Personalized Medicine: The Public Health Perspective

December 11-12, 2014, Das Neue Rialto, Basel Switzerland

Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Associated Institute of the University of Basel

Swiss TPH Autumn Symposium 2014

Thursday, December 11

Welcome and Registration

08.00 **Registration and Coffee**

08.45 **Welcome and Introduction,** *Nicole Probst-Hensch, Swiss TPH*

Session 1 – Success Stories in Personalized Medicine

Moderator: Elisabeth Zemp Stutz, Swiss TPH

09:15 **Genetic Screening for Rare Diseases**, *Sabina Gallati Kraemer, Bern University Children's Hospital, Switzerland*

09:45 **Personalized Diagnosis toward More Effective Treatment**, *Aurel Perren, Institute of Pathology, Bern University Hospital, Switzerland*

10:15 **Coffee Break**

10:45 **Genetic Testing, Counselling, Family Care for Breast Cancer**, *Maria C. Katapodi, Institute of Nursing Science, University of Basel, Switzerland*

11:15 **Personalized Health – a Clinical and Public Health Priority in South Africa?**, *Kathleen Kahn, University of Witwatersrand, South Africa*

11:45 **Pharmacogenetics - Clinical Application**, *Thomas Szucs, Institute of Pharmaceutical Medicine/European Center of Pharmaceutical Medicine, University of Basel, Switzerland*

12:15 **Lunch**

Session 2 – Personalized Research Approaches in Epidemiology and Public Health

Moderator: Nino Künzli, Swiss TPH

13:30 **Research toward Personalized Risk Prediction in Respiratory Epidemiology**, *Deborah Jarvis, Imperial College London, United Kingdom*

14:00 **Measuring Individual Exposomes toward Environmental Health Policy**, *Annette Peters, Helmholtz Zentrum München, Germany*

14:30 **Research Priorities in Epidemiological Transition**, *Stephen Tollman, University of Witwatersrand, South Africa*

15:00 **Biomarkers toward Improving the Prevention of Chronic Kidney Disease**, *Murielle Bochud, Institute of Social and Preventive Medicine, University of Lausanne, Switzerland*

15:30 **Coffee Break**

16:00 **Potential and Limitations of Personalized Medicine in Neuropsychiatry**, *Andreas Papassotiropoulos, University of Basel, Switzerland*

16:30 **Personalized Health: the Swiss TPH Perspective**
Moderation Presentations & Discussion: Jürg Utzinger

- Sébastien Gagneux – Research on Tuberculosis
- Medea Imboden – Research on Non-Communicable Diseases
- Hans-Peter Beck – Research on Malaria
- Claudia Daubenberger – Research on the Immune System
- Martin Röösli – Research on Environmental Monitoring

18.00 **Close of Day 1**

Swiss TPH Autumn Symposium 2014

Personalized Medicine: The Public Health Perspective

Friday, December 12

Session 3 – Individualized Health versus Public Health: How to Reconcile

Moderator, morning: Nicole Probst-Hensch, Swiss TPH

08:30 **Coffee**

09:00 **Preparing the Swiss System for Personalized Medicine**, *Vincent Mooser, Vice Dean Research, Faculty of Medicine, CHUV, Lausanne, Switzerland*

09:30 **Preparing Populations in High Income Countries for Personalized Health**, *Ernst Hafen, ETH Zürich, Switzerland*

10:00 **Veterinary Genetics and its Implications for Human Health**, *Tosso Leeb, Institute of Genetics, Vetsuisse Faculty, University of Bern, Switzerland*

10:30 **Coffee Break**

11.00 **Personalized Cancer Care,** *Stefan Frings, Oncology/Cancer Immunotherapy, F. Hoffmann-La Roche Ltd., Basel, Switzerland*

11.30 **Priorities in Improving the Health of People in Côte d'Ivoire**, *Dinard Kouassi, Institut National de Santé Publique, Abidjan, Côte d'Ivoire*

12.00 **Discussion,** *all speakers*

12:30 **Lunch**

Moderator, afternoon: Kaspar Wyss, Swiss TPH

13:30 **Health Care in the Era of Personalized Medicine: a Global Industry Perspective**, *Andreas Wallnöfer, Pharma Research & Early Development, F. Hoffmann-La Roche, Basel, Switzerland*

14:00 **General Practice in Medicine: a Personalized Approach to Patients**, *Carlos Quinto, Swiss TPH and General Practice*

14:30 **From Genes to Jeans: challenges on the Road to Personalized Medicine**, *Antoni Plasència, Barcelona Institute for Global Health, Hospital Clinic, University of Barcelona, Spain*

