

MID-ATLANTIC SECTION

Volume 1, Issue 2

<http://www.aps.org/units/mas/>

November 2013

A GLIMPSE AT THE M-AS MEMBERSHIP

The Mid-Atlantic Section (M-AS) is now one year old and we have close to 1,000 members. It is time to take a closer look at our membership.

The number of members has steadily increased over the past year. At the time of this writing, M-AS is 4 members short of 1,000 members. In 2013 the membership grew linearly with a slope of about 48 members per month.

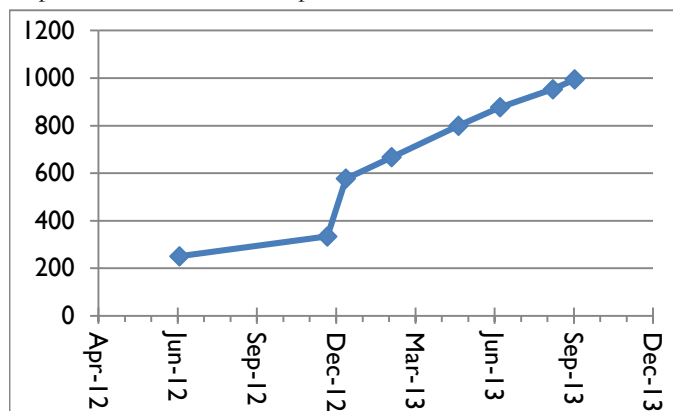


Figure 1. Membership development of the Mid-Atlantic Section.

Our program committee is currently working hard to prepare our first section meeting. To aid the program committee it would be useful to get a snapshot of the interests of our membership. One glimpse at these interests can be gathered by looking at what other units of the American Physical Society (APS) our members have joined. The membership department of APS provides a yearly cross reference list on its webpage. APS currently has 44 units (14 divisions, 13 groups, 7 fora, & 10 sections). The membership department furnished us with a cross reference list in the form of a 44x44 matrix, where each element gives the number of members that are in any combination of two units.

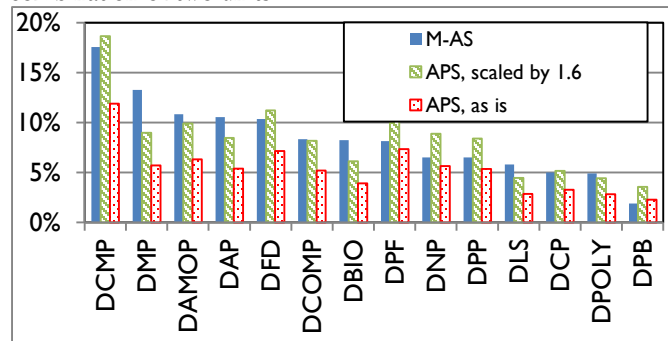


Figure 2. Relative Membership in the different divisions. On average a M-AS member belongs to 1.2 divisions.

Figure 2 shows the relative fraction of M-AS members that claim membership in the 14 divisions as of Sept. 26, 2013. In total, the 996 M-AS members have 1,175 division memberships, i.e. each M-AS member belongs on average to 1.2 divisions. This number is much higher than for an average APS member. An APS member belongs on average to 0.75 divisions. The reason for this difference is a sign-up bias. Once a member signs up for one unit, he or she is more likely to sign up for another unit. By looking at the M-AS members only, we select APS members that have already signed up for one unit, hence introducing a bias. In the example above we call $1.2/0.75 \approx 1.6$ the sign-up ratio.

Because of this sign-up bias, it is not very meaningful to compare the relative fraction of M-AS versus APS members that sign up for a given division. A better comparison can be obtained by scaling the relative APS fraction by the sign-up ratio, which is in this example 1.6. We calculate a different sign-up ratio for the four types of units.

Figure 2 shows the fraction of M-AS member that are members of the divisions of the APS in solid bars. The hatched bars give the scaled numbers for all of APS. For reference we show the raw relative numbers as dotted bars.

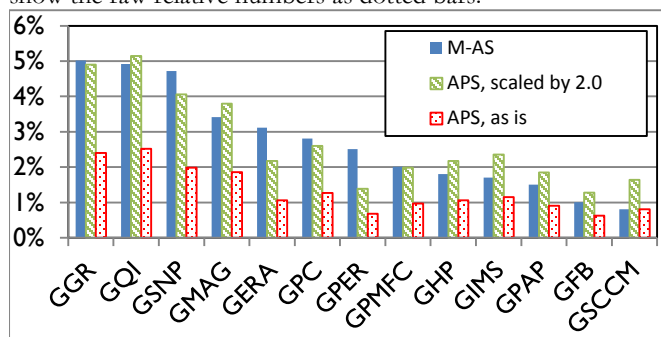


Figure 3. Relative group memberships. An average M-AS member belongs to 0.35 groups.

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The most popular division in the APS, as well as, in the M-AS is the division for condensed matter physics (DCMP). It appears that M-AS members are somewhat less interested in Particles& Fields (DPF), Nuclear Physics (DNP), & Plasma Physics (DPP) than the average APS member, and more interested in materials physics (DMP) and biological physics (DBIO). It could be that we're seeing the influence of strong materials science and biophysics programs at government-funded laboratories as well as at universities, and the lack of large nuclear and particle facilities in our region.

Let's take a look at the 13 groups, see figure 3. There are 352 group memberships within M-AS. The two most popular groups within M-AS and APS are gravitation (GGR) and quantum information (GQU). The groups that have more interest within the M-AS than in APS are physics education research (GPER), energy research & application (GERA), and statistical and non-linear (GSNP).

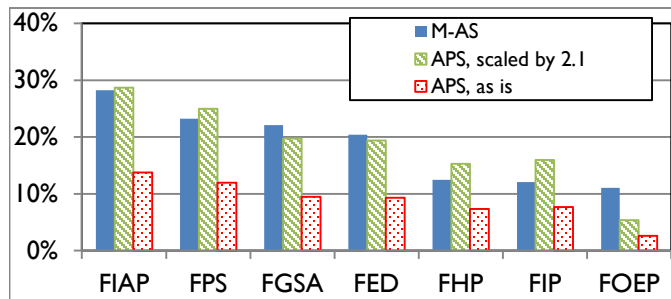


Figure 4. Relative memberships in the seven fora. An average M-AS member belongs to 1.3 fora.

