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August Newsletter

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Exposome Bootcamp 2025 Reflections



The seventh annual Exposome Bootcamp took place on the campus of Columbia University in New York City, bringing investigators from all career stages and around the world for two days of intensive seminars and hands-on analytical sessions. These sessions provided an overview of concepts, techniques, and data analysis methods used in exposome research. The Bootcamp is structured to foster meaningful connections, professional development, and the open exchange of key ideas among all attendees. The collaborative nature of the event enabled participants from diverse backgrounds and disciplines to expand their knowledge and skillset to better understand the exposome. The Bootcamp was led by a team of scientists in the field of exposomics, whose expertise spans a wide array of disciplines including environmental health, data science, exposure sciences, toxicology, engineering, and biochemistry. This multidisciplinary background enabled the program to cover the full breadth of the field of exposomics. Most of the instructors are formally affiliated with NEXUS.

The Bootcamp kicked off with an opening lecture from the program training director, Gary Miller, PhD, Columbia University, which helped set the stage for the next two days. He showed a timeline of key achievements and breakthroughs in the field of exposomics over the past two decades. He highlighted Christopher Wild's 20th anniversary retrospective in the journal *Exposome* that explained the setting that led up to his introduction of the term exposome and his views of how the field has grown. Dr. Miller also described the role of NEXUS in promoting and advancing the science of exposomics.

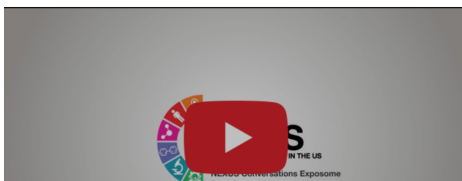
The first day included a series of lectures that focused on the technical approaches of mass spectrometry-based measurement of constituents of the exposome. Doug Walker, PhD, Emory University, presented "Optimizing mass spectrometry for exposomics." He explained how each of the components of the mass spectrometers worked and how his team has optimized various aspects to improve the detection of environmental compounds. This was followed by the lecture "Wearable technologies for measuring the exposome — from wristbands to sensors" by Krystal Pollitt, PhD, P.Eng., Yale University. Dr. Pollitt has been a leader in the use of sensors for exposomics, and she provided methodological details and real-world examples of how wearables can be used to measure the exposome.

[Read the Full Article](#)

NEXUS Conversations

Exposome Boot Camp 2025

At the Exposome Boot Camp 2025, NEXUS had the opportunity to engage with students from multidisciplinary backgrounds. Our conversations provided insight into students' interests in exposomics, individual experiences, along with their key takeaways and highlights from the two-day event.





Please visit the NEXUS Youtube Channel for More NEXUS Conversations content, and much more!

NEXUS Youtube

Spotlight

Marina Sirota, Ph.D.

University of California San Francisco



Learn more

Dr. Marina Sirota is currently a Professor and the Interim Director at the Bakar Computational Health Sciences Institute at UCSF. Prior to that she has worked as a Senior Research Scientist at Pfizer where she focused on developing Precision Medicine strategies in drug discovery. She completed her PhD in Biomedical Informatics at Stanford University working with Dr. Atul Butte. Dr. Sirota's research experience in translational bioinformatics spans nearly 20 years during which she has co-authored over 170 scientific publications.

Her research interests lie in developing computational integrative methods and applying these approaches in the context of disease diagnostics and therapeutics with a special focus on women's health. The Sirota laboratory is funded by NIA, NLM, NIAMS, Pfizer, March of Dimes and the Burroughs Wellcome Fund. As a young leader in the field, she has been awarded the AMIA Young Investigator Award in 2017. She leads the UCSF March of Dimes Prematurity Research Center at UCSF as well as co-directs ENACT, a center to study precision medicine for endometriosis. Dr. Sirota also is the founding director of the AI4ALL program at UCSF, with the goal of introducing high school girls to applications of AI and machine learning in biomedicine. She has a number of projects relating environmental exposures and reproductive health and co-directs the NEXUS data hub with Dr. Chirag Patel.

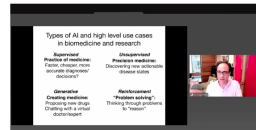
Fun Fact! Dr. Chirag Patel and Dr. Marina Sirota were graduate students together in the Butte Lab at Stanford University.

Read the Full Article

NEXUS In the Scientific Community

Dr. Chirag Patel and Using AI for Data Mining, Evidence Synthesis, and Data Collection

The National Academies of Sciences, Engineering, and Medicine hosted a public webinar "Exploring the Types of Evidence Behind Diet and Chronic Disease" on July 10th 2025. During the webinar speakers explored the types of evidence used to look at relationships between diet and chronic disease. NEXUS MPI Dr. Chirag Patel, is a Standing Member of the Committee on Evidence Synthesis and Communication in Diet and Chronic Disease Relationships.



Watch the Webinar

Dr. Patel spoke during this conference about "Using AI for Data Mining, Evidence Synthesis, and Data Collection" where he discussed the role of AI in sifting through evidence, particularly for modifiable factors of the exposome, such as nutrients from food. Currently, before the advent of systematic measurement tools, such as those that are being brought to practice by the NEXUS team, sifting through data and studies can be daunting. Traditional evidence synthesis, like systematic reviews, is time-consuming and prone to biases. AI, especially large language models (LLMs) like ChatGPT and biomedical systems, could change that. Drawing from Dr. Patel's presentation slides, emphasizing why a domain-wide or exposomics-wide approach is vital for reproducible exposomics research.