15:00 **Outlook and Closing Remarks**, *Marcel Tanner, Swiss TPH*

15:30 **Coffee Break**

16:00 **Geigy Foundation Award**, *Marcel Tanner, Swiss TPH*

17:30 **Apéro**

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Speaker Profiles

Swiss TPH Annual Autumn Symposium 2014

Personalized Medicine: The Public Health Perspective

December 11-12, Basel, Switzerland

Welcome and Setting the Stage

Symposium Organizer, Nicole Probst-Hensch, Swiss TPH

Nicole Probst-Hensch, PhD, is Associate Professor at the Medical Faculty of the University of Basel and heads the Unit of Chronic Disease Epidemiology at Swiss Tropical and Public Health Institute. Originally a pharmacologist, she received her PhD training in epidemiology at UCLA, held a research professor position at USC in Los Angeles, and is the former director of the National Institute of Cancer Epidemiology and Registration in Switzerland. Her research focuses on public health relevant mechanisms underlying chronic diseases. Prof. Probst-Hensch is an expert in genetics and biobanking and the principal investigator of the only swiss national chronic disease biobank SAPALDIA, funded for more than 20 years by the Swiss National Science Foundation (SNSF).

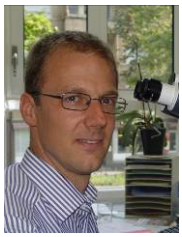
Session 1: Success Stories in Personalized Medicine

Session Moderator, Elisabeth Zemp Stutz, Swiss TPH

Elisabeth Zemp Stutz, Professor in Public Health at the University of Basel/Switzerland, was trained at the University Basel (MD) and at the Harvard School of Public Health/Boston (MPH). She is currently head of the Unit Society, Gender and Health at Swiss Tropical and Public Health Institute. Her research focuses on how gender shapes health and access to health care throughout the life course, working with gender as a socio-cultural health determinant and addressing sex/gender-related factors in epidemiological models of non-communicable diseases, in particular respiratory diseases, and of sexual and reproductive health. She is lecturing in the medical curriculum of the University of Basel and in several Master Programmes.

Genetic Screening for Rare Diseases, Sabina Gallati Kraemer, Bern University Children's Hospital, Switzerland

Sabine Gallati Kraemer is Professor and Head of the Division of Human Genetics, Inselspital, University of Bern. She holds Diploma of Biology (1977), PhD in Human Genetics (1980), Readership (1993), Associate Professor (1997), and a Certification as Specialist in Medical Genetic Analysis (FAMH) (2000). Since 2003 she is Extraordinary Professor of Human Genetics, Medical Faculty, University of Berne. Prof. Gallati did her Postdoctoral training at Hammersmith Hospital and St. Mary's Hospital, London; Inst. of Human Genetics, Würzburg; Children's Hospital, HMS, Boston; FBI-Academy, Quantico. Her research, focused on Cystic Fibrosis, liver diseases, mitochondriopathies, mental retardation is supported by the SNSF and private foundations. Prof. Gallati has received the Nestlé Award (1989), Theodor Kocher Award (University of Bern, 1996), Guido-Fanconi Gedenkpreis (Swiss Paediatric Association, 1999). She provides genetic counselling, cytogenetic and molecular cytogenetic analyses, molecular genetic testing, including clinical exome. She gives lectures, seminars and practical courses for Medical students and students of Biology, and supervises diploma, MD and PhD theses. Prof. Gallati is a member of the Swiss Working group for Cystic Fibrosis (SWGCF) and the Task Force for the CF Newborn Screening, Member of the Swiss National Advisory Commission on Biomedical Ethics (2001-2008), President of the National Expert Commission on Genetic Testing in Human (since 2007), Evaluator of proposals submitted to the FP7-Health call of the European Commission, Member of the European Union Committee of Experts on Rare Diseases (EUCERD, 2010-2013



Personalized Diagnosis toward More Effective Treatment, Aurel Perren, Institute of Pathology, Bern University Hospital, Switzerland

Aurel Perren, after completing his medical studies in Basel, did his residency training in the Institute of Clinical Pathology, University Hospital Zurich. As head of the lab for molecular endocrine pathology he gained first experience in the year 2000 with "biobanking" as responsible for the tissue collection for the research in neuroendocrine tumors. In this lab he was also responsible for genetic testing of patients with suspected familial endocrine cancer syndromes. In 2007 he was elected as Professor of Tumour Pathology at the Institute of Pathology, Technical University Munich TUM. He was head of the laboratory for molecular pathology and responsible for the tumor bank of the TUM, initiating the design of a new data-base in collaboration with Prof. Kuhn of the institute of medical statistics. Since 2010 he is president of the foundation Biobank Suisse (BBS). In 2009 he was elected as Director of the Institute of Pathology at the University of Bern. In this function he initiated the foundation of the Biobank Bern

as a core facility of the Inselspital and medical faculty of the University Bern 2011. Since 2012 Prof. A. Perren is responsible for the Cancer registry of the Canton Bern which started registering patients 1st of July 2013.

