

Mycobacterial Diseases and Co-Morbidities

December 5-6, 2013, Bildungszentrum 21, 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 2013

Thursday, December 5

Welcome and Registration

08.00 Registration and Coffee

08.45 Welcome and Introduction: *Gerd Pluschke and Sébastien Gagneux, Swiss TPH*

Session 1 - New Approaches in TB Product Development

09:00 ***M. tuberculosis* from Genotype to Phenotype**, *Douglas Young, MRC, National Institute for Medical Research, UK*

09:30 **Towards a New Combination Therapy for Tuberculosis**, *Stewart Cole, EPFL Lausanne, Switzerland*

10:00 Coffee Break

10:30 **Drug Resistance in *M. tuberculosis* – Mechanisms and Implications**, *Erik Böttger, University of Zurich, Switzerland*

11:00 **On the Role of Immunological Memory in TB Subunit Vaccines**, *Peter Andersen, Serum Statens Institute, Denmark*

11.30 **Systems Approaches to Identify Biomarkers in TB**, *Daniel Zak, Seattle BioMed, USA*

12:00 Lunch

Session 2 - TB: The Known Unknowns

13:30 **Microbial Individuality and Antibiotic Tolerance**, *John McKinney, EPFL Lausanne, Switzerland*

14:00 **Life and Death of *M. tuberculosis* within the Macrophage**, *Jean Pieters, University of Basel Biozentrum*

14:30 **Short Talk: Lipidomics of Host-Pathogen Interactions – Novel Tools and Applications in Mycobacteriosis**, *Xueli Guan, Swiss TPH, Basel*

14:45 **Short Talk: The Mtb Proteome Library - Development and Application of Assays for Targeted Mass Spectrometric Analysis of the Complete Proteome of *M. tuberculosis***, *Olga Schubert, ETH, Institute for Molecular Systems Biology Zurich, Switzerland*

15:00 **Short Talk: Metabolomics: Approaches to Study the Plasticity of Mycobacterial Metabolism**, *Michael Zimmermann, ETH, Institute for Molecular Systems Biology Zurich, Switzerland*

15:15 Coffee Break

15:45 ***M. tuberculosis* Evasion of CD4 T Cell Responses**, *Joel Ernst, New York University, School of Medicine, USA*

16:15 **The Pathogenesis of the HIV-TB Associated Immune Reconstitution Inflammatory Syndrome**, *Rob Wilkinson, University of Cape Town, South Africa*

16:45 **Short Talk: Immunology of Helminth Coinfection in TB**, *Damien Portevin, Swiss TPH, Basel*

17:00 **The Cause and Consequence of Genetic Diversity in *M. tuberculosis***, *Sébastien Gagneux, Swiss TPH, Basel*

17:30 Close of Day 1

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Friday, December 6

Session 3 – Buruli Ulcer

- 08:45 **Infecting Amoebae with Mycobacteria to Study Conserved Mechanisms of Innate Immunity**, Thierry Soldati, University of Geneva, Switzerland
- 09:15 **What Have We Learned About Buruli Ulcer from Examining the Genome of *M. ulcerans*?**, Tim Stinear, University Melbourne, Australia
- 09:45 Coffee Break**
- 10:15 **Product Development in Buruli Ulcer**, Gerd Pluschke, Swiss TPH, Basel
- 10:40 **Surveillance System for Buruli Ulcer in Benin: Results after 10 Years**, Christian Johnson, National Program for TB and Leprosy Control, Benin
- 11:05 **Heat Treatment of BU: An Old Concept and a New Applications Device**, Thomas Junghans, University Hospital Heidelberg, Germany
- 11:30 **Towards of Effective Control of Buruli Ulcer and TB in Ghana**, Dorothy Yeboah-Manu, Noguchi Memorial Institute for Medical Research, Ghana
- 12:00 Lunch**

