HESI Annual Meeting

8-9 June 2022

Hybrid Event: Online and In-Person Attendance Options Available
Venue: HESI Office, 740 15th Street NW, Suite 600, 3rd Floor Conference Center, Washington, DC 20005

Wednesday, 8 June 2022		
9:00 am	Welcome & Meeting Goals	
9:05 am	HESI: Achievements and Impacts – a Growing Organization Meeting Global Needs	Syril Pettit, DrPH, MEM, HESI Executive Director
9:25 am	**HESI AND GLOBAL PARTNERSHIPS FOR GOOD IN 2022**	Moderator: Dr. Martin van den Berg, Utrecht University, HESI Chair of Board
9:30 am	HESI Global Risk Assessment Training Center	Michelle Embry, PhD, HESI Associate Director and Eliana Munarriz, PhD, MBA, University of Buenos Aires
10:05 am	HESI Propagate – A COVID-19 Initiative to Enhance Global Health Equity Through Efficient and Accessible Testing Methods	Emily Bruce, PhD, University of Vermont and Margaret Mills, PhD, University of Washington
10:45 am	Herb-Drug Interactions Mixed Methods Research Program – a Joint HESI/U Malawi School of Pharmacy Initiative	Dallas Smith, PharmD and Kumbukani Nyirenda, PhD, University of Malawi
11:25 am	BREAK	
11:45 am	Panel Discussion: How has the COVID-19 Pandemic impacted international collaboration – a look back and forward	Moderator: Dr. Doug Wolf, Syngenta. Panelists: Dr. Sandrine Deglin (HESI), Dr. Clare Narrod (Joint Institute for Food Safety and Applied Nutrition at UMD), Dr. Arianne Brown-Jordan (Trinidad & Tobago Ministry of Health), Dr. David Morrow (EATRIS)
12:30 pm	LUNCH	

1:15 pm	**HESI SCIENCE AT THE CUTTING EDGE: EVOLVING APPLICATIONS OF ERROR CORRECTED SEQUENCING IN HESI SCIENTIFIC PROGRAMS**	Moderator: Dr. Barbara Parsons, FDA
1:15 pm	A Brief History of Error Corrected Sequencing Field	Dana Nachmanson, PhD, TwinStrand Biosciences (virtual presentation)
1:35 pm	Proof of concept and a roadmap for error-corrected sequencing in regulatory toxicology	Carole Yauk, PhD, University of Ottawa
2:10 pm	ecNGS for detection of cancer driver gene clonal expansion as a potential early biomarker of carcinogenicity	Patricia Escobar, PhD, Merck
2:45 pm	CT Tracs – Combining unbiased and targeted approaches to assess tumorigenicity risks for gene edited cell therapies	Mick Fellows, PhD, AstraZeneca
3:20 pm	BREAK	
3:45 pm	Panel Discussion: 33 Years of Advancing Science at the Intersection of Sectors – Lessons learned and future goals for HESI	Moderator: Dr. Charlene McQueen, University of Arizona. Panelists: Dr. Angelo Moretto (University of Milan), Dr. Norman Stockbridge (US FDA), Dr. Rose Omari (Ghana Center for Scientific and Industrial Research), Dr. Ruth Roberts (Apconix)
4:30 pm	**HESI Innovation Prize 2021 Lecture**	Dr. Kenneth Olden, NIEHS (retired)
Followed by Reception to Honor Awardee		

	Thursday, 9 June 2022	
9:30 am	Welcome & Introduction	
9:35 am	**HESI THRIVE – A HESI COMPETITIVE SEED GRANT PROGRAM TO ADVANCE QUALITY OF LIFE FOR CANCER PATIENTS AND SURVIVORS**	Shermaine Mitchell-Ryan, PhD, HESI
9:45 am	Surviving the Cure: Perspectives from a mom-cologist	Courtney Horvath, PhD, DABT, Novartis
10:15 am	Defining an inherited predisposition to cancer therapy-induced cardiomyopathy	Krishna Aragam, MD, Massachusetts General Hospital

10:45 am	Cancer therapy and premature ovarian failure in young female cancer patients	Shuo Xiao, PhD, Rutgers University
11:15 am	Diabetes after breast cancer: A role for adipocyte progenitor cells	Elizabeth Wellberg, PhD, Board of Regents of the University of Oklahoma Health Sciences Center (virtual presentation)
11:45 pm	Panel Discussion	Syril Pettit, DrPH, MEM, HESI Executive Director
12:15 pm	LUNCH	
1:15 pm	**HESI SCIENCE FORESIGHT: FORWARD SCIENCE SESSION FOCUS ON ARTIFICIAL INTELLIGENCE.** ***ARTIFICIAL INTELLIGENCE TO SUPPORT ANIMAL FREE DRUG DEVELOPMENT AND CHEMICAL SAFETY***	Moderator: Dr. Ruth Roberts, Apconix
1:20 pm	AI in Drug Safety: Hype or Reality?	Szczepan Baran, MS, VMD, VeriSim Life
1:50 pm	AI Approaches Alternative to Animal Studies	Weida Tong, PhD, Director of Division of Bioinformatics and Biostatistics, FDA NCTR
2:20 pm	AI Approaches to 'Safety by Design' for Ag Chemicals	David Rouquie, PhD, Bayer CropScience (virtual presentation)
2:50 pm	Panel Discussion	
3:20 pm	Awards and Recognitions	
3:45 pm	Adjourn Day 2	

HESI 2022 Annual Meeting Speakers

Krishna Aragam, MD
Massachusetts General Hospital

Krishna Aragam is a cardiologist and cardiovascular geneticist at the Massachusetts General Hospital (MGH), and a member of the Cardiovascular Disease Initiative at the Broad Institute of Harvard and MIT. He investigates the population genetic determinants of cardiovascular diseases and the implementation of genomic data to inform primary and secondary cardiovascular prevention. Dr. Aragam is a core faculty member within the MGH Cardiovascular Genetics Program and the MGH Cardiovascular Disease Prevention Center. His clinical focus pertains to the management of patients and family members with a confirmed or suspected genetic predisposition to heart attack and heart failure.

