Global Genomic Medicine Collaborative (G2MC) Membership

Marc Abramowicz, M.D., Ph.D., is a Professor of Medical Genetics at the Université Libre de Bruxelles, Belgium. President, College of Human Genetics, Belgium. Director, Center of Human Genetics – ULB − Professor of Human and Medical Genetics, Medical School, ULB. − Research Associate, Laboratory of Medical Genetics and IRIBHM, ULB. Vice-President (2009-), Fund for Rare Diseases and Orphan Drugs, FRB_KBS, Belgium. Training, Previous Positions, Miscellaneous - Doctor of Medicine (MD) (ULB 1986; SCL and Best Student's Prize). Research Assistant, Belgian National Fund for Scientific Research (FNRS) at the IRIBHN (ULB) (1988-1992). PhD (ULB 1992). Thesis topic: molecular endocrinology. ECFMG certification, Philadelphia, PA, USA. Fellow, Human Genetics, Baylor College of Medicine, Houston, Tx, USA (1992-93) Board, Internal Medicine, Belgium (1993). Certification, Medical Geneticist, Belgium (1994) President (2001-2004), Belgian Society of Human Genetics (www.BeSHG.be) Vice-President (2006-13), High Counsil of Human Genetics, Ministry of Health, Belgium.

Fahd Al-Mulla is a professor of molecular pathology. He established a Molecular Pathology and Research Core Facility Laboratories in Kuwait, which aim at delivering state-of-the-art technologies for the Arab world. He was the first to introduce and implement the use of microarrays in diagnostics, tailored therapy and research in this area of the world. Currently, these laboratories also offer Next generation sequencing technologies that he introduced and operates. His research activities focus on cancer. His extensive research led to the identification of two novel metastasis suppressors, namely Carbonyl Reductase and Raf Kinase Inhibitory Protein, which he and his team characterized further and their therapeutic roles in cancer patented. In the last 5-years, Fahd's work has changed the lives of women with breast cancer forever. While 80% of patients used to die from advanced breast cancer, his introduction of advanced personalized medicine in Kuwait, which he insisted to be offered to all women regardless of Nationality, switched this number around. Now, 80% of women survive. Fahd has spearheaded and initiated the 'Genome Arabia' project, which is a new technological milestone aiming at sequencing normal Arab individuals from Kuwait, Qatar, Bahrain, UAE, and Lebanon and is funded by Qatar National Research Fund. Fahd received his Medical Doctorate and Ph.D. from Glasgow University. He is a Fellow of the Royal College of Physicians of Edinburgh. Fahd Al-Mulla has extensive experience in technology and intellectual property development. He established the office for Technology Transfer and Patenting in Kuwait University, which helped in the patenting of 44 ideas. As an author for Nature's Biotechnology blog, his

mandate is to build collaborative partnerships, invest institutional outputs, generate capital and resources, and promote public awareness regarding the importance of scientific research in resolving the Arab society's problems and in expediting the development process.

Rudi Balling has studied human and animal nutrition and received his PhD in Reproductive Biology from the University of Aachen. After his habilitation in 1991, he carried out research in the Mount Sinai Research Hospital in Toronto, Canada, and the Max Planck Institutes in Göttingen and Freiburg im Breisgau. In 1993, he became director at the Helmholtz Center for Mammalian Genetics in Munich. In 2001, he took over the position as Scientific Director of the Helmholtz Center in Braunschweig, a research center with close to 700 employees. January-July 2009, Dr. Balling was a guest professor at the Broad Institute of MIT/Harvard University in Boston (USA). He took up the position as the Director of Luxembourg Centre for Systems Biomedicine in September 2009.

Kristine Barlow-Stewart

Zahurin Binti Mohamed

Steven B. Bleyl, M.D., Ph.D., earned his M.D. & Ph.D. in Human Genetics before training and board certification in both Pediatrics and Medical Genetics. Currently, Dr. Bleyl is Co-Director of the Clinical Genetics Institute (CGI) at Intermountain Healthcare. The CGI's mission is to improve the quality of health for patients in the Intermountain system through the application of genetics, genomics and family history. Dr. Bleyl coordinates the efforts of CGI staff and Intermountain genetic counselors for provision of clinical genetics services, genetic testing oversight and educational efforts both internally and in the community. The CGI plays a leadership role in Intermountain's strategic plan for gathering genetic testing and family history data and integrating it into the electronic health record. The CGI is also charged with policy development and implementation with respect to molecular genetic testing, including next generation sequencing. In addition, Dr. Bleyl practices and teaches Medical Genetics as an Associate Professor at the University of Utah School of Medicine where he directs the Heart Center Genetics Clinic at Primary Children's Hospital. There he continues active research that combines genetic mapping in extended Utah families identified using the Utah Population Database and next-generation sequencing techniques to identify new genetic risk factors for complex disease. This research focus on deep family history and genomics is synergistic with his efforts to integrate genomic medicine at Intermountain Healthcare.

Aravinda Chakravarti, Ph.D., Professor – Department of Medicine, Pediatrics, and Molecular Biology and Genetics; Bloomberg School of Public Health, Department of Biostatistics; John Hopkins University School of Medicine; McKusick-Nathans Institute of Genetic Medicine.

My laboratory focuses on the development and applications of molecular genetic, genomic and computational methods for identification of human disease genes through "genetic dissection". We use a variety of disease models to infer the features of complex disease gene architecture in birth defects (Hirschsprung disease), cardiovascular disorders (hypertension, sudden cardiac death) and mental illness (autism, bipolar disease, schizophrenia). Common human diseases, be they birth defects, diabetes, cardiovascular disease, infectious disease, psychiatric illness or neurodegenerative disease, are familial and arise from a combination of genetic and environmental factors. The familial nature of most diseases suggests an underlying genetic susceptibility, but environmental, stochastic and epigenetic factors are also critical. Additional genetic hallmarks of complex disorders are that the underlying mutations are neither necessary nor sufficient for the development of disease, and that these mutations are common in the general population. Contemporary genomic methods and perspectives, using the human genomic sequence, comparative sequence from many other vertebrates, a genome-wide map of polymorphic sites (The International HapMap Project) are all critical elements of this genetic dissection. In particular, we are developing a paradigm for the genetics of common mutations.