Session 4 - TB: Epidemiology, Clinical Trials and Control

- 13:30 ***M. africanum* – Does Variation Matter?**, Bouke de Jong, Institute of Tropical Medicine, Antwerp, Belgium
- 14:00 **Short Talk: Bovine Tuberculosis in Africa**, Jakob Zinsstag, Swiss TPH, Basel
- 14:15 **Short Talk: Tuberculosis in Papua New Guinea** Hans-Peter Beck, Swiss TPH, Basel
- 14:30 **Short Talk: Tuberculosis in North Korea** Peter Helbling, International TB Consultant, Bern, Switzerland
- 14:45 **Short Talk: Molecular Epidemiology of TB in Switzerland**, Lukas Fenner, Swiss TPH, Basel and Ifakara Health Institute, Ifakara, Tanzania
- 15:00 **Short Talk: Genomic Epidemiology**, Iñaki Comas, Centre for Public Health Research, Valencia, Spain
- 15:15 Coffee Break**
- 15:45 **Short Talk: TB and Non-Communicable Diseases**, Nicole Probst-Hensch, Swiss TPH, Basel
- 16:00 **Ethical Dilemmas and Medical Outcomes in TB and MDR-TB Control in Prisons: Examples from Kyrgyzstan**, Micaela Serafini, Médecins sans Frontières, Geneva, Switzerland
- 16:30 **Short Talk: Building Capacity for Clinical Trials in TB High-Burden Settings**, Klaus Reither, Swiss TPH, Basel and Ifakara Health Institute, Ifakara, Tanzania
- 16:45 **Short Talk: The Global Drug Facility (GDF): Successes and Challenges Related to Health Systems**, Christian Auer, Swiss TPH, Basel
- 17:00 **Will DOTS Do It (with Co-Morbidity)?**, Chris Dye, WHO, Geneva, Switzerland
- 17:30- 17:45 Outlook and Closing Remarks**, Marcel Tanner, Director, Swiss TPH, Basel, Switzerland



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Introduction

Gerd Pluschke, Swiss TPH

Gerd Pluschke is head of the Department Medical Parasitology and Infection Biology of Swiss TPH. His research is focussed on the analysis of host-pathogen interactions and on vaccine design. In the field of *Mycobacterium ulcerans* infection (Buruli ulcer) his laboratory is involved in the analysis of the pathogenesis and transmission of the disease, vaccine development and the improvement of diagnosis and treatment



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.



Session 1 – New Approaches in TB Product Development

Douglas Young, NIMR, MRC National Institute for Medical Research, UK

Douglas Young is Head of the Division of Mycobacterial Research at the MRC National Institute for Medical Research and the Fleming Professor of Medical Microbiology at Imperial College London. His research interests are in understanding the fundamental pathogenesis of tuberculosis, with a current emphasis on using a systems biology approach to analyse the evolutionary diversity of *Mycobacterium tuberculosis*. He has also been involved in the development and drugs and vaccines for tuberculosis and in the study of bovine tuberculosis in the UK and Ethiopia.



Stewart Cole, EPFL, Ecole Polytechnique Fédéral de Lausanne, Switzerland

Professor Stewart Cole is an international authority in bacterial molecular-genetics and genomics. He has made outstanding contributions in several fields including: bacterial anaerobic electron transport; genome analysis of retroviruses and papillomaviruses; antibiotic resistance mechanisms; and the molecular microbiology of toxigenic clostridia. His studies on isoniazid and multidrug resistance in *Mycobacterium tuberculosis*, together with his pioneering work on the pathogenicity, evolution and genomics of the tubercle and leprosy bacilli, have made him an undisputed leader in the field of mycobacterial research. The findings of his research are of direct relevance to public health and disease-control in both the developing world and the industrialised nations. He has published over 250 scientific papers and review articles, and holds many patents.



