

The Post-y

Newsletter for the SOT Postdoctoral Assembly

Winter 2017



2017 Society of Toxicology Meeting



The 2017 Annual Meeting is quickly approaching. For those of us who typically procrastinate, please be sure to go to the [Annual Meeting site](#) to find registration and housing resources, as well as a city guide to enhance your experience. *Be sure to purchase a ticket to our Postdoc Luncheon!* As many of us scramble to complete experiments to present to our community of scholars, getting organized and professionally prepared for the Annual Meeting often gets pushed to tomorrow's to-do list. However, it is exactly these career development activities and opportunities which will greatly benefit us as postdocs as we begin to transition to the next phases of our careers. To enhance your experience at the 2017 Annual Meeting, we have provided a complete list of events, which are specifically coordinated for postdoctoral scholars on pages 6-11, as well as a "Survival Guide to Networking at the SOT Annual Meeting" on pages 4-5. I hope that you take advantage of the ample resources we have at our fingertips and make the most out of your time in Baltimore. I look forward to seeing you all there!

*Kari Sant, PhD
Postdoctoral Assembly Treasurer*

Best Postdoctoral Publication Awards

The SOT Postdoctoral Assembly presents the Best Postdoctoral Publication Awards (BPPA) each year at the Annual Meeting to recognize outstanding published works in the field of toxicology accomplished by members in formal mentored postdoctoral positions. Applications were eligible this year if papers were published between October 1, 2015, and September 25, 2016. Out of the outstanding pool of applicants, three recipients were selected. Applications were reviewed by the Postdoctoral Assembly Board and outside reviewers with matching scientific expertise using the NIH conflict of interest, confidentiality, and nondisclosure rules. The 2017 awards will be presented during the Postdoctoral Luncheon at the 56th Annual Meeting in Baltimore, MD on Tuesday, March 14 at noon. Please be sure to come by, enjoy the luncheon, and congratulate the recipients!

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2016-2017 SOT PDA Board

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Best Postdoctoral Publication Award Recipients

Fabian Grimm, Texas A&M University

Fabian Grimm is a postdoctoral research scientist in the Department of Veterinary Integrative Biosciences at Texas A&M University. His research in Dr. Ivan Rusyn's laboratory focuses on the application of organotypic and population-based cell culture models in the development and implementation of high-content screening strategies for chemical safety assessments. Prior to joining Texas A&M, Dr. Grimm was an NIH/NIEHS Superfund Research Program trainee and earned his PhD in Human Toxicology from the University of Iowa. For his thesis, he investigated the role of metabolism in the disposition and bioactivation of polychlorinated biphenyls. Dr. Grimm is the recipient of the Society of Toxicology's 2017 "Syngenta Fellowship Award in Human Health Applications of New Technologies" and 2015 "Colgate-Palmolive Postdoctoral Fellowship Award in In Vitro Toxicology."



Sascha Nicklisch, Scripps Institution of Oceanography

Sascha Nicklisch is a Postdoctoral Research Fellow at Scripps Institution of Oceanography (SIO), UC San Diego. He majored in biological sciences at the University of Cologne, Germany, and received a PhD in biochemistry from the Institute of Biochemistry at Cologne University in 2008. Prior to joining SIO in 2012, he worked a year as Research Associate in the Experimental Physics Department at the University of Osnabrück, Germany, and another two years as a Postdoctoral Research Fellow in the Marine Science Institute at UC Santa Barbara. His research interests include structure-function analysis of diverse soluble enzymes and membrane transporters, drug and persistent organic pollutant (POP) interactions with mammalian and fish ABC-type transporters and their application in chemical bioaccumulation and bio-monitoring, as well as environmental and human toxicology. Sascha has reviewed projects and co-authored reports on environmental pollution and aquatic toxicology for the City of San Diego, UC Santa Barbara, Portland State University, and for the California Council on Science and Technology (CCST). Government agencies, private donors, and foundations have funded Sascha's research. He has published 12 articles in peer-reviewed journals, including his recent key study in Science Advances that was granted the 2017 Best Postdoctoral Publication Award from the Society of Toxicology.