Dr. Aragam graduated from Harvard College with a degree in Biochemical Sciences and received his medical doctorate and graduate training in clinical research at the University of Michigan. He completed his residency in Internal Medicine at the Hospital of the University of Pennsylvania, followed by a fellowship in Cardiovascular Medicine at MGH and post-doctoral training in computational biology and population genetics at the Broad Institute.

Szczepan Baran, MS, VMD
VeriSim Life

Szczepan is a scientist and veterinarian turned "technology geek." He is passionate about transforming the delivery of innovative medicines to patients through digital technologies and data enablement while pushing the scientific envelope and reimagining patient engagement.

Szczepan currently serves as a Chief Scientific Officer at VeriSIM Life, which leverages AI to improve drug discovery and development through a virtual drug development platform, where he leads the research and development strategy and oversees scientific functions, including basic and applied research projects, and develops new processes, technologies, and products.

He previously served as a Head of Emerging Technologies within Comparative Medicine at Novartis. In this position, he led an integrated digital enterprise strategy focusing on developing and incorporating patient-relevant AI technologies and conducted decentralized clinical trials (DCT). In parallel, Szczepan focused on stakeholder engagement to identify adaptation hurdles and develop a regulatory qualification pathway for Microphysiological Systems (MPS) technologies. He has played instrumental roles in establishing Global MPS and Digital Biomarkers Groups with a vision for strategic alignment and data agility.

Szczepan is a graduate of the University of Delaware and the University of Pennsylvania School of Veterinary Medicine. He completed his residency in Laboratory Animal Medicine and received a Master of Science degree in Comparative Medicine from the University of Washington.

Before joining VeriSIM Life, Szczepan held multiple start-up and faculty positions and served on numerous boards. He chaired the IQ MPS Affiliate and led the IQ MPS Affiliate Regulatory Outreach Group. Currently, he serves as an advisory board member at BRIDGE, ad hoc member of National Academies on the NHP Model Systems Committee, a co-chair of the MPS and Translational Digital Biomarker Initiatives of the North American 3Rs Collaborative, and serves on the Scientific Advisory Committee on Alternative Toxicological Methods (SACATM) ad hoc member.

Emily Bruce, PhD
University of Vermont

Dr. Emily Bruce is an Assistant Professor in the Microbiology and Molecular Genetics Department at the University of Vermont. She is also a member of the NIH COBRE-funded Translational Global Infectious Disease Research Center at UVM. She earned her Ph.D. and M.Phil in Virology investigating mechanisms of influenza A virus trafficking and budding at the University of Cambridge, as a Gates-Cambridge Scholar. She completed a post-doc in Dr. Bob Doms' lab at the University of Pennsylvania, studying the cellular biology of hantavirus entry and exit where she first began BSL-3 work. As a junior faculty member in Dr. Jason Botten's lab at UVM, Emily worked on arenaviruses, bunyaviruses and SARS-CoV-2 before establishing her own independent lab in 2021. Her lab studies SARS-CoV-2 and influenza and is investigating fundamental biology questions about viral assembly and egress and the role of particle shape on infectivity. In addition, the lab is interested in questions at the intersection of basic and clinical virology, which they study in collaboration with Drs. Margaret Mills, Keith Jerome and Alex Greninger at the University of Washington.

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Michelle Embry, PhD
Associate Director,
Environmental Science

Michelle Embry received her PhD in Toxicology in 2004 and her BS in Biology and Environmental Science and Policy in 1998 from Duke University. She is currently the Associate Director of Environmental Science at HESI, where she provides leadership, technical direction, and guidance to varied, multi-stakeholder, collaborative committees on topics related to risk assessment and environmental protection worldwide.

Prior to joining HESI in 2006, Dr. Embry worked as an Ecological Risk Assessor at the US EPA's Office of Pesticide Programs. She has expertise in both human health and ecotoxicology, with an emphasis on integrated approaches and alternative methods. Her current project portfolio includes the Animal Alternatives in Environmental Risk Assessment Committee and the Development of Methods for a Tiered Approach to Assess Bioaccumulation of Chemicals Committee, two of HESI's projects aimed at improving ecological risk assessment. Dr. Embry's work also includes the Risk Assessment in the 21st Century (RISK21) Committee, which developed a scientific, transparent, and efficient approach for human health risk assessment, including a web-based tool that has led to outreach and training activities on risk assessment approaches worldwide. In addition, she works with HESI staff and partners on project development related to chemical risk assessment issues.

Dr. Embry is an elected member of the SETAC North America Board of Directors (2014 to present), chair of the SETAC Global Partners Advisory Committee, and a member of the SETAC Bioaccumulation and Animal Alternatives Advisory Group Steering Teams. She is a full member of the Society of Toxicology (SOT) and a member of the SOT Risk Assessment and Mixtures Specialty Sections. She was a member of the ECETOC Task Force on Information to be Considered in a Weight-of-Evidence-Based PBT/vPvB Assessment of Chemicals (Annex XIII of REACH) in 2013 to 2014 and was a steering team member of the SETAC Adverse Outcome Pathway (AOP) Pellston Workshop (Spring 2017). Dr. Embry is also one of the founding partners on the "eco data hub" initiative, started in Fall 2016.

