Speaker Bios

Development of Best Practices in Physiologically Based Pharmacokinetic Modeling to Support Clinical Pharmacology Regulatory Decision-Making

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FDA White Oak Campus Great Room

Susan Cole, BSc
Expert Pharmacokinetics Assessor and Head of the Pharmacokinetics Group, Medicines and Healthcare products Regulatory Agency
Susan Cole is an Expert Pharmacokinetics Assessor and Head of the Pharmacokinetics group at the UK Regulatory Agency. She is also a member of the Pharmacokinetics Working Party and the Modelling and Simulation Working Party at the European Medicines Agency. Prior to joining the MHRA in 2012, Sue worked for 26 years at Pfizer in the UK in the field of Drug Metabolism and Pharmacokinetics. While in industry, Sue fulfilled several roles including: Head of the Preclinical Pharmacokinetics and Modelling group and as a Clinical Pharmacologist. Sue was also one of the Rapporteurs on the EMA guideline: The Reporting of Physiologically Based Pharmacokinetic (PBPK) Modelling and Simulation.

Grace Fraczkiewicz, BS, MSc
Team Leader, Simulation Studies, Simulations Plus, Inc.
Grace Fraczkiewicz is currently Team Leader of the Simulation Studies Team at Simulations Plus, where she mentors and manages a team of scientists providing mechanistic absorption and PBPK modeling consulting services for the pharmaceutical industry. Projects performed by her group encompass all areas of pharmaceutical product development, from early discovery through clinical development, and she has been involved in numerous studies that informed regulatory decisions. Grace joined Simulations Plus in 2000 as a scientist supporting the development and validation of new software tools for the pharmaceutical industry, such as GastroPlus™, ADMET Predictor™, and DDDPlus™. She has been leading the consulting services team since 2010. She holds B.S. degree in Chemistry and M.Sc. in Chemical Physics from Wroclaw University in Poland.

Iain Gardner, PhD
Head of Translational DMPK Science, Simcyp
Iain graduated from the University of Nottingham (Pharmacy) and completed his professional training in Newcastle. He was awarded a PhD from the University of Sheffield in 1993. After Post-Doctoral positions at the University of Toronto, Canada and Imperial College, UK, investigating the links between the metabolism and toxicity of drugs and chemicals, he joined Pfizer in 1999 where he was responsible for optimising pharmacokinetic (PK) properties of compounds for Drug Discovery and Development projects. Particular areas of interest were the prediction of human pharmacokinetics and the application of *in silico* physiologically based PK approaches to projects. Since July 2011, Iain has been head of the

Translational DMPK Sciences team at Simcyp. The science team at Simcyp is responsible for further developments of the population-based, physiologically based PK-PD simulator.

Marc Gastonguay, PhD
CEO, Metrum Research Group
Dr. Marc Gastonguay has dedicated more than 25 years to science, advocacy, innovation, and education in the discipline of pharmacometrics. He is founder and CEO of Metrum Research Group, a provider of strategic biomedical modeling and simulation solutions. Dr. Gastonguay received a BS in Pharmacy from the University of Connecticut, a PhD in Pharmacology from Georgetown University, and a postdoctoral Fellowship at the US FDA. His current research interests include Bayesian modeling methods, pediatric clinical pharmacology, and drug development in rare diseases. He is also a strong advocate and contributor to open-science initiatives, including open-source software, open disease models & data and open courseware.

Steve Hall, PhD
Department of Drug Disposition, Eli Lilly
For the past 12 years Stephen D. Hall, PhD has been a Senior Research Fellow in the Drug Disposition Department at Eli Lilly and Co. in Indianapolis. In this role, he is responsible for developing new, quantitative preclinical and clinical translational models and has led several PBPK initiatives in the Translational and ADME Leadership Group of IQ. Prior to taking this position, Dr. Hall was Professor of Medicine and of Pharmacology and Toxicology at Indiana University School of Medicine and Associate Director of the Division of Clinical Pharmacology and the NIH-supported Clinical Pharmacology Training Program with adjunct appointments at the Purdue University School of Pharmacy. Dr. Hall received a BSc in Pharmacy from the University of Aston, Birmingham, U.K. in 1978 and a Ph.D. in Pharmacology from the University of Manchester in 1983 followed by a fellowship in Clinical Pharmacology at Vanderbilt University. Dr. Hall is a past Associate Editor of Drug Metabolism and Disposition and of Pharmacological Reviews. He is a past member of the board of directors and past chairman of the pharmacokinetics and drug metabolism section of the American Society for Clinical Pharmacology and Therapeutics and has served on several NIH study sections. Dr. Hall has published over 200 peer-reviewed articles in the fields of pharmacokinetics, drug metabolism and drug-drug interactions.