Genetic Testing, Counselling, Family Care for Breast Cancer, Maria C. Katapodi, Institute of Nursing Science, University of Basel, Switzerland

Maria Katapodi is interested in breast cancer prevention and decision-making about genetic testing and cancer screening. Her research is focused on women and families with deleterious mutations that predispose to hereditary cancer, especially breast and ovarian cancer (i.e., perceived risk, family communication, decisional conflict related to genetic testing, and cancer screening behaviors). She is testing the effects of the Family Gene Toolkit, a family-based communication and decision support intervention for families that harbor a cancer-predisposing mutation. Dr. Katapodi is also leading a multidisciplinary, public health genomics, dissemination study, which aims to increase screening among young breast cancer survivors (i.e., women whose age of diagnosis suggests hereditary/ familial breast cancer) and their high-risk female relatives. Dr. Katapodi has also expertise in meta-analysis methodology. Her first meta-analysis examined the association between perceived breast cancer risk and screening behaviors. The second one examined the effects of interventions targeting family caregivers of cancer patients. Her contributions have been acknowledged by the scientific community. She is a Fulbright scholar (1998), a Robert Wood Johnson Foundation – Nurse Faculty Scholar (2010), a Fellow of the American Academy of Nursing (2012), and the first recipient of the Friends of the National Institute of Nursing Research, Protégé Award (2013).

Personalized Health - a Clinical and Public Health Priority in South Africa?, Kathleen Kahn, University of Witwatersrand, South Africa

Kathleen Kahn, MBBCh (Rand), MPH (Harvard), PhD (Umeå), is Senior Researcher in the MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) and Associate Professor in the School of Public Health, University of the Witwatersrand. Within the Agincourt Unit, she leads research on Child and Adolescent Health and Development, as well as mortality studies involving determination of cause-of-death based on a validated verbal autopsy instrument. She is active within the INDEPTH Network, playing a central role in multicentre work on ageing and adult health, and serving on the Board of Trustees from 2011-2013. Kahn developed and leads an interdisciplinary PhD training programme in public and population health at Wits. She has 111 publications in peer-review journals, is co-author of 9 book chapters and has been a guest editor for two journal supplements. She is a Faculty Member in the Centre for Population and Development Studies, Harvard University; Research Associate in the Population Centre, University of Colorado, Boulder, USA; and Guest Researcher in Epidemiology and Global Health, Umeå University, Sweden. She has been a Board member of the Soul City Institute for Health & Development Communication since 1998, and Deputy-Chair since 2005.

Pharmacogenetics - Clinical Application, Thomas D. Szucs, European Center of Pharmaceutical Medicine, University of Basel, Switzerland

Thomas Szucs is Professor of Pharmaceutical Medicine and Director of The Institute of Pharmaceutical Medicine/European Center of Pharmaceutical Medicine at the University of Basel. He is also a Professor and part-time lecturer for Medical Economics at the University of Zurich. Previously he was Chief Medical Officer of Hirslanden Holding, the largest private hospital chain in Switzerland. From 1998 to 2001 he was head of the Department of Medical Economics, a joint venture of the University Hospital in Zurich and the Institute of Social and Preventive Medicine of the University of Zurich. Professor Szucs' former appointments include head of research and founder of the Center of Pharmacoeconomics of the University of Milan, head of the working group for Clinical Economics at the University of Munich, senior consultant at Arthur D. Little Inc and head of the Department of Health Economics at F. Hoffmann-La Roche Ltd. in Basel. He holds a medical degree from the University of Basel, a Masters in Business Administration from the University of St Gallen, Switzerland, a Master of Public Health degree from Harvard University, and is board certified in Pharmaceutical Medicine as well as in Prevention and Public Health. Recently, he has received a LL.M in International Business Law with a specialisation in Information- and Technology Law from the University of Zurich. He is also member of the editorial board of several scientific journals and has published more than 300 articles, book chapters and monographies. He has worked extensively in the field of pharmaceutical economics and epidemiology. In addition he is head of the Swiss Association of Health Economics. In 2010 he has been appointed as chairman of the largest Swiss health insurer, Helsana Group. In 2014 he has been appointed Honorary Professor at Peking University Health Science Center. Recently he started to practice personalised medicine with special emphasis on pharmacogenomics.

