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NEXUS
NETWORK FOR EXPOSOMICS IN THE US

October Newsletter

Visit the NEXUS website and our social media for exposome news, blog post, events, publications, and much more!

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NEXUS Podcast

Season 1 | Episode 1
What is Exposomics?

NEXUS is excited to announce the release of the first episode of the NEXUS Podcast!

In this episode NEXUS MPIs Gary Miller, PhD, Columbia University, Rima Habre, ScD, University of Southern California, and Chirag Patel, PhD, Harvard University discuss "What is Exposomics?" where they share their individual career paths in the field, as well as the history and current state of exposomics.

The objective of the NEXUS Podcast is to bring together stakeholders of the field of exposomics to foster dialogue around key topics, further the understanding, facilitate the advancement of the field of exposomics along with identifying ways that exposomics can support other scientific fields.

Subscribe to the NEXUS Youtube to follow Season 1

NEXUS In the Scientific Community

NEXUS ChemBio Analytical Sciences Hub Presents Results of International Survey on Exposomics Methods at the 7th Annual MANA Conference and BP4NTA September Meeting

In September, the NEXUS ChemBio Analytical Sciences Hub began communicating to the scientific community the results of an international survey on exposomics methods. The survey requested community input on methods and tools used to assess molecular features of the exposome, including xenobiotic chemicals, exogenous and endogenous metabolites, lipids, and protein/DNA/RNA adducts. The results of the survey will be used to design a community-based harmonized measurement method and resource for exposome research. At the 7th Annual Conference of the Metabolomics Association of North America (MANA) September 2-5 in Banff, Alberta, Tom Metz, PhD, Pacific Northwest National Laboratory Co-lead of the NEXUS ChemBio Hub presented survey results during his talk titled "Mapping the Landscape of Exposome Measurements" in a session dedicated to Exposomics. The annual MANA conference brings together leaders in metabolomics methods development and applications in biomedical and environmental domains. Similarly, the NEXUS ChemBio Analytical Hub was a featured presenter during the Monthly Meeting of the Best Practices for Non-Targeted Analysis (BP4NTA) consortium. BP4NTA aims to address challenges in non-targeted analysis (NTA) studies using mass spectrometry, and brings together scientists, within government, industry, and academia, and meets monthly to discuss novel approaches to NTA and highlight experts in the field. The September meeting began with NEXUS Chem Bio Hub Co- Leads Krystal

Pollitt, PhD, P.Eng, Yale School of Public Health and Tom Metz introducing NEXUS, which was followed by NEXUS collaborator Jeremy Koelmel, PhD, Yale School of Public Health, who presented "Non-Targeted Analysis in Exposomics: Global Perspectives from the NEXUS International Survey". The survey to date has collected responses from over 165 respondents from 26 countries at 135 institutions, including academic (71%), government (9%), national (7%), and industry (7%) laboratories.

These meetings were well attended and great opportunities for NEXUS to share the results of the international survey on exposomics methods.

NEXUS ChemBio Analytical Sciences Hub Co-lead Dr. Pollitt presented the results of the NEXUS Survey alongside Dr. Koelmel at the ISES & ISEE Joint Annual Meeting.

Learn more about the NEXUS ChemBio Analytical Sciences Hub

SAMBAI Annual Scientific Research Retreat

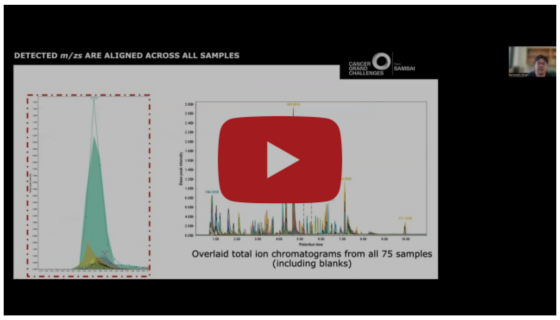
September 16-17, 2025
Baltimore, Maryland

Members of the SAMBAI Team at the Annual Retreat at Johns Hopkins.

In September, the SAMBAI (Social, Ancestry, Molecular and Biological Analysis of Inequalities) Annual Scientific Research Retreat took place at Johns Hopkins University to discuss the accomplishments of the first year of the Cancer Grand Challenge grant. During the second day of the conference, Gary Miller, PhD, Columbia University, presented an update on the work being conducted under "Work Package 2-Exposomics (WP2)," which Dr. Miller leads at Columbia University to use high-resolution mass spectrometry to collect data on thousands of exogenous and endogenous molecules to identify risk factors relevant to the study populations. The Columbia WP2 team includes Randolph Singh, PhD, Haotian Wu, PhD, Kam-Meng Tchou-Wong, PhD, and Hui-Chen Wu, PhD with partners in the UK, Nigel Mongan, PhD, and South Africa, Zodwa Dlamini, PhD.

