## SWISS TPH AT A GLANCE

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## KEY AREAS OF ACTIVITY

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Our analyses led us to conclude that combining research, teaching and training activities with active participation in public and global health policy and implementation efforts not only renders us competitive in the “global health market” but, more importantly, ensures effective outcomes and sustainable impact, as reflected in this report. We also confirmed that pursuing our strategic goals through an iterative process along the value chain from innovation to application leads to coherence in the overall institutional portfolio, while still allowing for effective reactions and actions in the face of emergencies like Ebola or upcoming major opportunities within global health initiatives. Clearly, our history, our current state and the strategic outlook match the well-known, but unattributed saying “It is not things that remain unchanged by the passage of time that endure, but rather those that change intelligently as time moves onwards”. What remains unchanged is our mandate, which is to contribute to improving the health of populations internationally, nationally and locally through excellence in research, services and teaching and training.

Transition Period Ahead

It is in this spirit that we shall develop – as a central part of the harmonious transition processes at Swiss TPH – the 2017–2020 strategy, including its financing by the local and national governments as well as by our own efforts to acquire competitively relevant projects and programmes of the highest relevance and merit.

Our strategic goals will be achieved through the outputs of 15 interrelated key areas of activity, which have been defined with a mid-term perspective and based on the currently active priority programmes and projects (see section K). We report our progress in relation to our strategic plan, emphasising the key areas of activities. It is well understood that these areas may change after tasks are completed and/or new areas are created following the dynamics of an active institution, new opportunities or strategic choices.

Linked to all the positive developments are our firm plans to relocate to a new building. Currently, more than 700 Swiss TPH staff members from over 60 nations occupy eight buildings in the vicinity of the “mother-house” at Socinstrasse 57, making continuous information exchange and effective, interdisciplinary work challenging. Following careful planning and consideration at the local and national level, we are happy to report that we can now engage in planning a new construction in nearby Basel-Landschaft. Thus, besides bringing the institute happily together into “one boat”, the new building – hopefully to be completed by 2019 – will strengthen the local partnership between the two cantons of Basel that now share responsibility for Swiss TPH.

Swiss TPH finances still require our highest attention, as our core funding is currently at 18%, and hence more than 80% of our funds have to be acquired competitively every
year (see p. 114). Based on the strategic plan and all negotiations that have occurred so far, we are now fortunately looking into a future where a new building is possible and the core funding can reach 25%.

Fruitful Partnerships

Given these most promising developments, it will be a truly fulfilling and happy moment to hand over the leadership of Swiss TPH to Professor Jürg Utzinger, who was selected through a careful international and competitive process to become my successor as of 1 July 2015. Jürg Utzinger has the expertise, experience and our full support to further develop Swiss TPH in the spirit in which it was first created, while responding to the needs and challenges of our world today. I wish him every success in this most interesting and deeply satisfying position.

None of the work described in this report would have been possible without the fruitful partnerships and collaborations with national and international institutions or the generous, unconditional support granted by the many donors mentioned throughout the report. We are deeply indebted to all of them.

The great developments of and at Swiss TPH are only possible thanks to the competent guidance and advice provided by the Board of Governors (see p. 134) and the international External Review Team (see p. 135). We are extremely grateful for their critical comments and their forward-looking, far-sighted and sound recommendations.

My sincere thanks go to the communication team, that carefully edited, planned, illustrated and co-ordinated this report.

Finally, my deepest appreciation goes to all Swiss TPH staff members – scientific, technical and administrative staff and students – and all of our collaborating institutions – locally, nationally and internationally. Their wonderful, un-failing commitment to our joint aims, countless new ideas and hard work made possible the achievements described here.

I wish you a stimulating read and look forward to your comments and suggestions as well as to the development of possible new collaborations.

MARCEL TANNER
DIRECTOR
STRATEGIC PLAN 2010 – 2016

TO IMPROVE HUMAN HEALTH AND WELLBEING THROUGH BETTER UNDERSTANDING DISEASE AND HEALTH SYSTEMS AND ACTING ON THIS KNOWLEDGE

Vision

Swiss TPH’s vision is to improve human health and well-being through better understanding disease and health systems and acting on this knowledge. Excellence in disease and health research, effective health service provision and world class teaching and training programmes are the foundations of the institute’s work. The strategic plan 2010 to 2016 formulates eight strategic goals (see p. 10 – 11).

Principles

The guiding principle is to work in interdisciplinary partnership to respond to local, national and international public health priorities. Swiss TPH generates new evidence, validates it in different health system settings and directly translates evidence into policy and public health action. Swiss TPH combines excellence in science and training of an academic institution with the standards of corporate organisations in consulting, backstopping and contract research organisation.

Innovation, Validation, Application

Swiss TPH seeks innovative solutions to improve health. This includes drugs, vaccines and diagnostics against poverty-related diseases, as well as e.g. vulnerability and resilience concepts, surveillance-response measures or new approaches in ‘information, education and communication (IEC)’. It creates knowledge and prevention programmes for non-communicable diseases and generates knowledge and tools for strengthening health systems. However, newly developed tools and concepts are validated in the field. Therefore, Swiss TPH activities take place in offices and laboratories, in villages and dusty cities, at the bedside of patients or in remote countries alongside the affected populations.

Research, Training, Services

As an associated institute of the University of Basel, Swiss TPH combines excellence in research and training with an extensive service portfolio – a unique distinction from other academic institutions. Services offered range from travel advice, clinical research trial monitoring to acting as a health advisory, support and implementation agency.
MANDATE AND STRATEGIC GOALS

Fighting Disease and Improving Health

Parasites can be dangerous, yet their lifecycles are fascinating. That is why Swiss TPH researchers unravel the biology of parasites to find new ways of fighting disease. But other factors must also be considered, such as genes, the environment and human behaviour. Non-communicable diseases are linked to today’s lifestyles, thus health specialists investigate these phenomena in large population studies in Switzerland and in low-resource countries.

Systems Thinking for Better Health

Functioning health systems are the foundation of sustainable public health and include hospital infrastructure, qualified nurses and doctors as well as health policies that work and protect the people. Not surprisingly, Swiss TPH staff is devoted to improving health systems worldwide, to facilitate people’s access to health services and work towards more equity in health care.

Interdisciplinary Collaboration

Swiss TPH assembles professionals with various backgrounds under one roof. This combined expertise enables new solutions for pressing global health needs. The institute’s culture of collaboration and exchange characterises its relationship with the outside world.

1. CONTRIBUTE TO UNDERSTANDING disease biology and develop tools and strategies for diagnostics, prevention and cure.

2. BECOME A GLOBAL LEADER in integrated health systems research, strengthening and training.

3. TAKE NATIONAL AND INTERNATIONAL LEADERSHIP in epidemiology and the control of communicable and non-communicable diseases in their social, cultural, environmental and systems contexts.

4. PROVIDE EXPERTISE on healthy societies and equitable access to health.
5 SERVE AS A RESOURCE CENTRE for national and international agencies.

6 GENERATE AND PROVIDE pre-travel advice, infectious disease diagnoses (National Reference Laboratory) and post-travel cure to travellers and long-term expatriates.

7 BECOME A COMPETENCE CENTRE for eHealth that innovates and applies information and communication technologies.

8 ACT AND DEVELOP AS A LEARNING ORGANISATION with a knowledge-sharing culture and defined processes of internal and external knowledge flows.

SWISS TPH MANDATE: CONTRIBUTING TO IMPROVE THE HEALTH OF POPULATIONS, INTERNATIONALLY, LOCALLY AND NATIONALLY, THROUGH EXCELLENCE IN RESEARCH, SERVICES AND TEACHING AND TRAINING
INNOVATE TO IMPROVE HEALTH

SPOTLIGHT: COHORTS AND POPULATION STUDIES
Swiss TPH constantly strives to generate new knowledge and tools to improve people’s health. Scientists analyse the interplay between the environment and our genetic disposition. They conduct large-scale population-based studies and develop new technologies for data storage and management. Thousands of antigens and molecules are screened for the development of much-needed drugs and vaccines against poverty-related diseases such as malaria and Buruli ulcer. But all of these innovations need to be validated in the field and brought to the populations concerned. This is how the Swiss TPH innovation chain works: from innovation to validation and, finally, to application.

SAPALDIA – Healthy Aging

Good health in old age is not simply a question of fate. A variety of health factors present during a person’s youth and middle age partly predetermine their health later in life, such as diet, exercise, smoking, pollutants, blood pressure, stress, work and social circumstances. If we knew the effect of each of these factors, then we would be able to contribute to healthy aging through promoting better lifestyle choices.

However, knowledge is still lacking in this respect. For the last 15 years, health research has very much focused on the influence of genetic factors. However, the vast majority of illnesses have multiple causes, with environmental, behavioural and social factors playing a more important role than genetics. The contribution of each factor is unknown. The SAPALDIA study offers a unique opportunity to assess the roles and interactions of individual health factors.

SAPALDIA is the largest national population-based cohort study in Switzerland. Running since 1991, more than 9,600 men and women have participated to date. The study has recorded participants’ state of health, lifestyle and environmental influences at ten-year intervals. Furthermore, SAPALDIA stores blood samples from almost every participant examined. SAPALDIA demonstrated that even a small amount of air pollutants has a detrimental effect on a person’s lung function. Furthermore, surveys indicate that people living along a busy street are at higher risk of developing asthma or lung cancer.

Today, the participants of SAPALDIA are almost a quarter of a century older than when they were first recruited for the study. Many of them have reached retirement age and form part of the older population in Swiss society. This opens a unique research opportunity in that each participant’s current state of health can be examined in light of his/her earlier lifestyle, exposure to emissions and environmental pollution, diet or past illnesses.

The blood samples collected during the SAPALDIA study are stored in the Swiss TPH biobank and provide a snapshot of each participant’s metabolism at different points in time over the last 25 years. Recent research has shown that environmental factors leave an imprint on a person’s metabolism. Thus, the stored samples are a valuable resource – SAPALDIA researchers can use them to track the interplay between lifestyle, environmental factors, health, disease and genetic factors. This “exposomics” approach aims to better understand and describe interactions between environmental and genetic factors.
Planning and Measuring Health Interventions

Comprehensive data repositories have become the backbone of epidemiological research and interventions. The Taabo Health and Demographic Surveillance System (HDSS) has established such a database. The system is a joint endeavor between Swiss TPH, the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire (CSRS), the Université Félix Houphouët-Boigny and Fairmed, a Swiss NGO. Taboo HDSS is also an active member and contributor to the INDEPTH network that conducts longitudinal population-based research on 45 field sites in low- and middle-income countries. In Taboo every four months, field-teams fan out to collect basic economic, demographic and health-related data for 40,000 inhabitants living in south-central Côte d’Ivoire. The region is known for the high prevalence of neglected tropical diseases such as bilharzia (schistosomiasis) and other parasitic worm infections. “Only when you know about birth, death and certain diseases at the household level can you design health interventions that are really effective,” says Siaka Koné, the CSRS scientist responsible for the Taabo project. HDSS is a unique platform that allows researchers to determine the impact of health interventions. Moreover, the Taabo team conducts research projects such as studying the causes of anaemia and local concepts of anaemia-related illnesses. So far, only inhabitants living within Taabo’s borders have profited from health interventions. But this will change in the future. “The Ivoirian government also profits from the database”, says Siaka Koné. “Many lessons learned at a small scale are relevant for the whole nation”.

‘ONLY WHEN YOU KNOW ABOUT BIRTH, DEATH AND CERTAIN DISEASES AT THE HOUSEHOLD LEVEL CAN YOU DESIGN HEALTH INTERVENTIONS THAT ARE REALLY EFFECTIVE’
SIAKA KÔNÉ, CSRS SCIENTIST, TAABO PROJECT
Drug resistance is one of the major challenges facing scientists. Currently, WHO recommends artemisinin-based combination therapy (ACT) as first-line treatment for malaria. But, the latest research in Southeast Asia shows a threatening emergence of ACT-resistant malaria parasites and ACT treatment is already ineffective for certain patients. We may soon lose the most effective weapon we have against malaria. “It is not sufficient to bring a medication against malaria to market and to then rest on one’s laurels,” says Sergio Wittlin of Swiss TPH. “Constant innovation is needed.”

Developing new drugs is expensive and 15 years ago the situation looked grim. But in the new millenium, with strong support from Swiss TPH, new partnership models have been formed. Industry and academia, governments and philanthropic institutions have joined in public-development-partnerships (PDPs). Medicines for Malaria Venture (MMV; www.mmv.org) or the Drugs for Neglected Diseases initiative (DNDi; www.dndi.org) were founded to pool expertise, technology and resources with the aim of developing new drugs and vaccines.

Swiss TPH conducts research on many different infectious and non-infectious diseases. Fighting malaria is one of the institute’s main concerns. Swiss TPH’s expertise in this area is unprecedented because it virtually covers and integrates all research aspects from preclinical drug and vaccine development and clinical trials to large-scale interventions, modelling and policy advice.
Promising New Molecules and Antigens

As a discovery partner of MMV, Swiss TPH tests thousands of new substances for their effectiveness against malaria parasites every year. Today, many of the most promising and advanced malaria drug candidates were tested at Swiss TPH. OZ439 is a fully synthetic peroxide that mimics the action of currently used artemisinin derivatives. OZ439 showed patient safety in Phase I trials and effectiveness against the malaria pathogens *Plasmodium falciparum* and *Plasmodium vivax* in Phase II trials. *In vitro* data suggest that OZ439 is also effective against artemisinin-resistant strains. However, it can take some time until OZ439 will be used in patients.

Even higher on the development ladder is drug-candidate KAE609, discovered by a team of Swiss TPH researchers. The compound was part of a collection of 300 molecules in the pool of Novartis’ natural products chemicals. *In vitro* tests at Swiss TPH showed high effectiveness against *P. falciparum* as well as against *P. vivax*. KAE609 is the first antimalarial drug candidate with a novel mechanism of action to achieve positive clinical proof-of-concept in over 20 years. In a proof-of-concept study, the Novartis Institute for Tropical Diseases (NITD) in Singapore has proven in a recently published study that KAE609 is able to free patients from malaria within 12 hours. KAE609, the first compound in the spiroindolone class of treatment, works through a novel mechanism of action that involves inhibition of a P-type cation-transporter ATPase4 (PfATP4), which regulates sodium concentration in the parasite. Because KAE609 also appears to be effective against the sexual forms of the parasite, it could potentially help prevent disease transmission.

Furthermore, in collaboration with the University of Cape Town in South Africa and MMV, Swiss TPH discovered a novel promising candidate called MMV390048. Even a small dosage of MMV390048 heals mice completely from malaria. It also works against resistant *Plasmodium* strains. The active agent candidate will be tested for its safety and compatibility in humans in 2014. A Phase I clinical trial is ongoing at the University of Cape Town in South Africa.

Malaria Vaccines: Upside Down

Molecular immunologists use a reverse vaccinology approach to identify antigens as targets for novel malaria vaccines. Using bioinformatic tools, they screen the entire genome sequence of the malaria pathogen *P. falciparum* for proteins being expressed on the surface or on invaded blood cells. These proteins may be effective antigens for the immune system and, therefore, a potential vaccine target. Using recombinant DNA technology, selected proteins are produced, antibodies raised and their pathogen inhibitory activity checked. A strong inhibitory activity indicates that the targeted antigen may be a promising candidate against which to develop an effective malaria vaccine.

Crowd Mapping: Maps for Malaria Research in Africa

Precise and up-to-date maps are not available for many rural areas in Africa and other parts of the world. This makes planning, analysing and implementing field projects a logistical challenge. Rural Geolocator is a novel crowdsourcing tool tapping into the combined intelligence of Internet users. Rural Geolocator presents satellite images in a web-browser. Volunteers are asked to visually identify houses on the presented satellite image and mark them with a mouse-click. “We depend on human brains and not computer algorithms for that matter”, says Nicolas Maire, lead developer of Rural Geolocator. The results are stunning. In the latest project to compile a database of houses in the Majete Wildlife Reserve in Malawi, more than 4,500 images have been analysed by almost 500 volunteers in just a couple of weeks. These maps have already proven to be a highly valuable tool in studies to determine the effectiveness of malaria control measures.

Health and Disease: The Swiss TPH Perspective

Biologists try to identify genetic risk factors affecting health or molecules that are crucial for disease transmission. They create basic and applicable knowledge on specific diseases and their underlying cause. This includes screening new drug candidates and therapies against tropical diseases such as malaria or Buruli ulcer, developing vaccines or assessing the effectiveness of new mosquito repellents. They may also study the interplay between environmental factors and the genetic make-up of individuals or populations.

Epidemiologists and field experts study the transmission dynamics of pathogens, develop new models for risk prediction and assess health problems in communities and populations.