Session 2: Personalized Research Approaches in Epidemiology and Public Health

Session Moderator, Nino Künzli, Swiss TPH

Nino Künzli, MD PhD, is Deputy Director of the Swiss Tropical and Public Health Institute Basel, Switzerland and Professor of Public Health at University Basel. Some 80% of his >300 publications focus on the long-term health effects of air pollution, including exposure and burden assessment studies. He serves in the steering boards of the Swiss SAPALDIA cohort and of European cohorts on chronic diseases, including the ESCAPE network of >30 cohorts. As ICREA Professor at the Centre for Research in Environmental Epidemiology CREAL (2006-2009) he led the air pollution and noise research in collaboration with the REGICOR cohort. As professor at the University of Southern California (2002-2005) he launched the first-ever studies on air pollution and atherosclerosis with the team of the Southern Californian Children's Health Studies. Künzli developed methods to integrate epidemiologic evidence into policy-relevant assessments, including as member of the 2001 Global Burden of Disease Outdoor Air Pollution team. He regularly serves as advisor of scientific and policy related constituencies and chairs the Swiss Federal

Commission on Air Hygiene (FCAH) advising the Swiss Government. He received his M.D. from University of Basel and his M.P.H. and Ph.D. from University of California at Berkeley.

Research toward Personalized Risk Prediction in Respiratory Epidemiology, Deborah Jarvis, Imperial College London, United Kingdom

Debbie Jarvis, MBBS MRCP MD FFPHM, is Professor in Public Health at the National Heart and Lung Institute, and Honorary Consultant Physician at the Royal Brompton Hospital, London. She coordinates the European Community Respiratory Health Survey, an international multicentre cohort study examining risk factors for asthma allergy and low lung function in over 10000 adults over a twenty year period of follow-up. She has worked with WHO (Europe) to produce guidelines to limit exposure to indoor pollutants, is a member of the Department of Health scientific advisory Committee on the Medical Effects of Air Pollution, Chair of the Epidemiology Group within the European Respiratory Society and associate editor for Occupational and Environmental Medicine

Measuring Individual Exposomes toward Environmental Health Policy, Annette Peters, Helmholtz Zentrum München, Germany

Annette Peters, PhD, is the Director of the Institute of Epidemiology II at the Helmholtz Zentrum München, Neuherberg, Germany. She is an epidemiologist focussing on the role of environmental factors for the development of cardiovascular disease and diabetes. She has pioneered work establishing inflammatory markers as a link between air pollution and cardiovascular disease. Today, she is investigating the complex interplay between the environment and molecular markers for understanding cardio-metabolic diseases and healthy ageing. She is coordinating the ongoing phenotyping and molecular characterisation within the KORA cohort, a prospective cohort study of more than 18,000 individuals recruited between 1984 and 2001. In addition, she is a principle investigator of the German National Cohort and responsible at the Helmholtz Zentrum München for the central Biorepository of the German National Cohort.

Research Priorities in Epidemiological Transition, Stephen Tollman, Rural Public Health and Health Transitions Research Unit, University of Witwatersrand, South Africa

Stephen Tollman (BSc, MBBCh MMed, MA, MPH, PhD) directs the MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) and the Health and Population Division in the School of Public Health, University of the Witwatersrand. Internationally, he is guest professor in the Centre for Global Health Research, Umeå University, Sweden, and Principal Scientist of the INDEPTH Network (International Network for the Demographic Evaluation of Populations and Their Health). In 1979 he graduated from the University of the Witwatersrand with a Bachelor of Science degree majoring in Anatomy and Physiology. He continued his studies at Wits obtaining his Bachelor of Medicine and Bachelor of Surgery degree in 1984. Further studies took him to Oxford, UK and Harvard, USA culminating in a PhD in Public Health and Epidemiology from Umeå University, Sweden. Steve was founding Board Chair of INDEPTH and is principal investigator for multi-centre research in Adult Health and Aging. He chairs the Wellcome Trust Population Health and Tropical Medicine Interview Committee (PHATIC), and currently serves on a panel of the National Academies of Science, USA, addressing the continuing epidemiological transition in sub-Saharan Africa. He also chairs the External Advisory Committee of the Public Health Foundation of India – UK Consortium Research Capacity Building Programme. He is a member of the Scientific Advisory Board of the MRC Health Systems Research Unit in South Africa. Major research interests focus on adult health and aging, non-communicable diseases and chronic care. Links: MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) www.agincourt.co.za; INDEPTH Network www.indepth-network.org; South African Medical Research Council www.mrc.ac.za.