Patricia Escobar, PhD
Merck & Co., Inc

Dr. Escobar is an Executive Director in the Genetic and Cellular toxicology group, leading a team of scientists that focus on genetic toxicology, in vitro safety pharmacology and in vitro toxicology assessments. Dr. Escobar is an internationally recognized genetic toxicologist with experience in academia, a contract laboratory and the pharmaceutical industry, and a frequent participant in international collaborative workshops and enterprises such as development of OECD guidelines. Dr. Escobar joined Merck and Co. in 2015 as the Director of Genetic Toxicology, responsible for screening and bringing forward the best drug candidates from Discovery; for the GLP regulatory genotoxicity testing; and for developing follow-up strategies and application of new technologies for screening and for understanding mechanism of genotoxicity to support compound selection and risk assessment.

Dr. Escobar received a B.Sc. in Microbiology and a M.Sc. in genetic toxicology from the Universidad de los Andes in Bogotá Colombia, and her Ph.D. in Molecular Toxicology from the University of Pittsburgh. She then completed her postdoctoral training in the Gene & Environment Laboratory at University of California, Berkeley. Following her post-doc, Dr. Escobar worked at BioReliance as a Genetic Toxicology Study Director. In 2008, Dr. Escobar joined Boehringer Ingelheim Pharmaceuticals, in the Nonclinical Drug Safety group in the US site, where she had a series of roles with increasing responsibility managing and leading the predictive toxicology group, while also serving as the genetic toxicology scientific lead for this group and as a toxicologist in drug discovery teams.

Dr. Escobar has contributed widely to international efforts in genetic toxicology, such as the International Working Groups on Genetic Toxicology (IWGT) and the Expert Working Group on the OECD In vivo Mammalian Alkaline Comet Assay, and the OECD group working on the Bacterial Reverse Mutation testing guideline. Dr. Escobar is a former board chair and member of the Genetic Toxicology Association (GTA), a council member of the Environmental Mutagenesis and Genomics Society (EMGS) and was also a council officer in the Northeast Chapter of the Society of Toxicology. For EMGS she has chaired special interest groups on Applied Genetic Toxicology, and on New Technology, and the Alexander Hollander Committee. Currently, she is member of the Tox Forum Program Planning Committee, the OECD Genetox expert working group, the Health and Environmental Sciences Institute (HESI) Genetic Toxicology Technical Committee (GTTC) and the Emerging Systems Toxicology for the Assessment of Risk (eSTAR) Committee. In addition, Dr Escobar is a board member of HESI. Dr. Escobar is author/co-author of more than 25 publications including peer-reviewed articles and/or book chapters.

Mick Fellows, PhD
AstraZeneca

Dr Mick Fellows is the Director of CVRM Cell Therapy Safety at AstraZeneca in Cambridge UK. He earned his Ph.D in Pharmacology and Toxicology investigating topoisomerase II inhibition at Liverpool University. In the mid 1980's Mick joined Covance, where he developed a range of in vitro and in vivo genetox assays, becoming an authority on in vitro mutagenesis and phototoxicity.
In 2001, Mick joined AstraZeneca, initially as a genetic toxicologists. However, over the last decade, Mick's research has focused on AstraZeneca's advanced medicine safety platforms, including genome editing and modified RNA therapies. Mick's current role is as the AZ biopharm cell and regenerative medicine safety lead. Mick has had the honour of serving as the president of the United Kingdom Environmental Mutagen Society and has worked on and chaired several international workgroups; including HESI, OECD, EFPIA and ICH.

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Courtney Horvath, PhD, DABT
Novartis

Dr. Courtney Horvath is a board-certified toxicologist and drug development professional at Novartis Institutes for Biomedical Research (NIBR) (Cambridge, MA). Courtney is a graduate of the Dartmouth Superfund program where she studied the effects of low dose arsenic exposure in drinking water on the immune system in adult and developing mice. Following completion of her PhD and post doc at Dartmouth, Courtney started her career in biopharma at Sanofi-Genzyme as a project toxicologist, leading the preclinical development of several biologics and gene therapy programs. In 2014, Courtney moved to Novartis to continue her career as a project toxicologist. During the course of her career, Courtney has led the nonclinical development of biopharmaceuticals across various therapeutic areas, modalities, and all stages of development. In 2016, Courtney was promoted to a global leadership role in the Novartis Preclinical Safety (PCS) organization and then expanded that global role to all of Translational Medicine at Novartis. She is currently the Global Head of Strategy, Operations and Planning for Translational Medicine at NIBR, where she is the key leader of strategic projects and operations.

Courtney is also a mom to an incredible 10 year old, Colby, who has been bravely battling cancer since March 2020. Colby's journey has inspired Courtney to become a passionate advocate for childhood cancer patients and to raise awareness of the desperate need for more targeted, accessible, safe and effective therapies.

Margaret Mills, PhD
University of Washington

Dr. Margaret Mills is a Research Scientist in the University of Washington Virology Laboratory (UWVL). She received her Ph.D. in Molecular and Cellular Biology from the University of Washington, studying the evolution and genetics of lateral line development in Threespine Stickleback fishes under Dr. Katie Peichel. She completed a postdoctoral fellowship with Dr. Evan Gallagher and the Molecular Design Research Network (MoDRN) using zebrafish as a model to study chemical-caused oxidative stress. As part of that project and others in Dr. Gallagher's lab, she developed and characterized several lines of CRISPR-generated mutant fish, and adapted new techniques for use in the lab. The interest in assay and tool development she discovered during her post-doc led her to join the Clinical Research group at UWVL as the scientist in charge of respiratory virology in March of 2020, just after her colleagues at UWVL validated the first lab-developed test for SARS-CoV-2 in the country. Since then, she has worked on clinical assay design and validation, clinical trials for drug and commercial test development, and research at the intersection between basic sciences and clinical work with Dr. Emily Bruce and others.