But even the best treatments are of limited value if they do not reach the affected populations and gain acceptance. Implementation experts are therefore involved in efforts to strengthen health systems and to improve access to medicine, infrastructure, logistics and financing. Finally, Swiss TPH advises and supports governments and international organisations in their efforts to improve the health of their populations.
Health Insurance Schemes for Poor Populations

Health coverage should not be the privilege of a wealthy few. The Swiss Centre for International Health (SCIH) designs and implements new health insurance schemes for the poorest segments of the population. In the Dodoma Region, a rural area in Tanzania, SCIH embarked on the Health Promotion and Systems Strengthening Project (HPSS). The redesign of the community health funds makes the core of the project. For the equivalent of CHF 5 a whole family can profit from basic health care coverage during one year. The project offers also new solutions for data management. New members are enrolled on site using mobile phone technology. A picture and personal data of new members are stored directly in a central database and can be accessed by health personnel working in dispensaries and health centres. However, people would probably reject such new insurance schemes if there is no improvement of the quality of care offered. Therefore, HPSS also invests in the procurement of essential medicine to dispensaries and health centres and in the maintenance of health technology in hospitals.
The Swiss Centre for International Health (SCIH)

The Swiss Centre for International Health (SCIH), a Swiss TPH service department, has a rich service portfolio for developing health systems all over the world. The staff offers consultancy and advisory services as well as short-term evaluations to governments and international development organisations. For almost 20 years, SCIH has planned and implemented large-scale health projects with a particular focus on Eastern Europe, Central Asia and Africa. Currently, the department is involved in reducing the high mortality rate of mothers and children in Chad, one of the world’s poorest countries. SCIH is a key asset for Switzerland’s development aid efforts. By monitoring various health projects in Eastern Europe, SCIH supports Switzerland’s 1 billion CHF initiative to foster integration of Eastern European countries into the EU. Its long-term experience in the field of international health makes SCIH a preferred partner for many local and international organisations. SCIH’s main clients include the World Health Organisation (WHO), the World Bank (WB), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and the Swiss Agency for Development and Cooperation (SDC/DEZA), among others.

Selected Key Clients
- Bill & Melinda Gates Foundation (BMGF)
- Department for International Development (DFID)
- German International Cooperation (GIZ)
- Global Alliance for Vaccines and Immunization (GAVI)
- Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)
- KfW German Development Bank (KfW Bankengruppe)
- Luxembourg Agency for Development Cooperation (Lux-Development)
- Swiss Agency for Development and Cooperation (SDC/DEZA)
- Swiss Federal Office of Public Health (FOPH/BAG)
- Swiss State Secretariat for Economic Affair (SECO)
- UNAIDS, UNITAID, UNDP
- World Bank (WB)
- World Health Organization (WHO)

Vector Control and Repellent Testing

Mosquitoes are small but life threatening. In Africa, Asia and Latin America they transmit malaria, dengue or yellow fever. repellents are one effective way to keep mosquitoes at arm’s length. The Swiss TPH vector control centre has specialised facilities to rear a broad range of mosquito species. Biologists study mosquito behaviour and evaluate mosquito repellents and insecticides for registration purposes, according to internationally recognised standards. A current study for the Federal Office of Public Health (FOPH) compares the efficacy of different repellents on Swiss mosquito populations.

Travel Medicine

Switzerland is a country on the move, with many of its people visiting sunny holiday destinations. Swiss TPH is the only institution in Switzerland providing preventive, diagnostic and curative services for imported infectious diseases. Swiss TPH is a national centre of excellence in travel and tropical medicine and in parasitological diagnostic services. It offers a variety of services to medical practitioners and to the public, such as advice to short- and long-term travellers on preventive measures and care for travellers returning ill from tropical and subtropical countries.

Clinical Trials in Low-Resource Countries

Developing new drugs and vaccines against neglected tropical diseases is challenging. Clinical trials have to take place in the rural areas of Africa, which lack basic health infrastructure. The Department of Medicines Research has long-term experience in monitoring and conducting clinical studies in low-resource countries such as the Democratic Republic of the Congo (DRC).

Department Head
Christian Burri

Christian Burri, what drives your team to work under most demanding circumstances?

We fight against diseases that normally don’t appear prominently on the research agenda of other organisations. In DRC, for instance, we are assessing the safety and efficacy of a new drug against sleeping sickness. Hopefully, this drug may revolutionise the treatment of this dreadful disease.

How does your work impact clinical research in Switzerland?

First, we closely collaborate with our research colleagues at Swiss TPH. We support them with our expertise in planning and conducting clinical trials. Also physicians and non-for-profit-organisations in Switzerland get our support for investigator-initiated trials. We share our extensive expertise in conducting trials in a cost effective and efficient way. This is essential even in Switzerland, as the Swiss National Science Foundation only provides minimal funding for investigator-initiated trials.

How do these activities differ from what pharmaceutical companies do?

Pharmaceutical companies such as Roche or Novartis usually separate the science part from the trial operations part. As a result, those who conduct clinical trials often have no deep scientific footing. We bring these two parts together. That is our key advantage. And we don’t have to satisfy any shareholder.
# UNIVERSITY COURSES, CONTINUING EDUCATION

## TEACHING AND TRAINING

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<th>Undergraduate / Bachelor</th>
<th>Graduate / Master</th>
<th>Doctorate</th>
<th>Professional Postgraduate</th>
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<tr>
<td>Faculty of Science</td>
<td>Faculty of Science</td>
<td>Faculty of Science</td>
<td>Advanced Studies</td>
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<tr>
<td>Faculty of Medicine</td>
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<td>Others</td>
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<tr>
<td>BSc in Biology</td>
<td>MSc in Epidemiology</td>
<td>PhD Microbiology or Cell Biology</td>
<td>Master of Advanced Studies (MAS)</td>
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<td>PhD Experimental Biomedical Research (MD)</td>
<td>Certificate of Advanced Studies (CAS)</td>
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<td>PhD Platform Health Science (PPHS)</td>
<td>Short Courses</td>
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<td>Master in African Studies</td>
<td>Master of Advanced Studies (MAS)</td>
<td>Continuing Education</td>
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<td>Other graduate / master level teaching at external academic institutions e.g. ETH Zürich, Uni Zürich, Bern, Lausanne, Geneva etc.</td>
<td>Other occasional postgraduate teaching at other institutions</td>
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<th>Professional Postgraduate</th>
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<tr>
<td>International PhD Infection Biology (IPPIB)</td>
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<tr>
<td>PhD Swiss School of Public Health (SSPH+)</td>
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Teaching and Training – along with research and services – is one of the three strategic pillars of the institute. The continuous pursuit of “mutual learning for change” is the institute’s guiding principle and has been a distinct feature of all teaching and training activities of the institute since its creation.

Mutual Learning for Change

Swiss TPH offers unique teaching and training opportunities in infection biology, epidemiology and in international and global health issues, among others. Teaching and training is offered at all levels of university and postgraduate education in several faculties at the University of Basel. Lecturers and facilitators develop and practice new forms of knowledge and skills transfer, from face-to-face to distance based, using eLearning tools and platforms. Teaching and training at Swiss TPH maintains a strong foundation in practice and is therefore favoured by students all around the world.

Rich Teaching Portfolio

Due to its comprehensive expertise based on excellent research and services at Swiss TPH, the teaching and training portfolio is attractive to students from various scientific backgrounds. At the University of Basel, the institute is involved in leading programmes at three faculties at the BSc, MSc and PhD levels, and throughout the whole medical study programme, from first semester to the MD. Teaching and training also includes postgraduate master studies in international health, public health and in insurance medicine. In addition, Swiss TPH runs the world’s first MBA in International Health Management. The portfolio is completed by a widespread offer of courses for various groups of health professionals.

New Curricula and Cooperation

For 70 years, Swiss TPH has continuously developed new curricula and new forms of training. In all its teaching and training activities, ranging from masters and doctoral studies to continuing education for health personnel, the institute draws from the wealth of knowledge generated by the research and service departments. Swiss TPH fosters the interaction with and between students as a basis for mutual learning for change. Further, the institute is a leader within multiple national and international teaching networks and projects, e.g. in the Swiss School of Public Health (SSPH+) and tropEd, the worldwide network for education in international health.

Swiss TPH has equipped me with the necessary skills to actually contribute to improving health not just in my home country, Nepal, but all over the world.

RASHMI SHARMA
PHYSICIAN, NEPAL

At Swiss TPH, I realised that curative medicine must always be complemented by sustained public health measures.

YVONNE ALBRECHT
PHYSICIAN, SWITZERLAND

‘Teaching and Training at Swiss TPH means cultural diversity under one roof. Here, I do not just learn from a wide range of experts but also from my peers.’

MAHY ELAREF
PATIENT EDUCATOR, EGYPT

‘Swiss TPH has equipped me with the necessary skills to actually contribute to improving health not just in my home country, Nepal, but all over the world.’

RASHMI SHARMA
PHYSICIAN, NEPAL

‘At Swiss TPH, I realised that curative medicine must always be complemented by sustained public health measures.’

YVONNE ALBRECHT
PHYSICIAN, SWITZERLAND
LONG-TERM PARTNERSHIPS
A culture of partnership and mutual trust is one of Swiss TPH's secrets of success. Personal and institutional relationships led to a network of partner institutions all around the globe. Historically, the field laboratories and research institutions in Tanzania, Côte d'Ivoire and Chad played a particularly important role for Swiss TPH and continue to do so.

Ifakara Health Institute, Tanzania

The success of Swiss TPH is closely linked to the research, teaching and training and implementation programmes initiated in Ifakara, Tanzania. In 1957, the Swiss Tropical Institute founded its field laboratory (STIFL) in Ifakara. Over the last 57 years it has developed into the Ifakara Health Institute (IHI). Today, IHI is one of the most renowned research institutions in Africa. More than 800 staff members are dedicated to develop new strategies against infectious diseases such as malaria, tuberculosis or HIV/AIDS. They fight, i.e., against childhood diarrhea in urban settings, against the premature death of women giving birth, or design and implement new health insurance schemes in order to strengthen the Tanzanian health system. IHI is also a key player in the large-scale trial with the new vaccine candidate RTS,S that could possibly be registered as a new malaria vaccine soon. Swiss TPH remains a strong partner of IHI, also as member of the IHI Board of Governors. Swiss TPH researcher and health specialists collaborate in numerous projects in various parts of Tanzania.

Selected Joint Project

Currently, Swiss TPH and IHI are involved in the clinical trials for the vaccine candidate RTS,S. The vaccine has been tested at 11 trial sites across Africa. RTS,S protects against *Plasmodium falciparum*, the deadliest of all malarial parasites. Scientists report an efficacy of RTS,S of 46% in children and of 27% in infants during a period of 18 months. WHO may approve this vaccine as the first malaria vaccine in 2015.
Chad in Central Africa is one of the poorest countries in the world. Health services in the rural areas as well as in the capital of N’Djamena are rudimentary. Swiss TPH started activities to strengthen health infrastructure of two rural districts in 1986. It has been active in the country ever since. These efforts led to the establishment of the Centre de Support en Santé Internationale (CSSI) in N’Djamena. CSSI is devoted to the control of infectious diseases in urban and rural settings and to strengthen health systems.

Selected Joint Project

In collaboration with Jakob Zinsstag (Swiss TPH), CSSI has organised a large campaign to control and eliminate rabies within N’Djamena. Two pilot vaccination campaigns with a total of over 40,000 vaccinated dogs demonstrated the feasibility of 70% vaccination density in the city’s dog population. The study attempts to eliminate rabies in N’Djamena and serves as a model for the control of rabies in other African cities by similar means. So far this large-scale intervention has been a success. Since 2013 only one case of human rabies has been reported in the city capital.

Centre Suisse de Recherches Scientifiques en Côte d’Ivoire

The Centre Suisse de Recherches Scientifiques en Côte d’Ivoire (CSRS) was Switzerland’s first laboratory in the tropics, and until today, the temporary home for many Swiss TPH scientists. Founded in 1951 with support from the former Swiss Tropical Institute, CSRS has developed into a prime example of Swiss-Ivoirian research partnership. Today, 270 researchers and employees work for the centre. Ivorian and Swiss scientists develop and implement research projects that are meaningful not only for Côte d’Ivoire but for the whole sub-region. Work with CSRS is based on a partnership agreement signed by the Swiss and Ivoirian governments. Swiss TPH acts as a “Leading House” for CSRS, a role that was attributed by the State Secretariat for Education, Research and Innovation (SERI).

Selected Joint Project

Afrique one: African Research Consortium for Ecosystem and Population Health Swiss TPH and CSRS are part of a larger Africa-initiated research consortium that brings together 11 African and three European research institutions. Funded by the Wellcome Trust, the consortium has been specifically devised to help support research capacity in its host institutions in the fields of ecosystem and population health. The discipline expands the traditional definitions of health, recognising the critical links between human activity, ecological change and health and incorporates important social and economic perspectives.
70 YEARS
FOUR DIRECTORS

‘We have to see our aim in the creation of a new ethic of giving, driven neither by political or economic considerations nor by Christian values ... The new giving I am talking about derives exclusively from a sense of international responsibility and the motive of bringing people closer together ...’


‘We should not deceive ourselves: any sustainable effort to promote research in developing countries will demand profound changes in research and teaching in the universities of the industrialised countries.’

Thierry Freyvogel, Speech at the 50th Anniversary of the STI, 1994
The transmission of tropical diseases is so complex that it is not enough to study only the parasite and its strategies. We must learn to understand the disease as a system, in relation to its socio-economic environment.

Antoine Degremont, Basler Zeitung, 1994

‘Today, the chief aim of field work is no longer to collect data about a population, their environment and their health problems, and carry the results back to a desk or a computer in some university. Today, every project in the field should study an important practical problem with the aim of finding solutions together with the people directly affected.’

Marcel Tanner
NO ROOTS NO FRUITS
70 YEARS SWISS TPH

1943
HAUS ZUR FÖHRE AND CLINIC SONNENRAIN

1944
RUDOLF GEIGY, FIRST DIRECTOR

1945
FIRST EXPEDITION TO WEST AFRICA

1945
R. GEIGY, F. ROULET AND A. SCHWEITZER IN LAMBARÉNE

1951
CENTRE SUISSE DE RECHERCHES SCIENTIFIQUES, EN CÔTE D’IVOIRE

1957
SWISS TROPICAL INSTITUTE FIELD LABORATORY, TANZANIA

1961
FOUNDATION OF RURAL AID CENTRE (RAC)

1970
FIRST ELECTRON MICROSCOPE

1972
THIERRY FREYVOGEL, SECOND DIRECTOR

1973
MEDICAL ASSISTANT TRAINING CENTRE, TANZANIA

1987
ANTOINE OEGRÉMONT, THIRD DIRECTOR

1995
STRENGTHENING MOLECULAR EXPERTISE

1996
SWISS CENTRE FOR INTERNATIONAL HEALTH

1996
CENTRE DE SUPPORT EN SANTÉ INTERNATIONALE, CHAD

1997
MARCEL TANNER, FOURTH DIRECTOR

2001
CSRS' 50TH ANNIVERSARY
No Roots, No Fruits

The Swiss Tropical Institute (STI) is the result of job-creating efforts during World War II. During the war, both the population at large and the political decision-makers were gripped by the fear of massive unemployment after the war had ended. The Government tried to reduce the threatened shortage of jobs by promoting scientific programmes of academic institutions. Foundational director Rudolf Geigy shaped the course of the institute to a large extent. STI combined research, training and medical service provision right from the beginning. The study of parasites and the many mosquitoes, flies or ticks transmitting malaria, African sleeping sickness or relapsing fever were at the top of the research agenda.

From Research to Development Aid

STI created new field laboratories in Africa in the 1950s: the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire and the Swiss Tropical Institute Field Laboratory (STIFL) in Ifakara (Tanzania). With many African countries becoming independent in the 1960s, STI moved from basic research to development aid. Tanzania in particular became a hotspot of Swiss development aid and has remained so ever since. The Ifakara Health Institute (IHI), as the former STIFL is known today, has developed into one of the most important research organisations in Africa. CSRS in Côte d’Ivoire has taken a similar path. In collaboration with STI, it has become a significant research institution in West Africa that implements projects not only in Côte d’Ivoire, but in the whole sub-region.

Staggering Growth Since the 1990s

Since the 1990’s, STI has grown tremendously. Large-scale studies in Africa made new investments in diagnostics and molecular research in Basel necessary. Since the mid-1990s the many services offered by the institute have also reached out to Eastern Europe and Central Asia, in particular after the collapse of the Soviet Union. The Swiss Centre for International Health (SCIH), an STI service department founded in 1997, helped to strengthen the health services of the former Eastern block countries. Thus already in the 1990s, STI was no longer “just” a tropical institute but an institute of global health.