Mira Pavkovic, Bayer AG

Mira Pavkovic is a postdoctoral research scientist who recently joined the department of Biomarker Research at Bayer in Germany. She received her PhD in Biology from the University of Dusseldorf (Germany) in 2014, evaluating microRNAs as safety biomarkers in preclinical toxicity studies in the laboratory of Dr. Heidrun Ellinger-Ziegelbauer (Toxicology Department, Bayer). With her work, she also made important contributions to the HESI Biomarkers of Nephrotoxicity Committee. As a postdoctoral research fellow from 2014 to 2016 in the laboratory of Dr. Vishal S. Vaidya at the Harvard Medical School and the Brigham and Women's Hospital in Boston, Dr. Pavkovic continued research on microRNA biomarkers expanding her experience into the area of clinical and translational toxicology. During this time, she was awarded a research fellowship from the Deutsche Forschungsgemeinschaft (DFG) and won in total five awards from different SOT Specialty Sections. The latter includes the prestigious BPPA for her publication in ToxSci (2016, 152 (1): 205-213), reporting on noninvasive detection of acute kidney injury in humans by combining the sensitivity of KIM-1 along with mechanistic potentials of three microRNAs. Currently, she is working on the discovery, validation, and qualification of biomarkers for diabetic kidney disease (DKD) under the umbrella of IMI's Biomarker Enterprise to Attack DKD (BEAt DKD).



Congratulations to our 2017 BPPA Awardees! If you are interested in competing for the 2018 BPPA award, please check out the award [website](#) in July 2017, and stay tuned for announcements from the PDA in summer 2017.

PDA Board Members Elected for 2017-2018

Vice Chair: Manushree Bharadwaj

Secretary: Gurjot Kaur

Treasurer: Marianna Stamou

Councilor: Cynthia Browning

Councilor: Dilshan Harischandra

The results of the PDA election have been released. More information on the officers can be found on the PDA webpage.

We wish the 2017-18 Board all the best as they assume their new leadership roles on May 1st.

Taking Control of Your Training: IDP to the Rescue

Kari Sant, PhD, University of Massachusetts

The Individual Development Plan (IDP) has become a standard resource for the career development of postdoctoral scholars and advanced graduate students. Academic institutions, government and private granting agencies, and even some corporations now require trainees to complete an IDP. While many of us have probably done so already, I'm sure a few of us have not. So what is an IDP? What is the benefit?

The IDP was developed in order to address the 'failing' standards of professional development for PhD students and postdocs in the biomedical sciences. Most PhDs are driven to postdoc within the academic sector, despite that most of us will pursue careers outside of academia. These traditional postdoc positions often ignore many of the skills necessary to succeed in government, industry, or non-traditional academic careers. So what can we do to prevent this dichotomy?

The IDP is a tool used to help close this training gap. First, it helps identify careers which will match your skills, interests, and values. Once you have identified your long-term goals, the IDP encourages you to develop short-term, attainable goals which will facilitate the transition to your desired career. The IDP is meant to be shared, and in part, developed with your postdoctoral mentor. Though many of us have great relationships with our mentors, others may need an established document to encourage open career conversations with their PI. And of course, the IDP encourages you to identify mentors other than your PI for career development (check out the [SOT Mentor Match program](#)).

Check out some of the excellent resources publicly available (for free!), and develop or revisit your IDP.

Resources

["My IDP" tool by Science Careers](#)

[UMass Center for Biomedical Career Development's IDP site.](#)



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Our Survival Guide to Networking at the SOT Annual Meeting

Joe Cichocki, PhD, Texas A&M University

Greg Smith, PhD, University of North Carolina

Networking at the SOT Annual Meeting can be a huge undertaking for most individuals, but is a particularly challenging experience for graduate students and postdocs. There are people that love to talk (others probably think they love to hear themselves talk!), those of whom would rather have a tooth pulled, and everyone in-between. Nevertheless, almost everyone finds a large crowd overwhelming. Considering there are over 6,500 registrants for the 56th SOT Annual Meeting in Baltimore, we would say that qualifies as a large crowd! But not to fear! There are some incredible built-in mechanisms at SOT to encourage collaboration and networking among toxicologists. These types of opportunities help to make the crowd more manageable and are excellent for all meeting attendees, especially trainees. Below are some ways in which we have personally found success networking at SOT. We hope trainees also find these items useful as resource for networking at this year's Annual Meeting!

Take advantage of your SOT smart phone app!

The SOT Annual Meeting app has valuable information and has a search function so you can look for posters/talks about research that interests you. Further, if you have a particular individual in mind, you can look them up using the app! We also find the app useful for keeping track of specific networking related events we want to attend (such as the Student/Postdoc Mixer). For example, you can find most of the specialty section and other special interest meetings and receptions in the app (search SOT 2017).

