Oncology Dose Finding Workshop
June 13, 2016
Walter E. Washington Convention Center, Washington, DC

Workshop Co-Chairs

Geoffrey Kim, MD, Director, Division of Oncology Products1 (DOP1), OHOP, OND, CDER, FDA

Geoff Kim is the director of the Division of Oncology Products 1 of the Office of Oncology Drug Products in the Center for Drug Evaluation and Research of the United States Food and Drug Administration. He is involved with numerous cross-center working groups, developing policies pertaining to *in vitro* companion diagnostics, combination products, and dose finding optimization strategies for oncology products. He received his bachelor's degree at UCLA, his medical degree at the New York Medical College, and completed his residency in internal medicine at the Montefiore Medical Center in the Bronx. Geoff completed his medical oncology fellowship at the National Cancer Institute where he was active in both laboratory and clinical research in the NCI molecular signaling section and the ovarian cancer clinic.

Amy McKee, MD, Deputy Officer Director (Acting), Office of Hematology and Oncology Products, Center for Drug Evaluation and Research, FDA

Dr. McKee is a Deputy Officer Director (Acting) of the Office of Hematology and Oncology Products (OHOP) in the Center for Drug Evaluation and Research of the United States Food and Drug Administration. Prior to this position, she was a clinical team leader in the Division of Oncology Products 1/OHOP for breast and gynecologic oncology products. Dr. McKee received her B.A. in Russian and East European Studies from Middlebury College. Before obtaining her medical degree at Tulane University School of Medicine, Dr. McKee was a reporter for Elsevier's medical industry trade journal "The Pink Sheet." She completed her pediatric training at the Floating Hospital for Children/New England Medical Center and her pediatric hematology/oncology training at the combined Johns Hopkins University/National Cancer Institute fellowship program, where she continued basic research on neuroblastoma in the laboratory of Carol Thiele, Ph.D. prior to joining the FDA. Since joining the FDA, she has reviewed numerous new molecular entities for marketing approval in oncology; authored several manuscripts on new approvals, on targeted therapy drug development, and on clinical trial endpoints for regulatory applications; and chaired workshops on dose-finding in oncology and accelerating new product development for ovarian cancer.

Pasi Jänne, MD, PhD, AACR Regulatory Science and Policy Subcommittee member; Director, Lowe Center for Thoracic Oncology; Scientific Director, Belfer Institute for Applied Cancer Science; Senior Physician, Dana-Farber Cancer Institute and Professor of Medicine, Harvard Medical School

Dr. Jänne is a translational thoracic medical oncologist at the Dana-Farber Cancer Institute and a Professor of Medicine at Harvard Medical School. He is the Director of the Lowe Center for Thoracic Oncology and the Scientific co-director of the Belfer Institute for Applied Cancer Sciences. After earning his MD and PhD from the School of Medicine at the University of Pennsylvania, Dr. Jänne completed his internship and residency in Medicine at Brigham and Women's Hospital, Boston. He subsequently completed fellowship training at the Dana-Farber Cancer Institute/Massachusetts General Hospital combined program in medical oncology in 2001. In 2002, he earned a Master's Degree in clinical investigation from Harvard University. Dr. Jänne's research combines laboratory based studies with translational research and clinical trials of novel therapeutic agents in patients with lung cancer. His main research interests center

around understanding and translating the therapeutic importance of oncogenic alterations in lung cancer. He has made seminal therapeutic discoveries, including being one of the co-discoverers of *EGFR* mutations and findings from his work has led to the development of several clinical trials. Dr. Jänne has received several awards for his research from Uniting Against Lung Cancer, American Lung Association, and the Bonnie J. Addario Lung Cancer Foundation. In 2008, he was elected as a member to the American Society of Clinical Investigation. He is also the recipient of the 2010 American Association for Cancer Research (AACR) Richard and Hinda Rosenthal Memorial Award and a member of the 2010 AACR Team Science Award, and is an active member of the AACR's Regulatory Science and Policy subcommittee.