The Environment and the Epidemiology of Non-Communicable Diseases

Some important changes in the history of the institute are quite recent. STI came to realise that it needed a stronger basis at local and national levels if it was to meet new global challenges like environmental hazards or the dissemination of non-infectious diseases. In 2009, the former Institute of Social and Preventive Medicine (ISPM) of the University of Basel was integrated, and STI was renamed, the Swiss Tropical and Public Health Institute (Swiss TPH). With the integration of the two institutes, the expertise was expanded to include: research on environmental health and on the epidemiology of non-infectious diseases, genetic epidemiology and gender.
SWISS TPH CELEBRATES ITS 70TH ANNIVERSARY

‘Swiss TPH is a gem that deserves our utmost attention and support’

URS WÜTHRICH-PELLOLI
Regierungsratspräsident Kanton Basel-Landschaft

The beautifully decorated hall of the Safranzunft was packed when Swiss TPH celebrated its 70th anniversary in Basel. There were people of all sorts sitting in the rows: representatives of the Swiss Government and the University of Basel, scientists, members of the board of governors, former and present staff and all those who are on cordial terms with the institute. Ambassador Mauro Moruzzi, Head of International Relations at the State Secretariat for Education, Research and Innovation, delivered a speech in which he looked back to the institute’s many successes during the last 70 years. He was echoed by Christoph Brutschin and Urs Wüthrich-Pelloli, Ministers of the Governments of Basel-Stadt and Basel-Land, who stressed the good collaboration between the government and Swiss TPH. “Swiss TPH is a gem that deserves our utmost attention”, Wüthrich-Pelloli said. Director Marcel Tanner took the opportunity not just to celebrate the past, but to offer a glimpse of Swiss TPH’s future. A future that – as history has shown – is wide open.

‘Swiss TPH is a 70-year long success story’

CHRISTOPH BRUTSCHIN
Regierungsrat Kanton Basel-Stadt

I–r: Christoph Brutschin, Urs Wüthrich-Pelloli, Marcel Tanner, Mauro Moruzzi

‘Switzerland can be proud. Swiss TPH brings important contributions to the health of populations all around the world.’

MAURO MORUZZI
Staatssekretariat für Bildung, Forschung und Innovation (SBFI)
Open House with an Open Spirit

Swiss TPH fosters a spirit of openness 365 days a year. But 2014, Saturday June 14th was special. Swiss TPH invited the public to join and celebrate. An information market on global diseases, the ‘Gesundheitsmäss’, TingaTinga workshops with artists from Tanzania, a health cinema, the malaria-room, info-posters on the Swiss Centre for International Health, air-pollution measurements, two camels and many other activities attracted more than 3,000 people to Swiss TPH. Along the side street at Socinstrasse a tasteful mix of different cuisines from all over the world provided culinary discoveries. And finally, the Cuban band Son Alarde warmed hearts and moved legs with great Cuban salsa. Not only neighbours, friends, families and the public of Basel, but also many representatives from the government and the university took the opportunity to get a glimpse of this institution.
1. Sébastien Gagneux Awarded “ERC Starting Grant”
Sébastien Gagneux and his Tuberculosis Research Unit investigate the global threat of multi-drug-resistance tuberculosis (MDR-TB). (September 2012)

2. Penelope Vounatsou Receives “ERC Advanced Grant”
Penelope Vounatsou develops new mathematical models to optimise diagnosis and treatments of childhood anaemia in Africa. (November 2012)

3. MBA in International Health Management
Swiss TPH offers the world’s first MBA in International Health Management. The course is a unique opportunity to acquire the knowledge and skills to take leading positions within the burgeoning field of global health. (January 2013)

4. New Communications Unit
In a step to professionalise external communication, Swiss TPH creates a dedicated Communication Unit led by Christian Heuss. He joined from Swiss Radio and Television SRF. (January 2013)

5. Cordaid Project in the Great Lakes Region
The project aims to improve the quality of adolescent sexual and reproductive health services and to facilitate people’s access to family planning. (January 2013)

6. New Community Health Funds in Dodoma, Tanzania
In rural Tanzania, health coverage is scarce. Swiss TPH designed and implemented a new community health fund (CHF) for Dodoma region. New information systems provide the CHF with a comprehensive solution for data management, including membership enrolment through mobile phone technology. (February 2013)

7. NETCELL Programme Extended
Insecticide-treated nets remain an important tool to fight malaria in Africa. The Swiss Agency for Development and Cooperation (SDC) continues to support the NETCELL programme in Tanzania. Swiss TPH continues to be a key partner for planning and implementing the largest malaria control programme in Africa. (April 2013)

8. Environment and Health Conference Basel (EHB13)
It was the largest scientific environment and health conference ever organised. Over 1,800 participants followed the invitation of Swiss TPH to the conference centre in Basel. Speakers presented the latest results about the influence of environmental factors such as dust, pesticides or plasticizers on human health. (August 2013)

9. HPSS Project Wins Gender Day Competition
The Health Promotion and System Strengthening project (HPSS) wins the gender day competition. The Swiss Agency for Development and Cooperation (SDC) awarded the prize in recognition of the project’s efforts towards social inclusion and gender-sensitive approaches. (September 2013)

10. First Medical Simulation Centre Opened in Crimea
This Ukrainian centre is an important element of the Swiss-Ukrainian Mother and Child Health Programme executed by Swiss TPH. Health care professionals are trained to adequately respond to delivery complications with interactive manikins. (May 2013)

11. Swiss TPH Teaches Scientists in Tehran
The city of Tehran suffers from a high level of air pollution, leading to chronic disease and death. In collaboration with Athens University in Greece, Swiss TPH developed and conducted a six-day course for young Iranian researchers on measures against poor air quality. (November 2013)

12. Spring Symposium “Primary Health Care and Non-Communicable Diseases”
Health Systems in Eastern Europe and Central Asia become decentralised. At the same time, the number of people suffering from non-communicable diseases is increasing. Speakers at the Spring Symposium exchanged on how to respond to these new challenges. (April 2013)

13. MMV Project of the Year
The team around Sergio Wittlin wins the title ‘MMV project of the year 2012’ for their work on the novel antimalarial compound MMV390048. The compound is active against resistant Plasmodium strains. MMV390048 undergoes testing for safety and compatibility in humans this year. (September 2013)
14. **New Project and Grant Service Unit**
The Project and Grant Service Unit supports Swiss TPH researchers during the whole project cycle from proposal design to getting ethical clearance and post-project activities. The unit establishes links across the different Swiss TPH departments and serves as an interface between Swiss TPH and external partners. (October 2013)

15. **Elimination of Rabies in N’Djamena, Chad**
In N’Djamena, the capital of the Chad, Swiss TPH has vaccinated over 40,000 dogs against rabies to stop the transfer of the disease from animals to humans. Since the end of the intervention, there has been only one human case of rabies in the Chadian capital. (October 2013)

16. **Top-Ranked Swiss Politician Visits Swiss TPH Projects in Tanzania**
The president of the Swiss National parliament, Ms. Maya Graf, visited projects and institutions supported by Swiss TPH in Tanzania. The visit of the Ifakara Health Institute (IHI), the St. Francis Hospital in Ifakara, and the HPSS Project in Dodoma were among the highlights of this official journey. (October 2013)

17. **EcoHealth Conference in Côte d’Ivoire**
Swiss TPH strongly supported the first EcoHealth Conference in Africa organised by the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire. Scientists from all over the world discussed the impact of climate and demographic changes on human and animal health. (October 2013)

18. **Jennifer Keiser Receives ERC Consolidator Grant**
Jennifer Keiser, Head of the Helminth Drug Development Unit, develops and validates novel approaches for drug discovery and development against worm infections. (December 2013)

19. **Autumn Symposium “Mycobacterial Diseases and Co-Morbidities”**
Many of the world’s deadliest diseases are caused by mycobacteria. Some of these germs cause tuberculosis (TB). Others cause leprosy or Buruli ulcer. The autumn symposium addressed burning research questions such as the emergence of multi-resistant TB-strains or the fatal co-infection of TB and HIV/AIDS. (December 2013)

20. **Support to SAPALDIA-Study**
The Swiss National Science Foundation supports the Swiss Study on Air Pollution and Lung and Heart Diseases in Adults (SAPALDIA)-study with 3.3 million CHF. In its fourth phase SAPALDIA concentrates on how lifestyle factors such as nutrition, smoking habits, stress, blood pressure and individual genetic disposition influence health in old age. (December 2013)

21. **New training Programmes in Clinical Research**
Swiss TPH launched new training programmes in clinical research: a Certificate in Advanced Studies (CAS) “Clinical Trial Planning and Conduct” a Certificate in Advanced Studies (CAS) “Advanced Clinical Trial Management” and a Diploma in Advanced Studies (DAS) “Basic and Advanced Skills in Clinical Trial Planning, Conduct and Management.” (January 2014)

22. **Sonia Borrell Wins Swiss TB Award**
Sonia Borrell is the winner of the 2014 Swiss TB Award for her work on mechanisms of multi-drug resistance of tuberculosis mycobacteria. (March 2014)

23. **MenschMikrobe**
Swiss TPH invited the exhibition “MenschMikrobe – das Erbe Robert Kochs und die moderne Infektionsforschung” to the University of Basel. Illustrative texts, interactive displays and audiofeatures gave insights into the fascinating world of microbes, parasites and viruses. (March 2014)

24. **Spring Symposium “Value for Money”**
Health economy was the lively debated topic of the Swiss TPH Spring Symposium 2014. Around 140 people joined 15 public health specialists from around the world to discuss the advantages and pitfalls of the “Value for Money” approach. (April 2014)

25. **SystemsX – Understanding Tuberculosis**
Swiss TPH becomes a member of “Systems X”, the Swiss Initiative in Systems Biology. The project led by Sébastien Gagneux generates new knowledge to explain the spread of multi-drug resistant tuberculosis.
26. Global Malaria Action Plan 2 (GMAP2)
The Roll Back Malaria Partnership (RBM) has contracted Swiss TPH and Deloitte Consulting LLP to guide the Global Malaria Action Plan (2016–2025). GMAP2, drafted by various stakeholders, will be an action-oriented document to accelerate progress towards malaria elimination goals. (April 2014)

27. The Charlotte Braun-Fahrländer Symposium
Charlotte Braun-Fahrländer, a pioneer of environmental epidemiology, retired. At the farewell symposium in her honor, many scientists, both colleagues and friends, gave insights into their research on environment and health and offered their personal recollections of joint academic work over the decades. (April 2014)

28. MSD Grant Award for One-stop-Clinic in Tanzania
Located within the mother and child clinic of the large St. Francis Referral Hospital, the One-stop-Clinic offers HIV/AIDS treatment and prevention to mothers and their families. (May 2014)

29. Swiss TPH Celebrates its 70th Anniversary
Happy Birthday Swiss TPH! 450 guests gathered at Safarzunft for an official celebration and a joyful apero. (June 2014)

30. Pascal Mäser Appointed Associate Professor
Pascal Mäser has been appointed associate professor in Infection Biology at the University of Basel in association with Swiss TPH. Mäser leads the Parasite Chemotherapy Unit. (June 2014)

31. New Clinical Research Unit
A new Clinical Research Unit has been established at Swiss TPH. It will boost new clinical research projects in the field of HIV/AIDS and tuberculosis, malaria and acute fever, neglected tropical diseases and the interplay between infectious and non-communicable diseases. (June 2014)

32. Science of Eradication Course
Swiss TPH hosted the third Science of Eradication Course in Basel. It brought together leading malaria researchers and public health specialists, giving insights into the current malaria elimination strategies and commenting on the prospects of a malaria-free world. (June 2014)

33. Marcel Tanner Listed as One of the World’s Most Productive Health Systems Researchers
A systematic review published in July 2014 has scored Marcel Tanner as one of the world’s most productive authors in the last 112 years of health systems research. Tanner is placed 8th in the top 20 most rated authors. (July 2014)

34. Forum Managed Care (FMC) Awards the FamilyStart Project
FamilyStart is a coordinated care model to guarantee postpartum care for mothers and their newborns at home after hospital discharge. It receives the 2014 prize of the Forum Managed Care (FMC) for "outstanding achievements in the integration of health care." (July 2014)

35. WHO Collaborating Centre for Epidemiology and Control of Helminth Infections
Acknowledging Swiss TPHs long-term efforts in combating neglected worm infections, WHO has appointed the institute as a "WHO Collaborating Centre for Epidemiology and Control of Helminth Infections." (July 2014)

36. New Mother-and-Child Health Project in Chad
The Swiss Centre for International Health (SCIH) will implement a new project funded by the Swiss Agency for Development and Cooperation (SDC) in the Chad. The project aims to improve the quality of health care services especially focusing on the health of mothers and children. (July 2014)

37. Study Identifies Meat Fondue as Cause for Campylobacter Infections.
Meat fondue with chicken is one of the primary risk factors for a Campylobacter infection in Switzerland, a Swiss TPH study shows. Over Christmas and New Years, the number of reported cases of this severe intestinal infection surges. (July 2014)
40. Malaria Vaccine RTS,S Protects Children
Swiss TPH is a key player in the development of the malaria vaccine candidate RTS,S. The vaccine is the first to undergo large-scale evaluation in Africa. It has proven to be partially effective in children. It may be an important additional tool to other malaria interventions. (July 2014)

41. Asian Tiger Mosquito on the Rise
The Asian tiger mosquito has crossed the Alps and migrated into Switzerland’s northern parts. The insect could possibly transmit diseases such as dengue or chikungunya fever. The Swiss government has assigned Swiss TPH to study and control the spread of the mosquitoes. (August 2014)

42. Malaria Course in Ifakara, Tanzania
This year’s malaria course attracted many researchers, public health specialists and caregivers committed to fight malaria in Africa. Participants were involved in active learning-teaching exercises based on new communication technologies and supported by leading global health experts. (September 2014)

43. Parasites – Life Undercover
Together with the Natural History Museum Basel, Swiss TPH organised the exhibition “Parasites. Life undercover.” It takes the visitors on a fascinating journey to the complex life cycles of parasites, the transmission of tropical diseases and the parasite’s unique adaptability within animal and human hosts. (October 2014)

44. R. Geigy Award to Somphou Sayasone
Somphou Sayasone receives this year’s R. Geigy Award for his outstanding contributions to the control of food and water-borne worm infections in Lao PDR. Sayasone assessed the variety of parasitic worms in the country, diagnosed new roundworms in humans and established the relationship between the lack of latrines and the prevalence of parasitic infections. (December 2014)

45. R. Geigy Jubilee Award Goes to the “Connecting the Dots” Project
The R. Geigy Foundation supports the Swiss TPH-project “Connecting the Dots” with CHF 75,000. The project is located in Bujumbura, Burundi. It aims to increase the managerial and financial capacities of the local staff in Bujumbura. Furthermore, it fosters collaboration between research, training and service units within Swiss TPH in novel ways. (December 2014)

46. Disease Prevention and Health Promotion in Primary Care in Switzerland
The “EviPrev Programme” boosts systematic and evidence based preventive interventions on the level of general practitioners. Programme responsibilities are shared between various institutions in Switzerland. Swiss TPH contributes with developing an electronic decision support system that allows health professionals to better guide patients and to choose efficient disease preventive and health supportive measures.

47. New Collaboration Between Swiss TPH and the Swiss Institute of Bioinformatics (SIB)
Swiss TPH and SIB have signed a collaboration agreement to strengthen activities in bioinformatics at Swiss TPH and to bring Swiss TPH’s core expertise in closer association with groups at SIB. The “Bioinformatics” group at Swiss TPH is becoming the “Computational PathohelixOmics” group with a shared affiliation and with Christoph Schmid as a new SIB group leader. (November 2014)

48. Professor Jürg Utzinger Elected New Swiss TPH Director from 1 July 2015
The Board of Governors of Swiss TPH has elected Prof. Jürg Utzinger as the new director with effect from 1 July 2015. Utzinger is an internationally renowned epidemiologist with a major focus on neglected tropical diseases. He has been Head of the Swiss TPH Ecosystem Health Science Unit since 2004. Utzinger will succeed Prof. Marcel Tanner who has led the institute with great success since 1997.
Swiss TPH published more than 460 publications in 2013 alone in the peer-reviewed international literature, including high-ranking journals such as Nature Genetics, New England Journal of Medicine, Nature Medicine, Lancet Infectious Disease, PLOS Medicine, European Respiratory Journal and many others. Key publications are listed at the end of each chapter in section K.

A database with the full listing of all publications including all PhD theses can be found on our webpage:
www.swisstph.ch/publications
Radio / TV / Press / Internet

Swiss TPH is a highly respected institution within Switzerland and has world-class reputation. One indicator is the frequent mentions in popular Swiss and international media about its research and its institutional activities. Swiss TPH experts regularly give interviews on topics such as global health, air pollution, infection biology, tropical diseases or vector control and many more. News stories have appeared in all major Swiss newspapers, on national Swiss radio and television stations and on regional TV and radio. International media and websites regularly report about published scientific results.

In 2013, a national study on the spread of the Tiger mosquito in the Southern parts of Switzerland raised broad interest nationally as well as internationally, as did the Environment and Health Conference in Basel and some high impact research publications. In 2014, the Ebola outbreak triggered an extraordinary media interest. Members of the institute were invited to prime-time radio and TV programmes and gave numerous interviews in the press. Between August and October 2014, Swiss TPH was mentioned more than 400 times in the context of Ebola. Another media forerunner in 2014 was a study on the risk of campylobacter infections when eating ‘Fondue Chinoise’ during the festive season. Finally, the jubilee activities attracted a lot of interest in the regional press, on Swiss TV and radio with extra broadcasts and interviews.