Eliana Munarriz, PhD, MBA
University of Buenos Aires

Researcher of the National Council of Scientific and Technical Research (CONICET) and Senior Assistant Professor of the Faculty of Agriculture of the University of Buenos Aires (UBA). Degree in Biological Sciences from the University of Buenos Aires (UBA), Doctor in Molecular and Cellular Biology from the University of Rome "Tor Vergata" (Italy) and Master in Business Administration from the "Torcuato Di Tella University" (Argentina). I have completed a first post-doctorate in the Toxicology Unit of the Medical Research Council in Leicester (United Kingdom) and second in the NYU System Biology Center in New York, USA. In addition, I was invited as an expert in the field to do short-term research stays in different laboratories in the Argentina and Europe. Since my return to Argentina in 2012 I have directed my own laboratory in Applied Nematology. My group is focused on using the nematode C. elegans as a biological model to study environmental and molecular toxicity, with particularly interest on pesticides. As result of the outstanding quality of our research I was granted with 1st place of the National Food Safety and Quality Service (SENASA) Award. More recently, I become an active member of the Risk Analysis and Toxicology group at ILSI Argentina and coordinate RISK21 activities, including workshops in Spanish for academic, industry and government audiences. Currently, I am leading a FAO project to promote and build capacities to risk assessment in Argentina and have been appointed by the Argentinean Government as the technical expert at the Chemical Review Committee of the Rotterdam Convention.

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Dana Nachmanson, PhD
University of California San Diego

Dana Nachmanson is a Bioinformatics Scientist for Seattle-based startup, TwinStrand Biosciences. Dana started using and developing error correction methods in 2015 under Professor Rosana Risques at the University of Washington. There she contributed to the experimental and analytical development of two Duplex Sequencing-based methodologies including CRISPR-DS and PolyG-DS.

Dana then went on to complete her Ph.D. in Bioinformatics and Systems Biology at the University of California San Diego in 2022. There she focused on sequencing methodology optimization to perform genomic characterization of early carcinogenesis. During her dissertation, she collaborated with TwinStrand Biosciences and Merck to help design a method to detect and track non-genotoxic carcinogen-induced tumorigenesis using Duplex Sequencing. She has now joined TwinStrand Biosciences as a Bioinformatics Scientist on their research team where she facilitates the application of Duplex Sequencing to a wide array of applications in academia, industry, pharma and government.

Kumbukani Nyirenda, PhD
University of Malawi

Dr. Kumbukani K. Nyirenda is a holder of BSc (Hons) in Chemistry, MSc (Applied Chemistry) and PhD (Natural Products Chemistry). Presently, he is a senior lecturer in the Department of Pharmacy, Kamuzu University of Health Sciences (Formerly College of Medicine of the University of Malawi). His fields of expertise include: Natural Products, Medicinal Chemistry, Food Chemistry, Nanomaterials and Chemical Characterization.

He has contributed a book chapter in Medical Toxicology, published in reputed peer-reviewed journals including Journal of Ethnopharmacology, pharma nutrition, metabolomics and Food Chemistry. His academic and research aspirations are to add value to Malawian biological resources through sustainable partnerships. His present study, supported by the Carnegie Corporation of New York, seeks to unravel the physicochemical properties of nanomaterials from Malawian underutilized plant species. It is anticipated that this multidisciplinary work will provide high value and safe pharmaceutical and cosmetic products; and thus contribute towards generation of improved sustainable economic, social and environmental development of Malawi.

Kenneth Olden, PhD
National Institute of Environmental Health Sciences (retired)

Income Inequality and Health Equity with Respect to Life Expectancy.

Kennth Olden, PhD. NIEHS & NTP Director, 1991-2005.

Human health is determined by complex interactions between genes and the so-called social determinants of health, which are defined as the social and economic conditions under which people are born, live, grow-up and age. People live longer in countries with lower levels of inequalities with respect to income and wealth. Among industrialized nations, the United States has the largest gap in income between the rich and the poor, and by far the worst health outcome based on rates of infant, maternal mortality, and shorter life expectancy. I will make the case that growing income inequality in the United States is resulting in shorter life expectancy for individuals on the bottom rungs of the economic ladder, and that our economic and social policies are leading to devastating poverty, social discord, staggering income inequality, shorter life expectancy, and growing disparities in health.

HESI 2022 Annual Meeting Speakers

Syril Pettit, DrPH, MEM
Executive Director

Syril Pettit is the Executive Director of the Health and Environmental Sciences Institute (HESI) and has been with the organization since 2000. Dr. Pettit holds a Doctorate in Public Health Leadership from the University of North Carolina's Gillings School of Global Public Health, a Master's Degree in Environmental Management from Duke University's Nicholas School of the Environment, and a Bachelor's Degree in Biology from Amherst College. As the organization's senior scientific and organizational leader, Dr. Pettit guides the strategic and technical direction for the organization's collaborative programs and its Board of Trustees. She has authored or co-authored dozens of scientific articles and lectured at international scientific meetings around the world on topics including public health, oncology, cardiac safety, genomics, collaborative approaches to science, and other drug and chemical safety issues. She is an avid runner and swimmer.

Elizabeth Wellberg, PhD
University of Oklahoma

My background and training are in normal mammary gland biology and breast cancer metabolism. Specifically, we study the "vicious cycle" surrounding obesity and estrogen receptor positive (ER+) breast cancer, where obesity increases the risk for diagnosis, yet the treatments for ER+ breast cancer increase the risk for obesity and diabetes. My independent research focuses on the mechanisms through which obesity promotes breast cancer relapse and endocrine therapy failure, and on the metabolic effects of estrogen deprivation that occurs with endocrine (anti-estrogen) therapy. I established a transplant-competent murine model of obesity and insulin resistance, in which I grow breast cancer patient derived xenograft tumors (PDX) as well as established human breast cancer cell lines. We are investigating the mechanisms through which growth factor signaling potentiates the response to estrogen in the obese environment, potentially through ligand-independent activation of ER. In addition, my lab studies the role of ER in adipose tissue function and the impact of endocrine therapies on metabolic health. My overall research goals include 1) identifying host (environment)-specific drivers of breast cancer therapy resistance in the context of obesity; 2) determining the effects of endocrine therapy on skeletal muscle, adipose, and liver biology, and 3) understanding how these effects are influenced by obesity; and identifying the patient population at risk for adverse effects associated with endocrine therapy and implement appropriate ways to monitor and intervene to prevent breast cancer relapse. I combine basic research techniques, including culture of established and primary breast cancer cell lines, with preclinical models of obesity and clinical studies to comprehensively investigate the relationship between obesity, metabolic disease, and breast cancer progression.

