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The Office of Postdoctoral Affairs serves close to 400 postdoctoral scholars and fellows at University Park from various colleges and centers. The mission of the office is to provide professional and career development opportunities that would complement postdocs’ research training at Penn State. In that regard, the office organizes workshops on creating Individual Development Plan, exploring careers, preparing for academic careers, and various activities that prepare and support their transition to independent careers.

OPA creates and organizes workshops on Individual Development Plan, mentorship training, grant writing, tools for career development, seminars and panel discussions on career exploration. Training postdocs to be able to communicate the science they do to a broad audience, is one of the core tasks of office and is implemented through training workshops, science café style presentations and an annual research exhibition.

OPA works closely with the Penn State Postdoc Society and its leadership to create a welcoming and supportive community for postdocs. The office is also responsible for the policy around postdocs and is a node for development of procedures and policy revisions.

Through this biannual magazine, we want to capture salient workshops and events hosted by the Office of Postdoctoral Affairs and showcase the research being done by current postdocs and our alumni in academic and non-academic careers.
The Office of Postdoctoral Affairs (OPA) serves an important institutional education and research mission — serving our postdoc community in excelling in their research by providing assistance with many of their non-technical needs, and by continually providing career counseling to facilitate their transition into desired professional positions. OPA works throughout the year designing educational and training programs, networking activities, and professional speaking support to accelerate the career transitions for postdocs. Pallavi Eswara, Director, OPA, is passionate and dedicated leader and has committed herself to the success of postdocs at Penn State. She has been transforming OPA into an exemplary unit for nurturing and promoting the postdoc careers.

OPA has developed training activities that fulfill the vision of postdoctoral mentoring programs expected by various federal agencies such as National Science Foundation. A systematic set of activities are designed and implemented by OPA throughout the year to provide exposure to postdocs to professional speaking and poster presentations (workshops and lunch events), preparation of grant proposal (seed funds for travel support to conferences and workshops), publications and presentations (invited mentoring lectures at the annual events); guidance on ways to improve teaching and mentoring skills (lecture opportunities through networking events and café talks); and career counseling (preparation for career in academia and industry).

OPA’s activities are continually growing to accommodate the changing professional employment landscape and postdoc interests. Stating this year, OPA will be publishing annual magazine that summarizes its annual professional training and mentoring activities, outcomes from these activities, planned periodic events to maintain engagement with Penn State academic community, postdoc transitions and success stories, and brief postdoctoral research articles. This is the inaugural issues of the OPA annual magazine. I congratulate OPA on reaching this milestone and very much look forward to reading this magazine.
Postdoctoral scholars are critical to the Penn State research enterprise. The creativity, intensity, and new ideas that these researchers bring to our programs enrich our work in many ways. The Office of the Senior Vice President for Research is the administrative home for the Office of Postdoctoral Affairs (OPA). We are committed to training the next generation of scientists, researchers, and experts. Penn State prides itself on its uniquely interdisciplinary research culture.

Through tailored events for Postdoctoral scholars, including networking, and outreach, we actively and intentionally focus on ensuring postdocs benefit from many relationships across our university. OPA works to catalyze and recognize success through programs such as the Outstanding Mentor and Mentee awards given annually. Postdocs network with researchers at the top of their fields, and both OPA and the University offer many opportunities for our postdoctoral scholars to showcase their work. Communication skills are also critical for researchers in all fields, and Penn State is committed to training our scholars improve their ability to communicate their research accomplishments. OPA’s postdoc-specific science communication training programs are an example of the importance we place on developing these key skill sets for the world’s future scientists. We also see it as our duty to provide our postdoctoral scholars with the necessary support to adjust to new communities, new workplaces, and new cultures, and the Office of Postdoctoral Affairs is dedicated to helping this critical community of researchers navigate new directions. The life of a researcher is truly an adventure, and it’s our pleasure and privilege to be a part of the careers of our outstanding postdoctoral scholars.

Lora Weiss
Senior VP for Research

Speaking at ScienceWriters 2019, Weiss shared that Penn State researchers have written on more than 15,000 topics in the last five years alone, which is made possible by Penn State “breaking the traditional disciplinary research boundaries” in order to “enable breakthroughs of inordinate proportion.” Image: Patrick Mansell, Penn State Office Of Strategic Communications
The Penn State Postdoctoral Society (PSPS) recognizes that due to temporary appointments, postdocs are often faced with a high need for professional materials to market themselves but little time or resources to acquire them. Specifically, we have teamed up with a local professional photographer and a printing service to offer subsidized basic professional headshot photos and free business cards for postdocs.