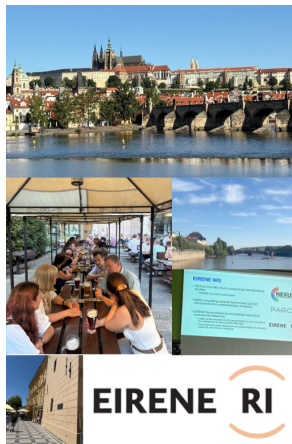
Read the Full Article

NEXUS around the World

Prague, Czech Republic
EIRENE PPP Consortium Meeting

At the end of July, NEXUS MPI Gary Miller

At the end of July, NEXUS with Gary Miller, PhD, Columbia University visited Prague, Czech Republic for the EIRENE PPP Consortium Meeting. This meeting focused on the work accomplished by EIRENE, as well as meetings with external stakeholders where Dr. Miller spoke about potential collaboration opportunities between NEXUS and EIRENE and overall how to link in the United States with this enterprise. This meeting provided a great opportunity to further one of the aims of NEXUS, to connect with the exposome research community globally and engage in meaningful partnerships throughout Europe. One significant collaboration is with the Environmental Exposure Assessment Research Infrastructure (EIRENE), the European Scientific Research Infrastructure (ESFRI), that supports exposome research in Europe. This project includes 20 universities in Europe, with Columbia University, the operational institution of NEXUS, as the sole non-EU participant. EIRENE comprises 22 National Nodes representing over 50 institutions and is led by Jana Klánová, PhD, Masaryk University, who is also the principal investigator of [RECETOX](#).



Barcelona, Spain

ISGlobal



During a recent visit to Barcelona, NEXUS Administrative Hub Lead Sophie Thuault-Restituto, PhD, Columbia University had the opportunity to visit the [Barcelona Institute for Global Health \(ISGlobal\)](#). Co-lead of the [International Human Exposome Network \(IHEN\)](#) Martine Vrijheid, PhD, and her team are located at ISGlobal. Photo of Dr. Thuault-Restituto and Rodney Ortiz, ISGlobal and IHEN Project Manager.



Upcoming Events

NEXUS Community Events

ISES & ISEE Joint Annual Meeting

August 17-20, 2025
Atlanta, Georgia



The annual joint meeting between International Society of Exposure Science and International Society for Environmental Epidemiology is taking place in Atlanta, Georgia this August. The theme of the meeting is “Global Environmental Health Equity across the Lifespan” and NEXUS Collaborator Douglas Walker, PhD, Emory University and NEXUS Chem bio co-lead Krystal Pollitt, PhD, Yale School of Public Health will both be hosting a workshops. Registration is **Open!**

Half Day Workshop

WS09: Wristbands 101: Harnessing Wearable Tech for Personalised Environmental Exposure Assessment (Krystal Pollitt, Ph.D.)

Full Day Workshops:

WS02: High-resolution mass spectrometry workflows to study the exposome (Douglas Walker, Ph.D.)

NEXUS-Related Talks:

“Community Wide Perspectives, Methodologies, and Applications in Exposomics: Results from the Network for Exposomics in the U.S. (NEXUS) Center for Exposome Research Coordination Survey”

IHEN Exposome Community Meetup in Atlanta

The International Human Exposome Network (IHEN) invites you to the **Exposome community meetup in Atlanta** as part of the ISES/ISEE pre-conference events to be held **17th August – 9:30am to 1pm**.



This open event will be held at the **Regency VI room** in the Hyatt Regency Atlanta. You are welcome to [register in this link](#), where you can also download the agenda.

This event is organized by the **International Human Exposome Network (IHEN)**, where you will also learn about exposome initiatives such as the Global Exposome Forum and NEXUS. You will also learn about exposome tools and data points, and the global exposome research roadmap goals and subgoals, which will be open for your input and discussion.

[Learn more](#)

ECHO Symposium: Translating Science to Action

September 15, 2025
Bethesda, MD/ Online



The Environmental influences on Child Health Outcomes (ECHO) Program is a research program supported by the National Institutes of Health (NIH), to enhance the health of children for generations to come. The ECHO Translating Science to Action Symposium brings together researchers, policymakers, health professionals, and advocates to translate child health research into impactful solutions.

[Learn more](#)

Santiago Exposome Symposium

September 25-27, 2025
Santiago, Chile



Registration is open for "The Second Latin American Exposome Symposium will be held in Santiago, Chile, focusing on the theme *"Integrating Environmental Exposures into Aging, Alzheimer's Disease, and AD/AD Research."* This event will bring together leading scientists in Alzheimer's Disease and Related Dementias (AD/AD), Environmental Health, and Exposomics to examine how environmental exposures impact AD/AD. Special emphasis will be placed on regional cohorts such as PELOTAS, 10/66, and other studies from across Latin America. The symposium seeks to bridge gaps in AD/AD research by fostering collaboration between the Alzheimer's and environmental science communities in Latin America, the United States, and beyond. Keynote talks, poster sessions, and hands-on workshops will cover innovative topics, including geospatial modeling, digital biomarkers for detecting cognitive decline, and prodromal markers of AD/AD. To promote collaboration, the event will support students and junior researchers from the region through travel awards. These efforts aim to build partnerships and catalyze new research at the intersection of environmental health and aging."

This meeting is being hosted by [The Institute for Exposomic Research at the Icahn School of Medicine at Mount Sinai](#)

[Learn more](#)

[Visit the NEXUS Calendar](#)

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Feature Podcasts

As the NEXUS Podcast is being constructed, please enjoy the recent episode of Health Report by ABC Radio National which features NEXUS Collaborator Fenna Sillé, PhD, Johns Hopkins School of Public Health and organizer of the Exposome Moonshot Forum.



"What is the exposome?"

[Listen to the episode](#)

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We are proud to have funding support from the following

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