, and for his leadership of the Auger analysis group dedicated to the search of the sources of the highest energy cosmic rays.

#### *Nicole Bell*

**University of Melbourne**

For the invention of ballistic electron emission microscopy, which is used worldwide for nanometer resolution imaging of device interface electronic structure, and for contributions to understanding electron transport.

#### *Rachel Bean*

**Cornell University**

For contributions to the understanding of dark energy, and her cosmological observations to constrain physics beyond the Standard Model of physics.

#### *Megan Donahue*

**Michigan State University**

For advanced cosmological observations and analyses of galaxy clusters, and of the relationship between the thermodynamic state of circumgalactic gas around massive galaxies, the triggering of active galactic nucleus feedback, and the regulation of star formation in galaxies.

#### *Ann Hornschemeier*

**NASA Goddard Space Flight Center**

For outstanding contributions to the understanding of physics and the evolution of X-ray binaries in other galaxies.

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### DIVISION OF ATOMIC, MOLECULAR, AND OPTICAL PHYSICS

#### *Nirit Dudovich*

**Weizmann Institute of Science**

For pioneering new measurement schemes and control of attosecond processes, thus shedding new light on fundamental ultrafast phenomena.

#### *Cindy Regal*

**University of Colorado Boulder**

For observation of quantum radiation pressure noise on a macroscopic object, and establishing quantum control over individual neutral atoms.

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### DIVISION OF BIOPHYSICS

#### *Mingming Wu*

**Cornell University**

For her research into the biophysical and biochemical drivers that guide bacterial and animal cell migration, and the creation of single cell analysis tools.

#### *Kalina Hristova*

**John Hopkins University**

For the development of quantitative methods to probe membrane protein interactions and to reveal the mechanism of activation of membrane receptors.

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### DIVISION OF CONDENSED MATTER PHYSICS

#### *Suhithi Peiris*

**Air Force Research Laboratory**

For technical leadership in the dynamical and chemical behavior of energetic materials, for technical advances in both static and dynamic high pressure physics methods, and for sustained leadership and service to the American Physical Society and energetic materials community.

#### *Kimitoshi Kono*

**RIKEN Center for Emergent Matter Science**

For groundbreaking experiments on the dynamics of strongly correlated 2-D electron systems and the observation of new collective phenomena in helium using surface electron states.

#### *Nina Markovic*

**Goucher College**

For important contributions to the experimental study and understanding of electron transport in low dimensions.

#### *Natalia Perkins*

**University of Minnesota**

For theoretical studies of the low-energy behavior of strongly correlated electron systems that exhibit an interplay of orbital and spin degrees of freedom.

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### DIVISION OF CONDENSED MATTER PHYSICS

#### *Humberto Terrones*

**Rensselaer Polytechnic Institute**

For his pioneering work on the introduction of negative Gaussian curvature in graphitic systems, and unifying different kinds of graphenic nanostructures under the concept of curvature, leading to the prediction of new materials and advances in the field of defects engineering in 2-D materials.

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For information on nominating women and minorities for APS prizes and awards, please visit [aps.org/programs/honors/nomination.cfm](http://aps.org/programs/honors/nomination.cfm)

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*Roser Valentí***Institute of Theoretical Physics at Goethe University**

For advancing microscopic understanding of correlated materials by combining computational electronic structure methods with many-body techniques.

*Laura Gagliardi***University of Minnesota**

For seminal contributions to the development of electronic-structure methods and their application to the understanding of complex chemical systems, including the prediction of new materials and associated properties.

## DIVISION OF CHEMICAL PHYSICS

*Mary Rodgers***Wayne State University**

For outstanding contributions to quantitative thermodynamic and structural characterization of noncovalent cation- $\pi$  interactions, including the DNA i-motif using guided ion beam tandem mass spectrometry and infrared multiple photon dissociation, and for extensive service to the community.

## DIVISION OF FLUID DYNAMICS

*Andrea Bertozzi***University of California, Los Angeles**

For seminal work on thin film fluid analysis and modeling, contributions to the understanding of vorticity and incompressible flow, experimentation on particle laden-free surface flow, and application of fluid models to biological and technological problems.

*Beverly McKeon***California Institute of Technology**

For experimental and theoretical contributions to advancing the understanding of wall turbulence and for elegant interdisciplinary approaches to modeling and flow manipulation.

## DIVISION OF MATERIAL PHYSICS

*Haiyan Wang***Texas A&M University**

For seminal contributions to optical spectroscopy of novel low dimensional materials, including carbon nanotubes, graphene, and transition metal dichalcogenides.