Biomarkers toward Improving the Prevention of Chronic Kidney Disease, Murielle Bochud, Institute of Social and Preventive Medicine, University of Lausanne, Switzerland

Murielle Bochud holds a diploma in medicine from the University of Geneva (Switzerland, 1994), an MD from the University of Lausanne (Switzerland, 2002) and a PhD in genetic epidemiology from Case University (2007, Cleveland, USA). She currently works as professor of epidemiology at the University Institute of Social and Preventive Medicine in Lausanne, Switzerland. Her research focuses on the epidemiology of chronic disease and, particularly, the genetics of blood pressure and renal function, based on population and family data. Her work is based on a multidisciplinary approach with epidemiologists, public health specialists, clinicians, geneticists, statisticians, bioinformaticians and molecular biologists. With the explosion of genomic discoveries on common complex traits, she is interested in developing the new field of public health genomics, which attempts to translate molecular findings into clinical and public health applications, and vice versa.

Potential and Limitations of Personalized Medicine in Neuropsychiatry, Andreas Papassotiropoulos, Division of Molecular Neuroscience, University Psychiatric Clinics and Faculty of Psychology, University of Basel, Switzerland

Andreas Papassotiropoulos is board certified psychiatrist and psychotherapist and, since 2007, full Professor of Molecular Neurosciences at the University of Basel, Switzerland. Other stations of his career led him to the University Hospital in Bonn, Germany, the University of Zürich, Switzerland, as well as research visits to the USA, amongst others at the National Institute on Aging, Bethesda, and the Translational Genomics Research Institute (TGen) in Phoenix. His areas of expertise include the investigation of the molecular basis of human cognition and the development of improved therapies for neuropsychiatric disorders. His research combines targeted and genome-wide genetic, epigenetic and transcriptomic analyses with functional

brain imaging in healthy and diseased human populations. He also studies the regulation of memory-related genes in animal models under different experimental conditions and at the level of defined neuronal subpopulations. His team uses advanced computational and mathematical approaches to generate testable hypotheses, identify the underlying genetic pathways and networks and define fundamental patterns of gene interactions. He is recipient of numerous honors and awards, amongst others the Robert-Bing-Prize, The Weizmann Lecture and, most recently, the Cloetta Prize.

Personalized Health: the Swiss TPH Perspective

Discussion Moderator, Jürg Utzinger, Swiss TPH

Jürg Utzinger is trained in environmental sciences (MSc) and epidemiology (PhD) with several years of postdoctoral research in demography and epidemiology at Princeton University. At present, Jürg heads the Ecosystem Health Sciences unit at the Department of Epidemiology and Public Health, Swiss TPH. He is Professor of Epidemiology at the University of Basel. Jürg's research, teaching and training interests pertain to the epidemiology, diagnosis and integrated control of neglected tropical diseases and malaria. He has ongoing collaborative projects in Côte d'Ivoire, China and elsewhere in Africa and Asia. Jürg's group pursues a wide variety of epidemiological research, including health impact assessment of large foot-print development projects in the tropics and risk profiling of parasitic diseases. Together with colleagues in Côte d'Ivoire, Jürg has established the first health and demographic surveillance system in the Taabo area, which serves as a platform for monitoring and surveillance of health and wellbeing of 40,000 mainly rural dwellers. Jürg has extensively published in the peer-reviewed literature, edited several special thematic journal issues and wrote numerous book chapters. He is founding deputy editor of PLoS Neglected Tropical Diseases and acts on the editorial boards of Acta Tropica, Geospatial Health and Parasites & Vectors.

Research on Tuberculosis Sébastien Gagneux, Swiss TPH

Sébastien Gagneux heads the Tuberculosis Research Unit at the Swiss Tropical and Public Health Institute (Swiss TPH). After receiving his PhD from the University of Basel in 2001, he worked as a postdoctoral fellow at Stanford University and at the Institute for Systems Biology in Seattle. He then spent three years as a Program Leader at the MRC National Institute for Medical Research in London, UK before returning to Swiss TPH in 2010. His research focuses on the evolution and ecology of Mycobacterium tuberculosis, and combines population genomics, molecular epidemiology and experimental approaches to determine the effect of bacterial variation on the host-pathogen interaction and the spread of drug resistance in TB.

Research on Non-Communicable Diseases, Medea Imboden, Swiss TPH

Medea Imboden is a Senior Scientist at Swiss TPH, Basel, Switzerland and longtime collaborator in the Unit of Chronic Disease Epidemiology. Her research interests are the identification of biologic, including genetic determinants and gene-environment interactions involved in the etiology complex human disease. Medea Imboden trained as a Molecular Biologist at the University of Basel, Switzerland, and then graduated as Molecular Neuroscientist at the Pasteur Institute, Paris, France. As a postdoctoral fellow, she entered the field of Human Genetics at the INSERM, at the Hôpital de la Pitié-Salpêtrière, Paris, France, studying monogenetic heritable cardiac disorders. In joining the scientific team of the SAPALDIA cohort in 2003, she moved from investigation of effects of mutations to that of polymorphisms alone or in combination with environmental risk factors, a focus in the center of Genetic Epidemiology. She was instrumental to establish and manage the SAPALDIA biobank, the first population-based sample and cohort data collection of Switzerland, headed by Prof. Nicole Probst-Hensch.