Attend the Student/Postdoc Mixer!

Make sure to sign up for the student/postdoc mixer! This free event is held the first night (Sunday) of the Annual Meeting and is consistently one of our favorite parts of the conference. It is a great way to meet up with fellow trainees before everyone gets busy with posters/talks/business meetings/etc. The SOT Graduate Student Leadership Committee and Postdoctoral Assembly do an excellent job (via a raffle!) of encouraging networking and exploring the various sub-groups of SOT while maintaining a friendly atmosphere. Make sure to participate in the raffle and to check out sub-groups of SOT that are of interest to you (more on this below)!

Establish grassroots at poster presentations!

Most trainees, including ourselves, have a difficult time asking questions during oral platform presentations. However, a conversation at a poster is friendlier and low-risk compared to getting up to a microphone and speaking to a room filled with experts in the field. We recommend using the SOT smart phone app or the printed Program to do your research before the SOT meeting to find the posters that you are interested in! Coming up with a question or two about several posters each day beforehand is a good way to start. Typically, the poster presenter is not the Principal Investigator, so the conversation will likely be between you and another trainee. In our experience, this is relatively low-stress, low-risk, and casual. Be sure to remember your business cards! These are obviously useful to give your new contact, but are also useful in case the author is not present at their poster (you can leave them your business card at their poster so they can contact you later). These grassroots connections are not only great ways to make collaborations that can lead to long-term professional relationships, but are also a great way to be introduced to their mentors, who may be your next boss!

Encourage your mentors to introduce you to their connections!

This one might sound more obvious, but cannot be understated. It is much easier to start

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Our Survival Guide to Networking at the SOT Annual Meeting, continued

growing your network by tapping into relevant connections already established by your mentors. If they're busy being the President of SOT, for example, see if they can set you up with a meeting with one of their friends. Getting someone to introduce you is usually less painful than introducing yourself.

Volunteer!

There are many opportunities to volunteer your time at the Annual Meeting. These are great ways to meet people and help further the goals of the Society. SOT volunteers come from the full range of career levels, thus volunteering can help to increase your interaction with people outside your level as well. Simply getting yourself seen by groups of people can make networking easier and more productive in the future. While considering that volunteering is supposed to be a selfless pursuit, it also happens to be a great way to work towards an elected position within SOT. For example, we have met several Postdoctoral Assembly (PDA) Board Members and Specialty Section Postdoctoral Representatives that say recognition through a volunteer activity was essential to obtaining their positions.

Specialty Sections/Special Interest Groups/Regional Chapters!

SOT has a variety of Specialty Sections (SS), Special Interest Groups (SIGs), and Regional Chapters (RCs) which offer ways to connect with toxicologists of similar research interests, with similar ethnicities, or in a similar geographical location. The beauty of these groups is that they typically have receptions (free food!) at night, and these receptions are designed to promote networking (roundtables, buffet-style food, etc). You should definitely contribute to your specialty section by paying your dues, visiting the reception, and applying for positions on its Executive Committee (EC). These ECs are elected, so positions on them are competitive, but they are one of the best resources available for trainees to network and contribute to the Society. For more information about particular SOT Component Groups, check out their posters at the Student/Postdoc Mixer (see above)!

Outside of SOT:

Take advantage of social media, especially LinkedIn! This is a great way to establish a connection with a fellow toxicologist and also a way to see what institutions are hiring toxicologists.

Final Notes:

Remember, there are many benefits to networking. It should NOT be viewed simply as a way to "climb the ladder;" that would just lead to more stress and urgency. Networking can foster collaboration, improve scientific communication skills, forge meaningful connections with experts (or the experts to-be) in the field, and create lasting friendships. As we are now in our respective second and third years of postdoctoral training, and attending our fifth and sixth Annual Meetings, we are very aware that Toxicology is a small field. Everyone is professionally-connected/networked in some way. So, do your research before the meeting, go see as many posters as you can, ask questions, volunteer your time as much as possible, go to your SS/SIG/RC receptions, apply for EC positions, and, most of all, enjoy yourself! See you in Baltimore!

Register for the SOT Job Bank

The Society of Toxicology Career Resource and Development Committee [Job Bank](#) provide employers and candidates who are seeking jobs with the opportunity to establish contacts relating to their specific needs and areas of interest. Registrations will be valid for four months and all registrants may access the system as often as they wish.