Social Media

Swiss TPH attracts a growing group of followers on Facebook. Media appearances, institutional events, key publications and news stories are followed by more than 1,500 people from all over the world. The number of followers has tripled within a year. Linkedin and Twitter followers are starting to pick-up as well.

Public Events

Swiss TPH organises or participates regularly at public events. At ‘Ferienmesse’ in Basel, Swiss TPH doctors and experts on travel medicine answer questions on travel-related health issues. Researchers from the field of environmental health presented their work on air pollution and mobile phone exposure at ‘Umwelttage’ Basel on the Barfüsserplatz; and at ‘Weltenreise’ 2013 in the Theater Basel, Swiss TPH presented work on malaria with hands-on parasite observation under a microscope. Finally, the Open House 2014 attracted well over 3,000 people to Socinstrasse and was very well received.
Swiss TPH’s guiding principle is to work in interdisciplinary partnerships to respond to local, national and international public health priorities. Projects generate new evidence (‘innovation’), validate it in different settings (‘validation’) and translate evidence into policy and public health action (‘application’). Swiss TPH combines the excellence of an academic institution with the high standards of a corporate organisation in consulting, backstopping and contract research (CRO).

Swiss TPH is currently active in 15 interrelated key areas of activity. Each area represents a strategically important field in which Swiss TPH contributes to its institutional goal to improve the health of populations in Switzerland and all around the globe.

The range of activities is wide and spans from basic research in infection biology, to health in the context of social and ecological systems to eHealth and health policy to name just a few. The 15 areas of activity are the productive areas of research and service leading to implementation and knowledge-transfer. They are the central platform of interaction to reach the goals set in the strategic plan 2010 to 2016.

Each key area is a focal point with programmes and projects currently running. The size in terms of the number of active projects differs between 14 and more than 90. All projects are competitively funded from various sources (see also p. 117 for an overview). Within a key area, expertise and innovative ideas come together to move projects along the Swiss TPH value chain from ‘innovation’ to ‘validation’ to ‘application’.

Hence, key areas of activity also foster the collaboration between groups, units and departments and are a measure of the progress made in strategically important fields. Key areas are dynamic. They are strategically created or disappear over time. This year, the new ‘Malaria centre’ has been defined as a new key area to further strengthen the strong existing portfolio of malaria activities within Swiss TPH.

Activity Domains for the Key Areas of Activity
Each project can be attributed to multiple activity domains.
Knowledge Transfer for All Key Areas

Each project at Swiss TPH is classified (1) as research and/or service project, and (2) according to its knowledge-transfer potential: knowledge transfer via teaching and training (incl. capacity building measures) or towards policy and decision-making. Each bullet represents the summary for each of the 15 key areas of activity.

Combined Characteristics of All Key Areas

Each project at Swiss TPH contributes to the overall goals by actions in the domains of innovation (discovery through promotion and testing of hypothesis), validation (evidence providing what works) and application (strengthening individual and public health actions, systems and policies), or a combination of the three. Each project can be classified, accordingly. The graph created for each key area of activity visualises the weight between these three domains.
Understanding the basics of host-pathogen interrelations has been a central research area of the institute since its foundation. Swiss TPH strives to acquire new scientific knowledge in the fields of (1) pathogen biology and survival; (2) infection dynamics, pathogenesis and transmission; (3) natural and adaptive immunity; (4) mechanisms and evolution of drug resistance; and (5) pathogen diversity, evolution and population structure. We aim through fields 1–5 to establish a scientific basis for developing innovative interventions against neglected and poverty-related infectious diseases.

Survival and Transmission of Malaria Parasites

Malaria is a devastating disease caused by unicellular parasites of the genus *Plasmodium*. More than 1 billion people worldwide are at high risk of contracting malaria and, each year, the disease causes more than 200 million clinical cases and 700,000 deaths. *Plasmodium falciparum*, one of five species known to elicit malaria in humans, is responsible for the vast majority of severe and fatal malaria outcomes. *Plasmodium* parasites invade red blood cells, undergo intracellular replication and release up to 32 daughter parasites that infect new red blood cells. Repeated rounds of this vicious cycle produce a massive proliferation of parasites in the blood, leading to malaria-related morbidity and mortality. Antigenic variation allows parasites to escape the body’s immune responses and to persist for weeks or months in the blood stream. During each replication cycle, a small number of parasites cease to multiply and differentiate into gametocytes that are required to infect the mosquito vector and, therefore, are essential for malaria transmission.
After invading red blood cells, *P. falciparum* exports hundreds of proteins into the host cell, ultimately exposing variant antigens and virulence factors on the infected erythrocyte surface to the immune system. By studying the proteins involved in exporting the cytoadherence ligand PfEMP1, we identified a particular member of the PHIST family that interacts closely with PfEMP1 and contributes significantly to cytoadherence. We are currently clarifying the interaction network of this and other exported factors to understand the molecular basis for cytoadherence-linked pathogenesis. We also showed that heterochromatin protein 1 (HP1), a regulator of reversible gene silencing, plays a key role in controlling antigenic variation of PfEMP1. HP1's function in this process is to prevent expression of var/PfEMP1 genes in order to protect the vast antigenic repertoire from being exposed to the immune system all at once. Interestingly, we also discovered that HP1 controls expression of the master transcription factor, AP2-G, and that this seemingly simple epigenetic system regulates the switch from asexual proliferation to gametocyte differentiation. Hence, epigenetic gene regulation contributes substantially to securing chronic blood stage infection and malaria transmission. Hopefully these results will support the development of new intervention strategies to prevent severe disease and malaria transmission.

**The Impact of Multidrug Resistance on the Spread of Tuberculosis**

Human tuberculosis (TB) is caused by the bacterium, *Mycobacterium tuberculosis*. One of the main problems in controlling TB worldwide is that these bacteria are increasingly developing resistance to antibiotics. These multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains are a growing risk to public health, threatening to make TB incurable in many parts of the world. For some time, many believed that drug-resistant bacteria were less virulent (or less fit) and thus less likely to be transmitted between patients compared to their drug-susceptible counterparts. We recently revisited this idea using *M. smegmatis* as a model. We generated strains resistant to rifampicin and/or ofloxacin, two of the most important antibiotics used to treat TB. We then measured the fitness of these strains, using a method that compares the growth of drug-resistant mutants to drug-susceptible strains. We found that many of the drug-resistant mutants were indeed less fit; however, some of the mutants resistant to both drugs were fitter than mutants resistant to only one drug. To explore
the in vivo relevance of this finding, we analysed a large collection of *M. tuberculosis* isolates from patients in South Africa, a country that carries a particularly large burden of MDR/XDR-TB. We discovered that the double-resistant mutants that showed a high fitness in our laboratory assay were also the most frequently observed strains in the clinical setting. We therefore concluded that mutations conferring resistance to different antibiotics interact in ways that increase (rather than decrease) the success of strains with these mutations. Our study also shows that the original suggestion of a universally reduced virulence of drug-resistant bacteria is too simplistic.

**Research on Mycobacterium Ulcerans**

*Mycobacterium ulcerans* causes Buruli ulcer (BU), a chronic necrotising skin disease that primarily affects children in West Africa. Possible modes of *M. ulcerans* transmission include both insect bites and contact with contaminated environmental water bodies. Within the framework of our epidemiological studies, we detected persistent *M. ulcerans*-specific DNA at village water sites. Among village residents, we observed that skin lesions typical of BU clustered around the ankles and the elbows. This distribution is inconsistent with published patterns of mosquito biting sites or small skin injuries in children, suggesting other modes of transmission. BU incidence was highest in young teenagers and in individuals above the age of 50; very young children (under five years) were underrepresented among cases. We also found that sera from children below the age of four lack antibodies against an *M. ulcerans*-specific marker protein. These data suggest that exposure to *M. ulcerans* increases at an age at which children venture further away from home and have more intense environmental contact, including exposure to water bodies.

The unique pathology of BU is primarily attributed to mycolactone, a plasmid-encoded macrolide toxin with cytopathic activity. Using synthetic mycolactone derivatives (in collaboration with Karl-Heinz Altmann, ETH Zurich), we have elucidated the signalling pathways through which mycolactone induces apoptosis in mammalian cells. Based on a quantitative structure-activity relationship analysis, we developed a strategy based on carrier protein conjugates to elicit mycolactone-specific immune responses. This allowed us to generate antibodies against the toxin for the first time. Our study also shows that the original suggestion of a universally reduced virulence of drug-resistant bacteria is too simplistic.

**Molecular Mechanisms of Drug Resistance – from the Lab to the Field**

The causative agent of sleeping sickness, *Trypanosoma brucei*, is not only a lethal pathogen but also a model parasite for molecular biology, due to its amenability to genetic manipulation. We are using *T. brucei* to explain how drugs can selectively kill parasites and how, in turn, parasites can become drug-resistant. Our aim is to understand the underlying molecular mechanisms and to devise markers for drug resistance, translating the findings from laboratory studies to the field. We found that some isolates from sleeping sickness patients in the Democratic Republic of the Congo exhibited a significantly reduced sensitivity to pentamidine and other drugs. Interestingly, these isolates carried a deletion at the aquaporin locus, leading to the fusion of two neighbouring genes and expression of a chimeric aquaporin gene. Re-introduction of the wild-type gene into resistant isolates fully restored drug susceptibility. These findings underpin the pharmacological importance of aquaporins and demonstrate that findings from *T. brucei* laboratory mutants can indeed be translated to the field. Currently, we are combining bioinformatic and genetic approaches to identify essential *T. brucei* transporters that may serve as drug targets and that can be exploited to channel drugs into the parasite.

**HIGHLIGHTED PUBLICATIONS**


Swiss TPH is committed to a high standard of translational research that includes preclinical research and developing products for controlling parasites and bacterial pathogens. New preclinical tools are derived based on the institute’s basic research activities. Promising preclinical research products can be further tested in the field by Swiss TPH clinical trial specialists. Preclinical research, therefore, bridges the chain from innovation to application and contributes to Swiss TPH’s development of new drugs, vaccines, diagnostic tests and vector control tools against poverty-related diseases.

Drugs

Swiss TPH is a key partner in several product development consortia for new drugs against neglected tropical diseases and malaria. Seven molecules, the preclinical development of which was performed in close collaboration with Swiss TPH, are presently being tested in humans. Among them are fexinidazole for sleeping sickness, OZ439, cipargamin (KA609) and others for malaria and tribendimidine for liver fluke infections. In light of these encouraging achievements, new antiparasitic and antibacterial scaffolds are constantly being identified. An identified ‘hit’ is evaluated according to its antiparasitic efficacy, therapeutic window in mammals, pharmacokinetics (PK) and pharmacodynamics (PD). Thus, new leads are being developed for Buruli ulcer, malaria, sleeping sickness and nagana, Chagas’ disease, leishmaniasis, schistosomiasis, food-borne trematodiases and soil-transmitted helminthiasis.
Screening for novel bioactives goes hand-in-hand with assay development: new and improved in vitro tests have been developed for schistosomes, *Echinostoma*, trypanosomatids and malaria. Read-outs have been refined to include onset of drug action, time to kill and stage-specificity. New insights into the genetic regulation of gametocytogenesis in *Plasmodium falciparum* translated into an *in vitro* test for the transmission-blocking potential of antimalarials. *In vivo* models for malaria transmission and causal prophylaxis have been established for the full cycle of the rodent malaria parasite, *P. berghei*. Such tests are of particular importance to the malaria eradication agenda. We are currently assessing blood-stage efficacy against malaria in a *P. falciparum* SCID mouse model. A goat model has been established for *Trypanosoma congolense* and *P. vivax* that permits us to test candidate molecules for nagana in a ruminant without overstraining the capacity of chemical synthesis for drug discovery.

![An African trypanosome expressing green fluorescent protein.](image)

Vaccines

Swiss TPH develops and evaluates new technologies for the design and immunological testing of vaccines. For malaria, we focus on designing synthetic peptidomimetics that are delivered on the surface of immuno-potentiating reconstituted influenza virosomes (IRIVs). These immunogenic particles function as carrier and adjuvant system, at the same time. A virosomal formulation incorporating two peptidomimetics has demonstrated safety, immunogenicity and pilot efficacy in clinical trials.

Swiss TPH is engaged in multiple consortia with partners from academia and the pharmaceutical industry, to develop vaccines for bacterial pathogens such as *Streptococcus pneumoniae*, *Neisseria meningitidis* and *Mycobacteria ulcerans*. Through these consortia, we have contributed to an affordable second-generation pneumococcal vaccine by peptidomimetics, for delivery on synthetic virus-like particles (SVLP), and to developing a broadly protective meningococcal vaccine based on outer membrane fragments called GMMA (generalized module for membrane antigens). We identified target antigens through comparative genomic analyses of numerous *N. meningitidis* isolates.

For a vaccine against Buruli ulcer, we developed and evaluated different formulations of *M. ulcerans* protein antigens, including virus replicons and adjuvanted recombinant proteins, and investigated the potential to generate a vaccine with the macrolide toxin, mycolactone, as a target. The most promising candidate vaccine is based on a carrier protein conjugate of a truncated synthetic mycolactone derivative, and is currently being profiled in established experimental mouse and pig *M. ulcerans* infection models.

Diagnostics

Swiss TPH is the national reference centre for the diagnosis of imported parasitoses. In parallel to routine diagnostics, new assays are being developed and validated. Major efforts are directed towards replacing crude antigens with defined synthetic peptides for serological detection of infectious agents. Research is in progress for *Plasmodium vivax*, *Leishmania* and other parasites. Malaria diagnostic assays with improved sensitivity have been established as tools for field-based malaria epidemiology in low-endemic settings. Further, new diagnostics include a multiplex assay for detecting Brucella species and an antigen-capture assay for *M. ulcerans*.

All new tests and models are validated with standard drugs on both sensitive and drug-resistant parasites from Swiss TPH’s biobank. To better understand and predict the *in vivo* efficacy – or lack thereof – of bioactive molecules, Swiss TPH engages in PK/PD modelling accompanied by the development of analytical methods for quantifying drug candidates in biological fluids. Basic PK parameters have been determined and PK/PD models have been established for anthelminthics, trypanocides and antimalarials. While drug development clearly requires animal testing, Swiss TPH strictly adheres to the 3Rs principle to reduce, replace and refine *in vivo* testing.

Swiss TPH also adopts new concepts for attacking pathogens. These include heat pad therapy for Buruli ulcer, lipidomics for identifying drug targets and biomarkers and differentiation-inducing agents for sleeping sickness. The latter aims to identify small molecules that trick the trypanosomes into differentiation from the blood-stage to the tsetse fly vector form, a form that lacks an immunoprotective surface coat and will be destroyed by serum components. Using transgenic trypanosomes with a reporter gene that is normally only expressed in the tsetse fly, we have identified differentiation-inducing molecules that may one day lead to a new treatment for sleeping sickness.

Sampling water probes on the quest to find *Mycobacterium ulcerans* in Bankim, Cameroon.
Vector Control

Swiss TPH constantly assesses new methods of vector control to reduce the burden brought by vector-borne diseases. It evaluates candidate pesticides under lab and field conditions and develops new tests for this purpose. This involves service contracting with commercial partners as well as with research collaborators. A multinational vector resource consortium is presently being established, together with the Ifakara Health Institute in Tanzania, the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire and Swiss TPH. The consortium will be an independent research and development resource centre for the private industry, for product development partnerships and regulatory bodies such as the WHO. The consortium will be developing and evaluating existing or new tools for vector control at a consistently high standard from the laboratory to the field in Europe, West and East Africa.

HIGHLIGHTED PUBLICATIONS


Swiss TPH has a strong expertise in planning, implementing and monitoring clinical trials especially in low-resource countries. Potential therapies and substances to be tested emerge from Swiss TPH’s own research pipeline or from external partners. Swiss TPH contributes to the clinical development and post-approval validation of new vaccines, drugs and diagnostic tests against parasitic and bacterial pathogens.

Swiss TPH is initially conducting a small safety or proof-of-concept study (phase I and IIa) with healthy volunteers and/or patients. Subsequently, trials are expanded to larger scale comparative studies (phase IIb and III).

Depending on their size and target population, clinical studies may take place at a single research centre or use a multi-centre approach in multiple countries.