Wasun Chantratita, Ph.D., has a broad background in genome research for both pathogen and human with specific training and expertise in key research areas for both viral and human diseases. As a head of Virology Laboratory and Medical Genomic Center at Ramathibodi hospital, Mahidol University, I have carried out both research and routine molecular diagnosis in virology since 2001. So far, more than 50,000 of various type of clinical species nationwide have been sent to our unit for molecular viral diagnosis annually. In 2003, I was chosen by Thailand Center of Excellence for Life Sciences (TCELS) to run the government prototype project called Pharmacogenmics. I as a program director and my colleagues have aimed of improving the health of people and reducing medical expenditure in developing countries such as Thailand. With support mainly from TCELS, Thai Ministry of Public Health, Ramathibodi hospital, Mahidol University, and Riken Genomic Sciences Center, Japan, this project has revealed several gene discoveries innovatively. This center performed more than 3,000 GWAS comparing two large groups of individuals of one no adverse drug reaction as a control group and one case group affected by serious side effect after taken that drug. A novel system has been developed. It can detect simultaneously HLA-B*1502, HLA-B*5801, HLA-B*5701, HLA-B*3505, and HLA-B*4001 adverse drug reactions associated with the use of carbamazepine (anticonvulsants), allopurinol (hyperuricemia treatment), abacavir (antiretroviral drug), nevirapine (antiretroviral drug), and stavudine (antiretroviral drug). These drugs could cause severe adverse drug reactions, such as Stevens-Johnson syndrome, hypersensitivity, and lipodystrophy syndromes. Finally, the assay received the Thailand Innovation Award in 2011. In 2013, I and my team applied our knowledge and experience gained from pharmacogenomics project to establish the Center of Excellent

in Medical Genomic Center which supported by TCELS and Ramathibodi Hospital. We provide clinicians and medical researchers with an end-to-end solution, which starts with genotyping or whole genome and whole exome sequencing based on next generation sequencing technology with the Ion Proton and Ion Torrent's PGM™ sequencers for amplicon resequencing or targeted sequencing of the chosen gene panels, followed by interpreting large numbers of human whole genomes and exomes, or targeted sequencing of specific human genes or genomic regions, and ends by reporting on clinical interpretation of the findings. During the next five years from now, we will focus our efforts firstly on inherited diseases such as sudden cardiac deaths, hereditary retinal dystrophy and neurodegenerative diseases. We will match mutation(s) in the genome of patients with inherited disease to potential treatment. Secondly, we will determine the progression and treatment response of infectious disease in patients, based on pathogen and/or host genomes. Then, we will expand our efforts to cancers and clinical trials for targets therapies.

Seong Beom Cho is Director, Division of Biomedical Informatics, National Institute of Health, Korea.

Ashwini de Abrew

Prof. Vajira H. W. Dissanayake, M.D., Ph.D., is a Professor and Medical Geneticist at the Human Genetics Unit, Faculty of Medicine of the University of Colombo, Sri Lanka. He graduated from the University of Colombo and read for his PhD at the University of Nottingham in the UK. Since returning back to Sri Lanka in 2004 he has been instrumental in developing clinical genetic and genetic diagnostic services as well as education and research in the field of Medical Genetics both in the public and private sectors. He founded the Asiri Center for Genomic and Regenerative Medicine of the Asiri Group of Hospitals in 2006 and co-founded Credence Genomics – the first Next Generation Genomics Company in Sri Lanka in 2012. He established MSc courses in Clinical Genetics, Genetic Diagnostics, and Biomedical Informatics in collaboration with the University of Oslo, Norway and an MSc course in Regenerative Medicine in collaboration with Manipal University, India. He has been helping Nepal develop their manpower in Medical Genetics by training doctors and scientists from Nepal in Clinical Genetics and Genetic Diagnostics in Colombo. He was awarded the Third World Academy of Science & National Science Foundation, Sri Lanka – Young Scientist Award for Scientific Excellence in 2008 and the Young Scientist Award of the Asia Oceania Federation of Obstetrics and Gynaecology in 2011. He was the President of the Sri Lanka Medical Association in 2012. He was elected a fellow of the National Academy of Sciences of Sri Lanka in 2013.

Thierry Frebourg, **M.D., Ph.D.,** is Deputy Director of the ITMO Genetics, Genomics and Bioinformatics at Aviesan in Paris; Professor of Genetics at Rouen University Hospital; Head of the Department of Genetics, Rouen University Hospital; and Director of the UMR Inserm U1079. He

obtained his M.D. at Rouen University in 1986, his Ph.D. in Molecular Biology at the University of Paris VII in 1990 and did his post-doc within the Department of Genetics at the Massachusetts General Hospital, Harvard Medical School in Boston to study genetic predisposition to cancer. He is a clinical and molecular geneticist whose research is focused on the development of innovative methods for the detection of genetic alterations, the biological and medical interpretation of genetic variations in the human genome, the medical applications of New Generation Sequencing technologies. This research mostly concerns inherited forms of cancer and neurogenerative disorders and targeted therapies in cancer. His laboratory combines genomic technologies, bioinformatics and statistical analyses, functional analyses of genetic variants in cellular assays or models such as yeast or Drosophila. He is Expert at the Inserm, AERES, INCa and European Research Council and Member of the French, European and American Societies of Human Genetics and of the Scientific Advisory Board of the French rare diseases Foundation. He has co-authored 334 peer-reviewed publications in medical genetics and molecular biology (h-index 51, Average citations per item; 32).

Geoffrey S. Ginsburg, M.D., Ph.D., is the founding director for the Center for Applied Genomics in the Duke University Medical Center and the founding executive director of the Center for Personalized and Precision Medicine in the Duke University Health System. While at Duke, Dr. Ginsburg has pioneered translational genomics and developing novel practice models and implementation research for the integration of genomic tools in health care systems with a focus on family history, health risk assessments, and pharmacogenomics. In 1990, he joined the faculty of Harvard Medical School, where he was director of preventive cardiology and led a laboratory in applied genetics of cardiovascular disease. In 1997, he joined Millennium Pharmaceuticals Inc., as senior program director for cardiovascular diseases and was eventually appointed vice president of Molecular and Personalized Medicine at Millennium, where he was responsible for developing pharmacogenomic strategies for therapeutics, as well as biomarkers for disease and their implementation in the drug development process. Dr. Ginsburg's research interests are in the development of novel biomarkers that inform medical decisions with a focus in oncology, infectious diseases, and cardiovascular disease. He and his teams are developing the paradigms for translating genomic information into medical practice and the integration of personalized medicine into health care. He has received a number of awards for his research accomplishments, including the Innovator in Medicine Award from Millennium in 2004 and the Basic Research Achievement Award in Cardiovascular Medicine from Duke in 2005. He is a founding member and on the Board of Directors of the Personalized Medicine Coalition, a senior consulting editor for *The Journal of the American College of Cardiology, The HUGO Journal*, and an editorial advisor for *Science Translational Medicine*. In addition, he is the editor of *Genomic and Personalized Medicine* (Elsevier) whose first edition was published in 2009. He has been an international expert panel member for Genome Canada and the Secretary of Veterans Affairs

Advisory Council on Genomic Medicine. He is currently a member of the Board of External Experts for the National Heart, Lung and Blood Institute, the Institute of Medicine's Roundtable on Translating Genomic-Based Research for Health, the National Advisory Council for Human Genome Research, and a member of the External Scientific Panel for the Pharmacogenomics Research Network. He received his M.D. and Ph.D. in biophysics from Boston University and completed an internal medicine residency at Beth Israel Hospital in Boston, MA. Subsequently, he pursued postdoctoral training in clinical cardiovascular medicine at Beth Israel Hospital and in molecular biology at Children's Hospital as a Bugher Foundation Fellow of the American Heart Association.