Dallas Smith, PharmD
Kamuzu University of Health Sciences

Dallas Smith is a lecturer in the pharmacy department at the Kamuzu University of Health Sciences in Blantyre, Malawi where he instructs in the clinical pharmacy and pharmacognosy modules. Dr. Smith is also an Epidemic Intelligence Service (EIS) officer with the Mycotic Diseases Branch at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. Dallas holds a Doctor of Pharmacy (PharmD) degree from the University of Findlay in Findlay, Ohio. With a passion for global health equity and justice, he previously served as a Peace Corps volunteer in Cambodia (2017 – 2019) and Malawi (2019 – 2020). Dr. Smith collaborates with his Malawian counterparts on a number of capacity strengthening projects to expand the pharmacy profession in Malawi. He is an avid musical theater fan and native plant gardener.

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Shuo Xiao, PhD
Rutgers University

Dr. Xiao is an Assistant Professor in the Department of Pharmacology and Toxicology, Ernest Mario School of Pharmacy at Rutgers University. He is also a PI at the Environmental and Occupational Health Sciences Institute (EOHSI) at Rutgers. Dr. Xiao received his BMed in Preventive Medicine and MS in Toxicology from Peking University Health Science Center and received his PhD in Reproductive Biology and Toxicology from the University of Georgia (UGA). Dr. Xiao completed his postdoctoral fellowship in Dr. Teresa Woodruff's lab in the Department of Obstetrics and Gynecology at Northwestern University.

Dr. Xiao and his team focus on multiple research interests in female reproductive biology and toxicology, including (1) the adverse effects of classic and emerging environmental contaminants and clinical drugs on women's reproductive health, in particular of women's ovaries and associated ovarian functions, menstrual cycle and fertility; (2) engineering an ovary-on-a-chip and female reproductive-tract-on-a-chip using the microfluidic and organ-on-a-chip technologies; (3) development of novel non-hormonal birth control pills for women; and (4) environmental exposure on women's reproductive diseases such as polycystic ovarian syndrome (PCOS). Dr. Xiao's research is supported by EOHSI at Rutgers, NIH (K01ES030014, R01ES032144, P01ES028942, UH3ES029073), Bill & Melinda Gates Foundation, Health and Environmental Sciences Institute (HESI), and New Jersey Department of Environmental Protection (NJDEP).

Carole Yauk, PhD
University of Ottawa

Carole Yauk was the lead scientist of the Genomics Laboratory in the Environmental Health Science and Research Bureau at Health Canada for 18 years. She joined the University of Ottawa's Department of Biology as a professor in September 2020, where she holds the Canada Research Chair in Genomics and the Environment. Her research broadly focuses on the development and implementation of genomic tools for human health risk assessment of environmental chemicals. Toward this, she is involved in numerous working groups within HESI's Emerging Systems Toxicology in the Assessment of Risk (eSTAR) and Genetic Toxicology Technical (GTTC) Committees. She has served as a Canadian delegate to the Organisation for Economic Co-operation and Development (OECD) Extended Advisory Group for Molecular Screening and Toxicogenomics since 2012, where she is co-leading the developing of omics reporting framework and involved in the Adverse Outcome Pathway program. She is Past-President of the Environmental Mutagenesis and Genomics Society, co-chair of the upcoming International Conference on Environmental Mutagens in August 2022, and an editorial board member of several journals focused on mutagenesis and genetic toxicology.

David Rouquié, PhD
Bayer CropScience

Dr. Rouquié is leading the Toxicology Data Science team on the toxicology facility of Bayer Crop Science in Sophia Antipolis, France. His passion about science and research addressing societal needs keep him involved in innovative, collaborative and multidisciplinary research work. By training he is a biochemist and molecular biologist, continuously metamorphosing toward a hybrid profile at the interface between biological and computational sciences. He recently joined the scientific committee of ECETOC as Bayer representative and also has the role of Affiliate Chair 3IA Côte d'Azur University (Interdisciplinary Institute for Artificial Intelligence).

Weida Tong, PhD
US Food & Drug Administration

Dr. Weida Tong is Director of the Division of Bioinformatics and Biostatistics at FDA's National Center for Toxicological Research (NCTR). He has been an FDA Senior Biomedical Research and Biomedical Product Assessment Service expert since 2011, an Arkansas Research Alliance fellow since 2016, and a member of the Arkansas Academy of Computing since 2021. He has served on science advisory boards for several multi-institutional projects in Europe and the U.S. and also holds adjunct appointments at several universities. His primary research interests are in the fields of bioinformatics, artificial intelligence (AI), molecular modeling and data analytics for biomarker discovery, drug safety and repurposing, pharmacogenomics/toxicogenomics, and precision medicine.

Moderators & Panelists

Arianne Brown Jordan, PhD
Trinidad & Tobago Ministry of Health

Dr. Brown Jordan is from the Caribbean twin nation of Trinidad & Tobago (T&T). She was awarded a PhD in Veterinary Microbiology from the University of the West Indies, St. Augustine Campus in 2019, while her masters program at the London School of Hygiene and Tropical Medicine was in the field of Medical Microbiology. She was a past recipient of an Epigenesis Young Scientist Award for Animal Health in the Caribbean, a project initiative by the French Agricultural Research Centre for International Development (CIRAD). Her research areas of interest and background reside in laboratory diagnostics for both human and animal health pathogens of importance, with specific strengths in molecular biology and virology.