Strict ethical standards and professional regulations are followed to guarantee the highest levels of patient protection and data integrity. This applies to resource-limited settings, in particular, where infrastructure for clinical trials is often suboptimal and patient populations may be highly vulnerable.
**Tuberculosis**

In past years, the Clinical Tuberculosis Research group at Swiss TPH built up research capacity at Swiss TPH partner institutes in Tanzania and Georgia, namely the Ifakara Health Institute (IHI) and the National Centre for Tuberculosis and Lung Diseases (NCTLD). At both sites, the research teams are able to conduct clinical TB trials as part of multi-centre drug development projects. The clinical trials aim to assess promising and innovative drug combination regimens against tuberculosis in phase II and III. In addition to TB drug trials, the Clinical Tuberculosis Research Group has been involved in studies of new TB vaccines and new TB diagnostics. One of the most significant innovations so far is a new immunodiagnostic test, the TAM-TB assay, which has the potential — after refinement of the technology – to advance the diagnosis of TB in children. The Clinical Tuberculosis Research group has become an integral part of the new Clinical Research Unit and works closely with the Tuberculosis Research and the Clinical Immunology Units.

Tuberculosis trial centre, Bagamoyo (Tanzania)

**Sleeping Sickness**

Sleeping sickness (human African trypanosomiasis, HAT) is a fatal protozoan disease. Three resurgences of epidemic proportions made it one of the most feared diseases in rural sub-Saharan Africa in the past 100 years. Recent control efforts have led to a decline to below 10,000 cases reported annually to the WHO. In 2012, WHO included HAT in its roadmap of neglected tropical diseases, with a 2020 target date for elimination. Immediate treatment after diagnosis is a major component of HAT control and elimination. For over 50 years, the late stage disease had been treated with a precarious organoarsenic compound, melarsoprol, which could only recently be replaced by the significantly safer niturtrimox-eflornithine combination treatment (NECT). NECT is, however, still too complex to be applied in large health centres of rural Africa.

In partnership with the DNDi and our teams in DR Congo, the Pharmaceutical Medicine Unit is currently conducting three clinical efficacy and safety trials in nine sites of a new oral drug, fexinidazole, which would substantially simplify treatment. The programme is designed to allow registration of the drug, should the comparative assessment against NECT be favourable. At the end of September 2014, a total of 425 patients had been enrolled in the trials.
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<tr>
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<td>TUBERCULOSIS (TB)</td>
<td>Vaccines (phase I-III) Phase II double-blind, randomized, placebo-controlled study to evaluate the safety and immunogenicity of H1/IC31®, an adjuvanted TB subunit vaccine, in HIV-infected adults with CD4+ lymphocyte counts greater than 350 cells/mm³</td>
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<td>Treatments (phase I-III) A multiple arm, multiple stage (MAMS), phase II, open label, randomised, controlled clinical trial to evaluate four treatment regimens including two doses of SQ1019, an increased dose of rifampicin, and moxifloxacin in adult subjects with newly diagnosed, smear positive pulmonary tuberculosis</td>
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<td>NC005 – a phase II open-label partially randomised trial to evaluate the efficacy, safety and tolerability of combinations of bedaquiline, PA-824, pyrazinamide and moxifloxacin during 8 weeks of treatment in adult subjects</td>
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<td>NC008 – a phase III open-label partially randomised trial to evaluate the efficacy, safety and tolerability of the combination of moxifloxacin plus PA-824 plus pyrazinamide after 4 and 6 months of treatment in adult subjects</td>
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<td>pre-trial preparations</td>
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<td>SLEEPING SICKNESS</td>
<td>Treatments (phase I-III) Efficacy and safety of fexinidazole in patients with late stage T. b. gambiense human African trypanosomiasis (HAT) in comparison with nifurtimox-eflornithine combined therapy (NECT): an open-label, randomized, non-inferiority study</td>
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<td>Efficacité et sécurité du fexinidazole chez des patients atteints de trypanosomiase humaine africaine (THA) à T. b. gambiense au stade 1 ou stade 2 précoces: étude de cohorte, ouverte, prospective, multicentrique, greffée sur l'étude pivot</td>
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<td>Efficacité et sécurité du fexinidazole chez des enfants d’au moins 6 ans et de plus de 20 kg atteints de trypanosomiase humaine africaine (THA): étude ouverte prospective, multicentrique, greffée sur l’étude pivot</td>
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<td>Vaccines (phase I-III) Controlled human malaria infection by intradermal injection of Plasmodium falciparum sporozoites (PfSPZ Challenge)</td>
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<td>Tanzania</td>
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<td>Intravenously administered attenuated Plasmodium falciparum sporozoite vaccine (PfSPZ vaccine)</td>
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<td>Safety and immunogenicity of novel candidate blood-stage malaria vaccine P27A with Alhydrogel® or GLASE as adjuvant.</td>
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<td>Immunological arm of the RTS,S phase III double-blind randomized controlled multi-center trial</td>
<td>Malaria Vaccine Initiative (MVI)</td>
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<td>ARCO: Phase IV open label study of fixed artemisinin/naphthoquine (ARCO®) therapy to determine safety, tolerability, pharmacokinetics and efficacy in adults and children with uncomplicated P. falciparum malaria in Tanzania</td>
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<td>Safety, feasibility, and effectiveness of health interventions (phase IV)</td>
<td>MATIAS – Observational study to support artesunate introduction in the Democratic Republic of the Congo</td>
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<td>New treatments (phase I-III)</td>
<td>Efficacy and safety of albendazole–oxantel pamoate, albendazole–mebendazole, albendazole–ivermectin and single mebendazole in the treatment of <em>Trichuris trichiura</em> and concomitant soil-transmitted helminth infections on Pemba: a randomized controlled trial</td>
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<td>Dose-finding of oxantel pamoate in school-aged children infected with <em>Trichuris trichiura</em> on Pemba, United Republic of Tanzania</td>
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<td>Development of a pediatric formulation of praziquantel</td>
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<td>Pharmacokinetic studies on praziquantel in schistosome infected patients</td>
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<td>Pharmacokinetic studies on praziquantel in <em>Opisthorchis viverrini</em> infected patients</td>
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<td>Lao PDR</td>
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<td>Tribendimidine for the treatment of liver fluke infection in Southeast Asia</td>
<td>MRC</td>
<td>Lao PDR</td>
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<td>Device (phase II)</td>
<td>A phase II non-comparative, open label, single-centre study to evaluate the efficacy and host-pathogen response of heat treatment in patients with Buruli ulcer (BU) using a phase change material (PCM) device</td>
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<td>Safety, feasibility, and effectiveness of health interventions (phase IV)</td>
<td>e-POCT, electronic algorithms based on host biomarkers point of care tests to decide on admission and antibiotic prescription in Tanzanian febrile children</td>
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<td>Tanzania</td>
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<td>Identification of new biomarkers</td>
<td>Host biomarkers for acute febrile illness in Tanzanian children and adults</td>
<td>Several sources</td>
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<td>Identification of new biomarkers</td>
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<td>Vaccines (phase I-III)</td>
<td>IMID – Impfungen bei rheumatischen Autoimmunkrankheiten</td>
<td>SNSF</td>
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Malaria

Within Swiss TPH, more than 200 professionals work on malaria-related topics and the institute is one of the most well-known and respected contributor in the field of malaria biology, control and intervention worldwide (see also the separate section on the Malaria Centre). With its impressive expertise, Swiss TPH is a highly competent partner in planning, designing and conducting clinical research projects, leading to the development of new treatments, vaccines and diagnostics to fight malaria.

In addition to several late-stage studies that focus on improving malaria treatment, Swiss TPH is currently involved in three high-profile vaccine development programmes, including: (1) the large, multi-centre phase III trial of RTS.S. The outcome of which encouraged GlaxoSmithKline to apply for a marketing license from the European Medicines Agency in July, 2014; (2) the first whole irradiation attenuated sporozoite vaccine, being tested in East-African volunteers with minimal malaria pre-exposure (results are expected in December 2015); (3) P27A, a synthetic blood stage malaria peptide combined with the novel adjuvant, GLA-SE, which is being evaluated in a nested phase Ia – Ib trial approach in Switzerland and Tanzania – an approach that will pave the way for fast-track assessment of new malaria vaccines in future, without compromising safety evaluation.

Swiss TPH scientists are also involved in phase IV implementation work to improve the clinical management of feverish children and to treat patients with severe malaria. A key factor in our success with these studies is the excellent collaboration with the Ifakara Health Institute (Tanzania) and its newly established Clinical Research Unit in Bagamoyo.

Helminth Infections

Parasitic worm infections are a major public health problem, especially in low-resource countries. The impact of these neglected diseases on human health are considerable: they cause many people to suffer from diarrhoea or stomach ache, cause growth retardation and anaemia and, in some instances, are the root cause of certain types of cancer. At present, millions of people are in need of regular deworming, however, we have very few drugs available. Hence, there is a need to develop new, effective and broad-spectrum anthelminthic drugs. Swiss TPH aims to improve our understanding of major anthelminthics, in order to increase the scientific knowledge-base supporting their use, according to standards equivalent to those for commonly used drugs in Western countries. To this end, the Helminth Drug Development Unit has launched dose finding and pharmacokinetic studies with praziquantel, in patients suffering from schistosomiasis and opisthorchiasis. Employing existing drugs in combination regimens will enhance efficacy and reduce the risk of resistant helminth populations. Following our recent finding on the trichuricidal activity of oxantel pamoate, we conducted a follow-up study and compared three drug combinations (albendazole-ivermectin, albendazole-mebendazole and albendazole-oxantel pamoate) in school-aged children infected with *Trichuris trichiura* and concomitant intestinal nematodes. This study provides the first evidence that albendazole-oxantel pamoate is currently the most effective treatment available for *T. trichiura* and concomitant intestinal nematode infections. In addition, we have pioneered the development of novel anthelminthics. In a phase Ia and Iib trial in Lao PDR, we found that tribendimidine, a Chinese anthelminthic drug, has both nematocidal and excellent opisthorchicidal activity and is well tolerated. As a member of the Praziquantel Paediatric Consortium, Swiss TPH is currently involved in the clinical development of a new paediatric formulation of this drug.

Buruli Ulcer

Buruli ulcer (BU) is characterised by coagulative necrosis of the skin and subcutaneous tissue. If untreated, very large skin lesions may develop, exposing patients to the risk of permanent disabilities, septicaemia and tetanus. While surgical excision of *Mycobacteria ulcerans*-affected tissue was the traditional standard therapy, an eight-week combination therapy with streptomycin and rifampicin is currently recommended. While this antibiotic treatment usually kills the mycobacteria efficiently, subsequent wound healing in BU patients is often slow. Within the framework of the Stop Buruli Consortium, we are investigating the contribution of immunological, microbiological and cell biological factors to this retardation of wound healing. If rifampicin resistant *M. ulcerans* strains were to emerge, no alternative antibiotic treatment regimen is currently available. Therefore, in collaboration with the University of Heidelberg and Fairmed Cameroon, we are evaluating treatment with the thermo-sensitive *M. ulcerans* bacteria by local hyperthermia. A phase II open-label, single-centre, non-comparative clinical trial was recently finalised, assessing the safety, efficacy and practicability of thermotherapy using silicon bags filled with a phase change material as heat source. Results indicate that local thermotherapy of BU is an efficacious, safe and simple treatment option that may be well suited to treating early lesions at the community level.
HIGHLIGHTED PUBLICATIONS


Molecular and genetic epidemiology has become an important activity in the fight against communicable and non-communicable diseases. At the interface between epidemiology, molecular biology and medical science it focuses on the contribution of potential genetic and environmental risk factors identified at the molecular level. It also aims to investigating the diversity, dynamics and evolution of a pathogen or a vector, as well as human and animal populations and their interaction with the environment. Having defined molecular factors and markers, this information can be used to monitor drug resistance development or to oversee therapeutic interventions, for example. Activities in this area may lead to novel therapeutics and diagnostic/screening tools.

Swiss TPH plays a leading role in developing new tools and strategies for molecular epidemiology. The institute established the usage of molecular parameters as outcome measures in intervention trials. Genotyping pathogens and hosts in major field studies all over the world have provided important molecular datasets for disease modelling. Integrating ‘-omics’ technologies into epidemiological studies facilitates the identification of causal exposure-disease relationships.
Molecular Typing Methods for Malaria Epidemiology

A central theme in the Swiss TPH malaria portfolio is the development of new, highly-sensitive diagnostic tools to detect the five *Plasmodium* species that infect humans. Several new approaches were used to increase test sensitivity, such as RNA-based assays targeting the highly abundant 18S rRNA transcripts or multi-copy genes of malaria parasites. Applying these assays to cross-sectional samples from Papua New Guinea (PNG) and Tanzania revealed a substantial amount of low-density submicroscopic malaria infections. Until now, they had been underdiagnosed by light microscopy, rapid diagnostic tests or even standard PCR assays. These molecular diagnostic tools accurately measure malaria prevalence, a necessary measure for community surveillance or for monitoring antimalarial interventions. In the context of intensified efforts towards malaria elimination, sensitive diagnosis is increasingly important. When reducing malaria transmission to very low levels, sensitive tests become critical for diagnosing residual transmission foci or for tracking parasite migration routes.

Swiss TPH developed genotyping methods to differentiate individual *P. falciparum* and *P. vivax* infections (i.e. parasite clones), to enumerate multi-clone infections and to track the infection dynamics of each clone during its persistence in a host over many months. The molecular force of infection (molFOI) has been established as a novel marker for individual exposure for both *P. falciparum* and *P. vivax*. molFOI represents the number of new parasite genotypes detected per individual per year and is now increasingly used to measure the outcome of interventions.

Genotyping methods were also applied to differentiate the gametocytes (transmission stages) produced by different *P. falciparum* clones from multi-clone infections. The assays facilitate studies on transmission dynamics, to answer questions such as when and for how long does a clone produce gametocytes and what factors influence these dynamics. Recent and on-going work focuses on *P. vivax*, investigating the contribution of dormant liver stages (relapsing hypnozoites) to infection and disease. With collaborators at the PNG Institute of Medical Research (IMR) and at the Walter and Eliza Hall Institute of Medical Research in Australia, we found that hypnozoites contributed to 83% of genetically distinct blood stage infections. This was shown by genotyping *P. vivax* clones in a cohort study where half of the participants had been treated with primaquine at baseline. Population genetic analyses of *P. vivax* populations from Brazil and PNG were performed, in collaboration with the University of São Paulo.
structure, genetic diversity, rate of multiple clone infections and effective population size in PNG vary greatly from low endemicity sites. These findings suggest a high degree of gene flow between distant populations. Thus, malaria control programmes should consider migration of infected hosts and coordinate control efforts between regions, for example, by targeting asymptomatic carriers of blood stages and hypnozoites.

These molecular genotyping techniques have also been used extensively to assess drug efficacy against both P. falciparum and P. vivax in trials driven by industry or by Medicines for Malaria Venture (MMV). We also used these techniques to identify and quantify gametocytes of P. falciparum in drug trials. In addition, we have genotyped samples from several WHO-conducted programme trials in sub-Saharan Africa to determine point mutations in the P. falciparum Kelch 13 (K13) gene—a gene implicated in conveying drug resistance to artemisinin-derivatives.

Host Pathogen Interactions in Bacterial Infections

In the African ‘meningitis belt’, outbreaks of meningococcal meningitis occur in cycles, offering a model for studying the role of host-pathogen interactions in epidemic processes. In our longitudinal colonisation and disease surveys, we have observed waves of clonal replacement with the same serogroup, suggesting that immunity to non-capsular antigens plays a significant role in natural herd immunity. Through comparative genomic analysis, we have obtained a high-resolution view of the evolutionary changes that occur during clonal replacement and found that the majority of genetic changes are due to homologous recombination of laterally acquired DNA. Signals of adaptation to evade herd immunity were indicated by genomic hotspots of recombination, including loci that determine the glycosylation patterns of major protein antigens, pilus expression and the synthesis of adhesins, highlighting the importance of these surface features in host-pathogen interaction and immune evasion.

The Human and Animal Health Unit continues work on the molecular epidemiology of brucellosis in Central Asia and Africa. 16 loci (MLVA) confirmed Brucella melitensis as the main cause of small ruminant related illness in Mongolia. B. melitensis is also the main species of Brucella circulating in Kyrgyzstan, with sheep being the main reservoir. Three B. abortus strains were isolated from joint hygromas from cows in northern Togo. These strains had large deletions in the gene used for species identification.
Our health depends on the complex interconnections between the natural and human environment, as well as on human behaviour and the effectiveness of health care providers. Mathematical and statistical modelling are fundamental parts of much of the work that Swiss TPH researchers carry out in learning how to intervene effectively in these complex systems. Testing and validating health interventions is largely a matter of collecting and analysing data. Much of the science underlying this falls within the remit of statistics. Statistical models are therefore an essential component of research in public health and epidemiology.

Estimating Environmental Exposure

Swiss TPH statisticians work in both clinical trials and observational epidemiology studies in Switzerland and elsewhere to provide state-of-the-art modelling input. One focus is on developing methodologies for estimating environmental exposure, where there are continual improvements in data availability and in statistical modelling techniques.