Eric Rubin, MD, AACR Regulatory Science and Policy Subcommittee member; Vice-President and Therapeutic Area Head, Oncology Early Clinical Development, Merck Research Labs

Dr. Rubin has focused on cancer drug development for over 20 years, initially as a faculty member at the Dana-Farber Cancer Institute, then as a senior leader of the Cancer Institute of New Jersey. In 2008, Dr. Rubin was recruited to Merck as Vice-President, Oncology Clinical Research. He led the development of the anti-PD-1antibody pembrolizumab, which was the first anti-PD-1 therapy approved in the U.S., and in the identification of the significant activity of this antibody across several additional cancer types. In his current role, he oversees oncology early development and translational research activities at Merck. Dr. Rubin has authored over 100 original, peer reviewed publications and book chapters related to oncology translational research, clinical trials, and drug development. He has served frequently as a member of National Cancer Institute and American Cancer Society study sections, as well as on program committees for the American Association for Cancer Research (AACR) and the American Society of Clinical Oncology. In addition, he is a deputy editor for the AACR's premiere journal Clinical Cancer Research and is an active member of the AACR's Regulatory Science and Policy subcommittee.

Workshop Speakers and Panelists

Shruti Agrawal, PhD, Director of Clinical Pharmacology & Pharmacometrics, Bristol-Myers Squibb

Dr. Shruti Agrawal is currently a Director of Clinical Pharmacology & Pharmacometrics at Bristol-Myers Squibb Co. Prior to joining Bristol-Myers Squibb, Dr. Agrawal received a PhD from the National Institute for Pharmaceutical Education and Research, India, and completed her post-doctoral training at Dr. Reddy's labs and Rutgers, The State University of New Jersey. Dr. Agrawal has extensive experience in immuno-oncology and oncology areas with the focus on clinical pharmacology & pharmacometrics strategies for small molecules and biologics. At Bristol-Myers Squibb, she has served as clinical pharmacology lead for several early and late stage assets in oncology including: dasatinib, nivolumab, ipilimumab, and immuno-oncology combinations. Dr. Agrawal has extensively published in peer reviewed journals and has presented at international conferences. She is a reviewer for various clinical pharmacology and pharmacometric journals and is a member of ASCPT, ISoP, and ASCO.

Darren Cross, PhD, Principal Scientist, AstraZeneca

Darren Cross studied BSc biochemistry at University of York, UK. He then joined the Medical Research Council's Protein Phosphorylation Unit at Dundee University where he obtained his PhD in 1997, during which time he identified the first cellular substrate and signalling role for AKT kinase. He then further developed his interest in kinase and signalling biology as drug target opportunities within industry, joining AstraZeneca's Oncology Group in 2001, after a short period at GSK. Darren is now a Principal Scientist in the Innovative Medicines Oncology biotech unit based in Cambridge, UK. He has gained experience in pre-clinical scientific leadership of drug discovery programs at all stages from target validation through to clinical candidate, and most recently has been the pre-clinical scientific lead for AstraZeneca's recently approved mutant-EGFR inhibitor Tagrisso/ osimertinib.

Dinesh de Alwis, PhD, Executive Director of Quantitative Pharmacology and Pharmacometrics, PPDM, Merck Research Labs

Dinesh de Alwis has over 19 years of global experience in the pharmaceutical industry, working with large and small molecules from discovery to loss of data exclusivity. He is currently an Executive Director of Quantitative Pharmacology

and Pharmacometrics, PPDM, at Merck Research Laboratories in New Jersey, where he is responsible for late stage development within his function. Since he joined Merck in 2012, he has been actively involved in the development of both small and large molecules and played a significant part in the dose finding and registration of KEYTRUDA® for IPI refractory metastatic melanoma. He previously held several leadership and scientific roles at Eli Lilly and Company (1997 – Jan 2012), in the UK. He headed a group of PK/PD scientists (since 2004) and was the lead PK/PD Scientist for several compounds (therapeutic areas of neuroscience, cardiovascular, oncology) from pre-clinical to phase III studies for over 14 years. Dr de Alwis has co-authored 26 publications in peer reviewed journals with over 900 citations and is on the editorial board of a journal. He is also on the scientific committee of the Population Approach Group in Europe (PAGE) since 2003. Dr de Alwis received his PhD from the University of Manchester (1997), UK in the field of Population PK/PD.