Postdoctoral Annual Meeting Handbook

Social & Networking Activities	pg. 6
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2017 SOT Social & Networking Opportunities

- **Welcome Reception:** Sunday, 6:30 PM-7:30 PM
- **Student/Postdoc Mixer:** Sunday, 7:30 PM-9:00 PM
- **Mentoring Breakfast:** Monday, 6:15 AM-7:45 AM
- **Past Presidents 5K Fun Run/Walk:** Tuesday, 7:00 AM-8:30 AM
- **Postdoctoral Luncheon:** Tuesday, Noon-1:15 PM
- **Tox ShowDown:** Tuesday, 7:30 PM-9:00 PM
- **Poster Tours for Trainees:** Various Times
- **Chat with an Expert:** Various Times

Welcome Reception

Sunday, March 12, 6:30 PM to 7:30 PM

Convention Center, Hall A

The Welcome Reception is a great opportunity to renew old friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting. This event is open to all SOT Attendees.

Student/Postdoc Mixer

Sunday, March 12, 7:30 PM to 9:00 PM

Hilton Baltimore, Holiday Ballroom 4

TICKET REQUIRED. The Graduate Student Leadership Committee hosts this opportunity for students and postdoctoral scholars to gather, to meet new colleagues, and to re-establish relationships in an informal atmosphere at the beginning of the meeting. Tickets are obtained at no cost by registering for this event on the Annual Meeting Registration Form and are required. Complimentary refreshments and a cash bar will be available.

Mentoring Breakfast

Monday, March 13, 6:15 AM to 7:45 PM

Convention Center, Room 325

TICKET REQUIRED. The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. As such, the Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, are pleased to host the sixth annual Mentoring Breakfast. The Mentoring Breakfast is for SOT members at any career stage—from graduate students to postdoctoral fellows to senior scientists—who are seeking a mentor. Brief presentations will be followed by small group discussions led by trained facilitators. Facilitators will work to match participants with compatible mentors following the Annual Meeting. Tickets are \$10, and can be added on during your Annual Meeting registration.

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Past Presidents' 5K Fun Run/Walk

Tuesday, March 14, 7:00 AM to 8:30 AM

Camden Yards

PRE-REGISTRATION REQUIRED. Join us for the seventh annual Past Presidents' 5k Fun Run/Walk! Open to anyone interested, this event is a great opportunity to meet old friends and make new friends in a casual environment, all while showing support for SOT and its wonderful past presidents. Whether you're in it for some friendly competition or would rather take a leisurely stroll, this event's emphasis is on camaraderie and will bring together runners and walkers of all levels and paces. Come join us—we look forward to seeing you! To register, visit the [Special Events section of the SOT Annual Meeting website](#). Registration is only \$25, and all proceeds will go towards the SOT Endowment Fund.

Postdoctoral Assembly Luncheon

Tuesday, March 14, 12:00 PM to 1:15 PM

Convention Center, Room 324



TICKET REQUIRED. To encourage increased participation and networking among postdoctoral scholars, this year the Postdoctoral Assembly (PDA) Board has planned the PDA Luncheon to be more casual than a seated lunch. Finishing a discussion from your morning poster session? Leaving early to run off to set up a poster or attend another meeting? That's no problem, come stop in when you can! You can enjoy a buffet lunch and move around the room to mingle with others, including PDA Officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun. Tickets are \$10, and can be added on during your Annual Meeting registration.

Tox ShowDown

Tuesday, March 14, 7:30 PM to 9:00 PM

Hilton Baltimore, Holiday Ballroom 3

This is the sixth year of the Tox ShowDown, the toxicological quiz game par excellence. Three teams of three contestants each—the Endocrine Disruptors, the Free Radicals, and the Toxic Metabolites—battle each other to answer questions wholly, partially, or remotely related to toxicology. Topics cover the gamut, including the role of toxicology in history, current events, arts, culture, and society, not to mention science. The event features a cash bar and is a great opportunity to see how many questions you can answer correctly, while enjoying a good laugh. As always, there will be prizes for all participants and audience door prizes.

Poster Tours for Trainees

Numerous Time Slots Available

Convention Center, Groups meet at the Poster Tour Poster in the Pratt Street Lobby near Registration.