Research on Malaria, Hans-Peter Beck, Swiss TPH

Hans-Peter Beck, obtained his PhD in Tübingen, Germany, and became afterwards a post-doctoral fellow at the Wellcome Unit of Molecular Parasitology in Edinburgh/Glasgow, UK. After a period as visiting scientist at the Walter and Eliza Hall Institute in Melbourne, Australia, he headed for 5 years the Molecular Parasitology Unit at the Papua New Guinea Institute of Medical Research. Since 1995 he leads the Molecular Parasitology-Epidemiology Unit at the Swiss Tropical and Public Health Institute. The research focus of the Molecular Parasitology-Epidemiology Unit lies on cell biological research in the malaria parasite Plasmodium falciparum, and on molecular epidemiological studies both in malaria and Tuberculosis. Within our research we try to link bench results to observations made in the field.

Research on the Immune System, Claudia Daubenberger, Swiss TPH

Claudia Daubenberger is the Unit Leader for "Clinical Immunology". Her main interest is the analysis of human immune responses in phase I to III vaccine trials against Plasmodium falciparum malaria and Tuberculosis (TB). In collaboration with colleagues at SwissTPH, she contributes to the development of a highly specific and sensitive immunodiagnostic test for clinical tuberculosis in children. The impact of helminth co-infections on the innate and adaptive immunity in HIV, malaria and TB in Tanzanian children and adults is a focus within her research unit. The immunological interplay between non-communicable diseases like Diabetes mellitus and latent and active tuberculosis is being actively investigated. Before joining the Swiss TPH, she worked at the International Livestock Research Institute (ILRI) in Kenya on vaccine development against Theileria parva, an apicomplexan parasite closely related to Plasmodium falciparum. With colleagues at ILRI, she continues to work on aspects of the live

vaccine development program against Theileria parva. She received her Doctor of Veterinary Medicine degree from the University of Veterinary Medicine Hannover, Germany.

Research on Environmental Monitoring Research on Malaria, Martin Röösli*, Swiss TPH*

Martin Röösli is head of the Environmental Exposures and Health Unit at Swiss TPH. He has a background in atmospheric physics and a PhD in environmental epidemiology. His research addresses health risks in the area of ionizing and non-ionizing radiation, passive smoking, climate change, noise exposure and ambient air pollution. In his work he has a strong focus on exposure assessment and has conducted several studies on personal exposure measurements and exposure modelling. He is a member in various national and international commissions on environmental health risk and has published numerous scientific papers, reviews and book chapters.

Session 3: Personalized Research Approaches in Epidemiology and Public Health

Session Moderator - Morning, Nicole Probst-Hensch, Swiss TPH – see above

Session Moderator - Afternoon, Kaspar Wyss, Swiss TPH

Kaspar Wyss, PhD, is a Public Health Specialist, PD and Deputy Head of Department at the Swiss Centre for International Health, Swiss Tropical and Public Health Institute. Kaspar Wyss has strong management and leadership experience and is in charge of a team of 15 staff focusing on health systems development primarily in low- and middle income countries. Activities relate to both research and health system monitoring and performance assessment, with a specific interest in the role and importance of human resources for health. He directs a number of research and implementation projects in Africa, Eastern Europe, and Asia and has extensive consultancy experiences for a broad range of clients. For the University of Basel (MSc and medical students) and for other courses including the Swiss Inter-University Master of Public Health Program he teaches on health systems. Kaspar Wyss acts further as supervisor for several PhD and MSc students.

Preparing the Swiss System for Personalized Medicine, Vincent Mooser, Faculty of Medicine, University Hospital of Lausanne (CHUV), Lausanne, Switzerland

Vincent Mooser MD is board certified in internal medicine. His research training encompasses clinical pharmacology (CHUV), experimental parmacology (University of Melbourne, Australia), genetics and lipidology (UT Southwestern, Dallas TX). After a 6-year assistant professorship at CHUV, Vincent Mooser joined in 2002 GSK in Philadelphia, where he took roles of increasing responsibilities in R&D and in the Rare Diseases Unit. He came back to CHUV in 2011, as Head Lab Department and Head Biomedicine Service. Since 2012, he is Vice-Dean in charge of clinical research at the UNIL Biology and Medical School.