*Athena Sefat***Oak Ridge National Laboratory**

For major contributions in developing new and pure iron-based superconducting crystals, and advancing the understanding of structure-composition-property relations on multi-length scales in high temperature superconductors and antiferromagnets.

## DIVISION OF NUCLEAR PHYSICS

*Rebecca Surman***University of Notre Dame**

For contributions in elucidating r-process nucleosynthesis, in particular for connecting microphysics such as mass models and reaction rates to astrophysical environments, and for guiding the experimental efforts worldwide on deciding the most impactful nuclei to study at exotic nuclear beam facilities.

## DIVISION OF PHYSICS OF BEAMS

*Michiko Minty***Brookhaven National Laboratory**

For achievements in beam instrumentation and operations leading to greatly enhanced performance of the Relativistic Heavy Ion Collider.

*Evgenya Smirnova-Simakov***Los Alamos National Laboratory**

For the development of photonic-band gap accelerating structures.

## DIVISION OF PARTICLES AND FIELDS

*Mina Aganagic***University of California, Berkeley**

For pioneering applications of string dualities to mathematics, including the discoveries of the topological vertex and of refined Chern-Simons theory.

*Aaron Dominguez***Catholic University**

For leading contributions to measurements of B hadron properties for top quark physics, and for the search and discovery of the Higgs boson, as well as leadership in the design, construction, and use of silicon tracking detectors at the Large Electron-Positron Collider, the Tevatron Collider, and the Large Hadron Collider.

*Christine Davies***University of Glasgow**

For innovations in lattice quantum chromodynamics and their many applications to particle physics phenomenology.

*Kathryn Zurek***Lawrence Berkeley National Laboratory**

For innovative contributions to particle phenomenology, especially in the development of models of asymmetric dark matter and hidden valley particles.

## DIVISION OF POLYMER PHYSICS

*Ricardo Ruiz***Western Digital Corporation**

For outstanding contributions to the fundamental understanding of directed self-assembly of block copolymer films.

## DIVISION OF PLASMA PHYSICS

*Hui Chen***Lawrence Livermore National Laboratory**

For pioneering experimental research on relativistic positron generation using ultra-intense short-pulse lasers.

*Jose Boedo***University of California, San Diego**

For his ground-breaking contributions to the studies of plasma drifts and intermittent plasma transport in the peripheral region of tokamaks.

## FORUM ON EDUCATION

*Monica Plisch***American Physical Society**

For exceptional contributions to the physics community through the direction of the Physics Teacher Education Coalition (PhysTEC) and involvement in other programs to increase the numbers of physics majors and teachers, and strengthen the inclusion of underrepresented groups in Society activities.

## FORUM ON INDUSTRIAL &amp; APPLIED PHYSICS

*Peide Ye***Purdue University**

For contributions to scientific understanding and technical development of transistor technology on novel channel materials.

*Christine Darve***European Spallation Source**

For sustained contribution to specification, design, construction, and operation of critical components of superconducting linear accelerators, and for leadership in expanding the reach of physics and educational outreach and dissemination of knowledge generated through large scale science facilities around the world.

## FORUM ON OUTREACH &amp; ENGAGING THE PUBLIC

*Rebecca Thompson***American Physical Society**

For development of innovative physics outreach, engagement, and informal education programs reaching millions of children and adults every year, and outstanding leadership in US and international science outreach communities.

*Agnes Mócsy***Pratt Institute**

For innovative explorations of the intersection of science and the arts, for advocacy on behalf of fundamental science, and for promotion of underrepresented minorities working in science.

## FORUM ON PHYSICS AND SOCIETY

*Keivan Stassun***Vanderbilt University**

For helping to substantially increase PhD attainment in physics and astronomy for underrepresented minorities, and for fundamental contributions to the astrophysics of young stars and brown dwarfs.

## DIVISION OF GRAVITATIONAL PHYSICS

*Eva Silverstein***Stanford University**

For fundamental contributions to quantum gravity and early universe cosmology.

## TOPICAL GROUP ON MAGNETISM AND ITS APPLICATIONS

*Laura Heyderman***Paul Scherrer Institute**

For important contributions to the study of mesoscopic magnetic systems, with the observation of monopole-like excitations, thermally active behavior, and phase transitions in arrays of coupled frustrated magnets; and the control of magnetism at the nanoscale in hybrid systems.

*Laura Lewis***Northeastern University**

For investigations of fundamental structure-property relationships in functional magnetic materials from a unified perspective, specifically for advancing permanent magnet, magnetic cooling, and biomedical applications.