She has worked extensively with various governmental institutions in the area of laboratory strengthening due to her extensive knowledge in viral agents, emerging pathogens as well as modern laboratory and diagnostic sciences. Her knowledge and experiences have afforded her the opportunity to contribute more recently to the development of a new International Organization for Standards (ISO) standard document related to SARS-CoV-2 detection as well as to guide national establishment of molecular and antigen testing programs for SARS-CoV-2 in T&T.

Brown Jordan's main propelling factors for being involved in research and scientific development, is her desire to see greater progress and strides towards the resolution of global challenges and going further towards implementation of the solutions, as evident by her pursuits. She is mother to and advocate for one special needs son and enjoys being a fashion creative when time is afforded.

Sandrine Deglin, PhD
Scientific Program Manager

Sandrine Deglin joined HESI in 2018 as a Scientific Program Manager. Prior to joining HESI, she worked with the Environmental Public Health Program at the State of Alaska Division of Public Health for four years, where she managed the program for nearly two years. Prior to that time, Dr. Deglin spent seven years as a consultant in the Toxicology and Mechanistic Biology Group of Exponent, Inc.

Dr. Deglin holds a PhD in Applied Chemistry and an MS in Environmental Sciences and Engineering from the Colorado School of Mines. While studying in France, she also received a MS in Chemistry and a postgraduate degree in Public Health. Dr. Deglin is interested in all aspects of environmental health, including chemical fate and transport, toxicology, epidemiology, risk assessment, food safety and food security, and risk communication. She is currently involved in the HESI Bioaccumulation, Environmental Epidemiology, RISK21, UVCB, and Transforming the Evaluation of Agrochemicals (TEA) Committees.

Charlene McQueen, PhD, ATS
University of Arizona

Charlene A. McQueen is currently an Adjunct Professor at the University of Arizona. She was a Senior Scientist at the National Health Effects Research Laboratory of the USEPA (2017) and the Director of the Integrated Systems Toxicology Division (2011–2016). Prior to that, she held positions at the Harrison School of Pharmacy, Auburn University (2007–2011), and the Department of Pharmacology and Toxicology at the University of Arizona (1990–2007). Dr. McQueen received a MS in pharmacology from New York University and a PhD in human genetics from the University of Michigan. She has a particular interest in the genetic basis for response to xenobiotics. Her work with the arylamine N-acetyltransferase polymorphism has demonstrated that this genetic variation can affect drug efficacy as well as toxicity of aromatic amines and hydrazines. She was the Editor-in-Chief of the second (2007) and third (2017) editions of Comprehensive Toxicology. She also served as a member of the Editorial Board for Reference Modules in Biomedical Sciences (Elsevier Science) (2014–2017) and Editor-in-Chief of that board (2017–2019). Dr. McQueen is an American Association for the Advancement of Science Fellow and a Fellow in the Academy of Toxicological Sciences (ATS). Dr. McQueen received the Society of Toxicology (SOT) Public Communications Award and the SOT AstraZeneca Traveling Lectureship Award and has served on numerous SOT committees. She was on the Environmental Health Sciences Committee of the National Institute of Environmental Health Sciences, the Board of Scientific Councilors of the National Toxicology Program, and the National Institutes of Health Cancer Etiology Study Section. Dr. McQueen is a member of the Health and Environmental Sciences Institute (HESI) Board of Trustees.

Moderators & Panelists

Angelo Moretto, MD, PhD, ERT, Fellow ATS

University of Padova

Professor of Occupational Medicine (Industrial Toxicology), Department of Cardiac-Thoracic-Vascular and Public Health Sciences, University of Padova, and Director Occupational Health Unit, Padua University Hospital since September 1, 2020.

Previously, Professor of Occupational Medicine (Industrial Toxicology), Department Biomedical and Clinical Sciences, University of Milan, and Director of International Center for Pesticides anf Health Risks Prevention, "Luigi Sacco" Hospital, Milan, Italy.

Interest and activities:

- Risk assessment of chemical exposures, including experimental mechanistic studies, with specific interest in pesticides and pesticide metabolites, and combined exposure to environmental and occupational chemicals; use of in silico and in vitro approaches for hazard identification and characterization; collaboration with epidemiologists to apply the epi-tox framework;
- Author of over 100 papers on toxicology and occupational toxicology, book chapters;
- Member (present and past) of many international committees for the risk assessment of exposure to chemicals, in particular pesticides, including JMPR (previous chair), EFSA PPR panel, SCOEL and several national committees on toxicology;
- Members of international committees and working groups for the improvement, harmonization and innovation of risk assessment methods, including trustee (past) of HESI;
- Referee of research projects for several governments and institutions;
- Invited speaker to several meetings related to toxicology and chemical risk assessment;
- Recipient of several research grants from National and International bodies, related to toxicology, including occupational toxicology, risk assessment and training on toxicology and risk assessment.

David Morrow, PhD

EATRIS

David Morrow is a Senior Scientific Programme Manager at EATRIS. David received a BSc (Hons) in Molecular Biology from University College Dublin in 2001 and a PhD in Vascular Biology from Dublin City University in 2006. This was followed by an American Heart Association Postdoctoral Fellowship at the University of Rochester Medical Centre, NY from 2006-08 which resulted in an American Heart Association Young Investigator Award in 2008. From 2009-2015 he was an NIH/American Heart funded Principal investigator heading multiple projects in cardiovascular disease and Cancer as a faculty member at the University of Rochester Medical Centre. At EATRIS, David coordinates the scientific activities of the Advanced Therapies and Vaccines Platforms. He also leads the EATRIS COVID-19 Research Forum and coordinates the scientific output of the EATRIS training course in Advanced Therapies, ADVANCE. David also holds an MBA in health science management and has worked as a consultant and in technology transfer in life sciences.