In particular, Swiss TPH has been heavily involved in the EU-funded ESCAPE project. This project has advanced the spatial modelling of a range of health relevant air pollutants throughout Europe, for further use in health research and impact assessment. The Swiss SAPALDIA study is one of over 30 European cohorts in the collaboration making use of ESCAPE models.
We recently studied the potential biases in health effect estimates resulting from modelling air pollution with residential air pollution exposure only, disregarding workplace and commute exposures. Geographical and time activity data from a survey on commute behaviours conducted in the Basel region provided spatially and temporally resolved NO$_2$ estimates from an enhanced dispersion model. Ignoring exposures at work and during commute was estimated to lead to an underestimation of NO$_2$ effects by at least 10%.

Estimating Disease Burden

Research in advanced statistical modelling and Bayesian computation focuses on the analysis of very large – non-Gaussian – space-time data on malaria, neglected tropical diseases, mortality and cancer epidemiology. Current research topics involve (1) improving computation of Gaussian predictive process approximation models; (2) selecting variables for large geostatistical, non-stationary data to identify the best set of predictors and their functional forms; (3) modelling formulations for zero inflated, spatio-temporal binomial data; (4) modelling link functions in age-period-cohort models to overcome estimation of extreme rates; and (5) developing back-calculation models for sparse mortality data. We apply these models to estimate disease burden at high spatial resolution within countries or continents; to estimate disease burden attributed to specific exposures (e.g. malaria-related mortality, smoking or air-pollution-related lung cancer mortality); to assess effectiveness of interventions in space and; to forecast future trends in disease morbidity and mortality.

Forecasting Intervention Impacts

In addition to describing patterns of health and risk factors across the world, there is an increasing need to forecast the outcomes of health intervention programmes before they are deployed. Swiss TPH plays a leading role in mathematical and simulation modelling of infectious disease. In particular, the development of the open source computer programme OpenMalaria allowed to analyse the allocation of resources within integrated malaria control programmes, with support from the Bill & Melinda Gates Foundation. We are now diversifying our analyses to include other parasitic diseases such as human African trypanosomiasis, rabies, trematode infections and their vectors.

OpenMalaria was most recently used to predict how many deaths and illness would be prevented if children in African countries receive the RTS,S vaccine. This information needed by WHO to decide whether to recommend the vaccine to ministries of health, and by GAVI, the Vaccine Alliance that pays for vaccination programmes in low-income countries. To do this modelling, we needed to link the simulations to information from 43 countries on the number of children likely to be vaccinated, the number of people infected and the ability of the existing health system to treat malaria. With the help of thousands of volunteers, who made downtime on their computers available for running OpenMalaria, we were able to show that, although the vaccine prevents most infections during the first few weeks after it takes effect, protection from the vaccine is relatively short-lived halving over a period of about one year. Therefore vaccinating young children alone will not have much effect on the proportion of people who get infected with malaria, although it will prevent one death for about 300 children vaccinated — a very high public health impact.

Neglected Tropical Diseases (NTDs)

Studies in the industrialised world can often (but not always) depend on reliable data on diseases where they occur. However, for many diseases affecting tropical countries, neglected tropical diseases (NTDs) in particular, statistical models are needed to estimate their geographical distribution from very limited survey data. We are using Bayesian spatio-temporal modelling to construct distribution maps of various NTDs, including schistosomiasis, soil-transmitted helminthiasis and food-borne trematodiasis, in collaborative projects around the globe. Modelling and mapping child anaemia in Africa is a major new related initiative, funded by a grant from the European Research Council.
Mathematical modelling at Swiss TPH is also used to indicate general principles of how best to intervene. Such is the case in our studies to determine the effects of clustering insecticidal interventions on malaria vector populations. Often, resources are inadequate to provide whole populations with interventions like insecticide-treated nets, house spraying or larviciding. The models indicated that in such situations, it is better to spread the interventions around the affected area, rather than to concentrate on achieving solid protection for a subset of the population. This finding is based on spatial differential equations that describe the movements of mosquitoes, and how they are influenced by the locations of the people that they bite and the water bodies in which they lay their eggs.

Modelling in Laboratory Science

Statistical and mathematical modelling is also increasingly important in the analysis of laboratory biology studies at Swiss TPH. Many of these rely on the interpretation of very large datasets, using -omics technologies. Swiss TPH scientists make extensive use of algorithms to assemble genome sequences of parasites, and of statistical models to analyse levels of gene expression, based on chip technologies that can provide thousands of measurements of each sample. A typical example is a study that linked the publicly available genome of *P. falciparum* to post-transcriptional gene expression data for the major surface antigen PfEMP1. The analysis indicated that PfEMP1 is regulated differently from other malaria genes, potentially providing a new avenue for chemotherapy.

**HIGHLIGHTED PUBLICATIONS**


**KEY NUMBERS**

Key area coordinator: Tom Smith

N° of projects: 29

N° of projects contributing to

- innovation: 18
- validation: 15
- application: 6

N° of units involved: 12

Research projects: 89.7%

Implementation projects: 10.3%

**DISEASE AREAS**

- Malaria
- Neglected tropical diseases
- Schistosomiasis
- Soil-transmitted helminthiasis
- Food-borne trematodiases
- Anaemia
- Cancer

**HEALTH AREAS**

- Environmental exposure
- Health systems
- Health impact assessment
- Health financing
- Health statistics
- Health surveys
- Disease burden estimation
- Disease mapping and surveillance
- Water and sanitation

**KEY CHARACTERISTICS**
Around 200 individuals working at Swiss TPH are involved with malaria. Their interests and fields of activity range from high-technology research and developments in the laboratory (i.e. looking for new vaccine targets or better understanding parasite genes) to tracking malaria epidemiology in the field or in silico (through modelling) and developing and implementing control activities in endemic areas. The range of expertise and the number of people dealing with the disease makes Swiss TPH a well-known focal point and one of the most respected institutions in the field of malaria worldwide.

The mission of the Swiss TPH Malaria Research and Resource Centre is to provide coordination and communication for all malaria research, teaching and service activities at Swiss TPH. Internally, the centre will optimise the coordination of all malaria-related activities at the institute. Externally, it will provide a high-visibility interface for all Swiss TPH malaria activities.

The centre was only established in the spring of 2014; hence, its achievements to date are limited. Work so far has focused on developing a web-based presence, in collaboration with the team re-designing the overall Swiss TPH website. In line with the wide variety of malaria activities that we perform, the centre’s web presence will serve multiple roles...
and aims to reach multiple audiences. These include: (1) providing a cross-cutting platform to facilitate networking across departments and units and to simplify the search for malaria-relevant activities at Swiss TPH; (2) providing a unified platform in which Swiss TPH services in the field of malaria can be bundled and showcased; (3) offering a one-stop source of information for the general public as well as for the media. The web presence might be complemented with other channels of communication such as newsletters, social media, etc.

Some of the services the web platform will showcase are routine diagnosis and medical services (MEDDIA); public health programmes, including the LFA work and our programmatic involvement in Tanzania, DR Congo and Papua New Guinea; epidemiological field work; product development efforts for drugs, vaccines, diagnostics and vector control tools; applied modelling efforts, especially the OpenMalaria platform; human immunology and field-relevant molecular epidemiology tools (MPI); and other service mandates, such as the development of the 2nd Global Malaria Action Plan 2016 – 2030.

A second area of activity is planning malaria-related events for Swiss TPH staff and for the wider malaria community in Switzerland (in collaboration with the Swiss Malaria Group overseen by the Swiss Agency for Development and Cooperation (SDC)). Centre staff will also be involved in the forthcoming European Congress of Tropical Medicine and International Health, in Basel in September 2015. In future, the Swiss TPH Malaria Centre should aim to have an active presence in relevant scientific meetings and, hence, promote and support our work.

Finally, the Swiss TPH Malaria Centre will also showcase existing teaching and training activities in the field of malaria, as well as develop and support further initiatives in this area. Ultimately, bringing together the strength of all our malaria activities is expected to strengthen the recognition and reputation of Swiss TPH as a malaria centre of excellence and expand our work portfolio in all areas.
CHRONIC DISEASES AND ENVIRONMENTAL EPIDEMIOLOGY

TRACING THE ENVIRONMENTAL FACTORS INFLUENCING HUMAN HEALTH

The health impacts of a broad range of environmental exposures, ranging from indoor and outdoor air pollution, environmental microbial exposures, and non-ionising and ionising radiation, to climate change, noise, occupation and water pollution have become a central theme of Swiss TPH. Personal risk factors such as physical inactivity, nutrition, obesity and social and structural risk patterns are also explored. These factors are studied by applying the infrastructure and interdisciplinary experience and expertise available within Swiss TPH, including biobanks, environmental and chronic disease epidemiology and population genetics.

The aim is to better understand the determinants of chronic diseases and their public health impact. In particular, we assess the role of environmental and personally modifiable exposures in the disease process. Such knowledge is needed to implement effective prevention strategies in different settings all over the world.

By improving the understanding of determinants and mechanisms of chronic disease aetiology, co-morbidities (dual burden of disease) and progression over the course of life, actions to mitigate the health impact of lifestyle and environmental factors can be promoted.
Obese People are More Susceptible to Air Pollution

The EU-funded research project ESCAPE brings together large adult and children cohort studies to investigate the health effects of chronic exposure to ambient air pollution. In large cities across Europe, air pollution was measured according to state-of-the-art and harmonised protocols. Annual exposure estimates were derived for each study participants’ residential address and their association with different health phenotypes were investigated. Swiss TPH researchers participated in ESCAPE with the long-term adult study SAPALDIA, funded by the Swiss National Science Foundation since 1991. ESCAPE identified policy relevant air pollution effects — even at levels below current air quality standards — on total and lung cancer mortality. Lung function, an established predictor of accelerated aging and mortality, was observed to be lower in adults and children living at more polluted addresses. The ESCAPE project confirmed previous SAPALDIA results: the lungs of obese adults seem to be more susceptible to the impact of air pollution.

The global obesity epidemic could, therefore, worsen the health impact of air pollution, particularly in the context of mega-cities all over the globe. The underlying biological mechanisms remain poorly understood, but the rich SAPALDIA biobank is now being used to improve this understanding through genome and exposome approaches. Of great interest, the results from the first genome-wide interaction study on air pollution and lung function, published by SAPALDIA, are consistent with findings showing an interaction between air pollution and obesity; susceptibility to air pollution was determined by variants in a gene related to adipose tissue inflammation.

Introduction of Smoke-Free Workplaces Improves Cardiovascular Health

In May 2010, Switzerland introduced a heterogeneous smoking ban in the hospitality sector. This setting was used to conduct a quasi-experimental study on the effect of smoke-free workplaces on workers' personal exposure and on markers of cardio-respiratory health. Compared to a control group without a change in their environmental tobacco exposure at the workplace, a substantial exposure reduction was seen in an intervention group of 55 non-smoking hospitality workers after the introduction of a smoking ban at their workplace. In two health examinations conducted 3–12 months after the ban, heart rate variability and pulse wave velocity...
significantly improved in the intervention group but not in the control group. Further beneficial effects were found for respiratory symptoms in the intervention group. However, reduced lung function of long-term exposed workers did not recover within 3–12 months. This study demonstrates that reducing environmental tobacco exposure in the workplace is beneficial for the cardiovascular health of hospitality workers.

Domestic Radon Does Not Increase the Risk of Childhood Cancer

The decay of radon produces ionising alpha particles, which are the second most common cause of lung cancer after smoking. However, it is unclear whether radon causes other types of cancer as well. To investigate the association between childhood cancer and radon, a geospatial model was developed to predict radon levels for each Swiss apartment, based on geology, soil permeability and housing characteristics using 45,000 radon measurements taken in various apartments between 1994 and 2004. According to this model, average radon exposure of the Swiss population is 84.1 Bq/m³. Of the whole population, 26% is exposed to a radon level above 100 Bq/m³; a value which should not be exceeded, according to the WHO.

These radon predictions were used in a census-based cohort study, including all cancer cases diagnosed in children under 16 years between the years 2000 and 2008. In total, 997 childhood cancer cases were included in the study. After considering relevant covariates, the 10% most exposed children (≥160 Bq/m³) were not found to have an increased cancer risk. Neither central nervous system tumours nor leukaemia were associated with domestic radon levels. Despite relatively high radon levels in Switzerland, this study did not find evidence that domestic radon exposure is associated with childhood cancer. The nationwide radon model is a useful input parameter for future risk assessment of lung cancer in Switzerland.

Increased Food Diversity in the First Year of Life Might Prevent Allergic Diseases

Nutrition is an important environmental factor in early life, one that influences the development of a child’s immune system. The role of dietary factors in allergy development is a topic of debate. In the birth cohort study, The Protection against Allergy- Study in Rural Environments (PASTURE / EFRAIM), which included 856 children, we showed that increased diversity of complementary food introduced in the first year of life was inversely associated with asthma, with a dose-response effect. Among this cohort of children, the cumulative prevalence of asthma between three to six years of age was 8.6%, and the risk of asthma was significantly reduced by a factor of 0.74 with each additional food item introduced in the first year of life. The findings support the hypothesis that early life exposure to diverse food antigens, such as food proteins, could increase the maturation of the mucosal immune system, inducing tolerance networks, and thereby decreasing the risk of having an allergy in childhood.
Exposure to Non-Ionising Radiation in European Cities

Non-ionising radiation in the radiofrequency range is used for wireless communication. Thus, the exposure situation has been changing rapidly in the last few years and will continue to change in the future. Yet, little is known about the exposure situation of the population. Such knowledge is important for conducting risk assessments, risk communication, interpreting previous epidemiological research and improving the design of future studies.

A measurement protocol has been developed, with portable measurement devices used to efficiently collect exposure data in a given area and without the need for major infrastructure. The protocols applied in four different European cities (Amsterdam, Basel, Brussels and Ghent) were shown to be highly reproducible. In general, the highest exposure occurs on public transport, where other people’s mobile phones contribute substantially to the total exposure. In outdoor areas, most of the exposure originates from mobile phone base stations, with an increasing trend over the study period in all cities. Such a protocol can be easily applied in resource-restricted areas to obtain an overview of population exposure to non-ionising radiation.
HEALTH IN SOCIAL-ECOLOGICAL SYSTEMS

ASSESSING THE HEALTH RISKS OF HUMAN ACTIVITIES

The growth of human populations and an increase in per capita levels of consumption, coupled with the interconnectedness of contemporary human activities, are the principal drivers of global change. Such human domination is historically unprecedented and disrupts many of the biosphere’s systems and cycles, through agricultural intensification, land clearance, habitat degradation and urban expansion.

This key area recognises that human, animal and ecosystem health is closely interlinked with social-ecological systems. Our experiences and lessons learned from diverse studies carried out in different contexts indicate that a deeper understanding of health in social-ecological systems requires interdisciplinary and transdisciplinary research. Adopting a social-ecological perspective allows us to identify emerging properties and determinants of health across a range of scales, from molecules to the ecological and socio-cultural context. Comparing different disease systems and health systems structures and engaging various stakeholders further enhances the process.

This key area pursues three main objectives. First, to innovate, validate and apply integrated health risk and health impact assessment approaches for projects, policies and programmes in different social-ecological systems. Second, to develop an equity-effectiveness framework that allows identification of health interventions with the highest economic, ecological and societal leverage. Third, to apply an ecosystem health approach that allows management of global health challenges.
Safe Resource Recovery and Reuse of Liquid and Solid Wastes

In view of growing per capita levels of consumption and enhanced stress on ecosystem services, there is a pressing need to recover water, nutrients and energy from liquid and solid wastes. Swiss TPH, in collaboration with the WHO and other institutions, seeks to identify and characterise existing recovery and safe reuse business models for resources generated from liquid and solid waste streams, to assess the associated health risks and impacts and to pilot test an innovative sanitation safety planning approach for implementing guidelines for safely reusing wastewater. The project is being implemented in four large cities in Africa (Kampala), Asia (Bangalore and Hanoi) and the Americas (Lima). Swiss TPH developed and validated a health impact assessment (HIA) and health risk assessment (HRA) methodology that includes a limited amount of primary data collection, using rapid appraisal approaches, from selected waste recycling facilities, combined with secondary data from diverse sources. This approach allows us to develop strategies that are readily tailored to specific settings, facilitate risk mitigation and analyse potential community-level health impacts and multi-barrier control measures for specific exposure groups along waste streams.