Kelvin Dickenson, Patient Representative

Kelvin was diagnosed with Philadelphia-positive chronic stage CML in June 2001. He was treated with Hydroxyurea followed by Ablative stem cell transplant. Subsequent to the transplant Kelvin relapsed and was treated with Gleevec, then transitioned to Sprycel after developing additional chromosomal deletions and BCR/ABL point mutation F486S which is resistant to Gleevec therapy.   Kelvin has been an active patient advocate for the last 15 years, initially promoting registration of marrow donors in, LLS First connection and Ambassador programs, LLS speakers bureau, LLS Board member, representing the LLS at CDMRP in multiple scientific peer review panels for CML, Blood cancers and also bone marrow failure disorder, and on integration panels. Kelvin does ad-hoc PR and speaking for the LLS and is currently an FDA patient representative. Kelvin is based in NYC and works in the regulatory compliance industry and is a founding advisory board member of the Association of Certified Financial Crimes Specialists. He lives in Huntington, NY with his wife and sons, coincidentally close to the Cold Spring Harbor DNA lab.

Serban Ghiorghiu, MD, Global Clinical Leader, TAGRISSO (Osimertinib), AstraZeneca

Serban Ghiorghiu is the Global Clinical Leader for TAGRISSO, a novel oncology treatment which is the first approved medicine indicated for patients with metastatic EGFR T790M mutation-positive non-small cell lung cancer. He led the TAGRISSO global clinical development from first-in-man to approvals in the EU, USA, and Japan, based on single arm studies in a selected patient population identified by a companion diagnostic. Serban is a board-certified medical oncologist with more than 15-year experience in oncology, both in clinical practice and in global pharmaceutical R&D. He has in-depth expertise, a wealth of experience and successful leadership in designing, delivery and interpretation of clinical development programs with a global imprint (Europe, North America, Asia), in various tumor types (lung, breast, prostate, head & neck, and ovarian cancer) across all stages of development from preclinical to Phase II and III registration programs, as well as through to later phases and investigator-sponsored studies. He has extensively published in peer reviewed journals, including NEJM, and had presentations at international conferences. He is a member of ASCO and ESMO.

Matthew Guo, PhD, Executive Director, Head of Biostatistics and Programming in Eisai Oncology Business Group

Dr. Guo is currently Executive Director, Head of Biostatistics and Programming in Eisai Oncology Business Group. Eisai Oncology Business Group conducts preclinical research and clinical trials including first-in-human, phase 2, confirmatory and post market commitment. In his role, Dr. Guo works to implement innovative clinical trial designs in all stages of drug development. Dr. Guo has been an active member of the American Statistical Association since 1995. Prior to Eisai, Matthew has worked previously for Amgen, Radiation Therapy Oncology Group, and UCLA School of Medicine. He received his PhD in Biostatistics from UCLA.

Gabriel Helmlinger, PhD, DABT, Executive Director, Quantitative Clinical Pharmacology, Early Clinical Development, AstraZeneca Pharmaceuticals

Gabriel Helmlinger, PhD, DABT, is an Executive Director in Quantitative Clinical Pharmacology, Early Clinical Development, at AstraZeneca Pharmaceuticals, Waltham, MA. He leads AstraZeneca's translational modeling and systems pharmacology sciences, supporting quantitative Drug-Disease modeling through R&D and with multiple partner functions. Previously, he led a global Modeling & Simulation group at Novartis (2001-2014), developing quantitative

pharmacology, drug-disease, and drug-safety models in support of decision-making in multiple therapeutic areas, including: Oncology, Cardiovascular & Metabolic Diseases, Respiratory Diseases, Immunology, and Infectious Diseases.

His expertise also includes experimental and quantitative modeling work in cardiovascular biology, biomechanics, and tissue engineering (Georgia Institute of Technology), tumor angiogenesis and cancer pathophysiology (Harvard Medical School & Massachusetts General Hospital), and human & environmental safety risk assessments (Procter & Gamble). He is a Diplomate of the American Board of Toxicology and has published extensively, including three Nature publications on tumor microenvironment.