Tycho Heimbach, PhD
Director, PK Sciences, PBPK and Biopharmaceutics, Novartis Institutes for Biomedical Research
Dr. Tycho Heimbach is a Director at Novartis where he has led a global PBPK modeling group in PK Sciences and serves as a PBPK and biopharmaceutics expert. He received his PhD in Pharmaceutics from the University of Michigan. Currently, he chairs a global team which reviews and makes recommendations and conducts PBPK predictions to inform clinical trials, including pediatric studies, within the global PK Sciences function. His responsibilities include addressing regulatory questions in pediatric drug development. Moreover, his duties include development of translational biopharmaceutic formulation and PBPK/PD strategies across all disease areas. He served as the Novartis representative on PBPK WGs for PBPK Modeling and the PBPK renal and hepatic impairment for the Innovation and Quality in Pharmaceutical Development (IQ) consortium.

Shiew Mei Huang, PhD

Deputy Director, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA

Dr. Huang is Deputy Director, Office of Clinical Pharmacology, Office of Translational Sciences, Center for Drug Evaluation and Research (CDER), FDA. She received her BS in Pharmacy from the National Taiwan University School of Pharmacy in 1975 and her PhD from the University of Illinois, Medical Center in Pharmacokinetics and Biopharmaceutics in 1981. She has 15+ year drug development experience (Ortho pharmaceutical Corp. and Dupont-Merck Pharmaceutical Company) before joining the FDA in 1996. She is an Adjunct Professor at the School of Pharmacy, University of Maryland. She was the President (2009-2010) of the American Society for Clinical Pharmacology and Therapeutics (ASCPT) and has received the ASCPT Awards: "Gary Neil Prize for Innovation in Drug Development" in March 2014 and "Henry Elliott Distinguished Service Award" in March 2016.

Nina Isoherranen, PhD

Professor and Milo Gibaldi Endowed Chair, Department of Pharmaceutics, School of Pharmacy, University of Washington

Nina Isoherranen is a Professor and Milo Gibaldi Chair at the Department of Pharmaceutics, School of Pharmacy, University of Washington. Her NIH-funded research program is focused on translational research in endogenous hormone and vitamin-disease interactions, in drug metabolism, drug-drug interactions and in physiologically based pharmacokinetic (PBPK) modeling. She has published over 110 peer-reviewed manuscripts and 5 book chapters and has mentored numerous graduate students and post-doctoral fellows. She is an Associate Editor of Drug Metabolism and Disposition and Clinical & Translational Science. She has received several scientific awards including the Drug Metabolism Division Early Career Achievement Award by the American Society for Pharmacology and Experimental Therapeutics in 2013 and the ISSX North American New Investigator Award in Honor of James R. Gillette in 2014.

Christopher Joneckis, PhD

Associate Director for Review Management

Chris Joneckis currently serves as the Associate Director for Review Management for the Center For Biologics Evaluation and Research (CBER) at FDA. In this capacity, he Is the Center's authoritative expert on review management, directing the review management staff and providing leadership for review program activities executed throughout the offices of CBER. He is the CBER lead for user fee negotiations and is responsible for the development, implementation and oversight of several CBER programs including; policies, procedures and standards for review, data standards, information technology, regulatory affairs, document control, regulatory database and regulatory business operations, and Chemistry Manufacturing and Controls policy.

Colleen Kuemmel, PhD

Staff, Immediate Office, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA

Dr. Kuemmel works cross-functionally in the Office of Clinical Pharmacology (OCP) to support policy development, communications, training/education and outreach towards the advancement of model-

informed drug development (MIDD) at the FDA. Dr. Kuemmel leads the PBPK Oversight Board, which provides a high-level platform to identify and strategize on issues and opportunities to advance the use of PBPK, and also serves on the MIDD Steering Committee in OCP. Prior to joining the FDA in 2018, Dr. Kuemmel worked for Novo Nordisk where her responsibilities included supporting the global submission and approval of treatments for hemophilia. She also previously held a research scientist position at Argonne National Laboratory/Department of Energy. Dr. Kuemmel received her PhD from SUNY Upstate Medical University and performed her post-doctoral training at Cornell University.