Professional networking sites, presentations, and seminar announcements often require a professional headshot photo, which can be expensive individual sessions and may require a visit to a studio. Annually, during National Postdoc Appreciation week, we invite a professional photographer on campus to take headshot photographs of postdocs and PSPS subsidizes the cost of the photos. In addition, PSPS uses Penn State Multimedia and Print Center to print and provide business cards to postdocs. We offer 100 postdocs per year 20 free Penn State business cards and PSPS covers the cost. Overall, through organizing in order to divide costs and matching volume to needs, PSPS has demonstrated the possibility to provide postdocs with materials for professionalism on a limited budget.
The Penn State Postdoc Society, or PSPS is made of postdoctoral scholars, fellows and assistant research professors. PSPS executive council members lead this group and create various professional development, networking and social opportunities for the postdoc and early career researcher community.

Follow the link below to be navigated to the PSPS website. More information about the activities of the society can be found at https://postdoc.psu.edu/
Mentoring Matters

Every year, since 2014, Penn State Postdoctoral Society has awarded awards to Outstanding Postdoctoral Researcher and Outstanding Postdoc Faculty Mentor. The Awards committee doesn’t have an enviable task as they sieve through the nominations and identify the recipients. In 2019, Dr. Molly Hanlon was the recipient of the 2019 Outstanding Postdoc Award. Dr. Hanlon was nominated by Drs. Jonathan Lynch, Kathleen Brown, Erin Connolly, and Teh-hui Kao. She is a postdoc in the Department of Plant Science. In the words of her nominators “Molly is a truly exceptional young scientist, conducting novel research with vigor and creativity, managing a highly complex and multidisciplinary research project, and mentoring young scientists, all while maintaining very active outreach.”

Dr. Klaus Keller was the recipient of the 2019 Outstanding Postdoc Mentor Award. Dr. Keller is a Professor in the Department of Geosciences and the Director for the Center for Climate Risk Management. He was nominated by a current postdoc in his lab, Dr. Mahkameh Zarekarizi. Dr. Keller’s dedication to helping his postdoctoral mentees through professional development and teaching opportunities, maintaining consistent and open communication, providing constructive feedback, and providing opportunities to attend scientific meetings led to his selection as the recipient of the 2019 Outstanding Postdoc Mentor.

Dr. Molly Hanlon
Recipient of the 2019 Outstanding Postdoc Award

Dr. Klaus Keller
Recipient of the 2019 Outstanding Postdoc Mentor Award
Explaining your science to another scientist, but with no jargon? And competing with other postdocs doing the same for prizes—that is what postdocs and assistant research professors are doing every Fall. Through the Annual Postdoc Research Exhibition, Office of Postdoctoral Affairs and Penn State Postdoc Society organize poster session, lightning talk and short talk competitions to encourage early career scientists to get experience in science communication. We hold the exhibition during National Postdoc Appreciation Week in mid-September, when universities across the nation plan activities to recognize and reward contributions of postdoctoral trainees with various professional and social events. On September 28, 2019, at the 12th Annual Postdoc Research Exhibition, we had approximately 40 postdocs from various disciplines compete for first, second, third prizes in the poster session. Judges are faculty members, staff and other postdocs from unrelated disciplines, evaluating the poster presentation based on a rubric created specifically for presenting to a lay audience. Lightning Talk and Short talk competitions are held in two stages with the selected finalists from the first level getting the opportunity to present at the exhibition. The Annual Postdoc Research Exhibition is the largest professional development event for postdocs and assistant research professors. It is organized by a committee of postdocs and assistant research professors with advice and support from the Office of Postdoctoral Affairs.
Organizing the Postdoc Exhibition

Postdoc research exhibition is possible due to the active participation of postdocs, assistant research professors, graduate student volunteers, and dedicated staff. The Postdoc Exhibition Committee for 2019 included Emma Lee (Office of Postdoctoral Affairs Staff Assistant).

Stephanie Klein and Alden Perkins (Plant Science) tallying votes for poster and talk competition

Emma Lee, OPA Staff Assistant
Postdoc Exhibition Award Recipients

Poster Competition

**FIRST PLACE**
Dr. Yang Wu, Engineering Science and Mechanics, Research group of Prof. Ibrahim T. Ozbolat. Yang’s poster title is “Scaffold-free Bioprinting of Zonally-stratified Human Articular Cartilage”

**SECOND PLACE**
Dr. Subhadip Ghosh, Chemistry, Research group of Prof. Ayusman Sen Subhadip’s poster title is “Motility of Enzyme-Powered Vesicles”