SAMBAI is led by Melissa Davis, PhD, Morehouse School of Medicine, and was a 2024 Cancer Grand Challenge awardee. The project brings together a multidisciplinary team of researchers and institutions across the US, UK, and Africa in an effort to "decode the factors that cause and influence disparate cancer outcomes in underserved populations of African descent."

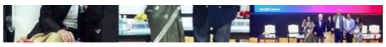
In March, Dr. Miller and Singh presented their work as part of SAMBAI at the 3rd International Meeting of the Pan African Cancer Research Institute (PACRI) about the work being completed under WP2. Please watch the presentation to learn more about the exposomics work being completed.



Centre for Chronic Disease Control (CCDC) 25th Anniversary Celebration

September 18, 2025
New Deli, India

On September 18, 2025, the Centre for Chronic Disease Control (CCDC) in India held their 25th Anniversary Celebration in New Delhi. One of the sessions was dedicated to exposomics. Led by Poornima Prabhakaran, PhD, Ashoka University the session began with her discussing how exposomics is being utilized by the CCDC, followed by two lightning talks by Siddhartha Mandal, PhD, Ashoka University and Priya Dutta, PhD, Ashoka University and a panel discussion. The lighting talks described some of the innovative methods being used by the research teams including advanced computational methods. The panel was led by Henry Falk, PhD, Emory University and Dr. Prabhakaran and included Soumya Swaminanthan, PhD, WHO, Anurag Aggarwal, PhD, Ashoka University, Gary Miller, PhD, Columbia University (remotely), and Kathrin Shilling, PhD, Columbia University. Dr. Miller commented on the tools that NEXUS is developing to support the field of exposomics and the opportunities for collaboration between NEXUS and investigators in India. Dr. Shilling discussed her work on using ICP-MS to measure metals in a range of studies in India.



Highlights from the 25th Anniversary Celebration of India's CCDC session on Exposomics. In the Top right, panelists reflecting on audience questions. Bottom left of above photo, Dr. Shilling explains the power of ICP-MS and metallomics. Bottom middle, Dr. Prabhakaran present Dr. Falk a memento from the occasion. Bottom right, closing of the session.

Spotlight

Ghada Soliman, MD, PhD, RD, LMNT, CDN

City University of New York

Learn more

Dr. Soliman is a tenured professor of nutrition in the Department of Environmental, Occupational, and Geospatial Health Sciences and the Interim Associate Dean for Faculty Affairs at the City University of New York, Graduate School of Public Health, and Health Policy (CUNY-SPH). She is also an affiliated faculty member at the Structural Biology Initiative of the CUNY Advanced Science Research Center (ASRC). Previously, she developed and served as the Doctoral Program Director for the Environmental and Planetary Health (EPHS) PhD Program at CUNY-SPH.

She has held faculty positions at Baylor College of Medicine and the University of Michigan Medical School and is a recipient of grants from the National Institutes of Health and the American Heart Association, as well as institutional grants to support her research program.

Dr. Soliman's role in NEXUS is a Lead in the Administration/Stakeholder Engagement hub to expand the reach of NEXUS and the dynamic engagement of CUNY graduate students, researchers, community, and professional network, and to support the scientific and intellectual vision of the NEXUS team.

Dr. Soliman's research on nutritional exposomics incorporates wet laboratory methods of nutrient-sensing pathways, such as the mechanistic Target of the Rapamycin (mTOR) complexes (mTORC1/mTORC2) metabolic networks, and computational data science to investigate the role of the nutritional exposome in metabolic diseases and cancer. By integrating cell culture mechanistic studies, high-resolution mass spectrometry, system biology, predictive models, and data science, the team investigates how nutrients and beverage exposures, dietary patterns, and environmental factors alter the signaling and metabolic pathways, as a framework for developing nutritional interventions for chronic diseases.

Her current research focuses on the Cardiovascular Kidney Metabolic (CKM) syndrome, engaging the NIH-All of Us data partnership to examine the factors contributing to the progression stages of CKM to develop predictive models and improve health outcomes. As a Registered Dietitian Nutritionist (RD), Dr. Soliman has a keen perspective on community and public health nutrition. Thus, her translational research investigates the non-genetic drivers of human diseases to develop actionable nutrition-based interventions that promote disease prevention and reduce the chronic disease burden.