Peter Goodhand

Godfrey Grech

Leif Groop

Peter Guthrie

Bok-Ghee Han, Ph.D. is the Director of the Center for Genome Science and also acting director of Center for Biomedical Research at Korea National Institute of Health. She received her Ph.D degree from University of Bonn, German, in 1993. She then worked on aging and chronic diseases in Seoul medical school and Korea National Institute of Health until 2000.She was director of National Biobank of Korea from 2001 to 2009 for which she designed and launched the Korea Biobank Project for nationwide management of human biorepositories and tissue banks in Korea. Now, she is directing several national projects including the Korea Genome and Epidemiology Study (KoGES), the Korea Genome Analysis Project (KoGAP), and Korean Association Resource consortium. Her research interest is focused on genome studies to understand genetic and environmental factors associated with aging and chronic diseases such as diabetes and hypertension. Currently, she is vice president of Korea Human Genome Organization and guest professor of Korea medical school.

Yijing He

Cashell Jaquish, Ph.D., is a Program Director in Genetic Epidemiology, Prevention and Population Sciences Program, Epidemiology Branch at National Heart, Lung and Blood Institute and a part time intramural scientist with the Center for Population Studies, Framingham Heart Study. Dr. Jaquish received her Ph.D. in Evolutionary Biology and Population Genetics in 1993 from Washington University in St. Louis. Dr. Jaquish did her post-doctoral training with Dr. Jean MacCluer at Southwest Foundation for Biomedical Research (now Texas Biomedical Research Institute) and with Dr. Alexander Wilson at the Center for Inherited Diseases, National Human Genome Research Institute. Her research interest has focused on gene by environment interaction, family studies and genetics of hypertension and obesity. Over the past 15 years Dr. Jaquish has lead several NHLBI family based programs such as GeneLink, an effort to

facilitate meta analysis and sharing of linkage results and PROGENI (Programs in Gene by environment interaction), an effort to use families to discover genes effecting response to short term interventions. Currently she leads “Life After Linkage”, a program designed to incorporate next generation sequencing and array technology into family studies for rare variant discovery. She has also played a lead role in the NHLBI genome- wide association studies, STAMPEED and SHARe. Dr. Jaquish works with several international genomic consortia (CHARGE and AGEN) and the International Childhood Cardiovascular Cohorts (i3C) consortium. Currently, she is leading a large scale effort (Next Generation Genetic Association Studies) to use induced pluripotent stem cells from 2,500 patients (across 9 studies) with known genetic variants to develop “disease in a dish” models of gene function. Dr. Jaquish has been an active member of The American Society for Human Genetics, International Genetic Epidemiology Society and the American Heart Association Epidemiology and Prevention Council.

Julie A. Johnson, Pharm.D., BCPS, FCCP, FAHA, is Dean of the University of Florida College of Pharmacy and Distinguished Professor of Pharmacy (Department of Pharmacotherapy and Translational Research) and Medicine; (Department of Medicine, Division of Cardiovascular Medicine) in the Colleges of Pharmacy and Medicine. She is also Director of the UF Health Personalized Medicine Program. She was appointed dean in August 2013 and joined the faculty at the University of Florida in May 1998, after having spent 9 years on the University of Tennessee College of Pharmacy faculty. She received her B.S. in Pharmacy from the Ohio State University (1985) and her Pharm.D. from the University of Texas at Austin and the University of Texas Health Science Center at San Antonio (1987). She completed a post-doctoral fellowship in cardiovascular pharmacology/ pharmacokinetics at the Ohio State University (1989). Dr. Johnson’s research focuses on cardiovascular pharmacogenomics. She leads a research group in the NIH-supported Pharmacogenomics Research Network, with a project focused on pharmacogenomics of antihypertensive drugs. She also leads another NIH-funded group in genomic medicine implementation that is part of the NIH IGNITE network, which she also chairs. She is an internationally-recognized leader in the field of cardiovascular pharmacogenomics and genomic medicine implementation, with 200 peer reviewed publications and > $35M in research funding as the principal investigator. Dr. Johnson served on the Nonprescription Drugs Advisory Committee of the FDA (2000-2004), the XNDA Study Section at NIH (2007-2012), as a member of the NHLBI Pediatric Heart Network Protocol Review Committee (2002-2012) and NHLBI Heart Failure Network Data Safety Monitoring Board (2008-2013). She was also a member of the American Heart Association Committee on Scientific Sessions Programming (2009-2011) and was co-chair for the 2009 AHA International Congress on Genetics and Genomics of Cardiovascular Disease. She served as a Regent of the American College of Clinical Pharmacy (2000-2003), and has had numerous other leadership roles in a variety of national organizations. She is on the editorial boards

of the journals *Clinical Pharmacology and Therapeutics, Pharmacogenetics and Genomics*, *Journal of the American Heart Association, Psychosomatic Medicine,* and *Pharmacogenomics,* and served as a scientific editor for *Pharmacotherapy* from 2004 to 2013. Dr. Johnson has received numerous awards including teaching awards from both the University of Tennessee (1996) and the University of Florida (2001); the Ohio State University Alumni Association William Oxley Thompson Award for early career achievement (1997), the Leon I Goldberg Young Investigator Award from the American Society for Clinical Pharmacology and Therapeutics (2004), the Distinguished Alumnus Award from the Ohio State University College of Pharmacy (2005), Paul Dawson Biotechnology Research Award, American Association of Colleges of Pharmacy (2007), the Therapeutic Frontiers Award (2009) and the Russell R Miller Award for Contributions to the Literature (2010), both from the American College of Clinical Pharmacy; among others. She also has numerous lectureship awards.

Abel Kho

Muin Khoury, M.D., Ph.D., is the first and current Director of the Centers for Disease Control and Prevention's (CDC) Office of Public Health Genomics. The Office was formed in 1997 to evaluate how advances in human genomics can be used responsibly and effectively to improve health and prevent disease across the lifespan. CDC's Office of Public Health Genomics serves as the national focus for integrating genomics into public health research and programs for disease prevention and health promotion. Dr. Khoury joined CDC as an Epidemic Intelligence Service Officer in 1980 in the Birth Defects and Genetic Diseases Branch, and as a medical epidemiologist in 1987. In 1990, he became Deputy Chief of the same Branch. In addition to his CDC role, since 2007, Dr Khoury serves as a senior consultant in public health genomics at the National Cancer Institute. Since 2011, he serves as the Acting Associate Director for the Epidemiology and Genomics Research Program, in the Division of Cancer Control and Population Sciences at the National Cancer Institute. Dr. Khoury received his B.S. degree in Biology/Chemistry from the American University of Beirut, Lebanon and his medical degree and pediatrics training from the same institution. He received a Ph.D. in Human Genetics/Genetic Epidemiology and training in Medical Genetics from Johns Hopkins University. Dr. Khoury is board certified in Medical Genetics. Dr. Khoury has published extensively in the fields of genetic epidemiology and public health genetics and is a member of many professional societies and serves on the editorial boards of several journals. He is an Adjunct Professor of Epidemiology at the Emory University School of Public Health and an Associate in the Department of Epidemiology at Johns Hopkins University Bloomberg School of Public Health.