**THIRD PLACE**
Dr. Marco Brustolin, Entomology, Research group of Prof. Jason Rasgon. Marco’s poster title is “Emergent viruses and their interactions in Aedes aegypti: Mayaro and Zika virus coinfected mosquitoes can successfully transmit both pathogens”

Short Talk Competition

Dr. Holly Harris, Center for Childhood Obesity Research, Research group of Prof. Jennifer Savage Williams. Holly’s talk title was titled “Eating your feelings: Understanding how parents influence children’s development of emotional overeating in an obesity-prevention program”

Lightning Talk Competition

**Audience Prize** — Dr. Anuradha Gupta, Institute of Gravitation and the Cosmos, Research group of Prof. B.S. Sathyaprakash. Anuradha’s talk title is “Listening to the symphony of the Universe”

**Judges Prize** — Dr. Chloe Drummond, Entomology, Research group of Prof. Tanya Renner. Chloe’s talk title is “The mystery behind sundew carnivory: how does it dew that?”
Science Café

Webster’s Café in downtown State College and Office of Postdoctoral Affairs collaborated to create a science café series to provide postdocs an opportunity to practice their science communication chops. Starting in March 2019, several postdocs and assistant research professors have spoken about their research to the audience members who were Webster’s regulars, postdocs, undergrads, and grad students.
Martina Colovi
Geography

My research focuses on the application of Geographical Information Science methods and techniques to natural disasters and emergencies, with emphasis on extreme weather events. Specifically, I’m employing a downscaling algorithm based on the Analog Ensemble (AnEn) method to identify extreme weather events from datasets that vary in spatio-temporal resolution.

The output is combined with socioeconomic data to quantify the vulnerability of urban populations to heat waves. Furthermore, I’m investigating the overwintering survival of the honey bee. The survival of this economically valuable and crucial pollinator is important for completely preserving biodiversity and for the vitality of the whole ecosystem. Lastly, I’m analyzing how the distribution of forage species responds to environmental and climate predictors, with the goal of generating a prediction model based on projected climates.

Niyantiri Ram
Psychology & Child Study Center

How parents and children respond to one another in real time during emotionally challenging situations can ultimately shape children’s long-term ability to cope with negative emotions and stress. The core focus of my research program is to understand how parents and children navigate emotional challenging encounters from moment to moment. I am also interested in examining the physiological underpinnings of parent-child interaction. To address my research questions, I use observational methods, biological measures (e.g., cardiac activity, skin conductance), and quantitative methods such as multilevel modeling.

Currently, I am examining how children’s cardiac responses shift dynamically from second by second in response to dynamic changes in emotional intensity in 3-min chase scenes from children’s movies. I find that children show a pattern of physiological responding that indexes arousal and engagement in seconds with the movie clip increases in emotional intensity, suggesting that children’s responses to emotional situations may occur on very fast timescales (i.e., seconds). I am also examining the extent to which parental scaffolding of children’s coping strategies during a frustrating situation predicts decreases in children’s physiological and affective arousal in subsequent moments, and how these patterns may change as children get older.
Postdoc Features

Hidetoshi Inamine  
Biology

I am fascinated by how biodiversity is generated and maintained across space and time. In my past work, I have studied how new species are formed, the causes of monarch butterfly population’s decline, and how an animal host regulates the hyperdiverse microbial community inhabiting its gut. A common challenge across these different questions is that biological systems are “complex”: a small change in an organism could amplify through their interactions with other organisms, leading to an unexpected outcome at the population or community level. I enjoy using mathematical models to uncover these often hidden mechanisms underlying biodiversity.

At Penn State, I study how competition and disturbance together enable coexistence of multiple species. Competition between species over limited resource is a key driver of biodiversity, shaping communities ranging from simple laboratory community of bacteria to complex tropical forest. The severity of competition that an organism experiences depends on the number of competitors around. Disturbance to a community, such as fire, flood, storm, drought, pesticide application, and disease outbreak, may kill off competitors and therefore clear out the competitive arena for the survivors. I use mathematical models to understand how different aspects of disturbance, specifically its intensity and frequency, lead to different community structures. I then test these predictions using a laboratory bacteria community, with the goal of generalizing to the natural world around us.

Juan Margalef  
Physics

Black holes (BH) are regions of the Universe where the gravitational pull is so strong that nothing, not even the light, can get out of them (that is why they are black). Surrounding a BH there exists the so-called event horizon. It is located at the last place from where the light can no longer escape. For static BH, this horizon is also static, but for rotating BH or for pairs of BHs orbiting each other (like the Moon and the Earth), this horizon is more complicated and in general changes over time. That is why we call them dynamical horizons. Understanding this evolution allows to understand better the origin and destiny of BH. Moreover, since 2015, we have detected a few collisions between BHs. In those extremely violent events, the horizons also merge so we can compare the experimental data with our theoretical results describing how the horizons in this situation should behave.