Don Mager, PharmD, PhD

Professor and Vice Chair of Pharmaceutical Sciences; Affiliation: University at Buffalo, SUNY

Dr. Mager is Professor and Vice Chair of Pharmaceutical Sciences at the University at Buffalo, State University of New York. He is also President and CEO of Enhanced Pharmacodynamics, LLC. He has served on the Pharmaceutical Sciences and Clinical Pharmacology Advisory Committee to the FDA and currently serves as an Associate Editor at CPT:Pharmacometrics & Systems Pharmacology and Pharmacology. He is a Fellow and former President of the International Society of Pharmacometrics and is a Fellow and President-Elect of the American College of Clinical Pharmacology. His research focuses on identifying molecular and physiological factors that control the pharmacological properties of drugs by combining experimental data with pharmacometrics and systems pharmacology modeling, with a focus on anti-cancer and immunomodulatory agents. Current efforts seek to combine network-based analysis with empirical and systems models to explore combinatorial anti-cancer drug regimens, heterogeneity in cancer responses, and chemotherapy-induced adverse drug reactions. He served as a Co-Editor of the book Systems Pharmacology and Pharmacodynamics and has contributed to 140+ peer-reviewed publications.

Tina Morrison, PhD

Deputy Director, Division of Applied Mechanics, Office of Science and Engineering Laboratories, CDRH, FDA

During the 11 years at the FDA, Tina has been working to advance the role of computer modeling and simulation in medical device design and product evaluation. Lauding her work ethic, in 2016 the FDA Office of the Chief Scientist entrusted her with forming and leading an agency-wide working group on modeling and simulation, whose first workshop attracted hundreds of FDA participants. She also headed the drafting of FDA's breakthrough guidance for modeling: Reporting of Computational Modeling Studies in Medical Device Submissions, attracting international recognition. Outside the Agency, Tina has led the development of pathways for enhancing modeling credibility and acceptance. For instance, she was selected by her peers to lead a 3-year effort in developing a verification and validation standard for the American Society of Mechanical Engineers (ASME), which culminated in 2018 with the first-ever set of evaluating procedures for computational modeling of medical devices, called the ASME V&V 40 standard. The FDA recently recognized this standard for supporting medical device evaluation. Because of these efforts, Tina was selected as the 2019 Federal Engineer of the Year for the FDA. She is the Deputy Director of the Division of Applied Mechanics in FDA's Office of Science and Engineering Laboratories, Chair of the ASME Verification and Validation Committee, and an Associate Editor for the

Journal on Verification, Validation and Uncertainty Quantification. She is a mechanical engineer who received her PhD in Theoretical & Applied Mechanics from Cornell University.

Paul Seo, PhD
Director, Division of Biopharmaceutics, Office of New Drug Products, Office of Pharmaceutical Quality, CDER, FDA
Paul received his BS in Biochemistry from the University of Maryland at College Park in 1999 and his PhD in Pharmaceutical Sciences in 2004 from the University of Maryland, Baltimore, focusing on the areas of biopharmaceutics and pre-formulation. Paul has worked for the FDA for over 12 years. Upon joining the Agency, he spent 5 years in the Office of Generic Drugs, where he served as bioequivalence team leader and dissolution specialist. After his time at OGD, he also served as the lead for the Compendial Operations and Standards and Technology Team in CDER in the Office of Pharmaceutical Science. In this capacity, he was responsible for overseeing all activities as they related to the United States Pharmacopeial Convention as well as other standard-setting organizations. In 2014, Paul joined the Office of New Drug Quality Assessment as lead of the Biopharmaceutics Staff. With the reorganization to the Office of Pharmaceutical Quality, he is currently the acting Director of the Division of Biopharmaceutics in the Office of New Drug Products, and oversees the direction and review processes of both NDA and ANDA related Biopharmaceutics issues. Additionally, his professional experience included time at the National Institute of Standards and Technology, Shire Labs, Inc., and the Walter Reed Army Institute of Research.