## TOPICAL GROUP ON STATISTICAL &amp; NONLINEAR PHYSICS

*Raissa D'Souza***University of California, Davis**

For seminal contributions to the statistical physics of complex systems, including self-organization in jamming phenomena and cascades, abrupt percolation transitions, and interdependence in network systems.



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## Recent APS Women Physicists of the Month

### SEPTEMBER 2016 WOMAN OF THE MONTH:

*Lindley Winslow*

University of California at Berkeley

Lindley Winslow is originally from Chadds Ford, PA where she grew up riding horses. A love of outer space brought her to the University of California at Berkeley and a great research experience introduced her to particle astrophysics and her favorite particle: the neutrino. She is an experimental nuclear physicist whose primary focus is on neutrinoless double-beta decay. Neutrinoless double-beta decay is an extremely rare nuclear process which, if it is ever observed, would show that the neutrino is its own antiparticle, a Majorana particle. A Majorana neutrino would have profound consequences to particle physics and cosmology, among them an explanation of the universe's matter-antimatter symmetry. Winslow takes part in two projects that search for double-beta decay at CUORE (Cryogenic Underground Observatory for Rare Events) and KamLAND-Zen, and works to develop new, more sensitive double-beta decay detectors. Winslow has also been awarded a 2010 L'Oréal for Women in Science Fellowship.

### NOVEMBER 2016 WOMAN OF THE MONTH:

*Chiara M. F. Mingarelli*

Max Planck Institute for Radio Astronomy

Dr. Chiara M. F. Mingarelli is an Italo-Canadian gravitational-wave astrophysicist, currently based at the Max Planck Institute for Radio Astronomy (previously Caltech), where she holds a Marie Curie Fellowship. She has made significant and novel contributions to the field of gravitational wave detection with pulsar timing arrays within the International Pulsar Timing Array community. Her thesis research continues to inspire young researchers to explore a new branch of NANOGrav science (sky anisotropy of the gravitational wave background) and she has placed the most stringent constraints on primordial gravitational waves, among other contributions. Mingarelli serves as a willing and dedicated mentor to many students at Caltech, and works with graduate students whose careers she identified would benefit from external collaboration. She maintains an active Twitter feed, which she uses to communicate research and sociological issues in science to over 3,000 followers. These efforts caught the attention of Amy Poehler's Smart Girls, who invited Mingarelli to write an invited blog series, "Conversations with a Theoretical Astrophysicist." Her social media science outreach also granted her an invitation to submit an op-ed article to *Scientific American*.

### OCTOBER 2016 WOMAN OF THE MONTH:

*Jedidah Isler*

Vanderbilt University

Dr. Jedidah Isler is an award-winning astrophysicist and National Science Foundation Astronomy & Astrophysics Postdoctoral Fellow at Vanderbilt University, where she studies the physics of particle jets emanating from supermassive black holes at the centers of massive galaxies called blazars. Dr. Isler's current research uses simultaneous infrared, optical and gamma-ray observations to better understand the physics of these blazar jets by constraining the time-resolved spectral variability. She has been recognized as a TED Fellow (2015), National Geographic Emerging Explorer (2016), and one of The Root's 100 Most Influential African Americans (2016) for her innovative research and efforts to inspire a new generation of STEM leaders from underrepresented backgrounds. She is also the founder of #VanguardSTEM and host of the monthly web series "Vanguard: Conversations with Women of Color in STEM." Dr. Isler has been an invited participant in Astronomy Night at the White House, briefed the President's Council of Advisors on Science and Technology, and has been featured in various publications.

### DECEMBER 2016 WOMAN OF THE MONTH:

*Chuhee Kwon*

California State University Long Beach

Dr. Chuhee Kwon is a Professor and past chair in the Department of Physics and Astronomy at California State University Long Beach. Her research specialty is condensed matter experiment, and she has over 90 peer-reviewed publications in superconducting and magnetic thin films. As a P.I. and co-P.I., Dr. Kwon has received over \$2.4 million in external grants, half of which was for outreach and diversity-enhancing programs, including PhysTEC (Physics Teacher Education Coalition), NSF S-STEM, and APS Bridge programs. Under her leadership, the Department has more than tripled the number of undergraduate majors, eliminated the achievement gap in gender/ethnicity, and graduated 43 bachelors and 16 masters with 50% underrepresented minorities in AY 2015 – 16. The Department received the 2016 Award for Improving Undergraduate Education from the American Physics Society. Dr. Kwon received the 2010 Advancement of Women Award from the President's Commission on the Status of Women, as well as the 2013 Faculty Award for Excellence by the College of Natural Sciences and Mathematics at CSULB.