A third type of unit is the forum. Surprisingly, M-AS members are more than twice as likely as APS members to join a forum. Here we find the highest sign-up ratio for this type of unit. Figure 4 shows the corresponding histogram for the seven fora. The M-AS numbers follow the general APS trend with one

50 YEARS OF ATOMIC PHYSICS WITH SYNCHROTRON RADIATION

On June 15, 1963, Robert Madden and Keith Codling published the first study of atomic photoabsorption using vacuum-ultraviolet light generated at the National Bureau of Standards Synchrotron (now the NIST Synchrotron Ultraviolet Radiation Facility SURF III.) This breakthrough publication on remarkable autoionization resonances in the noble gases stunned scientists around the world and was immediately followed by similar experiments in Europe and Asia.

It was among the early studies of the applications of synchrotron light that sparked its development into a general-purpose research tool. Nearly to the day, 50 years later, we held a workshop on "50 Years of Atomic Physics with Synchrotron Radiation" to commemorate this first experiment, with both Madden and Codling participating! Thus we were treated to first-hand accounts of the original research in the 1960s at SURF. We then learned about AMO research performed since, using second- and third-generation synchrotron sources all over the world, and the meeting concluded with recent revolutionary experiments

exception. The forum on outreach and engaging the public is more popular by 5 percentage points among M-AS members than APS members.

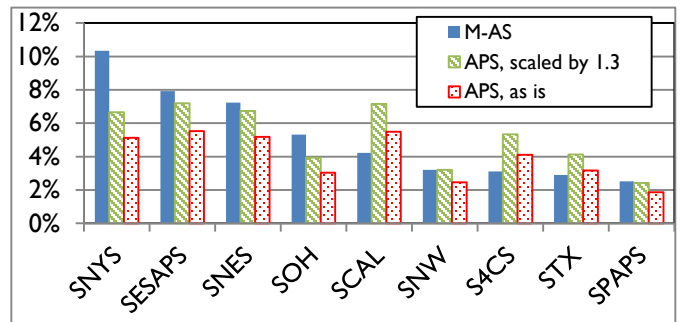


Figure 5. Relative memberships in the other sections. An M-AS member averages 0.5 additional section memberships.

The last type of unit is the section itself. It turns out that about half the M-AS members belong to a second section. Note that only about a third of all APS members belong to a section. Figure 5 shows the relative participation in the 9 other sections (APS has a total of 10 sections, but we exclude M-AS in this analysis). M-AS members are most likely to participate in the sections that are geographical neighbors (New York, South Eastern, Ohio) or are in the geographical vicinity (New England).

We have looked at the cross listing of M-AS members in other units of the APS. In summary, the average M-AS member has about the same interests as an average APS member. For the four different types of units an M-AS member is between 30% and 100% more likely to sign up than an average APS member

We thank the APS membership department for providing the raw data on which this analysis is based.

Stephan Schlamming

utilizing Free Electron Lasers in atomic and molecular photoionization.



In the picture, left to right, front row: John West, Robert Madden, David Ederer, Keith Codling, Linda Young, John Cooper; middle row: William Gadzuk, Akira Yagishita, Joseph Dehmer, Ralf Wehlitz, Michael Meyer; third row: Uwe Arp, Joseph Reader, Katharine Gebbie, Tom Lucatorto, Gwyn Williams, Mathias Richter.

THE BALLOT

Position: Vice-Chair

Andrew Zentner, University of Pittsburgh

Resume:

Andrew Zentner is an associate professor in the Department of Physics and Astronomy at the University of Pittsburgh, where he has been a member of the faculty since 2007. Andrew is also a member of the executive committee of the Pittsburgh Particle physics, Astrophysics, and Cosmology Center at the University of Pittsburgh. Prior to joining the faculty of the University of Pittsburgh, Andrew earned a B. S. in electrical engineering from The Cooper Union for the Advancement of Science and Art in New York City in 1998 and a Ph. D. in physics from The Ohio State University in 2003. Andrew conducted postdoctoral research in theoretical cosmology at the University of Chicago where he was a fellow of the Kavli Institute for Cosmological Physics (2003-2006) and a National Science Foundation Fellow (2006-2007). His primary research interests are theoretical cosmology, interpreted broadly to include early-universe physics, the evolution of large-scale structure in the universe, the formation of galaxies, and the quests to identify the dark matter and dark energy that dominate the energy budget of the Universe. He has published over 60 peer-reviewed journal articles on these subjects. Andrew maintains an active interest in education and outreach and organizes an Education and Outreach partnership between the University of Pittsburgh and the Carnegie Museums. One of his current education projects is to develop a general education program for non-science majors at the University of Pittsburgh aimed at improving upon the appreciation of physics as a field of discovery and the importance of physics as a basis for understanding energy, climate, and technological issues that affect society.

Statement:

As APS members, physics is dear to us and to us it is already evident that physics is an important part of our lives. The APS regional sections have numerous goals. Among these are to cultivate a cohesive and supportive environment for physicists in the region as well as to represent and advocate for physics as a crucial element of our lives. Within the Region, building a supportive environment can happen in many ways. We must continue to bring local physicists together, so that we may educate each other about our work, our concerns, and our visions for promoting physics in the Region. Building stronger

connections between academic and industry physicists is another important role that the regional sections play. This key enterprise has many possible benefits, not the least of which is improving undergraduate and graduate education and matching the needs of the broader community of physicists with the education provided at our universities. Furthermore, active Section meetings enable all physicists, but particularly young physicists, to develop a broader network of professional contacts and friends. Moving on, successfully advocating for physics as a pursuit of great value to the region can also happen in a number of ways. The Section can help develop successful and high-profile outreach activities in the region. Such activities exhibit the power of physics and the physicist's approach to pressing problems. The Section may also encourage and empower its membership to be active in their communities, weighing in on issues of particular importance to the region. To do so, the Section can organize efforts to provide membership with specific tools, studies, and advice tailored to our regional needs. All of these important goals begin with "grassroots" efforts to invigorate physicists in our region. Members of the Regional Section must go to their home institutions and encourage membership, while the Section must make the value of membership clear. In order to further these objectives, not only will increased membership be a key, but it may be necessary to seek novel sources of support as we expand Regional activities and resources. I hope to serve the Mid-Atlantic Section of the APS in order to drive growth of the Section, cultivate stronger relationships among physics, both in academia and industry, and advocate for physics to the general public as a powerful approach to the issues of importance in the region.