Chyi-Hung Hsu, PhD, Scientific Director, Janssen Research & Development

Dr. Hsu is currently a Scientific Director of Statistical Modeling and Methodology in the Statistics & Decision Sciences department at Janssen R&D. He is responsible for advancing the use of innovative, model-based drug development approaches across clinical development programs. Prior to joining Janssen R&D, he worked at Novartis Pharmaceuticals for twelve years as a modeler in the Modeling & Simulation department, and as a Senior Expert Statistical Methodologist in the Statistical Methodology group. There, he co-led a dose-finding focus team responsible for developing and implementing novel model-based methods for dose-finding trials.

Thomas Jaki, PhD, Professor of Statistics, Lancaster University

Thomas Jaki is a Professor of Statistics at Lancaster University, a Co-Investigator of the MRC's North-West Hub for Trials Methodology Research and Coordinator of the EU funded IDEAS network (www.ideas-itn.eu). He is also the director of Lancaster University's Medical and Pharmaceutical Statistics Research Unit (MPS, www.mps-research.com), which develops and evaluates novel statistical methods of study design and data analysis relevant to medical research institutes and pharmaceutical companies. His methodological research to date has focused on adaptive designs and multiplicity, Bayesian methods, and estimation with sparse data. He has worked on estimators for pharmacokinetic parameters, developed adaptive designs – in particular for multi-arm studies - and investigated Bayesian methods for dose-escalation.

Jin Yan Jin, PhD, Associate Director, Global Head of Modeling and Simulation, Clinical Pharmacology, Genentech

Dr. Jin Yan Jin is an Associate Director, Global Head of Modeling and Simulation (M&S) in Clinical Pharmacology at Genentech, and oversees clinical M&S and data programming activities for all molecule types in various therapeutic areas. She has been actively involved in M&S during development and/or registration for many molecules, including Atezolizumab, Avastin Pediatric, Cobimetinib, Herceptin SC, Pertuzumab, T-DM1, Vismodegib, and Xolair in CIU. Before joining Genentech in 2009, she worked at Eli Lilly in metabolism and neuroscience areas after Ph.D. and post-doc in Pharmaceutical Sciences from the State University of New York at Buffalo. Dr. Jin is a strong advocate for M&S application in drug development. Her scientific areas of expertise include mechanistic Pharmacokinetics/Pharmacodynamics (PK/PD), Physiologically Based Pharmacokinetics (PBPK), population analysis, trial simulation, disease modeling, literature meta-analysis, and has rich experience especially in oncology.

Dr. Jin is a committed member of the scientific community with active presentations/publications. She serves on the Board of Directors for the International Society of Pharmacometrics (ISoP) and will be the President for ISoP 2017-2018. She is also on the Editorial Board for Clinical Pharmacology and Therapeutics: Pharmacometrics and System Pharmacology (CPT:PSP), and is involved in various Task Forces and activities for American Society for Clinical Pharmacology and Therapeutics (ASCPT). She chaired the 2015 American Conference on Pharmacometrics annual meeting (ACoP6).

Alan J. Korman, PhD, Vice President of Immuno-Oncology Discovery, Bristol-Myers Squibb

Alan J. Korman received his Ph.D. degree from Harvard University (Cambridge, Massachusetts, USA) in 1984 and was a Whitehead Fellow at the Whitehead Institute, Massachusetts Institute of Technology (Cambridge, Massachusetts, USA) from 1984 to 1989. He was also a Chargé de Recherche at the Institut Pasteur (Paris, France) from 1990 to 1993. He has

worked in the biotechnology and pharmaceutical industry since 1993 and is currently Vice President of Immuno-Oncology Discovery at Bristol-Myers Squibb (Redwood City, California, USA). He initiated the preclinical development of the checkpoint inhibitor antibodies, ipilimumab and nivolumab, as well as their combination.