Erik C. Böttger, Institut für Medizinische Mikrobiologie der Universität Zürich, Switzerland

Dr. Erik C. Böttger, MD, Professor of Medical Microbiology, Director and Chairman of the Institute of Medical Microbiology, University of Zurich, Switzerland. One of Dr. Böttger's major research activities centers around mechanisms of drug resistance in *M. tuberculosis* and implications for therapy, resistance epidemiology and laboratory drug susceptibility testing. His activities resulted in over 200 original research publications, 15 book contributions and various review articles. He has received numerous awards including the prestigious Körber Award for European Science and he is ranked among the world's most cited and influential microbiologist of the past two decades (isihighlycited.com)



Peter Andersen, (SSI) Statens Serum Institut, Denmark

Professor Peter Andersen is Vice President of Vaccine Research and Development at Statens Serum Institut being responsible for the overall coordination of vaccine research and development, covering activities from early research and to clinical development. Andersen's research has been focused on the identification and characterisation of antigens, immune mechanisms and vaccine delivery systems that mediate protection against important pathogens such as Mycobacterium tuberculosis, Chlamydia trachomatis and Influenza. He has pioneered work both on novel diagnostic assays (the IGRA assays), novel TB vaccines (H1/H4/H56) and the CAF series of liposomal adjuvants. Professor Andersen is the inventor of more than 20 patent families and more than 270 papers (current H-index 66), within the field of infection, immunity and vaccine research in peer-reviewed journals.



Daniel Zak, Seattle Biomedical Research Institute, USA

After receiving his PhD in Chemical Engineering from the University of Delaware in 2006, Daniel Zak joined Alan Aderem's lab at the Institute for Systems Biology to study gene regulation in innate immunity. He moved with Dr. Aderem's Lab to Seattle BioMed in 2011, and became a Principal Scientist there in 2012. Zak's work is focused on the interface between innate and adaptive immunity, with the goal of enabling rational design of efficacious vaccines to combat tuberculosis, HIV, and malaria. Through collaborative systems-level analysis of natural history studies and vaccine trials, he and his colleagues are identifying predictive biomarkers for and generating novel hypotheses about disease risk and vaccine efficacy mechanisms. By performing system-level analysis of pattern recognition receptor activation networks, they are identifying novel regulatory circuits controlling the innate immune response. Holistic understanding of innate immunity will allow development of novel adjuvants and prediction of adjuvant effects on vaccine-induced immunity. This approach has yielded novel insights about the Step Study vaccine MRKAd5/HIV-1 and is uncovering prospective signatures for disease progression in MTB infected adolescents.



Session 2 – TB: the Known Unknowns

John McKinney, EPFL, Ecole Polytechnique Fédéral de Lausanne, Switzerland

John McKinney heads the Laboratory of Microbiology and Microsystems at the Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland. His PhD on eukaryotic cell cycle regulation with Fred Cross at The Rockefeller University (1994) was followed by postdoctoral research on tuberculosis with Bill Jacobs and Barry Bloom at the Albert Einstein College of Medicine (1995-1998). He headed the Laboratory of Infection Biology at The Rockefeller University (1999-2007) before relocating to EPFL to establish a new research program at the interface of microbiology and micro-engineering. His current interests are focused on developing new technologies for real-time single-cell imaging and applying the new technologies to explore the physiological basis of microbial individuality.



Jean Pieters, University of Basel, Biozentrum, Switzerland

Jean Pieters obtained his Ph.D. in the Netherlands and received postdoctoral training in the laboratory of Bernhard Dobberstein at the European Molecular Laboratory, Heidelberg, Germany. He was a junior group leader at the Netherlands Cancer Institute, Amsterdam, the Netherlands, and a member of the Basel Institute for Immunology, Switzerland, before joining the Biozentrum, University of Basel in Switzerland. His laboratory has been involved in the biochemical and cell biological analysis of host responses to foreign antigens, including Mycobacterium tuberculosis. His current research interests include the role of coronin molecules in immune cell activation and homeostasis.