Andrew Zwicker, Princeton Plasma Physics Laboratory

Resume:

Andrew Zwicker is the Head of the Science Education Department at the Princeton Plasma Physics Laboratory and a Lecturer in the Princeton University Writing Program. He received a bachelor's degree in physics from Bard College and a Ph.D. in physics from Johns Hopkins University where he focused on plasma spectroscopy. He was a post-doctoral researcher at Oak Ridge National Laboratory and he performed research on fusion devices at Princeton and in Germany.

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THANK YOU FOR YOUR SERVICE

November 2013 marks the Mid-Atlantic Section's first birthday. In 2013, M-AS was governed by a set of interim officers and interim members-at-large that were chosen at our inaugural meeting in June 2012. At the end of the calendar year the term of some of the interim members of the executive committee ends. We would like to take this opportunity to thank our interim past-chair Charles Clark, our interim treasurer Mark Stollberg, our interim members at large, Kurt Kolasinski, Joseph Tedesco, & Ray Elton, and our student member Galen Hench for their service to M-AS in the past year. These positions, with the exception of the past-chair, will be taken by elected officials starting 1/1/2014. The past-chair will be replaced by our succession rules.

M-AS MOVEMENTS

Physics comings, transitions and goings around the M-AS region in 2013 by Charles W. Clark.

Mid-Atlantic residents receiving Prizes or Awards of the American Physical Society:

2014 Aneesur Rahman Prize for Computational Physics

Robert Swendsen, Carnegie Mellon University: "For multiple, groundbreaking algorithmic developments in computational statistical physics."

2014 Dannie Heineman Prize for Mathematical Physics

Gregory W. Moore, Rutgers University: "For eminent contributions to mathematical physics with a wide influence in many fields, ranging from string theory to supersymmetric gauge theory, conformal field theory, condensed matter physics and four-manifold theory."

2013 Fluid Dynamics Prize

Elaine S. Oran, Naval Research Laboratory: "For seminal contributions to the understanding of reactive flows through computational simulations, especially the deflagration-to-detonation transition in gases and supernovae."

2013 James Clerk Maxwell Prize for Plasma Physics

Phillip A. Sprangle, Naval Research Laboratory: "For pioneering contributions to the physics of high intensity laser interactions with plasmas, and to the development of plasma accelerators, free-electron lasers, gyrotrons and high current electron accelerators."

2014 Julius Edgar Lilienfeld Prize

Edward Ott, University of Maryland, College Park: "For pioneering contributions in nonlinear dynamics and chaos theory that have been uniquely influential for physicists and scientists in many field, and for communicating the beauty and unifying power of these concepts to remarkably diverse audiences."

2014 Max Delbruck Prize in Biological Physics

Robert H. Austin, Princeton University: "For his wide-ranging contributions to biological physics encompassing all scales from the molecular to that of organismic populations. His early insights on how nanotechnology and microfabrication can be employed have uncovered both new physics and revolutionized the laboratory practice of biology."

2014 Prize for a Faculty Member for Research in an Undergraduate Institution

Thomas Solomon, Bucknell University: "For groundbreaking contributions to chaos and nonlinear dynamics through precise table-top experiments in fluid systems and for outstanding mentoring of undergraduate students at all levels."

2014 Edward A. Bouchet Award

Luz Martinez-Miranda, University of Maryland, College Park: "For her pioneering research on liquid crystals, in particular on the interactions of ordered liquid crystals and nanoparticles and their applications and extensive effort in mentoring and increasing diversity in physics and materials science."

2014 Leo Szilard Lectureship Award Recipient

M.V. Ramana, Princeton University: "For outstanding contributions to promote global security issues, through critical analyses of nuclear weapons and nuclear energy programs in India and associated risks in the subcontinent, and efforts to promote peace and nuclear security in South Asia through extensive engagements and writings."

2013 Outstanding Doctoral Thesis Research in AMO Physics

Michael Foss-Feig, National Institute of Standards and Technology: "Quantum simulation of many-body physics with neutral atoms, molecules, and ions"

Mid-Atlantic residents elected in 2013 to Fellowship of the American Physical Society:

(partial list from listings made public at time of press)

Gates, David

Princeton Plasma Physics Laboratory

Citation: For innovation and leadership in the understanding and control of limiting MHD phenomena in toroidal plasmas.

Nominated by: Division of Plasma Physics

Jaluria, Yogesh

Rutgers University

Citation: For pioneering and lasting contributions to a wide variety of fundamental and applied areas in fluid mechanics, particularly to buoyancy-induced flows, computational fluid dynamics, microscale transport, fluid flow phenomena in materials processing, the spread and growth of fires in enclosed spaces, and environmental flows.

Nominated by: Division of Fluid Dynamics

Keidar, Michael

George Washington University

Citation: For major contributions to the physics of low-temperature plasma, resulting in a variety of novel devices and unique processes with applications to space propulsion, nanotechnology and biomedicine.

Nominated by: Division of Plasma Physics

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Schmitt, Andrew

Naval Research Laboratory

Citation: For major contributions to the theory and simulation of laser plasma interactions including pioneering work on the effects of laser beam smoothing and for advancing high-resolution simulations of laser high gain direct drive implosions.

Nominated by: Division of Plasma Physics

Skinner, Charles

Princeton Plasma Physics Laboratory

Citation: For innovations in magnetic fusion issues including tokamak dust diagnostics and tritium management and seminal contributions to x-ray lasers and applications, non-linear optics, plasma spectroscopy, and plasma-lithium interactions.