I work at the Institute for Gravitation and the Cosmos with professor Abhay Ashtekar. Our goal is to understand this evolution with the help of powerful mathematical tools borrowed from, among others, the field of differential and symplectic geometry. Hopefully, with our work, we will shed some (metaphorical) light into BHs.
Joshua Garber  
Geosciences

Subduction zones—where Earth’s tectonic plates dive into the mantle—guide the global redistribution of materials between the surface and deep Earth. For example, chemical reactions in the subducting plate determine the long-term recycling of water, carbon dioxide, and numerous other important compounds and elements. These zones are significant in our understanding of the evolution of earth and formation of metallic ores such as Copper, Tungsten and Molybdenum. One way to study subduction is to examine rocks that detached from the downgoing plate and exhumed to the surface, where they are now exposed in mountain belts. Along these lines, my postdoc work is part of a collaborative, interdisciplinary National Science Foundation grant focused on the Western Alps, a well-studied locale that contains the exhumed remnants of a subducting plate. I am working with Dr. Maureen Feineman and Dr. Andrew Smye. We aim to understand the i) the time-and length-scales over which critical chemical reactions occur in the downgoing plate, and ii) the consequences of these reactions for terrestrial volatile and trace-element recycling. My efforts include field work to establish sample context (pictured) followed by detailed chemical analyses using an array of instruments at Penn State’s Materials Characterization Laboratory and Earth and Environmental Science Laboratory.

The chemistry of subduction is important for several reasons. Geologists think that subduction is intimately tied with the formation of continental crust—so studying subduction is highly relevant to the history of the continents, with connections to the origin and evolution of life on Earth. Subduction zones are further associated with the formation of ore deposits, including those of copper, molybdenum, and tungsten, providing tangible economic benefits to humans. Finally, subduction zones are associated with significant geologic hazards, including megathrust earthquakes and arc volcanic eruptions, so determining feedbacks between chemical and physical processes associated with subduction may have long-term societal implications.

OPA Staff Spotlight

Emma Lee is a staff assistant for the Office of Postdoctoral Affairs. She is a senior Finance and Economics major in the Smeal College of Business and the College of the Liberal Arts. At Penn State, she is involved in the Nittany Lion Fund, Global Business Brigades, and a professional business fraternity, Delta Sigma Pi. She will be working in investment banking in New York City upon graduation. A native of State College, PA, Emma enjoys hiking, traveling, going to concerts and music festivals in her free time.
Alumni Features

Kari Frank
Director of Administration, Northwestern University

The workshops and other events that I participated in, organized by the OPA and/or PSPS, were quite useful. They helped me become aware of various skills, such as negotiating or how to put together a CV, that are important for future career growth. What I learned there has not only been useful to me personally, but is also useful for me to share now with postdocs (and graduate students) that I interact with in my current role. I have even suggested similar workshops or resources for our students/postdocs here, and for the whole astronomy community via my role on the American Astronomical Society’s Employment Committee.

The experience I gained as a member and chair of the PSPS council had made even more of an impact. First, getting the chance to work with postdocs from across campus, in a variety of disciplines, not only gave me a wider view of academia and the postdoc experience, but also how to work with a team of varied backgrounds and training. In this aspect, it was a particularly rewarding experience. The skills learned in how to manage a team of people, organize events, communicate with our postdoc members, and work within both the research and administrative environment of a university (to name a few of the skills) all provided me with exactly the background I needed for my current position—I use all of these skills every day. It is also important to mention that this experience was pivotal in my decision that pursuing my current career path was the right one for me. I would not have been nearly as well-prepared for it without the experiences gained from the OPA and PSPS.

Olivenne Skinner
Assistant Professor, Wright State University

I was a post-doctoral fellow in the Department of Human Development and Family Studies (HDFS) during the 2015-17 academic year. I worked on Family Relationships Project under the mentorship of Dr. Susan McHale studying adolescent’s experiences in the context of their families and the ways in which gender and race are related to Black youth’s developmental outcomes. During my second year at Penn State, I was supported through the Africana Research Center’s postdoctoral program and I was later awarded a National Science Foundation postdoctoral fellowship. I am currently an Assistant Professor in the department of Psychology and the Merrill Palmer Skillman Institute for Child and Family Studies at Wayne State University where I am actively involved in research, teaching, and mentoring students. The workshops offered through the office of post-doctoral affairs was crucial in helping me to refine my research presentation and grant writing skills and they provided many opportunities to network with a diverse group of early career scholars. In addition, the office of post-doctoral affairs connected me to resources outside the university like the Professional Advancement Initiative which sponsored many leadership and grant writing workshops. Overall, the resources provided by the office of post-doctoral affairs helped to prepare me for the job market and I still draw from them as I navigate the first few years of my faculty position.
Alumni Features