Jan Snoeys, PhD
Director & Research Fellow Drug Metabolism and Pharmacokinetics, Janssen R&D
Jan Snoeys obtained his PhD in Medical Sciences from the Catholic University of Leuven in 2005 and joined Janssen R&D in 2006 as a postdoc for the development of novel in vitro liver models for improved prediction of human PK and clinical risk for drug induced liver injury. In 2007 Jan started efforts on the use of Physiologically-Based Pharmacokinetic Simulations for the prediction of human PK, clinical drug-drug interactions and organ impairment. Over the years, these activities evolved from retrospective work, to prospective simulations for clinical DDI trial design to inclusion in regulatory submissions to answer regulatory questions or waive the need for clinical DDI studies.

Peter Stein, MD
Director, Office of New Drugs, CDER, FDA
Peter Stein, MD, is the Director of CDER's Office of New Drugs (OND). OND is responsible for the regulatory oversight of investigational studies during drug development and decisions regarding marketing approval for new (innovator or non-generic) drugs, including decisions related to changes to already marketed products. OND provides guidance to regulated industry on a wide variety of clinical, scientific, and regulatory matters. A nationally recognized leader in pharmaceutical research and development, Dr. Stein joined CDER in 2016 as the OND Deputy Director. Before coming to the FDA, he served as Vice President for late stage development, diabetes, and endocrinology at Merck Research Laboratories. He also served as Vice President, head of metabolism development, at Janssen. He has more than 30 years of academic, clinical, and industry experience. Dr. Stein holds a bachelor's degree in

history from the University of Rochester in New York and a medical degree from University of Pennsylvania. He trained at Yale University and Yale-New Haven Hospital in internal medicine and in endocrinology and metabolism.

Million A. Tegenge, RPh, PhD
Pharmacologist, Office of Biostatistics & Epidemiology, CBER, FDA
Million A. Tegenge is pharmacologist at the Office of Biostatistics and Epidemiology, CBER. He is currently the CBER lead scientist for model informed drug development (MIDD). He conducts regulatory research and reviews clinical pharmacology submissions. Dr. Tegenge started his FDA career as a computational toxicology fellow and developed first-generation physiologically based pharmacokinetic models to assess the risk of a new class of vaccine adjuvants. Previously, Dr. Tegenge was a neurology postdoctoral fellow at the Johns Hopkins University School of Medicine. He received his Doctoral degree in Systems Neuroscience and a Master's degree in Pharmaceutical Sciences. He is also a Registered Pharmacist.

Yaning Wang, PhD
Director, Division of Pharmacometrics, Office of Clinical Pharmacology, OTS, CDER, FDA
Dr. Yaning Wang is currently the Director of Pharmacometrics in the Office of Clinical Pharmacology at FDA. Dr. Wang received his PhD in Pharmaceutics and Master's degree in Statistics from the University of Florida (1999-2003). He also obtained a Master's degree in Biochemistry (1999) from the National Doping Control Center and a Bachelor's degree in Pharmacy (1996) from Peking University in China. Dr. Wang oversees reviews, research projects, and policy development within the Division of Pharmacometrics for all disease areas. During his 16 years of service at the FDA, Dr. Wang has received numerous awards, including the Award of Merit and the FDA Outstanding Service Award. Dr. Wang is an Adjunct Professor in the Department of Pharmaceutics at the University of Florida and an invited lecturer in the College of Engineering and College of Pharmacy at the University of Michigan. Dr. Wang is a regulatory expert lecturer for the American Course on Drug Development and Regulatory Sciences (ACDRS), organized by the University of California at San Francisco, the European Course in Pharmaceutical Medicine (ECPM), organized by the University of Basel, and the Chinese Course on Drug Development and Regulatory Sciences (CCDRS), organized by Peking University Clinical Research Institute in collaboration with University of Basel and UCSF. He has served as a board member of the International Society of Pharmacometrics and is also a member of the Advisory Committee for the Chinese Pharmacometrics Society and the Editorial Advisory Board for the Journal of Pharmacokinetics and Pharmacodynamics.

Yuching Yang, PhD
PBPK Co-Lead, Division of Pharmacometrics, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA
Yuching Yang obtained her PhD in Exposure Assessment and Biomedical Science from Rutgers University in 2006. She worked as a computational toxicologist at the Hamner Institute (former CIIT) in RTP, North Carolina (2006-2011) where she applied PBPK modeling in toxicology, epidemiology, and exposure assessment. She later joined the Hamner- DILIsim Initiative (later DILIsym Services, Inc) as a Research

Investigator/Model Developer (2011-2015). She developed mechanistic-based computational models to assess drug-induced liver injury. In December 2015, Yuching joined the Office of Clinical Pharmacology at the FDA, where she co-leads the review of PBPK in regulatory submissions, conducts research in PBPK, and helps create policies regarding the use of PBPK in drug development.

