Speaker Biographies
SOT FDA Colloquium: Toxicology of Nanoparticles

Richard Canady, PhD, Co-Chair

Richard Canady has served in senior science policy roles for human health risk assessment for the White House, US Food and Drug Administration, and the Centers for Disease Control as well as for consulting and nonprofit corporations for a variety of government and industry clients in the US and Europe. Particular interests are health promotion, safe development of novel technology, and balancing bias across stakeholder perspectives. Dr. Canady received a PhD in neurophysiology and behavior from the Rockefeller University and maintained certification from the American Board of Toxicology (DABT) for 15 years.

Kapal Dewan, MS, CLSp(CG), Co-Chair

Kapal Dewan has 30 years of experience in regulatory science, toxicology, and clinical genetics. She has worked as a scientist at companies such as DuPont Bristol-Myers Squibb and Merck in the R&D Department. She has a dual career, having worked as a clinical geneticist with Christiana Health Care Systems for 10 years. Since 2008, she has been in the Office of Cosmetics and Colors (OCAC) at the US Food and Drug Administration (FDA). Currently, she is a team lead and oversees compliance-related activities for cosmetics to ensure that cosmetic products marketed in the US comply with the FDA laws and regulations. Mrs. Dewan leads a team of scientists comprising microbiologists, regulators, chemists, and biologists who are actively involved in scientific review of data to support regulatory decisions and policy development for cosmetic products. She is also actively involved in the FDA's Marijuana Working Group and Nanotechnology Task Force activities. Mrs. Dewan plays a key role in coordinating and leading cosmetics

related activities at OCAC. She is the lead author of the cosmetics nanotechnology guidance “Safety of Nanomaterials in Cosmetics.” She has presented at scientific and regulatory meetings and published several scientific papers in peer reviewed journals. Mrs. Dewan has a MS in Biology with an emphasis in genetics and a BS in Biology from the Science College, University of Patna, Patna, Bihar, India. She is a recipient of the prestigious gold medal for standing first class in order of merit in the MS (1983). She conducted three years of post-graduate research in genetics at Delhi University.

Anil Patri, PhD, Speaker

Anil Patri serves as the Chair, Nanotechnology Task Force, and Director of Nanocore, National Center for Toxicological Research, US Food and Drug Administration. His laboratory is very active in regulatory science research to understand material characteristics and safety and efficacy of products containing nanomaterial, and provides training to scientists and reviewers at FDA. He serves on the US National Nanotechnology Initiative Nanoscale Science, Engineering, Technology Subcommittee and Nanotechnology and Environmental Health Implications working group for interagency coordination. Dr. Patri is as member of ISO TC229 and serves on the executive committee of ASTM E56 to facilitate standards development in nanotechnology. He co-chairs the EU-US Nanomedicine and Characterization Communities of Research.

Prior to joining FDA in 2014, Dr. Patri served as the Deputy Director, Nanotechnology Characterization Laboratory (NCL), at the National Cancer Institute. In a decade-long tenure at NCL, he assisted collaborators from industry and academia towards clinical translation of drug products utilizing nanotechnology. From 2006-2014, he also served as a guest scientist at the National Institute of Standards and Technology. Dr. Patri developed nanotechnology-based targeted drug delivery and imaging agents for cancer until 2004 at the Center for Biologic Nanotechnology, University of Michigan Medical School. He obtained his PhD from the University of South Florida, conducting basic

research on dendritic nanomaterial. Dr. Patri is a principal investigator on several ongoing research projects and a co-author of over 70 peer reviewed publications.

Christie M. Sayes, PhD, Speaker

Christie Sayes is a practicing research scientist in the fields of toxicology, chemistry, material science, and environmental health. Currently, she holds the position of Associate Professor of Environmental Science and Toxicology at Baylor University. Sayes is a subject matter expert in advanced materials, human exposure and health effects, and risk science. Her activities include working with partners, collaborators, and trainees in designing studies related to safety-by-design considerations of engineered materials used in drug delivery and consumer product applications. Dr. Sayes is also interested in occupational safety and environmental transformations of particle systems in complex matrices. She possesses a working knowledge of laboratory science and US regulatory climates. Routine activities include cell culture, zebrafish and rat *in vivo* models, biomolecular mechanistic analyses, mass spectrometry, electron microscopy (TEM and SEM), and statistics. Data sets are always related back to the published literature, compared against appropriate controls, and verified using orthogonal methods.