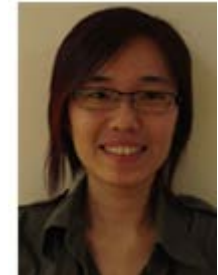
Olga Schubert, ETH, (IMSB) Institute of Molecular Systems Biology Zürich, Switzerland

Olga Schubert studied Biology at ETH Zurich. During her Masters she focused on cell biology and cancer research. Afterwards, she spent six months in Italy at EMBL Monterotondo to get trained in mouse biology and neuroscience. Fascinated by systems biology and proteomics, she joined the group of Prof. Ruedi Aebersold at the Institute of Molecular Systems Biology in April 2010. Here she has been applying mass spectrometry to study the proteome of *Mycobacterium tuberculosis*. Recently, she developed the Mtb Proteome Library, a database containing quantitative assays for targeted mass spectrometry for all proteins of *Mycobacterium tuberculosis*. Her current research focus is on proteome-wide absolute quantification of *Mycobacterium tuberculosis* using SRM and data-independent acquisition (SWATH-MS)



Xueli Guan, Swiss TPH

Xueli Guan is a Group Leader (Ambizione Fellow) at the Swiss Tropical and Public Health Institute in Basel, Switzerland. She is leading the new Lipidomics research, involving the development of novel mass spectrometry-based approaches for lipid analyses in model organisms and medically relevant pathogens. Using a systems-based approach combining various disciplines, the major focus of her Group is to scrutinize the functional relevance of lipids during host-pathogen interactions, as well as to evaluate potential biomarkers for infectious diseases including Buruli ulcers, tuberculosis and Chagas disease.



Michael Zimmermann, ETH, (IMSB) Institute of Molecular Systems Biology Zürich, Switzerland

Michael Zimmermann obtained his Bachelor's degree in pharmaceutical sciences from Basel University before joining the school of biotechnology in Strasbourg (ESBS). For his Master's thesis he worked with Jon Clardy at Harvard Medical School and Michael A. Fischbach at Massachusetts General Hospital in the field of chemical biology and the human microbiome. After obtaining his Master's degree he followed Michael A. Fischbach to the University of California in San Francisco to work as a Junior Specialist. Michael eventually returned to his home country to start his PhD project with Uwe Sauer and Nicola Zamboni at ETH Zurich. There, his main interest is to study the plasticity of mycobacterial metabolism applying novel metabolomics approaches.



Joel Ernst, NYU School of Medicine, USA

Joel Ernst was originally trained as a clinician, and developed an interest in tuberculosis by taking care of patients with TB, including the first AIDS patients in San Francisco in the early 1980's. His TB research focuses on interactions of the host adaptive immune system with the pathogen, especially on mechanisms used by *M. tuberculosis* to evade and exploit immune responses for the short and long term benefit of the bacteria. His laboratory, at the New York University, currently performs mouse studies in New York City, and human immunology studies in the Gambia, Shanghai, and South Africa.



Robert J Wilkinson, Imperial College London, UK /University of Cape Town, South Africa

Robert Wilkinson is a physician scientist who has researched tuberculosis for 20 years. He is a Wellcome Trust Senior Fellow in Clinical Science, Professor in Infectious Diseases, Imperial College London, UK; MRC Programme Leader, National Institute for Medical Research, London, UK; Director, Clinical Infectious Diseases Research Initiative, University of Cape Town. Wilkinson was trained in Cambridge, Oxford, Edinburgh, London and Cleveland, Ohio. Most of his research is conducted on secondment to the University of Cape Town South Africa where he directs the University's Clinical Infectious Diseases Research Initiative.



Damien Portevin, Swiss TPH

Damien Portevin is a post-doctoral scientist in the Clinical Immunology unit led by Claudia Daubenberger. After receiving his PhD from the University of Toulouse in 2005, he first worked as a post-doctoral fellow at the Physiopathology centre of Toulouse Purpan hospital, and then at the MRC National Institute for Medical Research in London, UK before moving to the Swiss TPH in 2012. His research focuses on host-pathogen interaction in tuberculosis integrating the cell wall biochemistry of MTB, the interaction of MTB with human NK cells and macrophages to the ex-vivo analysis of T cell responses among TB patients.