Nominated by: Division of Plasma Physics

Mid-Atlantic residents recognized in 2013 as Outstanding Referees of the American Physical Society:

Jayanth Banavar, University of Maryland at College Park

Alessandra Buonanno, University of Maryland at College Park

Lazaros K. Gallo, Rutgers University

C. Stephen Hellberg, Naval Research Laboratory

V. L. Jacobs, Naval Research Laboratory

J. K. Jain, Pennsylvania State University

Mark B. Johnson, Naval Research Laboratory

Zachary H. Levine, National Institute of Standards and Technology

Michael Stavola, Lehigh University

Ned S. Wingreen, Princeton University

Mid-Atlantic residents elected to the National Academy of Sciences in 2013:

Eva Y. Andrei, Department of Physics and Astronomy, Rutgers University

S. James Gates, Jr., Department of Physics, University of Maryland at College Park

Juan Maldacena, School of Natural Sciences, Institute for Advanced Study

Karin M. Rabe, Department of Physics and Astronomy, Rutgers University

David Vanderbilt, Department of Physics and Astronomy, Rutgers University

Mid-Atlantic residents elected to the American Academy of Arts and Sciences in 2013:

Timothy M. Heckman, Department of Physics and Astronomy, The Johns Hopkins University

Marc Kamionkowski, Department of Physics and Astronomy, The Johns Hopkins University

Karin M. Rabe, Department of Physics and Astronomy, Rutgers University

THE PHYSICS DEPARTMENT AT THE NEW JERSEY INSTITUTE OF TECHNOLOGY

Research at Physics Department at NJIT is carried out in several directions, such as Solar-Terrestrial Physics, Optics, Imaging, and Remote Sensors, Biophysics, Materials and Devices, and Spectroscopy of Novel Magnetic and Correlated Materials.

Twenty Faculty Members and a similar number of Research Professors and Postdocs supervise several dozen of Undergraduate and Graduate Student in both PhD (22 students) and Master (14 students) Programs in Applied Physics and Materials Science and Engineering (25 students). Every year about 8 Graduate Students receive their PhD degrees at the Physics Department. A tight collaboration with Industry, Solar Observatories, and National Lab is a distinct feature of the Physics Department. Among recently hired Faculty Members are experts in Computational Biophysics and Solar Telescope Instrumentation.

All Graduate and some undergraduate students affiliated with Physics Department work at the intersection between the traditional Academic environment and state-of-the-art National Synchrotron Facilities and Industrial Labs. For example, at Brookhaven National Lab, Physics Department operates at several beamlines dedicated to far-infrared and x-ray spectroscopy of materials with correlated electrons. The Center for Solar-Terrestrial Research (CSTR) centered at the Physics Department, operates 4 major remote ground based observing facilities, while having an expanding presence on NJIT campus. These remote facilities, Big Bear Solar Observatory (BBSO), Owens Valley Solar Array (OVSA), Second-generation Optimized Fabry-Pérot Doppler Imager (SOFDI) and Automated Geophysical Observatories (AGO) distributed across the Antarctic Iceshelf, provide NJIT with unique capabilities in optical-infrared and radio solar astronomy, as well as low, middle and upper atmospheric observations – enabling studies spanning the Sun’s surface through its extended atmosphere and on the Earth’s atmosphere, with more to come. In addition, CSTR is the PI organization in the Radiation Belt Storm Probes (RBSP) mission of the NASA Living With a Star (LWS) Program.

Andrei Sirenko

Professor at the Department of Physics, Chair

New Jersey Institute of Technology

His current research interests are in dusty plasmas and the educational use of plasmas for students and the general public. His recent work has concentrated on plasmas in advanced undergraduate laboratories and the development of tools to remote control laboratory equipment for educational purposes.

Zwicker is a Fellow of the APS (2010) and currently the Editor of the Forum on Physics and Society newsletter. Previously, he served as both Chair and Secretary/Treasurer for the Forum. Additionally, he has served on the APS Committee on Education, chairing the undergraduate education subcommittee. Besides his service to APS, he is the President of the Princeton Chapter of Sigma Xi, the Scientific Research Society.

He is an award-winning educator and science communicator. In 2005, an image from his dusty plasma laboratory won the inaugural Princeton University Art of Science competition. In 2006, the American Association of Physics Teachers named him one of their 75 significant physics educators. In 2012, his video submission to Alan Alda's "Flame Challenge" received an Honorable Mention ranking in the top 15 of the more than 800 submissions.

Statement:

I am honored to be included as a candidate for Vice-Chair of the Mid-Atlantic Section of the APS. As Stephan Schlamminger wrote in the February newsletter, the five states and the District of Columbia that make up our region did not have, until now, an APS section and I am thrilled that he took the initiative. As we all know, large APS meetings can be overwhelming and it is difficult to find the time to talk with colleagues outside of our own narrow scope of interest. Sectional meetings are ideal to learn what is new and exciting in other areas besides our own and to develop new friends, new colleagues and potential new ways to work together on topics of interest.

If elected, I will work to grow the membership of the Section, reaching out to our colleagues throughout the region and to student members. I would like to see us develop a fund to support student travel to our Sectional meetings, as other sections have done. Similarly, I believe it would be worthwhile to coordinate our meetings with local meetings of the American Association of Physics Teachers or the Society of Physics Students. Finally, I will work to ensure that our Sectional meetings are an interesting mixture of scientists from academic, industrial, and government laboratories from a wide range of physics topics.

Position: Treasurer

Silvina Gatica, Howard University

Resume:

Silvina Gatica is an associate professor at the Department of Physics and Astronomy, Howard University in Washington DC, where she has been a faculty member since 2005. She obtained her Ph.D in Physics in 1995 from the University of Buenos Aires. Later, she was a postdoctoral fellow at the University of Buenos Aires and Scientific Researcher member of the National

Research Council (CONICET, Argentina). In 2002, she moved to the US where she worked as a visiting professor at Pennsylvania State University for 2 years. She was an Affiliate Faculty at the Computational Science Center, George Mason University from 2005 to 2008. At Howard University, she has mentored 10 undergraduate students and is the advisor of 2 PhD students. Since 2008, she has been the PI of 6 research grants and she has been an active participant of two interdisciplinary inter college research programs funded by NSF, involving: Howard U., Harvard U., MIT, Cornell U., Gallaudet U. and Prince George Community College. She has taught physics for 27 years, has conducted research in condensed matter theory for 17 years and has coauthored more than 50 publications.