PRE-REGISTRATION REQUIRED. This is a great opportunity for trainees to participate in a one-hour guided Poster Tour with an expert toxicologist to explore topics related to your specific interests. Join your guide to take part in critical evaluation of cutting-edge toxicological methods and research findings. Additionally, you will have a unique opportunity to network with your guide, their colleagues, and fellow trainees. Interested graduate students and postdoctoral scientists can sign up and tailor their experience by selecting scientific topics and sectors (academia/industry/government) of interest. On-site registration will also be possible at the Student/Postdoctoral Mixer.

Chat with an Expert

Numerous Time Slots Available

Various Locations, Groups meet at the Poster Tour Poster in the Pratt Street Lobby near Registration.

PRE-REGISTRATION REQUIRED. The Chat with an Expert program provides a special opportunity at the SOT Annual Meeting for small groups of students and postdoctoral scholars to meet with Associate or Full SOT member Experts for informal discussion. This program provides

participants with a great opportunity to network and gain insights from seasoned toxicologists. Groups of about three students will be matched with suitable Expert volunteers from industry, academia, or government using the information provided during registration for the event. The Expert will determine the location and whether the group will meet for a snack, coffee, or for a social hour. On-site registration will also be possible at the Student/Postdoctoral Mixer.

2017 SOT Career Development Resources

- **Speed Networking:** Tuesday 1:20PM-2:40PM
- **Teaching at PUIs:** Tuesday 5:00PM-6:20PM
- **Soft Skills Training Session:** Wednesday 5:00PM-6:20PM
- **SOT Online Job Bank**
- **Mentor Match**
- **Awareness of Regulatory Toxicology Work Group**

Career Exploration through Speed Informational Interviews

Tuesday, March 14, 1:20 PM to 2:40 PM

Convention Center, Room 324



TICKET REQUIRED. Do you find yourself wondering what your career options are in the field of Toxicology? Then this is the event for you! This career development special event is designed for graduate students and postdocs who want to gain insight into the different career sectors in toxicology. Groups of three trainees will rotate through a series of approximately eight-minute discussions with career representatives from academia, government, and industry. Trainees can ask the career representatives questions about their background, career path, the hiring process in their company/sector, and other aspects of identifying and pursuing career interests. This session will provide an informal opportunity to gain insight about different employment sectors in toxicology, through candid discussions in a casual setting. Graduate students and postdocs are encouraged to register early, as registration will be limited to maximize the opportunity for small group discussion with career representatives.

Careers for Toxicologists at Primarily Undergraduate Institutions: Everything You Need to Know About the Job, Hiring Process, and Strategies for Success in Teaching and Research

Tuesday, March 14, 5:00 PM to 6:20 PM

Convention Center, Room 309

Primarily Undergraduate Institutions (PUIs) offer a substantial proportion of the available tenure-track faculty positions in the life sciences. For toxicologists interested in careers that combine research and teaching, a PUI can provide an excellent setting for interdisciplinary research collaborations and the opportunity to introduce undergraduate students to toxicology, in both the classroom and the laboratory. But the process of preparing for, finding, interviewing for, and launching a PUI career differs in terms of strategy and approach from that for a faculty position at a research university, often leaving graduate students and postdoctoral trainees with few role models and limited information on where to start to pursue this career path. This session brings together PUI toxicologists at different career stages to discuss the roles available for toxicologists in traditional academic undergraduate-oriented departments, and to provide advice on how to strategically navigate the competitive job market for tenure track positions at PUIs. Strategies also will be offered for laying the groundwork for success in the critical first few years on the job. The topics discussed will include: (1) a broad overview of the job responsibilities and expectations for PUI tenure-track faculty members; (2) what to expect from the hiring and interview process, and how toxicologists can prepare and present themselves as qualified candidates for PUI positions; (3) strategies, tools, and resources for achieving early successes in both the research and teaching aspects of the job. The session will conclude with a panel discussion, giving postdocs and graduate students considering this career option the opportunity to further explore these topics and others that were not explicitly covered.