A Framework to Assess Human Rights Impacts

In recent years, multinational companies have been asked to conduct human rights impact assessments (HRIA) of their projects, particularly in low-income countries and conflict-affected settings. However, little methodological guidance was available. Swiss TPH together with the US-based NGO NomoGaia developed a framework for HRIA that was validated on several field sites in Africa and the Americas. The methodology integrates theoretical components from human rights law with design elements from environmental, social and health impact assessments. HRIA begins with scoping, followed by a detailed cataloguing of rights-relevant issues. The latter hinges on a combination of rigorous literature and data review as well as acquisition of primary qualitative data through interviews. Preliminary impact ratings, generated through evaluating extent and intensity scores for an established list of roughly 300 indicators, are cross-checked with affected rights holders through feedback sessions. Through repeated visits to project sites, progress and changes were assessed and included: monitoring and surveillance approaches, tracking corporate improvements in human rights over time, noting contextual shocks to baseline conditions and changes in baseline and corporate capacity to manage change.
Parasitic Worm Infections and Children’s Health

In this reporting period, several studies were carried out in Côte d’Ivoire and China to determine whether parasitic worm infections influence children’s health and physical fitness, and to study the effect of deworming. Intervention studies were designed with prospective follow-ups for up to six months among school-aged children. Parasitic worm infections, physical fitness (20m shuttle run and standing broad jump test) and grip strength were determined at baseline and end-of-study cross-sectional surveys, using standardised, quality-controlled procedures. We did not find strong evidence for significant improvements in children’s physical fitness and anthropometric indicators due to deworming in either the China or the Côte d’Ivoire study. Potential beneficial effects of deworming are likely to be undermined in areas where malaria is co-endemic (Côte d’Ivoire) and nutritional deficiencies are widespread (both China and Côte d’Ivoire).

Threadworm: the Most Neglected Worm Infection

The epidemiology and clinical significance of the threadworm (*Strongyloides stercoralis*) in Cambodia were investigated. Arguably, the threadworm is the most neglected intestinal worm in resource-constrained countries with tropical climates, due to the lack of diagnostic techniques. We found exceedingly high infection rates in rural Cambodian villages, where up to half of the population was infected. Adult males showed the highest infection rates, probably due to occupational exposure in rice fields. However, children below the age of 10 years were also highly infected, indicating that the transmission occurs in the households. Indeed, common household animals (e.g. dogs) were also infected with the threadworm, contributing to the contamination of the household environment with infectious larvae. Our findings underscore that control strategies must focus on humans and animals. Moreover, we found significant associations between threadworm infection and lack of access to improved sanitation, which calls for infrastructure development and hygiene education. A pilot intervention emphasising integrated control in highly endemic villages of Preah Vihear province in Cambodia is now underway.

Closer Cooperation of Human and Animal Health

Human and animal health is closely related and contributes as ‘One Health’ to broader considerations of health in social-ecological systems. We define One Health as any added value in terms of improved health for humans and animals or financial savings or environmental services resulting from closer cooperation between human and animal health sectors. A new, comprehensive textbook is currently in print. One Health is particularly suited to serve mobile pastoralists living in close interaction with their livestock. We investigated appropriate control options for important zoonoses, such as brucellosis, that affect both human and livestock health. Mobile health and demographic surveillance systems using mobile phones have proven to be adequate and are currently being extended to mobile surveillance and response systems. Currently, we are using a systems epidemiological approach to investigate the social-ecological determinants of schistosomiasis and fascioliasis in humans and animals in pastoralist and sedentary communities in the Lake Chad area and in northern Côte d’Ivoire. It appears that the prevalence of *Schistosoma* spp. correlate in humans and cattle and detection may have a mutually predictive value. Field research in remote rural zones is often influenced by security threats affecting local communities and scientists. Dealing with insecurity illustrates the effect of social determinants on health and requires a resilience strategy.

Yearly Campylobacteriosis Epidemic in Switzerland

In Switzerland, a distinct increase in campylobacteriosis case numbers has been observed around Christmas and New Year, significantly contributing to the 7,000 – 8,000 individuals who become infected with *Campylobacter* spp. annually. A case-control study to investigate determinants of this increase was performed between December 2012 and February 2013. The analysis indicates that people consuming meat fondue (Fondue Chinoise) have a one in four chance of becoming infected. About half of the reported cases over the three-month study period can be attributed to this source of infection. Among the meat served, chicken was the only one associated with an increased risk of infection. Hygienic measures at the table such as using compartmentalised or separate plates for raw and cooked meat can decrease the risk of infec-
tion by a factor of up to five. Affected individuals experienced *Campylobacter* infections as a severe illness. They stated an average duration of illness of seven days and about 15% were hospitalised. Public health measures such as decontamination of chicken meat and improved food handling behaviour at the individual level are urgently needed.

**HIGHLIGHTED PUBLICATIONS**


It is one of the most urgent and puzzling public health questions: why do many of the best health interventions and services not reach those who need them most? There is no universal answer. Various methodologies aim to clarify key aspects in specific fields and contexts. Swiss TPH approaches the problem from the diverging perspectives of multiple stakeholders such as health experts, policy makers, health providers and potential beneficiaries. Drawing on methodologies developed in the social and cultural sciences, Swiss TPH examines the determinants influencing health promotion, disease prevention and treatment of infectious and non-communicable diseases at various levels of the health system.

Objectives of this key area are (1) to assume leadership in research and action concerning social, cultural and economic determinants of health and health care and (2) to initiate and develop partnerships for health social science research and related action, teaching and training within and beyond Swiss TPH.
Teenage Pregnancies: a Young Women’s Perspective

Building on previous efforts to move from a vulnerability perspective to one of resilience, a comparative study in Tanzania and Ghana examined teenage pregnancy from the perspective of young women. Funded by the National Centre of Competence in Research (NCCR) North-South, it used a mixed-methods approach to investigate factors that enhance young women’s capacities to overcome the risks of having a baby at the age of 15–19 years. A key insight was the importance of radio messages, youth magazines and social media in strengthening young women’s resilience. The video project “Voices of Youth” gave Tanzanian youth a voice by empowering them to speak out and to visualise their experiences related to sexuality and teenage pregnancy (http://socialresilience.ch/reproductive-resilience/).

Determinants of Vaccine Acceptance

Questions about community determinants of vaccine acceptance have been of major interest, motivating research developed in partnership with WHO. Recent studies examined the uptake and anticipated acceptance of oral cholera vaccines in three African countries. The latest project examines influenza vaccine use for pandemic influenza control in Pune, India. Although previous studies have used a paper-based illness explanatory model interview, an Android-based version of the instrument for studying influenza vaccine acceptance has now been developed and validated for feasibility and acceptability. This innovation of tablet computing is the result of collaboration with the Public Health Computing Research group at Swiss TPH, integrating qualitative and quantitative data acquisition and management.
Conditional Cash Transfer for Reproductive and Maternal Health Services

An implementation research project in South Kivu province, Democratic Republic of the Congo, uses a mixed-methods approach to investigate local perceptions of conditional cash transfers for the use of reproductive health services and for birth spacing. Accompanying research objectives include (1) exploring reproductive preferences and perceptions of family planning among men and women, (2) understanding the contextual socioeconomic and gender dynamics influencing women’s participation in conditional cash transfer interventions and (3) determining the potential impact of conditional cash transfers to women on intra-household power-relations. This study builds on previous research conducted in Zambia, where newly emerging self-care practices for HIV were investigated.

Health Education and Treatment Campaigns

In Lao PDR, an implementation project contributed to reducing multiple helminth infections through innovative treatment campaigns in combination with health education. According to the baseline study, helminth infection prevalence was high and so were the risk factors for helminth infections and transmission (consumption of raw or insufficiently cooked fish, frequent physical contact with Mekong River water and few latrines). The communities’ knowledge about the worms and their transmission routes was low. After intensive workshops with health providers and village leaders, the intervention was conducted in close collaboration with village health volunteers, the Lao women’s union and schoolteachers. The evaluation study showed a decrease in infection prevalence and an increase in risk awareness and risk-avoiding practices.

One Health Web-Based Training Programme

Humans and animals living in developing countries are often affected by health problems arising from neglected zoonoses. The collaboration between public and animal health services, also called One Health, can provide access to care that would otherwise be unaffordable and unavailable. The project, “Training of the One Health scientific next generation in the Sahel and Magreb”, developed a unique and sustainable web-based modular training programme that aimed to train African scientists to address One Health issues. This programme was targeted to the Maghreb and the Sahel; however, the course will also be accessible worldwide in the form of training modules offered through the European Tropical Health Education Network (tropED). Researchers at Swiss TPH developed various modules of this programme, covering One Health concepts as well as socio-cultural and ethical aspects in One Health research.

Sex and Gender in Biomedical Sciences

The European Gender Medicine Project (EUGenMed) was funded by EC/FP7 in 2013 and aims to develop a roadmap for further implementing sex and gender in biomedical sciences and health research in Europe. The EUGenMed consortium, including around 80 experts and stakeholders, met for a kick-off conference in April 2014 in Brussels to assess the status quo of gender medicine in Europe. It marked the first in a series of workshops planned up to 2015. One of the workshops will address public health and prevention and will focus on the role of sex and gender for highly prevalent risk factors for non-communicable diseases across Europe.

Interview with village leaders in Lao PDR

Sex- and gender-related issues producing gender differences in respiratory diseases and conditions

HIGHLIGHTED PUBLICATIONS


Sexual and reproductive health plays a crucial role for the health of populations. Gender is strongly linked to this particular health dimension. Activities in this key area include implementation projects, consulting, providing policy advice, monitoring and evaluation activities, research and teaching worldwide. From these activities, we generate and validate evidence and translate it into implementation and services and inform the research agenda based on our experiences and findings. We also contribute to capacity building in sexual and reproductive health and gender (SRH & G) both internally and externally and contribute to a shared understanding around key issues, developing new concepts and approaches in SRH & G.

Ongoing activities, mainly in East and South Africa, Central and Eastern Europe as well as in Switzerland, are carried out by Swiss TPH staff in local and regional offices and through partnerships with local universities. Other programmes operate in West Africa, Latin America, and Southeast Asia. Swiss TPH is about to concentrate SRH & G activities by developing a programme of action around four major areas: (1) adolescents, (2) working with a community focus and (3) a life course and developmental perspective in sexual and reproductive health, and (4) gender and human rights.
Evidence for Action (E4A) to Reduce Maternal and Neonatal Mortality in Africa

A five-year, UK-funded programme (2011–2016) aims to improve maternal and neonatal survival in six sub-Saharan African countries (Ghana, Ethiopia, Malawi, Nigeria, Sierra Leone and Tanzania). It focuses on using better information and enhanced advocacy and accountability, catalysing major improvements in the use of evidence for decision-making and of resources to improve the quality of care in maternal and neonatal health (MNH) services. Swiss TPH leads the Ghana and accountability components. To improve the quality of service delivery, E4A Ghana focuses on (1) improving training and supervision for skilled birth attendants, (2) increasing accountability of the health system through innovative social accountability mechanisms and (3) improving local use of data for decision-making.

Health Systems Strengthening to Address the Needs of Mothers and Young Children

With its regional office in Bujumbura, Burundi, Swiss TPH addresses MNH needs in Rwanda, Burundi and the Democratic Republic of the Congo (South Kivu). It strengthens health care providers from the community level to the provincial level, emphasising quality of care, access to care and health facility management. The interventions, funded by the Swiss Agency for Development and Cooperation (SDC), have contributed to significant reductions in institutional maternal and infant mortality and have earned participating health districts the reputation of being well-managed health facilities amongst their national peers.

Making Sexual and Reproductive Health Work for the Next Generation

Young people in the Great Lakes region face substantial social and economic barriers to accessing SRH information and services, leading to high levels of unmet needs for contraception; maternal mortality and morbidity and HIV incidence. Swiss TPH conducts monitoring, evaluation and operations research for a large project in this area, funded by the Dutch Foreign Ministry and managed by the NGO, Cordaid. It aims to improve access to family planning and youth-friendly health and social services, and to reduce socio-cultural barriers. From 2013–2016, a series of studies investigating the impact and effectiveness of the programme on SRH and the active demand of young people for SRH services is underway. Qualitative studies examine young peoples’ perception of family planning and acceptability of SRH interventions.

Incident HIV and Sexual Risk Behaviour in Pregnant Women in Urban South Africa

HIV prevalence among pregnant women in South Africa is estimated at 30%, one of the highest in sub-Saharan Africa. Knowing which sexual risk behaviours lead to transmission would facilitate more effective interventions. A Swiss National Science Foundation-funded project, conducted jointly with the University of Witwatersrand, investigates the HIV incidence rate among pregnant women in Johannesburg; a linked qualitative study aims at understanding the biological and sexual behaviours associated with HIV risk of pregnant women and of their partners.

Bringing Appropriate Knowledge to Remote Health Facilities

Innovative training tools based on Information Technology may bring knowledge to areas without training facilities. In collaboration with the Novartis Foundation for Sustainable Development and WHO, Swiss TPH developed the Integrated Management of Pregnancy and Childbirth Training Tool (IMPACTT) to facilitate continuous education for nurses and midwives in rural health facilities.

Health Promotion and Community Action for Health in the Dodoma Region, Tanzania

This participatory project mainstreamed approaches to gender, HIV/AIDS and social inclusion. A training package on inclusive decision-making for health promotion was rolled out to build capacity among all health and community development officers and school health coordinators, who, in turn, built capacity among community-based organisations and communities. Over 200 villages have developed action plans to be included in and funded through local comprehensive council health plans, with technical support from the Health Promotion and Systems Strengthening Project (HPSS). The project was awarded a prize at the celebration of the 10th anniversary of the gender policy of SDC in Dar es Salaam, 2013.

Strengthening Maternal and Newborn Care in Eastern Europe

Swiss TPH’s long-term engagement in Eastern Europe (e.g. Romania, Moldova, Ukraine), funded mainly through SDC, has contributed substantially to mortality reduction in premature babies. Interventions are based on multidisciplinary approaches, using post-graduate education, manage-
ment of health technology and eHealth, clinical guideline development and quality management to improve quality of care. The recent introduction of simulation laboratories to train physician and nursing teams has improved clinical skills to treat the most vulnerable.

Local authorities determine local health needs in collaboration with community stakeholders and coordinate health service providers’ activities to protect the most vulnerable. This integrated approach to primary care in pilot regions is part of the intervention package funded by SDC through its cohesion funds to Romania, managed by Swiss TPH in collaboration with CRED Foundation, a Romanian NGO.

Family clubs are at the interface between community and health care providers and play an important role in sensitising pregnant women and young mothers to the needs of new born children, facilitating access to specialised perinatal health services. Positive experiences in rural Moldova show the importance of engaging directly at community level to improve perinatal health.

**Integrated Post-Partum Care in Switzerland**

A coordinated care model (FamilyStart) has successfully been established in the Basel Region, guaranteeing postpartum care at home after hospital discharge. The model won the 2014 prize for ‘outstanding achievements in the integration of health care’ from the Forum on Managed Care in Switzerland.

**Early Life Factors of Health and Early Life Care**

The research focus on early life factors and health care in early life was strengthened in 2013 and 2014. The Swiss Infant Feeding Study, commissioned by the Federal Food Safety and Veterinary Office, was conducted to provide insight into current infant feeding practices in the first year of life, and to investigate trends since the first monitoring study in Switzerland in 1993. The SAPALDIA Youth Study showed an early impact of smoking on structural and functional vascular health and blood pressure, as well as of parity on blood pressure in adult women.

**HIGHLIGHTED PUBLICATIONS**


Policy brief on adolescent pregnancy for UNFPA Regional Office for Eastern Europe and Central Asia. UNFPA, Eastern Europe and Central Asia Regional Office 2013.
Policy-makers at national and global levels are facing health policy and system reform changes: global subsidies for essential medicines; public-private partnerships; changes to provider payment mechanisms; demand and supply side incentives such as conditional cash transfers; pay-for-performance and cash-on-delivery; and new service delivery and social protection mechanisms in line with universal health coverage (UHC).

Health policy analysis and health economics are key approaches for assessing the impact of these interventions and for generating evidence for informed decisions leading to strengthened health systems. Swiss TPH is progressively showing leadership in the area of health policy and economics by fostering more intense collaborations among research, service and training departments. These efforts aim to better understand health systems in order to shape them more effectively.

Work in this key area contributes to the following objectives: (1) Increasing visibility and leadership in health policy and economics for health systems; (2) providing evidence and guidance for low and low-middle income countries on the path to achieving Universal Health Coverage (UHC) and on how UHC can be maintained in countries that have achieved it; (3) developing and applying methods to evaluate and validate health policies and interventions in real world health systems; (4) translating and applying research findings into sound policies and high performance systems; (5) fostering stronger links between our health systems and policy research and our health systems development efforts.
Global Health Policies and Health Systems Governance

WHO’s health systems framework, consisting of six building blocks, was operationalised in a detailed assessment of the Global Fund’s health system investments. 37% (USD 362 million) of funding was used for health systems strengthening (HSS). Of the HSS funding, 38% was for system-level interventions, while 62% was dedicated to disease-specific system strengthening activities. Around 82% of health systems strengthening funding was dedicated to service delivery, human resources and medicines. This suggests opportunities for more balanced investments with regards to governance, financing and information system related interventions. There is also a need for agreement among researchers, recipients and donors on keystone interventions that have the greatest system-level impacts and value for money.

Roles of Private Finance

Development assistance for health (DAH) in resource-constrained countries continues to evolve after a decade of increasing complexity in global health architecture. New financiers, particularly from the private sector, philanthropic groups and the emerging economies, present novel opportunities and challenges for recipients. Global monitoring of financial flows for DAH as part of Official Development Assistance continues to focus only on conventional OECD sources and fails to include these pivotal new actors, their programmes and their influence. We investigated how these new actors influence global health at three levels: (1) global governance through the WHO; (2) multilateral partnerships such as the Global Fund, GAVI Alliance and Medicines for Malaria Venture; and (3) at country level in Chad, Ghana, Mozambique and Tanzania.