Chao Liu, PhD, Pharmacometrics Reviewer, Division of Pharmacometrics, Division of Pharmacometrics (DPM), Office of Clinical Pharmacology(OCP), OTS, CDER, FDA

Dr. Chao Liu is currently a Reviewer in the Division of Pharmacometrics, Office of Clinical Pharmacology at the U.S. FDA. Prior to becoming a reviewer at OCP, he was an ORISE Fellow at FDA. Dr.Liu received his Ph.D. degree in Immunology and Microbiology from the University of Florida, Gainesville in 2014. His Ph.D. study focused on immunological mechanisms in autoimmune disease. During that period, Dr. Liu also earned a Master's degree in Statistics. Dr. Liu earned a B.S in biological science from Nankai University, China. In his current role at the FDA, Dr. Liu works in the areas of oncology products. His current interest is focused on applying pharmacometrics for dose optimization and description of disease progression in oncology.

Hans Loland, Patient Representative

Hans Loland is a both a patient and a patient advocate. He was diagnosed with Chronic Myeloid Leukemia in 2008, and his treatment journey has included 3 TKI's (Tyrosine Kinase Inhibitors) to date. His third treatment included joining a Phase 1 clinical trial in 2009, after the previous two TKI's did not control his disease. His experiences include dosage reduction due to concern of safety profile of drug, after the drug had been on the market for a year. He is also a moderator of an online forum with other patients to help foster dialog and support among patients on the same drug. He lives outside Seattle, Washington, and has 4 boys, ages 1 through 9.

Ying Lu, PhD, Director, Department of Veterans Affairs Corporative Studies Program Palo Alto Coordinating Center; Professor, Department of Biomedical Data Science, Co-Director of the Center for Innovative Study Design and Co-Director of the Biostatistics Core of the Stanford Cancer Institute, Stanford University School of Medicine**.**

Dr. Lu's research areas are in clinical trials, medical diagnosis, medical decision making and applications in cancer trials. Dr. Lu is a member of the AJCC Molecular Modeler Group and ASCO Scientific Program Committee and is an elected fellow of the American Statistical Association. His profile and publication can be found in the following link https://med.stanford.edu/profiles/ying-lu.

Sumithra Mandrekar, PhD, Professor of Biostatistics and Oncology, Mayo Clinic

Dr. Mandrekar is a Professor of Biostatistics and Oncology at Mayo Clinic, Rochester MN; and is the Associate Director of the Biostatistics Shared Resource of the Mayo Clinic Cancer Center. Her primary research interests include dose-finding trial designs for Phase I trials, designs for predictive biomarker validation (initial and definitive), and general clinical trial methodology related to identification of alternative Phase II cancer clinical trial endpoints. Her recent work in the early phase setting includes the development of a continuous toxicity score that captures information on not only severe, but also mild and moderate toxicities, both cycle 1 and from multiple cycles. Dr. Mandrekar has co-authored over 110 original papers, several book chapters and editorials, and has given numerous lectures, invited presentations and workshops on these topics. Her primary collaborative area is lung cancer and she is the faculty statistician for the NCI precision medicine trial: ALCHEMIST, a national screening trial to enroll >8000 early stage lung cancer patients. She is a voting member of the NCI thoracic malignancies steering committee and the NCI imaging steering committee, serves on the program committees of ASCO and society for clinical trials (SCT), is the co-chair for the education committee of SCT, and is the Biostatistics editor for the Journal of Thoracic Oncology.

Lei Nie, PhD, Statistical Team Leader, DBV, OB, OTS, CDER, FDA

Lei Nie is a lead mathematical statistician of the Division of Biometrics V in the Office of Biostatistics (OB), Office of Translational Sciences (OTS), Center for Drug Evaluation and Research (CDER), U.S. Food and Drug Administration (FDA). He has authored/coauthored more than 80 peer reviewed journal papers. As a regulatory reviewer, he has review

experiences in dose finding. Dr. Nie received his Ph.D. in Statistics from the University of Illinois at Chicago. Prior to coming to FDA, Dr. Nie was a faculty member at the University of Maryland Baltimore country from 2002 - 2005 and Georgetown University from 2005 - 2007.