*Lindley Winslow*



*Jedidah Isler*



*Chiara M. F. Mingarelli*



*Chuhee Kwon*

**JANUARY 2017 WOMAN OF THE MONTH:**

*Laura Sinclair*  
National Institute of Standards and  
Technology

**D**r. Laura Sinclair is a physicist in the Applied Physics Division at the National Institute of Standards and Technology (NIST). She is recognized for pioneering new robust optical tools based on fiber frequency combs that operate outside well-controlled laboratory environments. Dr. Sinclair's internationally acclaimed comb research has been applied to time transfer across large distances and precision measure-



*Laura Sinclair*

ments of airborne contaminants in turbulent environments, dramatically increasing observation periods from hours to weeks. Recently, she was the technical lead of a team that was able to synchronize clocks over kilometers of turbulent air to within femtoseconds. Leading publications including *Nature*, the *Proceedings of the National Academy of Sciences*, and the American Physical Society's *Viewpoint* have recognized the importance of her work through editorial commentaries. When not wrangling optics equipment, Dr. Sinclair organizes a monthly "Awesome Women in Science" coffee hour to connect technical women across the NIST Boulder campus. Since 2008, she has served with the Rocky Mountain Rescue Group.

## Meet the 2017 COM and CSWP Chairs and New Committee Members

### New CSWP Chair and CSWP Members

*Patricia Rankin*  
*University of Colorado Boulder*  
**2017 CSWP Chair**

I agreed to serve on the Committee on the Status of Women in Physics (CSWP) because I wanted to help ensure that we recruit and retain the best and brightest, and that everyone feels welcome and supported. What I like about serving on this committee is that it gets things done. One of the reasons for this is that the committee operates under a set of guiding principles and I will continue to follow these as chair. In particular, I want to focus on ways to emphasize that all physicists should follow the professional practices of our field and to further develop suggested best practices that improve the working environment for all.

*Miriam Deutsch*  
*University of Oregon*

During my years of working at the University of Oregon, I have dedicated numerous efforts towards working with academic leadership to highlight the need for targeted programs for training, hiring and retaining female graduate students and faculty in the STEM fields. I now wish to use the experiences and knowledge I gained in the past years to work more collaboratively towards this goal on a national level.

*Laura McCullough*  
*University of Wisconsin Stout*

I've been doing research on gender and science issues for over twenty years, and my goal has always been to improve the participation rates of women in physics. I am very excited to be on this committee, and I hope that my research background and organizational skills will be a benefit to CSWP in their endeavors to promote women's presence in physics. It's a goal we all need to work on!



*Patricia Rankin*  
CSWP Chair



*Miriam Deutsch*



*Laura McCullough*

*Kristen M. Burson*  
*Hamilton College*

I am a condensed matter experimentalist and an assistant professor in the physics department at Hamilton College. Through my previous involvements with Conferences for Undergraduate Women in Physics (CUWiP), the women in physics group at the University of Maryland, and public outreach events aimed at female students, I have come to appreciate the role that local action can play in promoting and encouraging women in physics. I am excited to think about these issues more broadly as part of the Committee on the Status of Women in Physics. I am especially interested in ways to best support students at the undergraduate and graduate levels, as well as early career physicists. CSWP is already working in these areas through women in physics group grants, the site visits program, the CUWiP conference series, and guides for best practices for departments. I am looking forward to playing an active role in supporting women in physics through these ongoing efforts.

### New COM Chair and COM Members

*Edmundo J. Garcia-Solis*  
*Chicago State Univ/ NSF*  
**2017 COM Chair**

I am persuaded of the value of basic research for our society. I also believe in the significance of diversity, not only as a resource in science, but as one of the major engines that propel the advancement of our nation. I am a firm proposer of the equality of opportunities based on education. I am serving on the Committee on Minorities in Physics because it is the ideal platform from where I can combine my professional and life experience to undertake actions that align with my beliefs.



## Ivy Krystal Jones

LLNL

My reasons for wanting to serve on the APS Committee on Minorities in physics are varied and meet many of my needs such as a desire to give back to the community that supported me, and a need to effect change. In no particular order, here are my specific reasons for getting involved:

1. I relish the opportunity to serve APS in a higher capacity.
2. To learn more about organizational management skills while promoting the Society's vision/mission.
3. To fellowship as well as network with an inclusive and diverse group of individuals dedicated to service within the different committees.
4. Support the committees by providing services which will assist in accomplishing set goals.
5. Utilize experience to improve on certain professional development skills such as organization, communication, dissemination of information, etc.