Statement:

I will be honored to serve as treasurer in the executive committee of the MAS. I will work with the Chairs and members to fulfill the goals of our APS section. I am particularly motivated to increase the participation of underrepresented groups in physics: African-American, Hispanic and Deaf and Hard-of-Hearing population. I will also continue encouraging the participation of women in physics to maintain a strong workforce in the academia and national laboratories.

Amy Mullin, University of Maryland, College Park

Resume:

AMY S. MULLIN, Professor of Chemistry, University of Maryland, College Park, 2005-present. B.A. in Chemistry, University of California, Santa Cruz, 1985. Ph.D., University of Colorado, Boulder, 1991. Postdoctoral research at Columbia University, 1992-1994, AAUW Postdoctoral Fellow. Clare Boothe Luce Assistant Professor, Boston University, 1994-2000; Associate Professor, Boston University, 2000-2005. ONR Young Investigator Award, NSF CAREER Award, 1996-2000. Camille Dreyfus Teacher Scholar, 1999-2004. AAAS Fellow, 2006. APS Fellow, 2008. Member, APS DCP, DAMOP and DLS. Creative Educator Award, CMNS, University of Maryland, 2011. APS DAMOP Program Committee, 2003-2006. Organizer of APS symposium, 2007; co-organizer of ACS symposium, 1996. Beckman Scholar Program Executive Committee, 2007-2011. Editorial Board, Resource Letters, American Journal of Physics and American Association of Physics Teachers, 2011-2013. APS Nominating Committee, 2012-2013. Editorial Board for Atoms, 2012-2014. Board member of Telluride Science Research Center, 2012-2015. NSF Division of Chemistry Committee of Visitors, 2013. APS Councilor for Division of Chemical Physics 2013-2017. RESEARCH INTERESTS: State and time resolved optical methods for investigating high energy molecules; quantum-state resolved transient optical detection of molecular collisions and reactions; behavior of molecules in strong optical fields; dynamics of molecules in extreme rotational states using an optical centrifuge; isotope fractionation in the early Earth atmosphere.

<http://www.chem.umd.edu/research/facultyprofiles/amymullin>

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Statement:

I am honored to be a candidate for Treasurer of the Mid-Atlantic Section of the APS. The role of Treasurer provides an opportunity to support the efforts of our young section as we prepare for our first annual meeting in 2014. The role of Treasurer is an important component in supporting the interests of the regional physics community and making connections among physicists in a broad range of environments. If chosen, my close proximity to APS headquarters will enable me ready access to meetings at APS headquarters and thereby facilitate interactions between MAS and APS. I am currently a Councilor for the Division of Chemical Physics and have been involved as a sorter for the March meeting several times. Through these activities, I have gained firsthand knowledge of processes and resources at APS. I have developed working relationships with members of the staff and leadership at APS. I am also involved with the American Association of Physics Teachers, a sister organization of APS that is also located in College Park, and in this capacity can help to facilitate the sorts of outreach activities that are becoming an increasingly important part of the mission of APS and its divisions.

Position: Member-at-Large - 2-year

Niel Brandt, Pennsylvania State University

Resume:

Current position: Professor of Astronomy and Astrophysics, Penn State University, 1997-2013.

Selected biographical data:

B.S. Caltech, 1992; Ph.D. University of Cambridge, 1996; Smithsonian Postdoctoral Fellow, Harvard-Smithsonian Center for Astrophysics, 1996-1997; Sloan Fellowship, 1999; NSF CAREER Award, 2000; American Astronomical Society Pierce Prize, 2004; APS Fellowship, 2009.

Relevant professional service positions:

APS Division of Astrophysics Executive Committee, 2006-2008; American Astronomical Society Award Committees and Committee on Astronomy and Public Policy; Scientific organizing committee member for 15 conferences and workshops; Collaborator on several large astrophysics projects (e.g., Chandra ACIS Team, NuSTAR, LSST); Regular reviewer of grant and observing proposals.

Research interests:

Active galaxies, starburst galaxies, cosmic X-ray surveys, high-energy astrophysics, large-scale data analyses, Large Synoptic Survey Telescope.

Additional information:

<http://www2.astro.psu.edu/~niel/cv/onepage.pdf>

Statement:

Having been an astrophysicist in the Mid-Atlantic region for 17 years, I would be pleased to help strengthen the local connections that can enable progress in physics research, teaching, outreach, and advocacy. Natural opportunities for this

will occur at the Section Meetings, and I want to organize first-rate and highly visible meetings that include the most exciting new results across all of physics - I will personally be most capable in ensuring effective coverage of new astrophysical and related discoveries. These Section Meetings must also be geographically/economically accessible to our many local undergraduates, graduate students, and postdoctoral researchers, and I want to ensure they are welcomed and that their most exciting discoveries are highlighted. Excellent student and postdoctoral researcher experiences at the Section Meetings will be one key way of growing the membership of the Mid-Atlantic Section, and I will more generally encourage this growth. Finally, as appropriate, I will ensure the Mid-Atlantic Section effectively advocates for physics and scientifically sound decision making at the regional and national levels.

Erin De Pree, St. Mary's College of Maryland

Resume:

Erin De Pree is an assistant professor of physics at St. Mary's College of Maryland where she leads the high-energy phenomenology research group. She graduated with her Ph.D. in high-energy theory from the College of William & Mary. De Pree also serves as faculty advisor for the SMC Society of Physics Students and Sigma Pi Sigma chapters; in the past, she has also served as chair of the Faculty Issues Committee and represented the physics department on the faculty senate.