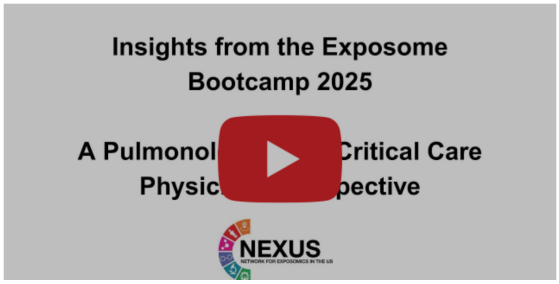
She published over fifty-five peer-reviewed papers in nutrition research and book chapters on nutrition, cholesterol metabolism, fiber intake, and causes of obesity. She is an associate editor of the journal Frontiers on Public Health and Nutrition, a guest editor for the journal Nutrients, Special Issues on Metabolomics and Nutrition, and Nutrigenomics and Exposomics: Precision Nutrition in Metabolic Diseases, and serves as an ad-hoc reviewer for several peer-reviewed journals. She is also a member of the American Public Health Association, the Academy of Nutrition and Dietetics, the American Society for Nutrition, and the American Association for Cancer Research, among others.

Fun Fact! I grew up in Zambia, and I was chased by a monkey who was after the same banana that I had earned by climbing the banana tree in my garden.

Read the Full Article

Insights From the Exposome Bootcamp 2025: A Pulmonologist and Critical Care Physician's Perspective

At the Exposome Bootcamp 2025 Training Director Gary Miller, PhD, Columbia University and NEXUS MPI sat down with Exposome Bootcamp participant Kathryn Sullivan, MD, University of California San Francisco to reflect on the Bootcamp from a pulmonologist and critical care physician's perspective.



NEXUS Youtube Channel

Upcoming Events

Genomics meets exposomics: advancing gene by environment science

October 20-21, 2025
Mendel Museum, Brno, Czech Republic

The goal of this meeting is to develop a strategic plan for the advancement of gene by environment studies to better understand human disease. Advances in sequencing technologies have revealed countless discoveries of the genetic drivers of human disease, but for most chronic disease genetics can only account for a portion of the variability. A broad range of environmental factors are known to contribute to human disease. Recent advances in exposomics which is designed to systematically analyze the physical, chemical, biological, and social factors that influence disease, now position the research community to systematically perform gene by environment experiments

Organized by: Jana Klánová (Masaryk University, EIRENE), Gary W. Miller (Columbia University, NEXUS), Robert Barouki (INSERM, EIRENE) and Chirag Patel (Harvard University, NEXUS)

Participation by invitation only.

Save-the-date

Global Exposome Summit

The **Global Exposome Summit**, organized by IHEN in collaboration with NEXUS and the Global Exposome Forum, will take place from **27-29 April 2026** in **Sitges (Barcelona), Spain**

Additional information forthcoming.

NEXUS Community Events

Lung as the Gateway for Environmental Exposures

October 14-15, 2025
Virtual

The National Heart, Lung, and Blood Institute's Division of Lung Diseases is hosting the virtual workshop "Lung as the Gateway for Environmental Exposures in Pulmonary and Cardiovascular Disease" on Tuesday, October 14, 2025, from 10:00 a.m. to 4:00 p.m. (EDT) and Wednesday October 15, 2025, from 10:00 a.m. to 4:00 p.m. (EDT). Dr. Nadia N. Hansel (Professor of Medicine at the Johns Hopkins University School of Medicine) and Dr. Mary B. Rice (Associate Professor of Medicine at Harvard Medical School) are the workshop co-chairs. Registration is free, and required to attend the meeting.
* Text from event description

Learn more

Visit the NEXUS Calendar

Updates from the Exposomics Community

Invitation to provide input for the exposome research roadmap by **15th Oct**. - International Human Exposome Network (IHEN)

Please read a message from IHEN below

Dear environmental health colleagues,

The interim exposome research roadmap is available for **consultation until 15 October**

The interim exposome research roadmap is available for **consultation until 15 October**. Please review the interim document and provide feedback via this form. The feedback is anonymous.

Your feedback is crucial to ensure the roadmap reflects the diversity of expertise and priorities across sectors and regions. We are particularly interested in your perspectives on the issues that have been little or insufficiently addressed by scientific research and public policy, but which exposome research could potentially tackle in the coming decades.

This is part of an open consultation process by the EU-funded International Human Exposome Network (IHEN) to guide the future of exposome research and its orientation for a variety of stakeholders. You can go to the website and join the network and stay tuned for the Global Exposome Forum to be held in Sitges (near Barcelona) 27-29 April 2026.

If you have any questions or need further information, please feel free to contact us at rodney.ortiz@isglobal.org

Thank you for your interest and contribution.

Kind regards,

Rodney Ortiz Rivera
Senior Project Manager

ISGlobal
Barcelona Institute for Global Health - Campus MAR
Barcelona Biomedical Research Park (PRBB)

We want to feature your exposome-related events on the NEXUS website and social media!

Event form

Visit Our Blog to Read More!

Our blog page

We are proud to have funding support from the following

National Institute of Environmental Health Sciences (NIEHS)
National Institute on Aging (NIA)
National Institute of Neurological Disorders and Stroke (NINDS)
National Cancer Institute (NCI)
National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Office of Research on Women's Health (ORWH)

More information can be found on NIH RePORTER.

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