Session 3 – Buruli Ulcer

Thierry Soldati, Université de Genève, Switzerland

Thierry Soldati is an associate professor at the Department of Biochemistry, University of Geneva since 2004. His group investigates the interface between host and pathogens, especially mycobacteria as they re-programme the otherwise bactericidal phagocytic cells to establish a proliferation niche. After studying Biochemistry in Geneva, he carried out his doctoral work at the ETH in Zurich and then was a postdoc at Stanford University Medical School. In 1995, he joined the Max Planck Institute for Medical Research in Heidelberg, as a group leader. In 2001, he was appointed Lecturer at the Department of Biological Sciences at Imperial College London. He is also vice-president of Life Sciences Switzerland (LS2).



Tim Stinear, University of Melbourne, Australia

Associate Professor Tim Stinear is a molecular microbiologist who leads a bacterial pathogenesis research group in the Department of Microbiology and Immunology at the University of Melbourne. He received his PhD in Microbiology from Monash University in 2001 followed by a 3-year postdoc with Professor Stewart Cole at the Institut Pasteur, Paris. His research is based on using comparative and functional genomics to understand how certain bacteria evolve and cause disease, including *Mycobacterium tuberculosis* and *Mycobacterium ulcerans*. His laboratory also studies hospital superbugs such as *Staphylococcus aureus* (Golden Staph) and Vancomycin Resistant *Enterococcus faecium* (VRE).



Roch Christian Johnson, Fondation Raoul Follereau, France/Africa

After receiving his medical degree in 1997, Roch Christian Johnson opened a Buruli ulcer center in Lalo, department of Couffo in Benin. From 1998 to 2003 his main challenge was to organize the management of Buruli ulcer patients in the Mono-Couffo region. With the support of the Institute of Tropical Medicine (ITM, Antwerpen, Belgium), Johnson started a research program, with the possibility to begin PhD studies on the human and environmental factors related to Buruli ulcer. In 2003, he was appointed as the Manager of the National Buruli Ulcer Control Program in Benin. In 2005 he defended his PhD thesis at the University of Abomey-Calavi with the support of the ITM, Antwerpen. After seven years as Manager of the Buruli ulcer control Program in Benin he was recruited by the Fondation Raoul Follereau as Regional Advisor for Buruli and leprosy control in francophone Africa. In addition to this position, in 2007 Johnson was appointed as a Lecturer at the University of Abomey-Calav. Bénin.



Thomas Junghanss, University Hospital Heidelberg, Germany

Thomas Junghanss is a medical doctor specialized in Internal Medicine, sub-specialities Tropical Medicine and Infectious Diseases. He is professor at the University of Heidelberg and heads the Section Clinical Tropical Medicine at the University Hospital Heidelberg. He works on neglected tropical / infectious diseases, in particular cystic echinococcosis, Buruli ulcer, epidemic bacterial meningitis and dengue fever in cooperation with partner institutions in Sub-Saharan Africa, SE Asia and Latin America. The principle approach is multidisciplinary with the aim of translating research findings into clinical practice. He is editor of the Journal "Tropical Medicine & International Health".



Dorothy Yeboah-Manu, Noguchi Memorial Institute for Medical Research (NMIMR), Ghana

Dorothy Yeboah-Manu is the Head of Bacteriology Department, Noguchi Memorial Institute for Medical Research, University of Ghana. She is also an Intermediate Fellow of the Wellcome trust. Her research activities focus on host-pathogen interactions in *Mycobacterium tuberculosis* and *Mycobacterium ulcerans* infections. Within this study area major study objectives include: understanding genomic diversity and the contribution to host immune response and virulence; epidemiology and transmission dynamics; and improvement of diagnostics.