Statement:

Engaging students in the APS community has been my focus since I joined the physics faculty at St. Mary's College of Maryland (a public, liberal-arts college) in 2008. I've integrated career discussions into the third semester physics course, founded the Sigma Pi Sigma chapter (which has inducted 27 students), and taken over thirty students to various conferences (including the March Meeting in Baltimore this year). Supporting our new Mid-Atlantic Section will provide our students with significantly more opportunities to engage with the greater physics community thus nurturing our future as field.

As Member-At-Large, I would help by bring my perspective from a small liberal arts college with a growing department to be part of our new, diverse section. Through active research with undergraduates and mentoring numerous students, I have learned that these students are generally unaware of the opportunities available to them. A successful, vibrant section will help draw more students into the field as well as serve the physicists in the region.

With executive committee members from a variety of backgrounds and institutions, I am confident that we can continue to form a regional section to benefit our both our current members as well as our future members. I look forward to our first meeting next fall!

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Leonard Finegold, Drexel University

Resume:

- Drexel University, Philadelphia, Department of Physics, Professor, Biophysics, 1974-present
- University of Cambridge, Cambridge, Department of Botany, Sabbatical Visiting Professor (with Felix Franks), 1987-88
- University of California at San Diego, Department of Biology, N.I.H. Special Fellow/American Cancer Society Research Scholar (with Jon Singer), 1971-73
- University of Colorado, Boulder, Department of Physics, Assistant (1965-71) and Associate Professor, 1971-74
- University of California, Department of Chemistry and Lawrence Radiation Laboratory, Berkeley, Research Associate (with Norman Phillips), 1962-65
- Harvard University, Cambridge, Division of Engineering and Applied Physics, Research Fellow (with William Paul), 1959-62
- University of London (Queen Mary College) B.Sc. Physics, 1956
- University of London (Queen Mary College) Ph.D., Physics, 1959
- Fellow, American Physical Society, 1993

Statement:

It has been said that the most important tools in physics are the social coffee cup and pencil and paper. Our Section will supply these tools. Rush Holt's welcome to the Section (our first newsletter) eloquently explains the importance of propinquity to physicists, which the Section provides; also that our Section is unique in that it includes the U.S. Congress.

I was at the Section's reception at the March meeting, and appreciated the wide range of physics and of career positions there. I like the way the Section is beginning: I served on the Division of Biological Physics soon after it started (Secretary/Treasurer, Chair of Prize and Fellowship Committees) and so have had some experience with a nascent APS entity. (I was also consulted recently on By-Laws.) I particularly like the way in which positions are rotated and shared among the members (for this Candidate's Statement I did see what other Sections do). I will work to increase participation by women and minorities at all levels of our discipline. The Section promises to be the best of the APS Sections.

Michael E. Fisher, University of Maryland, College Park

Resume:

I was born in Trinidad in the West Indies in 1931 but educated mainly in Britain, gaining a B.Sc. in physics from King's College London in 1951 and, following service in the Royal Air Force, a Ph.D. in 1957, and a Professorship in Physics in 1965. In 1966 my family and I moved to Cornell where I later became a chaired Professor of Chemistry, Physics, and Mathematics. Since 1987 my base has been at the University of Maryland currently as Distinguished University Professor Emeritus and Regents Professor.

As a theoretical scientist I have worked in the areas of statistical physics, the theory of condensed matter, especially magnetism and superfluid helium, and physical chemistry, as well as associated foundational and mathematical problems (such as Toeplitz determinants). Following early work building a high-speed electronic analog computer and studying numerical analysis, I have contributed to the modern theory of critical phenomena, renormalization groups, and phase transitions. More recently I took up problems in biophysics, especially the dynamics of motor proteins. Over the years my publications have totaled over 400 research articles, a score subsequently reprinted. Thirty-five graduate students have written theses with my guidance and over 50 postdoctoral associates have worked closely with me. I enjoy teaching and, in 1998, was happy to be recognized by the University of Maryland's Distinguished Scholar-Teacher Award.

As a Fellow (Queen's Medallist and one-time Vice President) of the Royal Society of London, I was elected a Foreign Associate of the U.S. National Academy of Sciences in 1983 and a Fellow of the American Philosophical Society in 1993. The Royal Society of Edinburgh, the Indian Academy of

Sciences, the Brazilian Academy of Sciences, and the Norwegian Society of Sciences and Letters have similarly honored me. In 1980 the Wolf Prize in Physics was shared with Ken Wilson and Leo Kadanoff. Honorary doctorates have been given by Yale, Tel Aviv University, the Weizmann Institute, and by ENS de Lyon. In 1970 the A.P.S. awarded me the Irving Langmuir Prize and, in 1995, I was delighted to receive the first Lars Onsager Memorial Prize.

Statement:

If elected as a Member at Large of the Mid-Atlantic Section of the American Physical Society I will feel an especial responsibility to help this new, but long overdue, Section of the APS, be successful.

In accord with the formulated aims of the Regional Sections of the APS, my focus will thus be on bringing together students of physics and practicing physicists from industry, academia, schools, hospitals, and national labs and, especially in the Washington area, scientific program managers in government.

In executing my role I will call on my experience as an APS Councilor at Large in 1985-1988, including service on the Committee on Publications and Council Representative on the Executive Committee of the Forum on the History of Science (on which I served as an Officer in 2000-2003). Specifically, in 1988-1990 I was a member of the APS Task Force on Governance.

Over the years I have also served, in particular, on the Executive and other Committees of Associated Universities Inc (AUI) which founded Brookhaven National Laboratories and which currently oversees the National Radio Astronomy Observatory. But service on various NSF, NRC, NAS, OTA, NASA and NIST Committees has also been given. Mainly in advisory roles, I have assisted in the organization of many national and international conferences, workshops, and schools. Since 1957 I have kept in close contact with graduate students and young physicists by frequently teaching short courses in

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symposia and summer schools throughout the United States and Canada as well as overseas in Europe, Australia, South Africa, Mexico, Brazil, Israel, India, Japan, and China.