Preparing Populations in High Income Countries for Personalized Health, Ernst Hafen, Institute of Molecular Systems Biology ETH Zürich, Switzerland

Ernst Hafen, PhD, is a Professor of Systems Genetics at ETH Zurich and former President of ETH. In addition to over 30 years of academic research, he has founded and advised several biotechnology companies. He endeavors to assist scientific discovery and its efficient translation into products that help society and the economy. As a trained geneticist, Ernst Hafen has a strong interest in human genetics and personalized medicine. He posits that an individual's control over his or her personal health data will be a key asset for better and more effective health care. In 2012 he acted as a founding member of the Association Data and Health (DatenundGesundheit.ch) whose aim it is to discuss legal, ethical and societal issues about health data ownership and to find commercial models permitting owners not third parties to benefit from their personal data assets.

Veterinary Genetics and its Implications for Human Health, Tosso Leeb, Institute of Genetics, Vetsuisse Faculty, University of Bern, Switzerland

Tosso Leeb is a veterinary geneticist. He studies genetic variation that causes phenotypic variation in domestic animals, such as dogs, cats, horses, cattle, sheep, and goats. As these animals are closely related to humans and can be affected by very similar diseases, the findings are of relevance to human and veterinary medicine. Thanks to the recent advances in sequencing technologies Tosso Leeb and his group nowadays apply "personal genomics" to domestic animals.

Personalized Cancer Care, Stefan Frings, Oncology/Cancer Immunotherapy, F. Hoffmann-La Roche Ltd., Basel, Switzerland

Stefan Frings is the Head of Medical Affairs of the Roche Pharma AG in Germany. Beforehand he was heading the Oncology/Cancer-Immunotherapy area in Roche Partnering and. Earlier he was the Global Head of Medical Affairs Oncology at Roche. In 2010 Stefan was the Global Avastin Franchise Director after he headed the HER2-franchise covering Herceptin, pertuzumab and T-DM1. 2002 – 2008 Stefan was Life Cycle Leader for various Avastin indications, pertuzumab and novel topoisomerase inhibitors. He has a keen interest in drug development and personalized health care. Stefan joined Roche 1997 in Germany straight from academia as Medical Manager for Xeloda and later Herceptin as well. 1999 he moved as International Medical Director for Xeloda from Basel to New Jersey/USA. Stefan graduated from the medical school in

Duesseldorf/Germany. He is board certified for internal medicine and underwent sub-specialty training in onco-/hematology at the West German Cancer Center and an academic teaching hospital. He is a member of the American Society of Clinical Oncology (ASCO) and the European Society of Medical Oncology (ESMO).

Priorities in Improving the Health of People in Côte d'Ivoire, Dinard Kouassi, National Public Health Institute, Abidjan, Côte d'Ivoire

Dinard Kouassi, PhD, is the Director of the Institut National de Santé Publique (INSP). He is an Ivorian who started his grammar school in Côte d'Ivoire and ended up in France by obtaining his baccalaureate. He later received his Pharm D's degree at Université de Nantes. He specialized in Medical Biology at Université de Brest (France). The PhD degree was obtained in Hematology, jointly in Cote d'Ivoire (Université de Cocody) and France (Université de Marseille). He received his professorship with the grade of "Professeur Agrégé" of CAMES in 2004 at Libreville, Gabon. Prior to being appointed Director of INSP in 2008, Professor Dinard served as Head of the laboratory of biology. He carried out several research activities in the arenas of diabetology, vascular diseases, neurology and mental health. Prof. Dinard worked closely with the Technical managing board of the Ministry of Health that is the Direction Generale de la santé. He is one the resource specialists of the cabinet of the Ministry of Health. In the field of public health, he brought in an innovative idea about the "integrated-care of diabetic patients" taking into account the clinical and paramedical aspects of cares at low cost. Prof. Dinard was instrumental in INSP becoming a member of the International Association of National Public Health Institutes (IANPHI) based in Atlanta, USA. Together with other partner institutions, a platform for collaboration to strengthen the public health systems in Côte d'Ivoire is being implemented there

Health Care in the Era of Personalized Medicine: A Global Industry Perspective, Andreas Wallnöfer, Pharma Research & Early Development, F. Hoffmann-La Roche, Basel, Switzerland