Speakers include:

- Karen Stine, *Auburn University at Montgomery*
- Larissa Williams, *Bates College*
- Wade Powell, *Kenyon College*
- Christine Curran, *Northern Kentucky University*

Mastering Soft Skills to Advance Your Scientific Career

Wednesday, March 15, 5:00 PM to 6:20 PM

Convention Center, Room 308



The overwhelming majority of the typical training experience focuses upon doing excellent science and identifying a career path. However, without a bit of personality, even trainees with the most exceptional resume may not stand out in a saturated applicant pool. Soft skills are often ignored in training, but can have a huge impact on the amount of success one obtains throughout their career. This session is designed to bring charismatic leaders in the field to discuss the non-scientific attributes that have contributed to their success, and also the qualities they seek out when identifying candidates for their organizations. Presentations will focus on: (1) how to network effectively; (2) how to present oneself in a professional environment using proper body language and etiquette; and (3) effective communication, leadership, and management skills. These interactive presentations will utilize demonstrations when applicable, and will be followed by a panel of young toxicologists who have successfully mastered these soft skills to transition from trainee to professional across the sectors. These discussions will be highly relevant to all student and postdoctoral attendees, as well as senior toxicologists who want to improve the professional training of mentees. This session will stimulate a discussion about underserved aspects of professional development, and enable trainees to learn and implement an essential skill set which will improve professional relationships throughout their careers.

Speakers include:

- Ruth Roberts, *Apconix*
- Martin Philbert, *University of Michigan*
- Ron Hines, *US EPA*

Early-career panelists include:

- Bethany Hannas, *DOW Chemical*
- Shaun McCullough, *US EPA*
- Jonathan Shanahan, *Purdue University*

SOT Online Job Bank

<https://www.toxicology.org/jobbank/>

This free online service allows job candidates to browse and search open employment positions in toxicology and other closely related fields. SOT Members can browse and search all positions posted in the Job Bank free of charge. The online Job Bank lists positions available at corporations, academic institutions, government agencies, and private research organizations. Employers rely on this online service to provide them with a robust database of candidates available for career opportunities ranging from junior- to senior-level positions.

Mentor Match Program

<https://www.toxicology.org/application/jobbank/mentormatch.asp>

This free service allows trainees to connect with suitable mentors for career and personal development. The objective of this program is to provide a service that matches mentees with potential mentors from the SOT membership to provide advice on career path selection and success and life/work balance issues. Some members may serve as mentors but might also be a mentee as they consider moving into a different specialty or area of employment.

Awareness of Regulatory Toxicology Work Group

Interested in learning more about careers related to regulatory toxicology? Recognizing the high level of interest in this area, the Graduate Education Subcommittee created the Awareness of Regulatory Toxicology Work Group. Members of that group will be available for discussion with you at several Annual Meeting activities, beginning with the Student/Postdoctoral Mixer. They will have a poster in ToxExpo among the Regional Chapter, Special Interest Group, and Specialty Section posters near the SOT Pavilion. A representative will be there Monday morning, March 13, from 11:45 am-12:15 pm. A search of the meeting app using “regulatory” will yield many scientific sessions that may be of interest.

2017 SOT Scientific Sessions for Trainees

- **Plenary Discussions: Data Science** Monday 9:45 AM-10:45 AM
- **Plenary Discussions: Precision Medicine** Tuesday 9:45 AM-10:45 AM
- **MRC Discussion: The Exposome** Wednesday 9:45 AM-10:45 AM
- **Trainee Symposium: 'Omics Approaches to Metabolic Disease**
Wednesday 9:30 AM-12:15 PM

Monday Plenary Session: Data Science

Monday, March 13

- **8:00 AM to 9:20 AM (Plenary Session)**

Convention Center, Hall A

Lecture 1 (Peter Sorger): The development of new therapeutic drugs is fundamental to improving human health but the process is challenged by rising costs and a high rate of failure. New and better technology and big data are often put forward as the solutions to these problems. I will argue that big data and data science are essential but insufficient: correct interpretation of empirical data in biomedicine hinges on theories about mechanism. New pharmacological principles derived from such studies are being developed into practical algorithms and open-source software as a means to improve target qualification, lead molecule optimization and early phase clinical trials. The hoped for outcome: better drugs at a cost society can afford.

Lecture 2 (Lara Mangravite): We will consider how data is captured today and look at alternatives if one could take sensor based approaches. Extrapolating from the efforts the community has shown feasible using various ResearchKit Apps it is worth considering tracking of adverse effects.

- **9:45 AM to 10:45AM (Trainee Discussion w/ Drs. Sorger & Mangravite)**

Convention Center, Room 304 & Room 305

TICKET REQUIRED. Drs. Sorger and Mangravite will meet informally for discussion with graduate students and postdoctoral scholars after the Plenary Session on precision medicine. Room occupancy is limited, and participants register for a ticket with their Annual Meeting registration.