Todd Palmby, PhD, Pharmacology/Toxicology Supervisor, FDA

Dr. Palmby is a Pharmacology/Toxicology Supervisor in the Division of Hematology Oncology Toxicology leading a team supporting the Division of Oncology Products 1 of the Office of Oncology Drug Products in the Center for Drug Evaluation and Research of the United States Food and Drug Administration. Prior to joining the FDA as a Pharmacology/Toxicology Reviewer in 2008, Dr. Palmby completed a post-doctoral fellowship in the Oral and Pharyngeal Cancer Branch within the National Institute of Dental and Craniofacial Research at the National Institutes of Health. Dr. Palmby received his PhD in Pharmacology from the University of North Carolina at Chapel Hill in 2004. His research experience was focused on mechanisms of cancer biology involving GTPase and kinase networks using cell and molecular biology approaches as well as tumor, knockout, and transgenic mouse models.

During his time at FDA, he has presented at national meetings on the FDA perspective of nonclinical testing of oncology therapeutics.

Nam Atiqur Rahman, PhD, Director, Division of Clinical Pharmacology V, Office of Clinical Pharmacology (OCP), OTS, CDER, FDA

Nam Atiqur Rahman, PhD, is the Director of the Division of Clinical Pharmacology V within the Office of Clinical Pharmacology (OCP), Center for Drug Evaluation and Research, U.S. Food and Drug Administration (U.S. FDA). The Division consists of 26 clinical pharmacology reviewers who are involved in pharmaceutical product development, product review, and approval. The Division supports evaluation of Hematology/Oncology and Medical Imaging products. Prior to joining the FDA, Dr. Rahman completed post-doctoral training at the St.-Jude Children's Research Hospital, Memphis, Tennessee in Molecular Pharmacology and Pharmacogenomics. Dr. Rahman's current interest includes dose optimization in oncology drug development, application of modeling and simulation in oncology drugs and biologics development, and application of pharmacogenomics to promote personalized medicine for patients. He leads and supports the review staff that addresses various scientific challenges in drug development and approval, and interacts with pharmaceuticals to promote and facilitate oncology drug development from Clinical Pharmacology perspectives. Dr. Rahman has been involved with the biosimilar program and a member of various committees and working groups at the Center level dealing with the FDA biosimilar program. Dr. Rahman is a member of the Biologics Oversight Board within OCP. The board provides recommendation to the review teams on Biocomparability and Biosimilarity related clinical pharmacology issues. Dr. Rahman has written four book chapters, over 35 articles in peer reviewed journals, and made numerous presentations in various national and international scientific forums.

Mark J. Ratain, MD, Leon O. Jacobson Professor of Medicine, Director, Center for Personalized Therapeutics, Associate Director for Clinical Sciences, Comprehensive Cancer Center, The University of Chicago

Dr. Ratain is a graduate of Harvard College (A.B., 1976) and Yale University School of Medicine (M.D., 1980). His postgraduate training was completed at Johns Hopkins Hospital (Internal Medicine, 1980-3) and the University of Chicago Hospitals (Hematology/Oncology, 1983-6). He has been a faculty member in the Department of Medicine at The University of Chicago since 1986, and is currently the Leon O. Jacobson Professor of Medicine, the Director of the Center for Personalized Therapeutics, and Chief Hospital Pharmacologist. In addition, he serves as the Associate Director for Clinical Sciences in the University's Comprehensive Cancer Center and leads the University of Chicago's phase I oncology trials program. Dr. Ratain's research focuses on the development of new oncology drugs and diagnostics, and he is an international leader in phase I clinical trials, pharmacogenomics, and clinical trial methodology, with over 280 original publications. He served as the first chair of the Steering Committee of the National Institutes of Health Pharmacogenetics Research Network, as well as one of the first co-chairs of the National Cancer Institute Investigational Drug Steering Committee. He currently serves as co-Editor of Pharmacogenetics and Genomics, and is a past Associate Editor of the Journal of Clinical Oncology. He is the recipient of multiple awards, including the Research Achievement Award in Clinical Pharmacology and Translational Research from the American Association of

Pharmaceutical Scientists, the Rawls-Palmer Progress in Medicine Award from the American Society for Clinical Pharmacology and Therapeutics, the Translational Research Professorship from the American Society of Clinical Oncology, a Honorary Fellowship from the American College of Clinical Pharmacology, and the Award in Clinical Excellence from the Pharmaceutical Research and Manufacturers Association Foundation.