Andreas Wallnörfer is a clinical pharmacologist by training with additional degrees in Pharmaceutical Medicine and Business Management (IMD), Andreas earned his Ph.D. at the University of Basel. Prior to Roche, he worked in Cardiovascular Research at Sandoz and pursued a post-graduate fellowship in Clinical Pharmacology at the University Hospital Leiden, Netherlands. He also certified in Advanced Management Concepts as part of his EMBA training at IMD Lausanne. Andreas joined F. Hoffmann-La Roche after his clinical research fellowship at Leiden University as a Clinical Pharmacologist. He was responsible for clinical "Proof of Concept" studies and later became Clinical Science Leader for Cardiovascular Clinical Development. He became R&D project leader in 1999 and was appointed in 2002 as Global Head of Exploratory Development Project Leaders and Project Management. In 2007, he became Global Head of Clinical Research & Exploratory Development and successfully built this newly formed function. Under his leadership Discovery Research and Clinical Research became better connected and translational medicine became a key driver to implement the Personalized Healthcare strategy of Roche. In 2009, Andreas was the task force leader for the integration of the clinical development departments of Roche and Genentech after the Genentech acquisition and was subsequently appointed as the new Head of Roche pRED Development. In 2012 he took on, in addition, the role of the Acting Head of the Cardiovascular & Metabolism Disease Therapeutic Area.

General Practice in Medicine: A Personalized Approach to Patients, Carlos Quinto, Swiss TPH and General Practice

Carlos Quinto, MD, MPH, is a practicing family physician, a senior scientist at the Swiss TPH in the Chronic Disease Epidemiology unit of the Epidemiology and Public Health department and lecturer at the Basel University Institute for Family Medicine at the Baselland Canton Hospital (Institut für Hausarztmedizin beider Basel). After receiving his medical degree from the University of Basel, School of Medicine, including some studies in Utrecht, the Netherlands, Dr. Quinto completed his advanced training in General Internal Medicine in 1999. Since then, he has been a practicing physician at a group practice in Pfeffingen, Switzerland and worked at the University of Basel Institute for Social and Preventive Medicine. Next to his role at the Swiss TPH, he completed his Master of Public Health in 2007. Dr. Quinto also teaches Public Health, Family Medicine and Sports Sciences at the University of Basel, School of Medicine. He is a member of the European and Swiss Evaluation Societies, the Swiss Societies of General Internal Medicine and Public Health, a member of the College of General Practitioners permanent Prevention Working Group, a board member of the Canton Baselland Physicians Association and member of the editorial board of "Synapse".

From Genes to Jeans: Challenges on the Road to Personalized Medicine, Antoni Plasència, Barcelona Institute for Global Health, Hospital Clinic, University of Barcelona, Spain

Antoni Plasència, PhD, is the Director of ISGlobal. He graduated in medicine from the University of Barcelona and holds a PhD from the Autonomous University of Barcelona. He is a specialist in public health and preventive medicine and has a Masters in public health from Yale University. From 2004 to 2011, he was Director General of Public Health for the Catalan Government, where he was instrumental in the design of the Catalan Public Health Law and the creation of the Public Health Agency of Catalonia. He is Associate Professor of Epidemiology and Public Health at the Autonomous University of Barcelona and an Associate at the Department of Health Policy and Management at the John Hopkins Bloomberg School of Public Health in Baltimore. Before being appointed director of ISGlobal, Dr Plasència was Deputy Director of its research centre, CRESIB. His career has centred around epidemiology and public health, and he has combined practice, research, teaching and management activities, with a broad biological, social and environmental perspective on health and its determinants and a long-standing involvement in policy-making, strategic planning and programme implementation and evaluation, including key global health areas such as the reduction of health inequalities, infectious diseases, maternal and child health, injuries and environmental health.

Outlook and Closing Remarks, Marcel Tanner, Director, Swiss TPH

Marcel Tanner obtained a PhD on medical biology from the University of Basel and a MPH from the University of London. He is Director of the Swiss Tropical and Public Health Institute and Professor of Epidemiology and Medical Parasitology at the University of Basel and at the Federal Institute of Technology. Since 1977, his research ranges from basic research on the cell biology and immunology on malaria, schistosomiasis, trypanosomiasis and filariasis to epidemiological and public health research on risk assessment, vulnerability, health impact and district health planning. His research, teaching and health planning expertise are based on substantial long term experience from working in rural and urban areas in Africa (mainly Tanzania, Chad, Burkina Faso and Côte d'Ivoire) and Asia (China, Thailand, Laos). He was co-investigator and coordinator of the first African malaria vaccine trial in 1992 and participated as co-principal investigator in several major intervention trials on malaria (iron supplementation, intermittent preventive treatment) and schistosomiasis. Besides research the capacity building and North-South partnership was a main interest as reflected in the development of the Ifakara Health Institute in Tanzania. He has published extensively in the many fields of global health (>500 original papers). He also acted and acts as advisor on communicable diseases research and control, health systems strengthening and capacity building in various national and international agencies/bodies and in boards/committees such as e.g. WHO/TDR, Wellcome Trust, DNDi, NITD, INCLEN-Trust and INDEPTH.