Anne Kolbe, M.D., is a paediatric surgeon. She is the Chair of the National Health Committee, a Member of the Hospital Advisory Committee of the Auckland District Health

Board and a Member of the Risk and Audit Committee of the Whanganui District Health Board. She is a current Member of HealthPACT. Anne is a past President of the Royal Australasian College of Surgeons and has been a Director of PHARMAC.

Bruce Korf, M.D., Ph.D., completed his undergraduate studies and M.D. at Cornell University and received his PhD in genetics and cell biology from Rockefeller University. He then did training in pediatrics, child neurology, and genetics at Children's Hospital, Boston, and is board certified in all three areas, as well as clinical cytogenetics and clinical molecular genetics. He served as clinical director and associate chief of the Children's Hospital, Boston Division of Genetics until 1999, when he assumed the role of medical director of the Harvard-Partners Center for Genetics and Genomics. In 2003 he moved to University of Alabama at Birmingham, where he is the Wayne H. and Sara Crews Finley Professor of Medical Genetics, chair of the Department of Genetics, and director of the Heflin Center for Genomic Sciences. Dr. Korf is past president of the Association of Professors of Human and Medical Genetics, immediate past president of the American College of Medical Genetics and currently is president of the ACMG Foundation for Genetic and Genomic Medicine. He has served on the Liaison Committee on Medical Education and the Board of Scientific Counselors of the National Cancer Institute, and now is on the Board of Scientific Counselors of the National Human Genome Research Institute at the NIH. He also chairs the Medical Advisory Committee for the Children's Tumor Foundation (CTF) and is a member of the board of directors of CTF. Dr. Korf is author of Human Genetics: A Problem-Based Approach, co-author of Medical Genetics at a Glance, and co-editor of Current Protocols in Human Genetics and Emery and Rimoin's Principles and Practice of Medical Genetics. His research focus is the genetics and treatment of neurofibromatosis type 1 and he also has a major interest in genetics and genomics education and the integration of genetics into medical practice.

Michiaki Kubo, M.D., Ph.D., is a deputy director of Center for Integrative Medical Science (IMS), RIKEN. He graduated Faculty of Medicine, Kyushu University in 1988. After working as a clinical nephrologist, he started his research as an epidemiologist in the Hisayama study which is a population-based cohort study of cardiovascular disease established in 1961. He started genomic research of common diseases at the University of Tokyo from 2003 and continuing his genomic research at the IMS (previously called as SNP Research Center or Center for Genomic Medicine), RIKEN since 2006. He became the project leader of the BioBank Japan project in 2011 and is working for the implementation of personalized medicine in Japan.

Paul Lasko, Ph.D., received a Ph.D. in Biology from the Massachusetts Institute of Technology, where he carried out a genetic

saturation of the chromosomal region surrounding the *Drosophila* vestigial gene in the laboratory of Mary Lou Pardue. He then moved to the laboratory of Michael Ashburner, in the Department of Genetics at Cambridge University, where he cloned and did an initial characterization of *vasa*. Paul Lasko joined the Biology Department at McGill University in April 1990, was promoted to Associate Professor in 1996 and to Full Professor in 1999. He has served as Biology Department Chair since June 2000, and is a founding member of the DBRI. Dr Lasko was a Research Scientist of the National Cancer Institute of Canada from 1992-98, won the Young Scientist Award of the Genetics Society of Canada in 1998 and its Award of Excellence in 2004, and is a contributor to the Faculty of 1000.

Erkki Leego, M.S., is an IT advisor at Genome Center University of Tartu. He also holds CEO and managing partner position of consultancy company Hansson, Leego & Partner. Mr. Leego has previously worked as director of IT services for Tartu University Hospital, as an Advisor to the President of the Republic of Estonia and Head of the IT department of the Estonian Parliament. He has been a member of the committee which coordinated Estonia's National Digital Health Record project and is an expert advisor in several other Estonian and European Ehealth and personal medicine initiatives. He holds a master's degree in Informatics from University of Tartu and also teaches at University of Tartu. He is member of P3G (Public Population Project in Genomics).

Paul Madden

Surakameth Mahasirimongkol, M.D., M.Sc., Ph.D., is a medical scientist/genetic epidemiologist working on turning the basic understanding of genetic risks into clinical application and public health measures in Thailand. He is interested in analysis of SNP-SNP interactions in complex traits and the gene environment interactions and their application in clinical settings. His institute is instrumental in the implementation of the pharmacogenetic testing to avoid serious adverse drug reactions (ADRs) in Thailand. This work also led to establishment of collaborative research network among Thai FDA, clinicians and pharmacists within The Ministry of Public Health, Thailand Pharmacogenomics Research Network.

Partha P. Majumdar, Ph.D., is Director of the National Institute of Biomedical Genomics in India and Professor of Human Genetics at the Indian Statistical Institute. Areas of major interests and contributions: Human Genetics and Genomics, Population Genetics, Statistical Genetics. Coordinator of the Indian project on oral cancer under the International Cancer Genome Consortium. Have served on various national and international committees on genomics and ethics. Currently, a member of the HUGO Council.

Teri Manolio, M.D., Ph.D., a physician and epidemiologist, has a deep interest in discovering genetic changes associated with diseases by conducting biomedical research on large groups of people. As the director of the new Division of Genomic Medicine, Dr. Manolio will lead efforts to support research translating those discoveries into diagnoses, preventive measures, treatments and prognoses of health conditions. "I see our division as a truly novel undertaking at NHGRI. We will take full advantage of the rapidly expanding knowledge base of genetic associations and of remarkable genome-scale analytic technologies," said Dr. Manolio. "This knowledge will enable us to begin to meld clinical and genomic research for rapid improvements in clinical care." Dr. Manolio envisions a day when patients have ready access to affordable, reliable genetic tests enabling them to avoid rare, sometimes devastating complications of common drug treatments. She also hopes to find ways of using a patient's genomic information to enhance diagnostic strategies and improve treatment outcomes by examining comprehensive databases of patients whose physical characteristics and genomic variants match those of the patient at hand. "Finding ways to achieve such goals through research will be an incredible challenge and I look forward to working with our new sister divisions, other National Institutes of Health (NIH) institutes and centers and the research community as a whole," Dr. Manolio said. Dr. Manolio joined NHGRI in 2005 as senior advisor to the NHGRI director for population genomics and as director of the Office of Population Genomics. She has led efforts to apply genomic technologies to population research, including the Genes, Environment, and Health Initiative (GEI), the Electronic Medical Records and Genomics (eMERGE) Network and the NHGRI Genome-Wide Association Catalog. Dr. Manolio came to NHGRI from NIH's National Heart, Lung, and Blood Institute where she was involved in large-scale cohort studies such as the Cardiovascular Health Study and the Framingham Heart Study. Dr. Manolio also maintains an active clinical appointment on the in-patient medical service of the Walter Reed National Military Medical Center, Bethesda, and is a professor of medicine on the faculty of the Uniformed Services University of the Health Sciences. She has authored more than 240 research papers and has research interests in genome-wide association studies of complex diseases and ethnic differences in disease risk. She received her B.S. in biochemistry from the University of Maryland College Park, her M.D. from the University of Maryland at Baltimore, and her Ph.D. in human genetics and genetic epidemiology from the Johns Hopkins School of Hygiene and Public Health.