Session 4 – TB Epidemiology, Clinical Trials and Control

Bouke de Jong, Institute of Tropical Medicine (ITM), Belgium

After training in medicine at the University of Amsterdam, and in infectious diseases and the molecular epidemiology of tuberculosis at Stanford University, Dr. Bouke de Jong worked in The



Gambia for over 6 years on strain differences within the *M. tuberculosis* complex, with a focus on *M. africanum*. Since 2010 she heads the Mycobacteriology Unit at the Institute of Tropical Medicine in Antwerp, working on the *M. tuberculosis* complex and *M. ulcerans*, the cause of Buruli Ulcer, combining research and reference laboratory services. Her research interests include transmission, molecular epidemiology, strain differences, and drug resistance. In addition, she supports capacity building efforts in mycobacteriology in West- and Central Africa.

Jakob Zinsstag, SWISS TPH

Jakob Zinsstag graduated with a Doctorate in veterinary medicine at the Veterinary Faculty of the University of Berne in 1986. After his studies he worked in rural practice and as post-doctoral fellow on trypanosomiasis research at the Swiss Tropical Institute. From 1990 to end of 1998 he worked in the Gambia and Côte d'Ivoire. Since 1998 he leads a research group at the Swiss Tropical and Public Health Institute (Swiss TPH) on the interface between human and animal health. The group focuses on health of mobile pastoralists and zoonoses control in developing countries. He holds a PhD in Tropical Animal Production from the Prince Leopold Institute of Tropical Medicine of Antwerp, Belgium. Since 2010 he is Professor of Epidemiology at the University of Basel and since 2011 deputy head of department of Epidemiology and Public Health at the Swiss TPH. He is a member of the trans-disciplinary board of the Swiss Academies of Sciences (www.transdisciplinarity.ch) and president of the International Association of Ecology and Health (www.ecohealth.net).



Hans-Peter Beck, Swiss TPH

Prof. Hans-Peter Beck, obtained his PhD in Tübingen, Germany, and afterwards became 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.



Peter Helbling, Federal Office of Public Health (FOPH), Switzerland

Peter Helbling has been in charge of TB for the FOPH since 1996. Since 2002, he also works as an independent international TB consultant for various organizations. He is a Medical Doctor with training in general medicine (Swiss Medical Association) and in infectious diseases in Brazil, and he holds an MPH degree from Harvard School of Public Health. His main topics have been TB epidemiology, TB program management, and TB drug management. He has been to North Korea for the Global Drug Facility (hosted by WHO Geneva) three times since 2005 and once for the Swiss TPH (Data Quality Audit of the Global Fund project).



Liz Corbett, London School Hyg Trop Med & MLW Research Programme, Malawi

Liz Corbett is a Wellcome Trust Senior Fellow and Clinical Epidemiologist with London School of Hygiene and Tropical Medicine, based full time in Malawi. Her main interests concern control of TB in high HIV settings, with a focus on the epidemiology at primary care and community level, and intervention trials, with a special expertise in TB screening/active case finding. She is a member of the Strategic and Technical Advisory Group (STAG) for Stop TB Department, World Health Organization. She is co-Director in the TB/HIV Research Group in Department of Pathology and Medical Laboratory Sciences, College of Medicine (COM), Blantyre, Malawi and led the HIV/TB Theme in MLW. She has grants from the Wellcome trust, NIH, Helse Nord RHF and Malawian and UK Fellows in Blantyre and Zimbabwe.



Nicole Probst-Hensch, Swiss TPH

Nicole Probst-Hensch is Associate Professor at the University of Basel Medical School in Switzerland. At the Swiss TPH she is head of the Chronic Disease Epidemiology unit. Her broad research experience covers several chronic diseases including cancer, respiratory and cardiovascular diseases. Her work focuses on the mechanistic pathways linking genetic and modifiable risk factors to these diseases. She has worked on several large cohort studies both, in the US and Switzerland, where she established the large SAPALDIA biobank. She is a directorate member of the SAPALDIA cohort and heads SAPALDIA molecular and genetics research. Assoc.