EATRIS

EATRIS is the European infrastructure for translational medicine. Its vision is to make the translation of scientific discoveries into medical products more effective to improve human health and quality of life and to support researchers in developing their biomedical discoveries into novel translational tools and interventions for better health outcomes for society.
EATRIS provides access to a vast array of pre-clinical and clinical expertise and facilities that are available within 127+ top-tier academic centres across Europe. It focuses on improving and optimising preclinical and early clinical development of drugs, vaccines, and diagnostics. Solutions are developed in the fields of advanced therapy medicinal products, imaging and tracing, small molecules, vaccines and biomarkers. In addition, EATRIS works with public funding agencies, charities and policy makers with tailored actions to help improve the translational research and innovation ecosystem in addition to providing regulatory services, training and education and mentoring.

Clare Narrod, PhD

Joint Institute for Food Safety and Applied Nutrition at UMD

Dr Clare Narrod is the Director of the Risk Analysis program at JIFSAN and leads the monitoring and impact effort associated with the evaluation of JIFSAN's capacity building efforts. She received her Ph.D. in Energy Management and Environmental Policy in 1997 and a Master's Degree in International Development and Appropriate Technology both from the University of Pennsylvania. From 1998-2000 she served as an American Association for the Advancement of Science Risk Analysis Fellow at USDA. Prior to coming to JIFSAN she worked at the International Food Policy Research Institute, the United States Department of Agriculture, and at the Food and Agriculture Organization. She has consulted for the World Bank and the Inter-American Institute for Cooperation on Agriculture. She has field experience in Brazil, China, Costa Rica, Ethiopia, Ghana, India, Indonesia, Kenya, Nigeria, Thailand, Mali, Mexico, Vietnam, and Zambia. She has taught in the Bahamas, Colombia, China, Egypt, India, Jamaica, Malaysia, Russia, and the US.

She started her career in the government where she conducted and reviewed risk assessments and cost-benefit analyses of proposed and final rules for Agency clearance associated with reducing the risk of animal and plant diseases and improving food safety. Over the years she has conducted research on identifying cost-effective food safety and animal health risk reduction measures for different size producers, understanding the role of public-private partnerships in ensuring the production of safe food so as to improve market access for the poor, and measuring the impact of capacity building efforts on improving food safety. Currently she is involved in research associated with monitoring and impact evaluation of various food safety capacity building efforts..

In addition to her work at JIFSAN she also served as a Scientific Advisory Board Member of the Institute for Food and Agricultural Literacy at UC Davis, World Food Center and on the Board of Directors for the Center for Foodborne Illness, Research & Prevention. She was a working group member on a Global Food Ethics Project at John Hopkins Berman Institute for Bioethics, a member of the expert panel for a Global Regulatory Competency and Curricula, and a consensus committee member of two National Academy of Science on the Institute of Medicine's studies aimed strengthening Food Safety Regulatory Systems in Developing Countries.

Moderators & Panelists

Rose Omari, PhD
Ghana Science and Technology Policy Research Institute

Dr. Rose Omari is a Senior Research Scientist at the Science and Technology Policy Institute, Council for Scientific and Industrial Research (CSIR-STEPRI), in Ghana. She has expertise in multidisciplinary and policy research in agriculture, food safety, nutrition, and health. Dr. Omari is a co-founder of EatSafe Ghana, an NGO that promotes public health through safe and healthy food. She is a member of the Partnership for Aflatoxin Control in Africa (PACA) and has contributed in many ways to the PACA program, which aims to make Africa free from aflatoxin. She is also a trainer/educator and has conducted several trainings in food safety, nutrition, and risk communication for varied audiences using different channels. Dr. Omari has a BSc in biochemistry and food science, a master's degree in food science from the University of Ghana, and a PhD in rural sociology (food studies) from Wageningen University and Research Center, The Netherlands.

Barbara Parsons, PhD
FDA

Dr. Barbara Parsons is a Research Microbiologist in the Division of Genetic and Molecular Toxicology at the US Food and Drug Administration. She has nearly forty years of experience and expertise applying molecular biology techniques to a variety of research areas. Dr. Parsons studied biology at the State University of New York at Binghamton and received her B.S. degree in biology in 1980. From 1980-1982, she worked as a technician under the supervision of Dr. Richard J. Roberts at Cold Spring Harbor Laboratory, where she participated in sequencing the adenovirus-2 genome. As a participant in its Interdisciplinary Program in Genetics, Dr. Parsons conducted research on the telomere sequences of Orthopoxviruses and obtained her Ph.D. in microbiology and immunology from Duke University in 1988. She conducted research in plant molecular biology at the Beltsville Agricultural Research Center from 1988 to 1992. Specifically, she studied the plant hormone, ethylene, and its impact on gene expression and tomato fruit ripening. Dr. Parsons worked as a research associate at the University of Arkansas at Little Rock from 1992 to 1994. She joined NCTR as an Oak Ridge Institute for Science and Education (ORISE) postdoctoral fellow in 1994. Dr. Parsons has been a research microbiologist serving as a principal investigator in the NCTR Division of Genetic and Molecular Toxicology since 2002.

At NCTR, Dr. Parsons developed a highly-sensitive, allele-specific competitive blocker-PCR method (ACB-PCR). This method has been used to quantify specific hotspot-point mutations in oncogenes and tumor-suppressor genes at very low frequencies 3 mutants in a background of 300,000 wild-type alleles). Dr. Parsons and colleagues have developed a unique research program around the use of ACB-PCR. The goals of this program are to improve methods for assessing the carcinogenic potential of human exposures and developing knowledge that will advance the field of personalized medicine.