Gert Matthijs, Ph.D., is a molecular geneticist, involved in the diagnostics of inherited diseases since 1994, and a professor at KU Leuven. He is the head of the Laboratory for Molecular Diagnostics at the Center for Human Genetics, at the University Hospital in Leuven. The Center for Human Genetics is the largest genetic department in Belgium. He is the coordinator of EuroGentest, a network for development, harmonization and standardization of

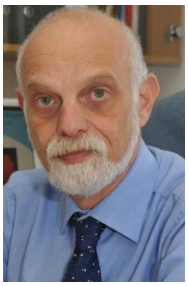
genetic testing in Europe, funded by the European Commission. It also deals with clinical, legal and ethical aspects of genetic testing, and with the introduction of new technologies for diagnostics. EuroGentest aims at setting new standards for genetic testing in Europe. His research interest is in Congenital Disorders of Glycosylation (CDG), a group of rare inborn errors of metabolism. His group is focusing on the systematic search for novel types of CDG. His (translational) research activities deal with the development and validation of novel technologies for diagnostic use. Currently, the focus is on the implementation of the newest massive parallel sequencing platforms for mutation scanning in a diagnostic setting. As far as policy is concerned: he was very actively involved in the European opposition against the BRCA patents. At the national level, he has contributed to the recent revision of the reimbursement system for genetic tests.

Howard McLeod, Pharm.D., is Medical Director of the DeBartolo Family Personalized Medicine Institute at the Moffitt Cancer Center. He is also a Senior Member of the Division of Population Sciences. Most recently he as the Fred Eshelman Distinguished Professor and Founding Director of the UNC Institute for Pharmacogenomics and Individualized Therapy, University of North Carolina, Chapel Hill. Dr. McLeod held appointments in the UNC Schools of Pharmacy and Medicine, the Carolina Center for Genome Sciences, and the Lineberger Comprehensive Cancer Center. Dr. McLeod is chair of the NHGRI eMERGE network external scientific panel and is a member of the FDA committee on Clinical Pharmacology. He is a member of the NIH NHGRI Advisory Council. Since 2002, Dr. McLeod has been vice chair for Pharmacogenomics for the NCI clinical trials cooperative group CALGB/ALLIANCE, overseeing the largest oncology pharmacogenomics portfolio in the world. Dr McLeod is a 1000 talent scholar of China and a Professor at Central South University in Changsha, China. He also directs the Pharmacogenetics for Every Nation Initiative, which aims to help developing countries use genetic information to improve National Drug Formulary decisions. Howard has published over 460 peer reviewed papers on pharmacogenomics, applied therapeutics, or clinical pharmacology and continues to work to integrate genetics principles into clinical practice to advance individualized medicine.

Andres Metspalu, M.D., Ph.D., is a full professor of Biotechnology and Director of the Estonian Genome Center of the University of Tartu. He graduated from the University of Tartu in 1976 with an M.D. and received his Ph.D. in 1979 on ribosome structure and function (Kiev, Ukraine). He was as a postdoc (IREX fellow) at Colombia University (yeast mtDNA) and Yale University (snRNAs) in 1981-1982. His main scientific interests are human genetics, genetics of complex diseases and microarray technology applications in research and diagnostics. He has published more than 240 papers and chapters in international peer review journals and books. His main contributions are on the

field of microarrays (APEX) and population based biobanks (The Estonian Genome Center www.geenivaramu.ee). From 1986 he was at the Estonian Biocentre as a scientific director and head of the laboratory of gene expression at University of the Tartu. He worked at EMBL, Heidelberg (1985 as a FEBS fellow), at MPI Molecular Genetics in W-Berlin (1988 as an EMBO fellow) and at University of Hamburg (1990-1991) as a DAAD fellow and with the support of EC. In 1993-1994 he was at Baylor College of Medicine, Houston, as a visiting faculty (Dept. of Human Genetics with Dr. T. Caskey) and 2000 at IARC (Lyon) as a recipient of the International Visiting Senior Scientist Award (genetic epidemiology). From 1996 to 2008 A. Metspalu was also the head (and founder) of the Molecular Diagnostic Center of the Tartu University Hospital. Metspalu is the past (2006) president of the European Society of the Human Genetics (ESHG) and current president of the EstSHG. He is one of the founders and directors (2002-2007) of the P3G Consortium of Biobanks. From 2007 he is the member of the ScanBalt academy, from 2011 ScanBalt Presidency. He supervised 19 Ph.D. theses. He is serving in several national and international committees, editorial boards and has received among other awards and honors the Order of the Estonian Red Cross 3rd Class and L'Ordre des Palmes Academiques from the Republic of France.

Satoru Miyano, Ph.D., is a Professor of Human Genome Center, The Institute of Medical Science, The University of Tokyo. He is an ISCB Fellow (The International Society for Computational Biology: http://www.iscb.org/iscb-fellows). He is one of the founders of Japanese Society for Bioinformatics and served as the president for 2004-2005. He received the B.S. (1977), M.S. (1979) and PhD (1984), all in Mathematics from Kyushu University, Japan. He joined Human Genome Center in 1996. His research mission is to develop "Computational Medical Systems Biology towards Genomic Personalized Medicine", in particular, cancer research and clinical sequence informatics. He has been involved as PI with the International Cancer Genome Consortium, Systems Cancer Research by MEXT (Ministry of Education, Culture, Sports and Science and Technology, Japan) Innovative Area, and Strategic Programs for Innovative Research by MEXT - Large-Scale Data Analysis with K computer (10 peta FLOPS supercomputer). He is also working for the Biobank Japan (DNAs and sera of 200,000 patients for 47 diseases are collected in the last ten years) that is located at the Institute of Medical Science, The University of Tokyo. By massive data analysis and simulation with the supercomputers, his group is developing computational methods to link differences in our genomes to diseases, drugs, and environmental factors with systems understanding, by which he will contribute to personalized genomic medicine. He has editorial positions in some journals: PLoS Computational Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Journal of Bioinformatics and Computational Biology.



Yaakov Naparstek, M.D., is the Senior Deputy Director General for Research & Academic Affairs at the Hadassah University Hospital, Israel. Dr.