Prof. Probst-Hensch is a member of the national expert commissions on genetic testing in humans and on air quality - two advisory boards for the Swiss Government. She is also president of the scientific committee of the Swiss Public Health Association. Probst-Hensch has been instrumental in establishing the National Institute of Epidemiology and Registration and was its first director.

Micaela Serafini, médecins sans frontières, Switzerland

Micaela Serafini, a medical doctor specialized in Internal Medicine, started working with Medecins Sans Frontieres (MSF) in 2004. Since then she worked in many different countries, in a variety of diseases such as HIV/AIDS, TB, Cholera, Malaria, Ebola, Meningitis and Measles and in different contexts, from long term programmes to outbreak response. She complemented her practical experiences with formal training and obtained first the Diploma in Tropical Medicine and later the Master in Public Health in Developing Countries. In 2009, Micaela became medical adviser for MSF Switzerland. Since then she has been supporting and supervising the technical aspects of the medical programmes in countries like Kyrgyzstan where MSF has a TB programme in prison.



Klaus Reither, Swiss TPH

Klaus Reither is working as a group leader 'Clinical TB Research' at the Swiss Tropical and Public Health Institute. His responsibilities comprise set-up, implementation, coordination and supervision of TB research projects with emphasis on clinical trials at international partner institutes of Swiss TPH. Prior to this post, Klaus Reither was working for four years as a project leader at the Ifakara Health Institute in Tanzania; employed by Swiss TPH. He was in-charge of building up a clinical TB trial site and performing trials on TB epidemiology and immunology, new vaccines and new treatment regimens as well as new TB diagnostics. Additionally, Klaus Reither managed TB projects in Mbeya, Tanzania, and mainly malaria studies in Tamale, Ghana, for the Universities of Munich and Berlin, Germany. He received his medical degree from the Free University Berlin, Germany, and pursued a Master of Science in International Health and a Diploma in Tropical Medicine and Public Health from the Humboldt University Berlin, Germany. Klaus Reither has clinical experience in internal medicine and is a specialist in diagnostic radiology.



Christian Auer, Swiss TPH

Christian Auer is a Public Health Specialist with a focus on the control of tuberculosis (TB) and multidrug-resistant tuberculosis (MDR-TB). He lived for more than 15 years in the Philippines where he worked for three years with the Global Fund Principal Recipient and with the Sub-Recipient responsible for the treatment of MDR-TB cases. He has done TB-related consultancies mostly for GDF and the Stop TB Department of WHO. Recent consultancies regarding MDR-TB were in Baku, Azerbaijan for a prison programme. He is involved in data quality audits for the Global Fund to Fight AIDS, Tuberculosis and Malaria (TB missions to Tajikistan, Uzbekistan, Kyrgyzstan and DPR Korea).



Christopher M. Dye, WHO, World Health Organization, Switzerland

Chris Dye began professional life as an ecologist in the UK, having been awarded degrees in biology and zoology from the universities of York and Oxford. After developing an interest in infectious diseases at Imperial College London, he moved to the London School of Hygiene and Tropical Medicine to bring his research closer to public health. In 1996, he joined the World Health Organization and is now Director of Health Information in the Office of HIV/AIDS, Tuberculosis, Malaria and Neglected Tropical Diseases at the World Health Organization. From 2006–2009, he was Professor of Physic at Gresham College, London. He is a Visiting Professor of Zoology at the University of Oxford, a Fellow of The Royal Society and of The UK Academy of Medical Sciences.



Marcel Tanner, Swiss TPH

Marcel Tanner is Professor and Chair of Epidemiology and Medical Parasitology at the University of Basel and acts since 1997 as Director of the Swiss Tropical and Public Health Institute (Swiss TPH) thereby being in charge of over 600 employees. He has an extensive research track record and interest which ranges from immunology, malaria and infectious disease control up to the planning and management of district health services. Marcel Tanner is teaching at universities in Europe, USA, Africa, Australia and Asia in the field of epidemiology and public health and advises on international health issues for governments and international organisations (WHO, World Bank).