Ruth Roberts, PhD, FRSB, FRCPath
Vice Chair of Board
ApconiX, Ltd.

Dr. Ruth A. Roberts is Chair and Director of Drug Discovery at Birmingham University, UK, and Cofounder of ApconiX, an integrated toxicology and ion channel company that brings together a team of world-renowned nonclinical safety experts with over 300 years of drug discovery and development experience. Before that, Ruth was Global Head of Regulatory Safety at AstraZeneca and Director of Toxicology for Aventis in Paris, France. She is currently Vice Chair of HESI. She chaired the HESI Emerging Issues Committee from 2015 to 2016, joined the HESI Board in 2019, and has co-chaired the HESI Biomarkers of Neurotoxicity scientific committee since its inception in 2015.

Dr. Roberts received her BSc in biochemistry and her PhD in medical oncology from the University of Manchester, UK. She is former president of EUROTOX, former president of the British Toxicology Society (BTS), and a Fellow and past president of the Academy of Toxicological Sciences (ATS) and was elected Fellow of the Royal College of Pathologists in 2012 and of the Royal Society of Biology in 2014.

Dr. Roberts was the recipient of the SOT Achievement Award in 2002, the EUROTOX Bo Holmstedt Award in 2009, and the SOT 2018 Founders Award, given in recognition of outstanding leadership in fostering the role of toxicological sciences in safety decision making. With over 150 publications in peer-reviewed journals, she is interested in developing and implementing innovative models in drug discovery and development.

Moderators & Panelists

Norman Stockbridge, MD, PhD
US Food and Drug Administration

Norman Stockbridge received his MD and PhD (physiology) degrees from Duke University. He performed basic science research before joining the FDA as a medical officer in 1991. Dr. Stockbridge is currently director of the Division of Cardiovascular and Renal Products in the FDA/CDER.

Martin van den Berg, PhD, ERT
Chair of Board
Utrecht University

Prof. Dr. Martin van den Berg is an Emeritus Professor in Toxicology, former deputy director of the Institute of Risk Assessment Sciences of the University of Utrecht, and a European Registered Toxicologist (ERT). He is currently Chair of HESI.

He is an honorary professor in environmental toxicology at the University of Queensland (Brisbane) and a visiting professor at the Royal Chulabhorn Research Institute and Graduate School in Bangkok. In 2006 he received an honorary doctorate from the University of Umea, Sweden, for his research on mixture toxicity of dioxin-like compounds. He has published over approximately 375 peer-reviewed scientific articles, short papers, and conference proceedings.

Prof. van den Berg has been and is an advisor to many national and international organizations (Dutch National Health Council, WHO, FAO, IARC, EU, and US) involved with (eco)toxicological risk assessment of environmental and food contaminants and pesticides.

He is Co-Editor-in-Chief of Regulatory Toxicology and Pharmacology and Current Opinion in Toxicology (Elsevier). From 2008 to 2018 he served as a member of the Dutch Committee of Appeal from the Board of Authorisation of Plant Protection Products and Biocidal Products. During the last decades he was also an advisor to the chemical and pharmaceutical industry for the registration and sustainable use of new products.

Douglas Wolf, DVM, PhD, FIATP, ATS
Syngenta

Dr. Wolf graduated in 1981 from the University of Missouri with a Doctor of Veterinary Medicine degree (D.V.M.) and, after 6 years in clinical veterinary practice, attended Purdue University where, in 1991, he completed a pathology residency and received a research PhD in Veterinary Pathology. Dr. Wolf was a staff scientist for 6 years at the Chemical Industry Institute of Toxicology (CIIT) where he studied chemical carcinogenesis. From 1997 until 2013 Dr. Wolf held various positions with the U.S. Environmental Protection Agency, initially as a Principal Investigator at the National Health and Environmental Effects Research Laboratory (NHEERL), where he continued research in chemical carcinogenesis and molecular pathology. Dr. Wolf held several formal leadership roles at EPA as a Branch Chief in the Environmental Carcinogenesis Division, as Director of the Toxicology Assessment Division, as Assistant Laboratory Director in NHEERL and as Director of the Endocrine Disruptor Screening Program in the Office of Chemical Safety and Pollution Prevention. He received numerous awards for innovative work at the US EPA to provide solutions to improve regulatory science and decision-making. In November 2013 he joined Syngenta Crop Protection as Regional Lead for Toxicology and Health Sciences in North America. Dr. Wolf is currently a Senior Syngenta Fellow where he leads international efforts to advance science-based risk assessment focusing on crop protection chemicals and progressing the development and qualification of new approach methods in the service of decreasing the use of animals in chemical evaluation. Dr. Wolf has authored or coauthored over 155 journal articles, book chapters, and technical reports and has presented at numerous national and international scientific meetings. In 2004 he was elected a Fellow of the International Academy of Toxicologic Pathologists and in 2007 a Fellow of the Academy of Toxicological Sciences.

Shermaine Mitchell-Ryan, PhD
Scientific Program Manager

Shermaine Mitchell-Ryan is a native Washingtonian and a product of the District of Columbia public school system. She holds a BA in Biology with a minor in Theater Arts from St. Mary's Public Honor's College in St. Mary's City of Maryland, a Master's Degree in Cancer Biology Prevention and Control from a dual-institution program at the University of the District of Columbia and Georgetown University, and a PhD in Cancer Biology and Pharmacology from the Department of Developmental Therapeutics at the Wayne State University School of Medicine. Prior to joining HESI, Dr. Mitchell-Ryan served as an AAAS Science and Technology Policy Fellow at the National Science Foundation's ADVANCE program office, where she assisted in managing an $18 million federal program geared toward increasing the participation and success of women in STEM academic careers.