Naparstek is a graduate of the Hadassah-Hebrew University Medical School in Jerusalem, Israel. He is Boards certified in Internal Medicine, Rheumatology and Clinical Immunology and Allergy. He has been a research fellow and a visiting Professor at the Weizmann Institute of Science, Rehovot, Tuft's University, Boston, The NIH, Bethesda and Stanford University, Stanford. Dr. Naparstek is a Professor of Medicine in the Hebrew University, Jerusalem. He was the Chairman of Medicine in the Hadassah University Hospital for 13 years. His main research interests are in the fields of autoimmunity, SLE, autoimmune arthritis and type 1 diabetes. In recent years his research group focused on the identification of target antigens in SLE and in autoimmune arthritis and diabetes and in the attempts to develop antigen-specific therapeutic modalities to those diseases. In addtion to his academic and clinical activities, Dr. Naparstek has been involved in several medical humanitarian activities, such as the Israeli Medical Rescue Team for Campuchean refugeees in Cambodia, and served as a medical advisor to the Ministry of Health in British Guiana. Dr. Naparstek is the Head of the Israelli Cell Therapy and Gene Therapy Committees of the Israeli MOH, and was a member of the National Committee for the Israeli "Health Basket", in addition to many other national and international committees. Dr. Naparstek is the founder and chief scientist of the Verto Medical and Protab Therapeutics biotechnological companies and a consultant and SAB member in other medical-biotechnology companies. Dr. Naparstek is the recipient of national and international awards, including the 2011 Elkeles Prize in Medicine and the author of more than 100 publications and chapters in books as well as many patents in the field of autoimmune inflammatory diseases.

Irene Norstedt, is Acting Head of Unit for the Personalised Medicine Unit it in the Health Research Directorate in DG Research and Innovation. She has been working with European life sciences research aspects at the European Commission since 1996. She was one of the key drivers for setting up the Innovative Medicines Initiative (IMI), a public private partnership between the EC and the Pharmaceutical industry. Previous responsibilities at the EC have primarily focused on Small and Medium size Enterprises and industry aspects of biotechnology and health research at European level. Before starting her job in Brussels she worked for Biscore AB in Uppsala, Sweden. There she had several positions including Business Development for the Drug Discovery and Food Analysis areas and Technical Services Manager. She has also worked as Assistant Technical Attaché at the Swedish Embassy in London.

Naoko Okamura, **M.S.** Counsellor, Office of Healthcare Policy, Cabinet Secretariat, Government of Japan. Director, Advanced Medical and Radiological Science Division, Research and Promotion Bureau, Ministry of Education, Culture, Sports, Science and Technology; Counselor – Mission of Japan to the EU, Ministry of Foreign Affairs.

P. Pearl O'Rourke, M.D., is the director of Human Research Affairs at Partners HealthCare Systems in Boston and an Associate Professor of Pediatrics at Harvard Medical School. She is responsible for the systems that support the regulatory and ethical oversight of human research and the responsible conduct of research. She is also chair of the Partners Healthcare System Embryonic Stem Cell Research Oversight Committee. Pearl has worked as a pediatric critical care physician at the Children's Hospital, Boston and at the Children's Hospital, University of Washington in Seattle where she was the Director of the Pediatric Intensive Care Unit. Additionally, in Seattle, she served many years as a member of the IRB. In her career in Pediatric Critical Care, she was active in clinical research in extracorporeal membrane oxygenation (ECMO), liquid ventilation, high frequency ventilation and pediatric resuscitation. In Seattle she served many years as a member of the IRB. Pearl has also been involved in international medical care, serving in China and Indonesia with Project HOPE. In 1995-1996, Pearl did a Robert Wood Johnson Health Policy fellowship and worked for Senator Edward Kennedy (Democrat-MA) as a member of the Labor Committee Staff. Following this fellowship, she became the Deputy Director of the Office of Science Policy in the Office of the Director at the NIH where she worked on issues such as privacy, gene therapy (transfer) embryonic stem cells, and genetic discrimination. Dr. O'Rourke is the past Chair of PRIM&R's Board of Directors, and has been a speaker at a number of PRIM&R meetings, addressing topics such as privacy, human embryonic stem cells, and the reporting of serious adverse events.

George Patrinos, Ph.D., currently serves as Associate Professor of Pharmacogenomics and Pharmaceutical Biotechnology in the University of Patras (Greece), Department of Pharmacy and holds an adjunct position at Erasmus MC, Faculty of Medicine, Rottetrdam (the Netherlands). Also, he is Greece's National representative in the CHMP Pharmacogenomics working party of the European Medicines Agency (EMA, London, UK), member of the International Rare Disease Research Consortium (IRDiRC) and Scientific Director of the Golden Helix Foundation (London, UK), an international non-profit research organization in the field of Genomic Medicine. His research interests involve pharmacogenomics for hemoglobinopathies and neuropsychiatric disorders, transcriptional regulation of human fetal globin genes and genotype-phenotype correlation in human genetic disorders. His group is also internationally recognized for its involvement in developing National/Ethnic Genetic databases to document the genetic heterogeneity in different populations worldwide, while he also has a keen interest in public health genomics to critically assess the impact of genomics to society and public health. George Patrinos has more than 130 publications in peer-reviewed scientific journals and textbooks, some of them in leading scientific journals, such as *Nature Genetics*, *Nature Rev Genet*, *Nucleic Acids Res*, *Genes Dev*, and he is the Editor of the textbook "Molecular Diagnostics", published by Academic Press,

now in its 2nd edition. Furthermore, he serves as Communicating Editor for "*Human Mutation*" and member of the editorial board of several scientific journals. He has been a member of several international boards and advisory and evaluation committees and he is the main organizer of the international meeting series "Golden Helix Symposia" and "Golden Helix Pharmacogenomics Days". He has given numerous keynote and plenary lectures in international conferences as invited speaker and his research projects received funding of over 6M EUR from national and international funding agencies

Munir Pirmohamed

Reed Pyeritz, Ph.D., is a medical geneticist and internist who focuses clinically and in research on cardiovascular disorders, especially heritable disorders of the thoracic aorta. Our group has been especially interested in ethical, legal, social and economic aspects of new genetic technologies and how next generation sequencing approaches are best applied in the clinic.

Heidi L. Rehm, Ph.D., FACMG, is the Director of the Laboratory for Molecular Medicine at the Partners Healthcare Center for Personalized Genetic Medicine and Assistant Professor of Pathology at Harvard Medical School. Her lab focuses on the translation of new genetic discoveries and technologies into clinical tests that can be used to improve patient outcomes, supporting the model of personalized medicine. Dr. Rehm also conducts research in hearing loss, Usher syndrome, genomic medicine, and healthcare IT.

Mary V. Relling, Pharm.D., is a Member and Chair of the Department of Pharmaceutical Sciences at St. Jude Children's Research Hospital in Memphis, TN. Dr. Relling earned her undergraduate B.S. degree from the University of Arizona College of Pharmacy and her doctoral degree from the University of Utah College of Pharmacy. She completed post-doctoral fellowships with Dr. William Evans at St. Jude and with Dr. Urs Meyer at University of Basel. She joined St. Jude as a faculty member in 1988, and in 2003 was named chair of the Department of Pharmaceutical Sciences. She is also a professor at the University of Tennessee in the Colleges of Medicine and Pharmacy. Her primary interests are in treatment of childhood leukemia and pharmacogenetics of antileukemic therapy. Dr. Relling is one of the Principal Investigators within NIH's Pharmacogenomics Research Network and co-founder of CPIC, the Clinical Pharmacogenetics Implementation Consortium. She has published over 270 original scientific manuscripts. She was elected to the Institute of Medicine in 2009.