Amit Roy, PhD, Group Leader, Clinical Pharmacology & Pharmacometrics, Bristol-Myers Squibb

Amit Roy is currently Group Director in the department of Clinical Pharmacology & Pharmacometrics at Bristol-Myers Squibb, where he serves as the Head of Pharmacometrics for Oncology. Amit received his undergraduate degree in Chemical Engineering from the University of Michigan, in Ann Arbor, MI, and his PhD in Chemical & Biochemical Engineering from Rutgers University in 1997, following which he was Assistant Professor in the Department of Community Medicine at the University of Medicine and Dentistry of New Jersey. Prior to joining BMS in September 2004, Amit worked as a clinical pharmacologist at Vertex Pharmaceuticals, in Cambridge, MA, where he supported the development of several immunology compounds.

Haleh Saber, PhD, Deputy Director in the Division of Hematology Oncology Toxicology (DHOT), FDA

Dr. Saber is currently the Deputy Director in the Division of Hematology Oncology Toxicology (DHOT). In this role, she provides leadership for day-to-day activities, coordinates scientific research, and participates in oncology guidance development. Dr. Saber has extensive industry and regulatory experience. She served as a Subject Matter Expert assisting pharmaceutical companies worldwide in nonclinical drug development and served many roles at the FDA over 12 years, starting as a primary reviewer before becoming a Supervisory Pharmacologist in DHOT. Dr. Saber is recognized nationally and internationally for her efforts in establishing acceptable approaches in first-in-human dose selection for new classes of products. She has been the recipient of multiple CDER awards. Dr. Saber received her PhD in Biochemistry from Lehigh University and conducted her post-doctoral studies at Fox Chase Cancer Center.

Lillian L. Siu, MD, Professor of Medicine, Princess Margaret Cancer Centre, Toronto, Canada

Dr. Siu is a senior staff medical oncologist at Princess Margaret Cancer Centre since 1998, and has been a Professor of Medicine at the University of Toronto since 2009. She is the Director of the Phase I Program and Co-Director of the Bras and Family Drug Development Program at Princess Margaret Cancer Centre. Dr. Siu currently serves on the Board of Directors for the American Society of Clinical Oncology (ASCO) for a four-year term (2012-2016). She also served as a member of the Nomination Committee for the American Association for Cancer Research (AACR) (2014-2016).

Dr. Siu's major research focus is in the area of new anticancer drug development, particularly with respect to phase I trials and head and neck malignancies. She is the Principal Investigator of a phase I cooperative agreement UM1 award (2014-2019) sponsored by the United States National Cancer Institute. In addition to her active research in early phase clinical trials, she has been leading genomics initiatives and immuno-oncology trials at the Princess Margaret Cancer Centre.

Internationally, Dr. Siu was the recipient of the US NCI Michaele C. Christian Award in Oncology Drug Development in 2010. She was the ASCO Conquer Cancer Foundation Grants Selection Committee Chair in 2009-10, and the Chairperson of the AACR Education Committee and Co-Chairperson of the Scientific Committee for the 2012 Annual Meeting. Dr. Siu has published over 240 peer-reviewed manuscripts, and she is currently a scientific editor for Cancer Discovery and is on the editorial board for the Journal of Clinical Oncology and JAMA Oncology.

Chandni Valiathan, PhD, Associate Principal Scientist, Quantitative Pharmacology and Pharmacometrics, Merck and Co.

Chandni Valiathan received her PhD in Computational and Systems Biology from Massachusetts Institute of Technology. She is currently a Quantitative Pharmacology and Pharmacometrics (QPP) program lead at Merck. During her 5 year tenure at Merck, she has made key contributions to programs in the diabetes, vaccines, anti-viral, and neuroscience areas with a current focus on immuno-oncology and real-world data integration. Chandni has extensive experience developing translational and clinical pharmacokinetic and pharmacodynamic models, as well as mechanistic and

physiology-based models. She has been involved in programs ranging from discovery to late stage development. Prior to taking on the role of QPP program lead, Chandni led the Disease and Predictive Modeling group in the Applied Math and Modeling group at Merck, where she identified and led efforts to enhance data infrastructure and management for model development.