Curtis Menyuk, University of Maryland Baltimore County

Statement:

I was educated as a physicist, and I am currently a Professor of Electrical Engineering and an affiliate member of the Department of Mathematics and Statistics at the University of Maryland Baltimore County. In my own research, I use physics concepts to create mathematical models to solve applied problems, mostly in optical fiber communications, laser physics, and nonlinear optics. I believe in the value of cross-disciplinary work, and I will try to promote that. Local societies play an important role in making us aware of work that is going on outside of the particular areas in which we are working and in promoting the careers of young scientists. I would be happy to contribute to this Society's activities.

Robert Morse, St. Albans School

Resume:

- B.A., Physics, Cornell University 1967; M.Ed., Boston University 1980; Ph.D., Education, University of Maryland 1995.
- 1968-82 Physics Teacher, Masconomet Regional H. S., Topsfield MA
- 1982-2012 Physics Master, St. Albans School, Washington DC.
- Member: AAPT, Chesapeake Section AAPT, APS, AAAS, NSTA, Electrostatics Society of America.
- Author: Teaching About Electrostatics, AAPT (1993); Teaching About Newton's Second Law, AAPT (2012); Franklin and Electrostatics - Ben Franklin as my Lab Partner, Wright Center for Science Education (2004); articles and letters in The Physics Teacher, American Journal of Physics, Journal of Electrostatics.
- Referee: The Physics Teacher, AJP, Journal of Electrostatics.
- Professional Activities: Physics Teaching Resource Agent, workshop presenter, 1985-present, including workshops at APS High School Teacher days and AAPT national meetings. High School Chair, LabFocus93; Content Panel for Physics, 2002 NRC report: Advanced Study of Mathematics and Science in U. S. High Schools. College Board : AP Physics Redesign Review Advisory Panel, 2007; Curriculum Development and Assessment Committee, 2008-2013. Co-Chair, Educational Testing Service AP Physics 1 Development Committee, 2013.
- Invited and contributed presentations and workshops at meetings of AAPT, APS, ESA, Gordon Research Conference.
- Association Offices: CSAAPT - VP for High Schools; AAPT Section Representative. AAPT Committees: High School, Laboratory, History and Philosophy of Physics.
- Honors: Presidential Award for Excellence in Science Teaching, 1988; Tandy Technology Teacher, 1995; AAPT Excellence in Pre-College Physics Teaching, 1998; APS

Distinguished Physics Teacher for DC, APS Centennial Meeting 1999.

Statement:

A scientifically literate public is necessary for the long-term prosperity of the country, the world and the enterprise of physics. Physics education research is a leader in the growing field of discipline-based education research. Joint national meetings of APS and AAPT such as the old New York meetings are no longer common, but several APS sections have a history of joint regional APS-AAPT meetings. I have presented work at the New England & Texas joint meetings. These occasions provide opportunities to develop broader understanding and lines of communication between the various communities of physicists and physics education. Regional partnerships of physicists and the AAPT Physics Teaching Resource Agents in some regions have been instrumental in giving opportunities for pre-college teachers to improve their knowledge of physics and their physics teaching skills. There are active AAPT sections in the Mid-Atlantic region, and the MAS should work towards joint meetings with these sections for our mutual benefit. If elected, I would propose that the Executive Committee should make establishing a tradition of joint meetings one of its priorities.

Vera N. Smolyaninova, Towson University

Resume:

- Moscow Institute of Physics and Technology, Russia. Physics & Engineering, M.S. 1988
- University of Maryland, College Park, MD, Physics, Ph.D. 1999.
- 2012-present: Professor of Physics, Department of Physics, Astronomy and Geosciences, Towson University, Towson, MD
- 2007-2012: Associate Professor, Department of Physics, Astronomy and Geosciences, Towson University
- 2002-2007: Assistant Professor, Department of Physics, Astronomy and Geosciences, Towson University
- 2001-2002: American Society of Engineering Education and Office of Naval Research Postdoctoral Fellow, Naval Research Laboratory, Washington, DC
- 2000-2001: Research Associate, Department of Physics, University of Maryland, College Park
- List of publications includes 54 refereed journal articles, 84 papers published in conference proceedings and/or presented at conferences, two invention disclosures, and one US patent, h-index 23.
- My publications in the area of metamaterials and transformation optics (invisibility cloaking etc.) generated wide press coverage including BBC News, Physics World, EurekAlert!(AAAS), New Scientist, Scientific American, NSF news, EE times, and other general news media around the world.
- I involve undergraduate students in my research. Three of my papers published with undergraduate students as co-authors were highlighted in the quarterly publication of the national

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Council on Undergraduate Research. Typically, about 15 publications are highlighted per year in the field of physics and astronomy.

- Reviewer for multiple journals including Physical Review, Physical Review Letters, Applied Physics Letters, Optics Letters, Optics Express, etc.; NSF panelist; APS March Meeting and CLEO session presider, CLEO/QELS Science Program Subcommittee member
- Disseminated my research on transformation optics by writing articles for a general audience and giving interview to several mass-media representatives including Physics World and New Scientist
- To excite interest in STEM disciplines in youth I conduct various outreach activities such as hands-on workshops for school students from kindergarten to high school level including all-girls audiences. I also provide research opportunities in my lab for high-school students and teachers.

Statement:

As every physicist would agree, in addition to being a source of technological advancements and broadening our basic knowledge, physics is great fun. I try to convey these points to my students and more general audiences through my teaching, research, and outreach. Findings of cutting edge research should be a part of any physics course to provoke scientific curiosity, which is a main driving force behind a process of acquiring scientific knowledge. Therefore, whenever possible I introduce examples from the most important current discoveries in physics, from the field of my expertise, from my own research, and invite students to visit my lab. I involve undergraduate students in my research, where they participate in every stage of a research project. To excite interest in STEM disciplines in youth I conduct various outreach activities such as hands-on workshops for school students from kindergarten to high school level including all-girls audiences. I also provide research opportunities in my lab for high-school students and teachers. My research on invisibility cloaking and other aspects of metamaterials and transformation optics offered me an opportunity to disseminate my findings among broader audiences through giving interviews to mass-media representatives including Physics World and New Scientist. This resulted in media coverage in BBC News, Physics World, EurekAlert!(AAAS), New Scientist, Scientific American, NSF news, EE times, and other general news media around the world. Hopefully, such efforts could raise public interest in physics achievements, help bring more funding, and most importantly, attract more curious young minds to physics.