Gad Rennert, Ph.D., has been the chairman of the Carmel Medical Center Department of Community Medicine and Epidemiology since 1992. He is a professor and the head of public health and

epidemiology teaching group at the Technion Faculty of Medicine. Prof. Rennert is also the Director of the National Israeli Cancer Control Center and the Department of Epidemiology and Disease Prevention of Clalit and is also leading its National Personalized Medicine Program offering testing, advice and policy on individualized molecular testing which dictates cancer risk and suitability for cancer treatments. He is responsible for the national breast and colorectal cancer detection programs in Israel and is a member of the National Oncology Council. In 1984, Prof. Rennert received his medical degree from Ben-Gurion Medical School. He received his Ph.D. in Public Health from the University of North Carolina. He focuses his studies on understanding the behavioral and biological causes of cancer, with special emphasis on gene-environment interactions. He is an invited speaker in key conferences in the world, such as the Personalized Medicine World Conference, UPCP, American Society of Clinical Oncology, American Association of Cancer Research, St. Galen Cancer Prevention conference and San Antonio Breast Cancer Symposium. In addition to his activities at the Technion, Dr. Rennert is a reviewer for more than thirty international journals, is an associate editor of two and serves on ten of their editorial boards. He has published more than 200 papers among them in leading journals such as the NEJM, Science and Nature.

Laura Lyman Rodriguez, Ph.D., is the Director of the Office of Policy, Communications, and Education at the National Human Genome Research Institute (NHGRI), National Institutes of Health (NIH). Dr. Rodriguez works to develop and implement policy for research initiatives at the NHGRI, as well as trans-NIH programs. She is particularly interested in the policy and ethics questions related to the inclusion of human research participants in genomics and genetics research. Dr. Rodriguez also is interested in the policy and organizational issues associated with the development and establishment of strategic partnerships. Among other activities, Dr. Rodriguez has provided leadership for many of the policy development activities pertaining to genomic data sharing and the creation of the database for Genotypes and Phenotypes (dbGaP) at the NIH. Dr. Rodriguez has been with NHGRI since 2002 and served in multiple capacities during her tenure with the Institute. Prior to coming to NIH, she was a Senior Program Officer at the National Academies Institute of Medicine where she was the Study Director for a project examining the federal system for protecting human research participants. She spent time in the legislative arena as an American Association for the Advancement of Science (AAAS) Congressional Science Fellow working on national science policy issues and K-12 math and science education, and with the Office of Public Affairs at the Federation of American Societies for Experimental Biology covering federal funding issues and various topics in bioethics. Dr. Rodriguez received her bachelor of science with honors in biology from Washington and Lee University in Virginia and earned a doctorate in cell biology from Baylor College of Medicine in Texas.

Sheri Schully, Ph.D., is Team Lead for the Knowledge Integration Team in the Epidemiology and Genomics Research Program's (EGRP) Office of the Associate Director. She

was previously a Program Director in EGRP's Host Susceptibility Factors Branch. Dr. Schully's responsibilities include systematically managing the accumulating knowledge base and tools for cancer epidemiology and genomics to accelerate research, evidence-based recommendations, and translation into prevention and clinical practice. In addition, she manages a portfolio of grants related to factors that influence personal susceptibility to cancer, specifically genomic risks. Dr. Schully is also the Program Officer for the Breast and Colon Cancer Family Registries (CFRs) cohorts. In addition to leading the Knowledge Integration team, Dr. Schully is heavily involved in Public Health Genomics research which is involves translating genomic discoveries into clinical care and to make a population health impact. She collaborates very closely with the Centers for Disease Control and Prevention's Office of Public Health Genomics. She is closely involved with the National Human Genome Research Institute's Clinical Genomics (CLinGen) Resource and Clinical Sequencing Exploratory Research (CSER) and serves on the steering committees of both groups. Dr. Schully joined NCI in 2005 as a Presidential Management Fellow through which she completed several rotations in various NCI Divisions and Offices, including with EGRP, the Division of Cancer Epidemiology and Genetics (DCEG), and the Small Business Innovation Research Program within the Office of the Director. During these rotations, Dr. Schully worked with the Cancer Family Registries (CFRs) and organized activities for the Cancer Genetic Markers of Susceptibility. During her time as a Presidential Management Fellow, Dr. Schully also served as an intern with C-Change, a non-profit organization comprised of the nation's key cancer leaders from government, business, and non-profit sectors.

Jeong-Sun Seo, M.D., Ph.D., is a molecular biologist trained in cancer research, biochemistry and genetics. I presently lead the Genomic Medicine Institute, Seoul National University (GMI-SNU) in Seoul, Korea, where we focus our efforts on the understanding of how genomic variations and epigenetic changes inform us about predispositions to pathological changes, and how we could harness this vast information for precision medicine. Among notable contributions of our team to the genome research are three reports. In 2009 we published in *Nature* a highly annotated genome sequence of a Korean individual and in 2010 we reported in *Nature Genetics* a common Asian copy number variation. Additionally, in 2011 we discovered the transcriptional base modifications through comparison of genomic and transcriptional diversity in 18 individuals and published in *Nature Genetics*.

Alan Shuldiner, M.D., received his B.A. degree (Chemistry) from Lafayette College (’79) and his M.D. degree from Harvard Medical School (’84). He was a resident in internal medicine at Columbia-Presbyterian Hospital in New York City and a Medical and Senior Staff Fellow in Endocrinology and Metabolism in the Diabetes Branch at the National Institutes of Health. Dr. Shuldiner is board certified in both Internal Medicine and Endocrinology and Metabolism. In 1991, he joined the

faculty at Johns Hopkins University, Division of Geriatric Medicine and Gerontology as an Assistant Professor, and in 1993 he was promoted to Associate Professor. In 1997 he was recruited to the University of Maryland as Professor and Head of the Division of Diabetes, Obesity and Nutrition in the Department of Medicine. In 1999, the Division of Diabetes, Obesity and Nutrition and the Division of Endocrinology were combined, and Dr. Shuldiner assumed the leadership of the newly named Division of Endocrinology, Diabetes and Nutrition. Under his leadership the Division has grown to 34 fulltime faculty members and an annual research budget of $13 million, ranking 11th in US News and World Report in 2013. In 2005, Dr. Shuldiner was named the John L. Whitehurst Professor of Medicine. In 2011, he was appointed Associate Dean for Personalized Medicine and Director of the interdepartmental program in Personalized and Genomic Medicine. In this context and also to expand infrastructure, quality and quantity of clinical and translational research, Dr. Shuldiner co-directs, with Dr. Stephen Davis, the University of Maryland Clinical and Translational Research Institute. He is also a Core Investigator at the Geriatric Research and Education Clinical Center (GRECC) at the Baltimore Veterans Administration Medical Center.