Karthick Vishwanathan, PhD, Director, Quantitative Clinical Pharmacology, AstraZeneca

Dr. Karthick Vishwanathan is currently in the Early Clinical Development group at AstraZeneca and is the clinical pharmacology lead of Tagrisso® (Osimertinib) for the treatment of EGFRm non-small cell lung cancer, which is currently approved in the U.S., EU, and Japan. He obtained his bachelor's degree in pharmacy from Birla Institute of Technology and Sciences, India in 1996 and obtained his PhD in pharmaceutical sciences from University of Georgia in 2001. Following his PhD, he joined Merck Research Labs and Wyeth Research in the DMPK group working on lead optimization of various small molecules in animal species prior to entry into human testing. He then joined AstraZeneca in 2010 where he has pursued his interests in DMPK and clinical pharmacology of small molecules in humans.

Diane Wang, PhD, Senior Director Clinical Pharmacology, Global Product Development, Pfizer

Having been with Pfizer since 2004, Diane Wang is currently a senior director at Clinical Pharmacology, Global Product Development. From 2001 to 2004, she spent more than 3 years at Immunex and Amgen focusing on the development of biotherapeutic agents. Prior to joining the industry, Dr. Wang was a senior clinical pharmacology reviewer (1993-1999) and pharmacometrics reviewer (1999-2001) at the Office of Clinical Pharmacology, the Food and Drug Administration. Diane's research interest is focused on developing methodology for model validation, applying modeling and simulation in drug development for dose selection, study design, making go/no go decisions, developing general guidance for dosing strategy of biotherapeutic agents, and oncology drug development.

Yaning Wang, PhD, Acting Director, Division of Pharmacometrics, Office of Clinical Pharmacology
(OCP), OTS, CDER, FDA

Dr. Yaning Wang is currently the Acting Director and Deputy Director in the Division of Pharmacometrics in the Office of Clinical Pharmacology at the FDA. Before joining the FDA, Dr. Wang received his Ph.D. in Pharmaceutics and a master's degree in Statistics from the University of Florida from 1999 to 2003. He also obtained a master's degree in Biochemistry (1999) from National Doping Control Center and a bachelor's degree in Pharmacy (1996) from Peking University in China. At his current position, Dr. Wang oversees the scientific aspects of reviews, research projects, and policy development within the Division of Pharmacometrics for all disease areas. Dr. Wang is an Adjunct Professor in the Department of Pharmaceutics at the University of Florida and is an invited lecturer in the College of Engineering and College of Pharmacy at the University of Michigan. Dr. Wang served as a committee member for multiple Ph.D. candidates from various universities. He mentored more than thirty former research fellows (visiting scholars, post-doctoral scholars, and Ph.D. candidates) at the FDA. He is a member of the Advisory Committee for Chinese Pharmacometrics Society and a member of the Editorial Advisory Board for the Journal of Pharmacokinetics and Pharmacodynamics. He is also on Board of Directors for International Society of Pharmacometrics (ISoP).

Juliet Williams, PhD, Head, Oncology In vivo Pharmacology Group, Novartis Institute for Biomedical Research

Juliet obtained her first degree in Natural Sciences (Biochemistry) from the University of Cambridge and a PhD in Developmental Biology from University College London. After her academic studies, she then worked for Curis in Cambridge, MA on Hedgehog pathway inhibitors. Following her time at Curis, Juliet moved to Millennium Pharmaceuticals, working on a variety of kinase inhibitors, before moving to Novartis to once more work on developmental pathway inhibitors. Juliet has subsequently worked as Department Head of Pharmacology at Cancer Research Technology, UK and at Sanofi, Cambridge, MA in both cases overseeing the pharmacology of a wide range of projects and in addition building and reorganizing groups. She current heads the Oncology In vivo Pharmacology group at Novartis Institute for Biomedical Research, Cambridge MA.