Position: Student Representative

Kelly Pisane, West Virginia University

Resume:

- Ph.D., Physics in progress, West Virginia University (WVU), Morgantown, WV
- MS, Physics, WVU
- BA, Physics/Mathematics Minor, University of Missouri-Saint Louis (UMSL), Saint Louis, MO

- WVU: 1/09 - present
- Physics Department-Graduate Research Assistant
- Advisor: Dr. Diandra Leslie-Pelecky (1/12 – present); Dr. Sergei Urazhdin (9/09-8/11)
- Using inert-gas condensation and surfactant assisted milling to make magnetic nanoparticles. I use a combination of transmission electron microscopy, DC magnetic measurements, x-ray diffraction, electron diffraction, and x-ray photoelectron spectroscopy to characterize nanomaterials. Used e-beam lithography, photolithography, sputtering, and thermal evaporation to pattern nanoscale devices. Performed magnetic measurements to characterize multilayer behavior.
- Shared Research Facilities-Graduate Assistant (1/11-8/11)
- Trained and assisted users with the TEM. Performed cleanroom maintenance duties (cleaning, ordering supplies, maintaining chemical hygiene standards). Maintained and troubleshoot equipment in the cleanroom. Contacted vendors for quotes and kept an up-to-date inventory of supplies.
- Physics Department-Graduate Teaching Assistant (1/09-5/10 and 8/11-12/11)
- UMSL: 8/05-5/09
- Physics Department-Undergraduate Research Assistant, 5/08-5/09
- Advisor: Phil Fraundorf
- Studied presolar graphene spherules extracted from the Murchison meteorite. Measured sample dimensions from digital images. Took and developed transmission electron micrographs to use for mapping the sample areas as well as analyzed diffraction patterns.
- Physics Department-Supplemental Instructor (Astronomy), 8/06-12/06
- Math Department-Tutor, 8/06-5/09
- Scholarships and awards:
- NSF IGERT Traineeship: Research and Education in Nanotoxicity, 2012 - present
- WVNano Bridge Award, 2009-2010
- NASA-Missouri Space Grant Consortium Undergraduate Researcher, 2008
- National Merit Scholarship (UMSL), 2005-2009
- Missouri Bright Flight Scholarship (UMSL), 2005-2009

Statement:

I am excited for the opportunity to be part of the new Mid-Atlantic Section of the American Physical Society. The formation of this section is very exciting since, in addition to some great universities, we have excellent government and private research groups in our area. The greatest benefit of a local section of APS is the ability to organize section meetings. Such meetings benefit attendees by allowing professors, students, and industry and government researchers to network with others in their area. These regional meetings are especially important for graduate students since most of us do not have the chance to visit national labs or industrial labs and interact with researchers outside academia-where a large percentage of us are heading. This is an excellent chance to present our work

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to experts in our fields and gain invaluable feedback while becoming more familiar with the research being done in our area.

I would like to seek opportunities to increase graduate students' opportunities at APS regional meetings by looking for travel assistance for graduate students otherwise unable to attend and by pushing for representative turnout from universities, national labs, and private research groups from across the region. I would also like to organize an informal "lunch with an expert" event that could be part of any Mid-Atlantic Section meetings where small groups of students and post-docs meet with more-senior scientists who share their research interests and ask questions. It is important that graduate students develop connections with scientists from their local community who can provide guidance and the insight of experience as we begin our careers.

Kathryne Sparks Woodle, Pennsylvania State University

Resume:

My name is Kathryne Sparks Woodle, and I am a sixth-year particle astrophysics graduate student at Penn State. As one of the senior graduate students working on the High Altitude Water Cherenkov (HAWC) observatory, I have been an active participant in Monte Carlo sensitivity studies, designing analysis software, and building the detector in Sierra Negra, Mexico. My primary research involves searching for Gamma-Ray Bursts, extremely powerful transient astrophysical events that have yet to be observed at TeV energies. In addition to my physics interests, I am also a member of the Graduate Women in Science (GWIS) chapter at Penn State, leading the organization's professional development and networking conference for approximately 80 people for the past two years. Last year I was the President of the PSU Physics and Astronomy for Women (PAW) group and am spear-heading the planning of the 2014 APS Conference for Undergraduate Women in Physics at Penn State. I have also taken part in many outreach projects during my graduate career, including teaching high school students in the Upward Bound Math and Science Program, designing and demonstrating experiments for elementary and middle school students in the community, and helping organize a "Women in STEM" mixer to encourage the development of a strong interconnected STEM community. On a side note, I am a huge fan of many college and professional sports teams and love attending Shakespeare productions.

Statement:

As the student member on the MAS executive committee, I would bring an enthusiastic, passionate, and organized approach to examining the issues brought to the committee and helping shape the future of this new APS section. Through my experience coordinating conferences, I have learned the value of detailed organization, delegation, and budgeting, all of which I will bring to the MAS student member position. I firmly believe in the responsibility of scientists to help educate society and create a community where all feel welcome and able to succeed.

LOGO COMPETITION

Greetings to all members of the Mid-Atlantic Section of the APS and newsletter readers!

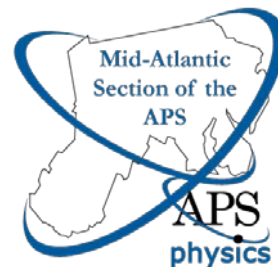
The logo competition has reached an end. Thank you for everyone who contributed. Members of the executive committee were unable to reach a decision between the top two entries, which are shown below. We are currently awaiting input from APS headquarters on branding before moving forward with further discussions amongst the executive committee. You will be among the first to know when a decision is reached.

Again, thank you for your contributions and your interest!

Sincerely,

Joseph Tedesco,

Member-At-Large, M-ASAPS and Chair, Logo Competition Committee



Welcome to the second edition of the M-AS newsletter.

Deadline for submissions to the third M-AS newsletter is February 28, 2014.

Please submit your contributions to the editor: Uwe Arp (uwe.arp@gmail.com).