Tuesday Plenary Session: Precision Medicine

Tuesday, March 14

- **8:00 AM to 9:20 AM (Plenary Session)**

Convention Center, Hall A

Lecture 1 (Jun Yang): Elucidation of the genetic basis for inter-patient variability in drug toxicity not only reveals important biology of a drug's mechanism of action but also provides critical knowledge that enables risk-adapted treatment individualization. At the forefront of precision medicine, pharmacogenomics hold particularly great promise to transform medical practice with more efficacious and safer therapies across diseases.

Lecture 2 (Richard Barker): The tremendous recent advances in basic bioscience are not translating as effectively and affordably as they should into health benefit for patients and positive change in healthcare delivery. The presentation will analyze and illustrate this phenomenon and the threat it represents to the long-term sustainability of biomedical innovation. It also will propose changes to both the innovation process and the environment in which it operates, highlighting the golden thread of precision medicine—vital to the potential to make major changes in innovation productivity. The talk will draw on the speaker's recent experience launching the UK's Precision Medicine Catapult.

- **9:45 AM to 10:45AM (Trainee Discussion w/ Drs. Yang & Barker)**
Convention Center, Room 304 & Room 305
TICKET REQUIRED. Drs. Yang and Barker will meet informally for discussion with graduate students and postdoctoral scholars after the Plenary Session on precision medicine. Room occupancy is limited, and participants register for a ticket with their Annual Meeting registration.

The Exposome: Challenges and Opportunities

Wednesday, March 15

- **8:00 AM to 9:20 AM (Keynote MRC Lecture)**
Convention Center, Hall A
 Professor Paul Elliott, MBBS, PhD, FMedSci, trained in clinical medicine and epidemiology as a Wellcome Trust Clinical Fellow at St. Mary's Hospital London and the London School of Hygiene & Tropical Medicine. He heads what is now the Department of Epidemiology and Biostatistics in the School of Public Health. The Department has expanded significantly during recent years to encompass a wide-ranging program of health research and extensive collaborations with honorary and visiting staff. Dr. Elliott also is Director of the MRC-PHE Centre for Environment and Health which sits within the Department and includes the Small Area Health Statistics Unit (SAHSU). He also is an honorary consultant in public health medicine in the Directorate of Primary Care and Public Health of the Imperial College Healthcare NHS Trust and the academic lead for the Biobanking research theme for the Imperial NIHR Biomedical Research Centre. He was recently appointed as the Academic Health Sciences Centre's (AHSC) Director of Information Governance.
- **9:45 AM to 10:45 AM (Trainee Discussion w/ Dr. Elliott)**
Convention Center, Room 304
TICKET REQUIRED. Dr. Elliott will meet informally for discussion with graduate students and postdoctoral scholars after Keynote MRC Lecture. Room occupancy is limited, and participants register for a ticket with their Annual Meeting registration.

Investigating Metabolic Diseases Using Integrated 'Omics Approaches

Wednesday, March 15, 9:30 AM to 12:15 PM

Convention Center, Ballroom II

The combination of the general population living longer, consuming a Western diet rich in saturated fats, and leading a sedentary lifestyle, among other risk factors, has led to the prevalence of metabolic diseases worldwide. For example, it is estimated that 20-25% of the US population have fatty liver disease, and approximately 35% of US adults have metabolic syndrome. Advances in next generation DNA sequencing, RNASeq methods, and novel mass spectrometry tools have provided access to large amounts of data that are able to be deciphered using computational approaches and new statistical methods to generate new hypotheses. Since the building blocks of a cell (DNA, RNA, proteins, metabolites) do not work in isolation and must orchestrate functions across global networks, it is important to utilize these molecular tools to understand biological functions in an entire system. The goal of this symposium is to demonstrate the use of different 'omics technologies as a tool to decipher possible mechanisms in the development of toxicant exposure-induced metabolic diseases. The first two speakers will present data using toxicogenomics and proteomics tools, respectively, in liver disease. The remaining four speakers will take an integrative approach combining multiple technologies (i.e. redox-based proteomics, transcriptomics, metabolomics, CHIP sequencing, epigenomics, lipidomics) in the setting of metabolic dysfunctions. Using 'omics applications in these settings will enhance understanding of known molecular mechanisms involved in metabolic diseases, aid in identifying undiscovered pathways underlying adverse health effects, and further develop integrated models to identify risk factors to improve human health. **All presentations will be given by postdoctoral scholars and graduate students. Come support your peers, and partake in this wonderful opportunity!**