Mikhail Cubarovs  
Process Development Engineer, Infineon Technologies

As a postdoc, I worked under supervision of Prof. Joan M. Redwing within 2DCC and MRI. The work was on the development of the chemical vapor process for the growth of 2D transition metal dichalcogenides, alloys and heterostructures. The workshops held by the OPA helped to get better understanding on the possible career paths after postdoc, what is different between them and how to prepare application materials. Postdoc annual exhibition was useful to meet with other postdocs from the University, discuss with them their work and career path. All this led to a better overview of variety of different possibilities to proceed in research.

It would be useful to have panel discussions with young faculty members as well as researchers from the industry on the possible evolution of their professional and career development to cover broader spectra of different stories as every case is highly individual. Otherwise, keeping current activities at the high level is already great help!

Nikki Hill  
Assistant Professor, Penn State College of Nursing

As a Postdoctoral Fellow at Penn State I attended multiple seminars and workshops offered by the Office of Postdoctoral Affairs, primarily focused on professional development and preparation for a faculty job search. These opportunities were extremely valuable since the content is not typically covered during a PhD program, yet is critical for success. In addition, at the time I was the only postdoc in our College, so having the Office as a link for meeting other postdocs as well as a resource for answering questions as they come up was critical.

Your postdoc is a gift of time to focus on YOUR development. Take advantage of the wealth of opportunities Penn State offers to build the skills in which you feel less confident, practice and be recognized for your areas of strength, and make connections with the larger scientific community (especially outside of your discipline). Consider the aspects of your work that energize you, and be thoughtful about pursuing a career where you can contribute and grow in those areas.
Science Outreach
Office of Postdoctoral Affairs supports the science outreach and community engagement via science of postdocs. Penn State Postdoc Society (PSPS) members actively participate in the many events organized by Science U, Eberly College of Science’s outreach office. Last year, Michelle Tomczyk, Ty Lees and Hugo Alvarez participated in Special Olympics and engaged the attendees and their care givers with making extra-large bubbles.

Career Outside Academics
The Office of Postdoctoral Affairs collaborated with Strategic Interdisciplinary Research Office (SIRO) at Penn State to offer a seminar on careers in research administration. The goal was to inform and educate postdoctoral researchers and graduate students about the range of non-academic careers at higher education institutions. The seminar was presented by Dr. Shashank Priya, Associate VP for Research & Director of Strategic Interdisciplinary Office (SIRO) and Professor, Material Science and Engineering. He talked about careers in research administration, grant writing and creating strategic collaborations in higher education institutions. The content covered included about the competencies needed for such career, transferable skills that postdocs have and the impact of such positions in higher education. This seminar was successful beyond imparting education as SIRO could recruit a recently graduated Ph.D. student.
Diversity Statement

Increasingly, faculty search committees are asking and expecting a diversity statement or thoughts on diversity/inclusion woven into teaching statements. Postdocs get training to reflect on their thoughts and practices around diversity and inclusion and how they can articulate these in a statement or during interviews.

Individual Development Plan Workshops

An individual development plan (IDP) is a tool to assist postdoctoral scholars, fellows and research staff in their career, professional and personal development. The primary purpose is to help them reach short and long-term career goals. Based on Federation of American Society of Experimental Biology IDP template and resources around IDP by various other professional societies, there is a template that postdocs can download from the website of the office and attend the interactive workshop on IDP to identify their strengths, interests and values and create goals for their careers.
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This publication is available in alternative media on request. The University is committed to equal access to programs, facilities, admission and employment for all persons. It is the policy of the University to maintain an environment free of harassment and free of discrimination against any person because of age, race, color, ancestry, national origin, religion, creed, service in the uniformed services (as defined in state and federal law), veteran status, sex, sexual orientation, marital or family status, pregnancy, pregnancy-related conditions, physical or mental disability, gender, perceived gender, gender identity, genetic information or political ideas. Discriminatory conduct and harassment, as well as sexual misconduct and relationship violence, violates the dignity of individuals, impedes the realization of the University’s educational mission, and will not be tolerated. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Office, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-5901, Email: aao@psu.edu, Tel (814) 863-0471. MPC 5157196