Xinyuan Zhang, PhD
PBPK Co-Lead, Division of Pharmacometrics, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA
Xinyuan (Susie) Zhang, PhD is a PBPK co-lead in the Division of Pharmacometrics (DPM)/ Office of Clinical Pharmacology (OCP)/ Office of Translational Sciences (OTS)/CDER. She shares responsibility for scientific oversight of PBPK review activities and provides leadership in PBPK-related research in OCP. Dr. Zhang has conducted clinical pharmacology reviews for numerous INDs and NDAs. Prior to joining OCP, Dr. Zhang was a scientific lead for absorption modeling in the Office of Research and Standards (ORS)/ Office of Generic Drugs (OGD) where she focused on applying PBPK absorption modeling and simulation to address issues in Abbreviated New Drug Application (ANDA) reviews, controlled correspondences, citizen petitions, and bioequivalence guidance development. She received her PhD from the University of Michigan, Ann Arbor.

Liang Zhao, PhD
Director of the Division of Quantitative Methods and Modeling, Office of Research and Standards, Office of Generic Drugs, CDER, FDA
Dr. Liang Zhao has been serving as Director of the Division of Quantitative Methods and Modeling (DQMM), Office of Research and Standards (ORS) in Office of Generic Drugs, CDER since 2015. He initially joined the FDA as a clinical pharmacology reviewer in the Office of Clinical Pharmacology in 2009 and worked as a team leader in the Division of Pharmacometrics in 2013-2015. Prior to joining FDA, he worked at Medimmune, BMS, and Pharsight for new drug R&D.

Ping Zhao, PhD
Senior Program Officer, Integrated Development-Quantitative Sciences, Bill & Melinda Gates Foundation
Ping obtained his BS in Pharmacy from the Beijing Medical University in China in 1994, and his PhD in Pharmaceutics from University of Washington in Seattle, WA, USA in 2002. Since then, Ping worked as a DMPK scientist at Pfizer in La Jolla CA (2002-2005), a pharmacokineticist at Sonus Pharmaceuticals in Seattle (2005-2007), a clinical pharmacologist at Amgen in Seattle (2008), and the Scientific Lead of PBPK (physiologically-based pharmacokinetic modeling) Program and Expert Pharmacologist at the Office of Clinical Pharmacology, US FDA in Silver Spring, MD (2008-2017). At the FDA, Ping led the review of PBPK submissions in IND/NDA/BLAs, research in PBPK, and development of policy on PBPK, including authoring the agency's first draft PBPK guidance (2016) and updating the in vitro and in vivo drug-drug interaction guidances (2017). In June 2017, Ping joined the Bill and Melinda Gates Foundation in Seattle, WA as a Senior Program Officer of Quantitative Sciences, where he applies pharmacology concepts and manages Model-informed Drug development (MiDD) efforts in programs funded by the foundation.

Issam Zineh, PharmD, MPH, FCP, FCCP

Director, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA

Issam Zineh is the Director of the Office of Clinical Pharmacology (OCP) at the U.S Food and Drug Administration (FDA). He has held various leadership positions at the FDA including Associate Director for Genomics in OCP (2008-2012) and Co-Director of the CDER Biomarker Qualification Program (2009-2015), and serves on the CDER Medical Policy Council, Drug Development Tool Committee, and Drug Labeling Coordinating Committee. Dr. Zineh received his PharmD from Northeastern University and completed his residency at Duke University Medical Center. He completed a fellowship in cardiovascular pharmacogenomics at the University of Florida (UF) where he also obtained his MPH in Health Policy and Management. Dr. Zineh was formerly on faculty at the UF Colleges of Pharmacy and Medicine and Associate Director of the UF Center for Pharmacogenomics. He is a recognized expert in the fields of drug development and evaluation, clinical pharmacology, pharmacotherapy, and precision medicine. As Director of OCP, Dr. Zineh leads a staff of over 240 regulatory, research, program/project management, and administrative staff in FDA's efforts to enhance drug development and promote regulatory innovation through clinical pharmacology and experimental medicine.