Christie received her PhD in Chemistry in 2005 from Rice University. Her dissertation focused on the “nano-bio interface.” After graduation, she joined The DuPont Company as Visiting Scientist and aided in the development of the DuPont-Environmental Defense Nano Risk Framework, the international standard for assessing risks associated with engineered nanomaterials.

Walter Brand, PhD, ERT, Speaker

Dr. Walter Brand is a toxicologist and works as a scientific officer at the National Institute for Public Health and the Environment (RIVM) in The Netherlands. Main topics of his current work concern the risk assessment of the application of nanomaterials in food, the safety of chemical substances in consumer products, and children-specific issues related to exposure. He has a master's in human nutrition and health and did his PhD in toxicology at Wageningen University, the Netherlands. He has a broad background in various fields and aspects of toxicology, as he previously worked as a risk assessor regarding human toxicology of pesticides, as a postdoctoral researcher in the implementation of bioassays in chemical water safety, and as a trainee study director and scientist in pharma R&D. Within this broad range of experience in the life sciences, he has a proven track record with various scientific publications and reports.

Lynne Haber, PhD, DABT, Speaker

Lynne Haber is an Associate Professor in the Department of Environmental and Public Health Sciences at the University of Cincinnati, where she leads the Risk Science Center within the department. She received her PhD in molecular biology from the Massachusetts Institute of Technology. She coauthored hundreds of documents for multiple federal and state/provincial agencies and private sponsors, including assessments of several nanomaterials for the Consumer Product Safety Commission. Her risk assessment methods research has included improving methods for extrapolating from the available data to safe exposures and designing approaches to address challenging risk assessment questions. For example, Dr. Haber has investigated the use of biomarkers in risk assessment and is currently working on improvements to read-across and other methods for data-poor chemicals. She has served on peer review panels for EPA and other US and foreign government agencies, as well as private organizations; on two

panels for the NAS/NRC; and on the IPCS EHC 240 dose-response author group. She has authored/coauthored more than 50 publications of chemical assessments or risk assessment methods, and more than ten book chapters, including as the lead author for the chapter on noncancer risk assessment in *Patty's Toxicology*. She is also active in teaching continuing education courses. Dr. Haber has been a member of SOT since 1998 and has served as the Secretary/Treasurer of the Risk Assessment Specialty Section. She is a councilor in the Sustainable Chemicals through Contemporary Toxicology Specialty Section.

Timothy Duncan, PhD, Panelist

Timothy Duncan received his undergraduate degree in chemistry in 2000 from Haverford College, located just outside of Philadelphia. He obtained his PhD in physical/inorganic chemistry in 2006 from the University of Pennsylvania under Professor Michael J. Therien (now at Duke University). The dissertation research involved measuring the photophysical properties of conjugated porphyrin arrays designed for medical diagnostic and optoelectronic applications. After graduation, his postdoctoral research was at the University of Pennsylvania in the lab of Professor So-Jung Park, where he built a single-molecule fluorescence imaging system to study the light emission properties of novel quantum-dot based bio-imaging agents and devised a new method to synthesize color-tunable conducting polymers. Since 2009 Dr. Duncan has been a research scientist at the US Food and Drug Administration's Division of Food Processing Science and Technology. Current research interests include assessing exposure to nanomaterials from food contact materials and developing nanotechnology-enabled sensors for food safety.

Dr. Duncan has technical expertise in spectroscopy (including UV/Vis, fluorescence, infrared, time-resolved, nuclear magnetic resonance, and inductively-coupled plasma atomic emission), confocal and single-molecular microscopy, molecular photophysics, materials chemistry, thermal and mechanical analysis (including thermogravimetry,

calorimetry, materials testing), nanomaterials, and polymer science. He also has formal training in risk management and food/drug law, and significant experience with data analysis, project management, technical writing, public speaking, and mentoring/teaching.

Agnes G. Oomen, PhD, Panelist

Agnes Oomen is a senior scientist at the National Institute for Public Health and the Environment (RIVM) in the Netherlands. She works at the interface between science and policy, leading and participating in national and European projects, for example, the health risks, toxicokinetics, grouping, and read-across of nanomaterials, as well as of other substances. She is an active member of the EFSA cross-cutting Working Group on Nanotechnologies and the EFSA Working Group on the food additive E171 (titanium dioxide). Dr. Oomen acts as an ad hoc expert in several international expert, working, and network groups. She is involved in the adaptation of OECD Test Guidelines and Guidance Documents on toxicokinetics to accommodate testing of (nano)particles. In addition, Dr. Oomen is exploring the topic of advanced materials in an international setting, taking into account issues related to their safety and sustainability by design, the scale of developments, and considering potential effects and the applicability of legal frameworks.