## Garfield Warren

Indiana University

It is with great pleasure that I am writing this letter to serve on the APS Committee on Minorities in

Physics. I am deeply honored to know that my fellow APS colleagues felt me worthy of such an important responsibility. In filling this position, I understand that the organization is committed to increasing the recruitment and retention of minorities in physics. Having participated in several programs to promote diversity at both the campus-wide and nation-wide levels, it is my desire to collaborate on similar projects to incorporate infrastructures that will ultimately increase the number of underrepresented minorities in the field. Furthermore, it has been a national priority to promote STEM education as well as to support, contribute to, and advance the career development of the next generation of scientists and minority physicists. Since science has been at the forefront of shaping culture, I look forward to promoting and contributing to this narrative.

## Carol Scarlett

Florida A&M University

I have joined the Committee on Minorities (COM) to improve the numbers of minority students entering Physics and other STEM programs. I believe science is the gateway to numerous careers and has a tremendous impact on human society. I want to see the diversity in the US population reflected in our scientific population. Beyond the impact that is brought by a diversity of people and ideas, having all Americans participate is a hallmark of inclusion in the larger society.



Kristen M. Burson



Edmundo J. Garcia-Solis  
COM Chair



Ivy Krystal Jones



Garfield Warren



Carol Scarlett

# JOIN THE APS NATIONAL MENTORING COMMUNITY

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The APS NMC program aims to increase the number of African American, Hispanic American, and Native American undergraduates obtaining physics bachelor's degrees.

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**M. Hildred Blewett Fellowship** *continued from page 1*

on the potential to detect the late-time radio afterglow signal of gamma-ray bursts, with the goal of learning about the progenitor and its environment. I have begun (with a small team of astrophysicists from Los Alamos) teaching a community education class on modern astrophysics at the Los Alamos campus of the University of New Mexico. I also continue to make frequent visits to elementary schools to do hands-on physics activities with young scientists. The Blewett Fellowship was the perfect way to transition back to work after my time away from astrophysics — it is not an overstatement to say I couldn't have done it without this fellowship! It allowed me the flexibility to pursue my research and outreach goals (not to mention an important morale boost), that truly made all the difference in returning to work after such a long absence.

**Huey-Wen Lin**

I am currently an assistant professor jointly in the Departments of Physics and Astronomy and Computational Mathematics, Science and Engineering at Michigan State University. My research focuses on using high-performance supercomputers to calculate the femtoscale physics where the strong nuclear interaction dominates and quarks and gluons are the fundamental particles. I have been providing Standard-Model strong-interaction inputs to search for new physics at the LHC and also in precision symmetry tests at lower energy using neutrons. The M. Hildred Blewett Fellowship was absolutely essential to me when I needed help the most: when I had to choose family (with 2 young children and a spouse searching for his own career after moving around the country with me for almost a decade) over my dream career in academia. Thanks to the fellowship, I was able to

continue doing research until I successfully landed a tenure-track faculty position during the term of the fellowship. Even beyond the financial consideration, the fellowship gave me hope to continue pursuing my research career. It was a great psychological boost, being recognized for my work by the committee and knowing they thought I had a good chance to succeed, when I had almost given up myself. My article in a previous *Gazette* also brought me a lot of community support, including some who assisted with travel funds so I could attend international workshops. For those who made a similar choice as I did, I hope they know that they are not alone; there are people who have made it from similar situations, and they should not be afraid to ask for help. I would not be where I am if it were not for the support of the fellowship and many helping hands in the field. I am grateful for the generosity of everyone who funds the fellowship. I will certainly, in return do what I can in the future to help those in need.

**Monique Tirion**

After a 10 year hiatus from theoretical research into the unique flexibility characteristics of folded proteins, my curiosity persisted but my confidence in re-igniting a research program waned. The Blewett Fellowship, unique in assisting qualified women transitioning back to active research in physics, provided a concrete and complete platform: a specific context to articulate a vision and assess advances and developments; a means to join a research department and the opportunity to discuss ideas and reconnect with colleagues. Completing and submitting the application felt good and provided the credibility to persist. I am grateful to Prof. Hildred Blewett and APS for providing this opportunity ■



*Nicole Lloyd-Ronning*



*Huey-Wen Lin*



*Monique Tirion*

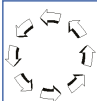


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