Andrew Sinclair, Ph.D., B.Sc.

Sukdev Sinha is currently holding the position of Adviser in the Medical Biotechnology Division - II in the Department of Biotechnology, Ministry of Science & Technology, Govt. of India. The core areas which are being dealt by him include various programmes related to Infectious Diseases both at the National and International levels. He also deals with DBT Task Force on Infectious Disease Biology, DBT-ICMR Collaborative effort on HIV/ AIDS & Microbicides, Interdisciplinary Programme on “Developmental and Disease Biology related to Pregnancy, Foetal life, Neonatal and early years and Biology of Ageing” with emphasis on preterm birth and sepsis, DBT-IAVI Collaboration on Neutralizing Antibody Consortium (NAC) on Indian Medicinal Chemistry Programme, and THSTI-IAVI HIV Vaccine Discovery Program. He has also contributed significantly towards establishment of the UNESCO Regional Centre for Biotechnology, Faridabad, National Institute of Biomedical Genomics, Kalyani, West Bengal and Biomedical Genomics Centre at IPGMER/SSKM Hospital, Kolkata by DBT. In addition, he had been instrumental towards establishment of Biotechnology Strategic Planning and Analysis Centre (Bio-SPACe) and made substantial effort in drafting the white paper on FDI in Pharmaceutical Sector in coordination with Planning Commission. Currently, he is also members in Task Force on Translational Research and Product Development of Veterinary Vaccines & Diagnostics, Scientific Advisory Committee of NIBMG, Kalyani; RCB, Gurgaon, Research Council of IICB, Kolkata and Review Committees of SBIRI and BIPP programmes. Prior to joining DBT, he was engaged in Malaria Research with emphasis on Chemotherapy and Drug Resistance at NCDC (formerly NICD) and NIMR (formerly MRC), Delhi and developed in vitro screening tests for lab and field conditions to test new compounds for anti-malarial activities and monitoring drug resistance. He has made significant contributions towards mapping drug resistance in falciparum malaria from different

geographical locations in India. He has over 35 scientific publications in national and international scientific journals, out of these activities.

Wouter Spek

Guilherme Suarez-Kurtz

Patrick Tan, MD, Ph.D., is an associate professor of Duke-NUS Graduate Medical School in Singapore. He received his B.A. from Harvard University in 1992, and attended Stanford University School of Medicine from 1992-2000, where he received his M.D. and Ph.D. degrees. Dr. Tan is also a Group Leader at the Genome Institute of Singapore, and in 2008 was appointed a Program Leader in Genomic Oncology at the Cancer Sciences Institute of Singapore. Other positions include being a Principal Investigator (Adjunct) at the National Cancer Centre of Singapore, and a Senior Research Fellow (Adjunct) at Defence Medical and Environmental Research Institute, Defence Science Organization (DMERI@DSO), Singapore. All of these positions have been held since 2004. Dr. Tan is also a member of Bioethics Advisory Committee (BAC) to the Government of Singapore.

Peter Tarczy-Homoch

Robyn Ward, M.B.B.S., Ph.D., FRACP, is the Deputy Vice-Chancellor (Research) at The University of Queensland, where she leads the University-wide research portfolio. Professor Ward graduated from the University of New South Wales with an M.B.B.S. (Hons 1) in 1984 and then trained as a physician and a scientist, gaining fellowship of the Royal Australian College of Physicians in 1991 and a PhD in Medicine at UNSW in 1994. She previously held positions at The University of New South Wales as Professor of Medicine, Clinical Associate Dean at the Prince of Wales Clinical School (UNSW) and Head of the Adult Cancer Program at the Lowy Cancer Research Centre. Robyn was also Director of the Comprehensive Cancer Centre at the Prince of Wales Hospital in Sydney. Robyn has demonstrated sustained translational and clinical research performance at the highest level. Her research performance is supported through a consistently strong grant track record, including NHMRC and ARC funding, as well as grants from cancer authorities. She has obtained over $38m in competitive funding to support her research activities and has published over 200 articles, books and chapters including in high impact journals such as British Medical Journal, Journal of the National Cancer Institute, Nature Genetics and The New England Journal of Medicine. As Director of the Translational Cancer Research Centre, Robyn has worked with a network of universities and hospitals to pursue the translational cancer research objectives of the Cancer Institute of NSW. Robyn's contributions to medical research have been acknowledged through a Commonwealth Health Minister's Award for Excellence in Health and Medical Research in 2004, the NSW Premier's Award for Outstanding Cancer Researcher of the Year in 2007, and membership of the Order of Australia, awarded in 2013. In addition to her clinical and research leadership experience, Robyn has contributed to the

development of Commonwealth and NSW health policy, including through her current roles as Chair of the Commonwealth Medical Services Advisory Committee and member of the Pharmaceutical Benefits Advisory Committee. She is currently Co-Chair for Global Genomics Medicine Collaborative (G2MC), which is hosted by the Institute of Medicine of the National Academies in Washington, and seeks to foster global collaboration in demonstrating the real world value of medical genomics to government and industry. Robyn is also on the council of the NHMRC.

John Wong Eu Li, M.B.B.S., Isabel Chan Professor in Medical Sciences, is Senior Vice President (Health Affairs) of the National University of Singapore (NUS). He is also the Chief Executive of the National University Health System and Director of the National University Cancer Institute, Singapore. A medical oncologisthaematologist, Professor Wong obtained his M.B.B.S. from NUS and did his residency and fellowship at the New York Hospital-Cornell Medical Center, where he was the Chief Resident in Medicine, and Memorial Sloan-Kettering Cancer Center. He is actively involved in the development of Biomedical Sciences as a key pillar of Singapore's economy, as well as the development of Singapore's first academic health system linking the National University Hospital and NUS' medical, public health, dental, and nursing schools under one unified governance. Prof Wong represents Singapore in the M8 Alliance of Academic Health Centers and the Association of Academic Health Centers – International. He is a member of the World Economic Forum Global Agenda Council on Personalized and Precision Medicine, the Nature Index Panel of Senior Medical Advisors, the International Editorial Board of the *American Journal of Medicine*, and the Editorial Board of the *Journal of the American Medical Association*. He jointly founded the Cancer Therapeutics Research Group, a multinational consortium of nine academic institutions, and has served as a member of the International Education the Council for Molecular Targeted Therapy for Cancer, the American Society of Clinical Oncology International Affairs Committee, and the International Oncology Foundation Advisory Board. Prof Wong's research interests are in the development of new drugs, new treatment strategies and differences between Asian and Caucasian cancers. He was awarded the Public Administration Medal (Silver) in 2005 and the National Outstanding Clinician Award in 2009 in recognition of his contributions to medicine and clinical research. He also received the SASS Foundation award in 2010 in recognition of his outstanding contributions in advancing the field of Hematology Oncology. In 2013, he received the Outstanding Service Award from NUS.

Rika Yuli Wulandari