Emerging Role of BRICS

We are working to further understand the economic, political and social contribution to global health of newly emerging economic powers such as Brazil, Russia, India, China and South Africa (BRICS). In the last two years, in collaboration with a network of global health experts, we have analysed BRICS’ role in global health, UHC promotion and their influence on the World Health Organisation’s reform process. We are currently investigating the nature and volume of BRICS’ health assistance to Chad, Ghana, Mozambique and Tanzania.
Policy Advice

A wealth of data is produced every day from research and technical assistance activities. However, data have to be intensively transformed to become reliable evidence for decision-making and action. At Swiss TPH, several initiatives operate in the continuum from data to evidence: producing, synthesising and disseminating evidence relevant to decision makers.

For example, new evidence and analyses of country and global vaccination data have been produced to inform official WHO / UNICEF coverage estimates; programmatic data from the Global Fund and GAVI grants were verified to inform funding decisions and health information strategies; evidence was synthesised through structured and systematic reviews on 12 vaccination priority topics to share with policy makers via a vaccination web portal, as well as through a systematic review on vaccination and aging; evidence on TB programmes and drug management was improved in terms of completeness, credibility and consistency for WHO; and evidence products were analysed to identify gaps in communications to improve vaccination.

In the last few years, we have expanded our activities assessing the costs and cost-effectiveness of malaria interventions to inform decision-makers. A new version of the cost-effectiveness framework for malaria interventions was developed, accounting for health systems factors, and used to assess effective coverage and system effectiveness. Predictions of the public health value and cost-effectiveness of the RTS,S vaccine in 43 countries were made by modelling the latest clinical trial results and new cost estimates for introducing RTS,S in African countries.

Path to Universal Health Coverage

In Tanzania, the Health Promotion and System Strengthening project (HPSS) aims to improve access to, quality and use of health resources and services. The project pursues a comprehensive health systems approach, integrating community-based health promotion, health financing, medicine supply management and physical resource management. The project has reorganised the “Community Health Funds” into a rural social health insurance system, integrating internet and mobile phone based management elements. It has also established a “Prime Vendor” system — a complementary pooled medicine supply for the district health services, improved health technology management and supported the districts in community and school health plans. Starting in 2015, the social health insurance mechanism and the “Prime Vendor” approach for medicine management will be rolled out to two other regions in Tanzania.

We are also supporting the government of Nepal in building up the social health insurance system by developing a modern “Insurance Management Information System”, with accompanying standard operating procedures. This system enables health insurance schemes to reach out to rural communities and enrol them through mobile phone technology, as well as to administer members and service payments.

Developing Methodology

Swiss TPH has been a leader in establishing and promoting ‘systems thinking’ concepts for strengthening complex adaptive health systems. Together with other collaborators, a Systems Thinking Tool Kit has been developed and applied successfully in health systems research and development. We have also developed a range of planning and costing tools, i.e. for costing malaria service delivery. We have been active in costing health interventions at health facilities, using the WHO’s “Integrated Healthcare Technology Package” (iHTP). In the Democratic Republic of Congo, iHTP costing was carried out at health centres and district hospitals in order to support the provincial health administration develop a new fees structure following the withdrawal of the region’s main external donor from the sector. A Cost-Benefit Analysis Tool for employee health programmes has been further developed in collaboration with the German International Cooperation (GIZ). Namibia and now features the systematic use of disability and mortality data for all causes and risk factors as the basis for prioritising staff health problems. The tool is also available on a web-based platform and is applicable to any country.

The Innovative Economic Investment Case Methodology for assessing investments for eradicating/eliminating infectious diseases has been developed. It is currently being applied to elimination/eradication investment cases for three neglected tropical diseases – onchocerciasis, lymphatic filariasis, and human African trypanosomiasis. The approach characterises and quantifies the risks, costs and benefits of control vs. elimination in regional level elimination scenarios that might lead global to eradication.

We build our work experiences on health policies and economics into our teaching programmes. This includes modules of the MBA in International Health Management, the SSSH+ Lugano Summer School and the Consortium for Health Policy and Systems Analysis in Africa (CHEPSAA).
HEALTH SYSTEM STRENGTHENING

The generation and translation of evidence into strengthening of health systems is a natural key area within the institute’s profile. Indeed, the health sector has been late to recognise the value of systems science in designing and managing health systems. Over the years Swiss TPH has shown global leadership in bringing health systems thinking to centre stage for health systems strengthening. Today Swiss TPH is a well-recognised advisory, support and implementation agency for a variety of local, national and international funding bodies, with a special focus on systems thinking, health planning and resource allocation, health service delivery at primary care level as well as performance monitoring and evaluation.

Work in this key area contributes to the following objectives: (1) Strengthening health systems from a systemic perspective, through generating, translating and applying new evidence in the areas of health financing, health technology management, human resource management and medicine management. (2) Developing, validating and applying evidence-based implementation and new approaches to health systems in large health system support projects. (3) Maintaining and extending Swiss TPH’s profile as a leading agency for evaluating and monitoring health sector development projects, including its role as a Local Fund Agent for the Global Fund to Fight AIDS, Tuberculosis and Malaria. (4) Expanding approaches for evaluating policy implementation at scale in health systems, including concepts for district, regional and national health system observatories.
New Approaches for Health Systems to Scale

On behalf of various clients such as the Swiss Agency for Development and Cooperation (SDC), KfW Entwicklungsbank and the Department for International Development (DFID), Swiss TPH implements a broad range of large health system strengthening projects in many regions of the world, including Central Asia (Tajikistan and Kyrgyzstan), Eastern Europe (Moldova, Ukraine and Albania), the Middle East (Egypt) and sub-Saharan Africa (Tanzania, Chad, Cameroon, Burundi, Rwanda, Congo DRC and Ghana). These programmes improve health service coverage for populations in both urban and rural areas and strengthen quality of care and services provided to them. They emphasise the importance of primary health care, community health and health promotion.

Shift to Family Medicine in Tajikistan

In Tajikistan, with funding from SDC, Swiss TPH supports the national government’s efforts to decentralise the management of health services and to shift service provision to family medicine. This goes along with activities to empower communities to take responsibility over the health domain and to increase the accountability of health service providers to the population. Over the last two years, Tajikistan has improved health service quality by investing in infrastructure and essential equipment for primary health care services and by building the capacity of district coordination teams through management training. Over 200 family doctors and nurses were re-trained during six-month courses and training for family medicine specialisation was created, with 59 physicians currently enrolled to become family doctors. Outcomes are encouraging and indicate better performing health workers offering better family medicine services as well as lower infant and under-five mortality in Tajikistan.

Strengthening Health System Cornerstones: a Systemic Perspective

Swiss TPH supports the governments of Tanzania and Nepal to build up social health insurance systems. Here, a unique contribution of Swiss TPH is the development of a modern “Insurance Management Information System” (IMIS). It enables health insurance schemes to reach out to rural communities and enrol them via mobile phone technology, as well as to administer members and service payments. The value of IMIS, developed in the HPSS project in Tanzania, is evident from the Nepali Government’s request to transfer the system to Nepal. IMIS will serve as the IT backbone of the new “Nepal Social Health Insurance System” presently being developed with the support of Swiss TPH.

In the area of human resource development, Swiss TPH supports a number of initiatives designed to increase the availability and skill level of health professionals. In an SDC-funded project in Tajikistan, medical student training has been enhanced through assisting the Tajik State Medical University in reforming the medical curriculum. The teaching skills of academic staff have also substantially improved through revisiting pedagogical teaching approaches. A post-university training for specialisation in family medicine and continuous education procedures, namely peer-groups for family doctors and nurses, complement these activities. The results of these efforts are encouraging and have had a positive influence on the quality of care provided to patients. In Tajikistan, Romania and Moldova, SDC funded the establishment of clinical skills laboratories to improve students’ diagnostic skills. Swiss TPH procured the equipment, guided the set-up of these laboratories and substantially strengthened competencies of staff involved in teaching clinical skills.

Health systems suffer from high and inefficient investments in technology. Substantial amounts are committed to purchasing clinical equipment and to paying related operation costs, while devices are frequently inappropriate and function poorly. ‘openMedis’ is a specialised software to manage clinical equipment. The software has been developed by Swiss TPH and deployed in numerous countries (Moldova, Tanzania, Ukraine and Egypt). The software resulted in improved capital investment decisions and in efficient clinical device management. A newly developed mobile application enhances the day-to-day updating and evaluation of equipment-related information.

In Tanzania, a collaborative effort with the Ifakara Health Institute and the Ministry of Health and Social Welfare has led to the development of an electronic tool to improve quality of primary healthcare (e-TIQH). After validation in nine districts, plans are afoot to expand this tool nationally.

Another cornerstone of health systems strengthening is medicine management, including procurement and supply chain systems to improve access to medicines. In Tanzania’s Dodoma region, a prime vendor approach was adopted to complement supply from the Medical Stores Department’s public private partnership. Funds from insurance schemes and basket funds will finance missing essential medicines with pooled regional procurement. Following comprehensive
training for the current logistics system, peer cascade coaching was established to increase sustainability and impact by using internal resources. To promote rational use of medicine, community campaigns and prescriber training with a focus on antibiotics is conducted to improve adherence to standard treatment guidelines.

Monitoring and Evaluating Health Sector Programmes

The Swiss Centre for International Health (SCIH) acts as a Local Fund Agent (LFA) for the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) in 15 countries. In 11 LFA offices overseas we assess and monitor programmes funded by the Global Fund hosting 52 experts in financing, programme management, public health, monitoring and evaluation, procurement, and supply chain management. These experts are backed up by a team of 16 senior technical experts at Swiss TPH headquarters, ensuring the quality of the deliverables submitted to the Global Fund.

Within a changing environment, marked by substantial transformation at the level of the Global Fund since 2012, our mandate is to assess the capacity of principal recipients such as governmental entities, UN agencies or NGOs, and sometimes sub-recipients, with regards to institutional and organisational capacities, financial management systems, procurement and supply management and monitoring and evaluation. We review budgets, work plans and performance frameworks and we support the Global Fund in grant negotiations and grant closures. During the grant implementation phase, we review progress reports with disbursement requests every semester and review external audit reports. We oversee programme performance and accountability of use of funds for 64 grants in 15 countries. Expenditures are verified through spot checks, focusing on significant amounts, conspicuous book entries and posting texts. In doing so, we follow the principles of performance-based funding to make financing decisions and participate in risk mitigation approaches as outlined by the Global Fund.

In addition to routine programme monitoring, we regularly conduct evaluations, covering a broad range of thematic areas so as to optimise fund allocation and operations in health sector development programmes. For the German International Cooperation (GIZ), for example, we reviewed their health sector portfolio in Cameroon and recommended future priority investments. For SDC, we assessed and made recommendations for activities in the area of nutrition and outlined priorities in the coming years. Similarly, we have conducted programme evaluations for NGOs, like the Swiss Red Cross, of the effectiveness and efficiency of their operations in countries such as Togo and Ghana.

HIGHLIGHTED PUBLICATIONS


Information and Communication Technologies (ICTs) are powerful means to improve health system performance, enabling access to information for professionals and for the population at large. With capacities and projects in the continuum of innovation, validation and application, Swiss TPH plays a significant role in the field of eHealth locally, nationally and internationally. Swiss TPH, with its multidisciplinary capacities and vast scope of international initiatives, innovates and promotes ICT solutions to improve health services and population health.

Health Information Systems

Health information systems play a key role in optimising health delivery processes at facility, regional and national levels. Healthcare professionals, decision makers and researchers increasingly base their work on sound and reliable information available electronically.

Mobile technology, in particular, is taking the place of slow and unreliable communication channels characteristic of rural low-income settings around the world, and enables organisations to connect to wider networks, through the internet. Mobile technology in healthcare – “mHealth” – is widely used to connect health professionals to health information systems, particularly in resource-constrained settings. Previously established technological platforms have been expanded to include mobile user interfaces on smartphones. Even through a simple SMS interface, users on the move or without a computer have access to these information resources.
In line with this trend, Swiss TPH has expanded implementation of mobile information systems in its projects. A new mobile app for the medical device information system, “openMEDIS”, enables biomedical engineers in hospitals to manage medical equipment inventory and maintenance via smartphone or tablet.

Procurement and Supply Chain Management

A major constraint to health systems in low-income countries is the challenge of maintaining effective procurement and supply chain management of essential health commodities such as drugs. We have eased the reporting of antimalarial drug stocks via the use of mHealth at primary health care facilities. In a number of countries, we were able to shed light on problems along the drug supply chain. In Tanzania, ‘SMS for life’ has brought visibility to the depth and duration of total stock-outs of antimalarial drugs. This drew public attention to the problem and pushed efforts to improve the supply situation. A study confirmed that stock-outs occur most frequently in areas with the highest malaria prevalences, necessitating special attention and action.

eHealth Policy Development

There is a growing need for comprehensive strategies for health information systems and eHealth in various settings. Swiss TPH, therefore, is strengthening its eHealth efforts and building up capacity to support its partners in finding their eHealth strategy. In the Ukraine-Switzerland mother and child programme, for example, Swiss TPH helped the Volyn region healthcare administration to develop an eHealth strategy. This effort was coordinated with Ukraine’s Ministry of Health and other relevant stakeholders such as the World Bank.
Swiss TPH eHealth Network

Swiss TPH covers a wide range of professional specialities and key areas. This interdisciplinarity, along with the hundreds of active ICT working sites across the world, provide fertile ground for integrating informatics and communication solutions for improved health systems performance and ultimately better health outcomes. While eHealth applications have been used in varying degrees over the past 20 years, a formal eHealth initiative was launched in 2008 to systematically harness the potential of ICT within Swiss TPH. Since then, an eHealth strategy has guided the development, roll out and evaluation of ICT solutions across the different departments and units. Leading units are: Health Technology and Telemedicine, Health Systems and Policies and Public Health Computing.

Mobile Data Platforms for Surveillance Systems

Smartphones and tablet computers have transformed data collection and management in population-based health surveillance. We are involved in developing, validating and implementing data platforms that improve quality control and near-time data analysis. This approach has proven successful in health and demographic surveillance systems (HDSS) in Kenya, Tanzania and Malawi, where they run the openHDS software developed by Swiss TPH. In collaboration with the INDEPTH network, we are rolling out openHDS across various INDEPTH member sites in Africa and Asia.

HIGHLIGHTED PUBLICATIONS


Swiss TPH is a nationally and internationally recognised institution for teaching, training and learning in international and global public health, epidemiology and infection biology. In order to maintain and develop this standing, we rely on transferring the experiences gained in research and services into teaching, training and learning. Teaching activities are developed and implemented based on knowledge and practical inputs generated by researchers and health experts at Swiss TPH, and often in collaboration with national and international partners.
Undergraduate, Graduate and Doctorate University Programmes

As an associated institute of the University of Basel, Swiss TPH is responsible for teaching activities in medical parasitology and infection biology, in public health and epidemiology, and in medical anthropology at the Faculty of Science, the Faculty of Medicine and the Faculty of Arts and Humanities, respectively. In all programmes, student numbers have either remained constant or have increased over the reporting period. Student interest in two specialised programmes, the MSc in Epidemiology and the MSc in Infection Biology, has especially increased.

Swiss TPH has also contributed substantially to the PhD programme development through its activities with the Swiss School of Public Health (SSPH+) and at the University of Basel, through work with the MD/PhD programme, for example. The total number of doctoral students has steadily increased and there are currently 184 PhD students supervised by Swiss TPH staff. Every year, around 45 young researchers from all over the world receive the doctoral title from the University of Basel due to their involvement at Swiss TPH.

The University of Basel’s decision to admit 40 additional medical students in 2014/15 has offered new opportunities for teaching public health and health economics to medical students, while close collaboration with Università della Svizzera italiana (USI) has focused on medical training. The institute is represented in the respective curriculum commissions.

The Department of Public Health of the Medical Faculty of Basel established the PhD platform Health Sciences (PPHS). Swiss TPH is on the PPHS programme board along with relevant partner institutions (Institute of Nursing Science (ISN), Institute of Exercise and Health Sciences (ISSW), the European Centre of Pharmaceutical Medicine (ECPM) and the Department of Clinical Research at the University of Basel.

The inter-university PhD programme in infection biology (IPPIB), in collaboration with ETH Zurich, was successfully launched in 2014 with 14 students enrolled.

Postgraduate Professional Programmes

Our long-standing record of professional postgraduate teaching ranges from courses and trainings for health professionals, to Master of Advanced Studies programmes in public health, in insurance medicine, in international health and in international health management. Swiss TPH researchers and service providers not only serve as teachers and facilitators in these programmes, but also share their knowledge and expertise to update content and curriculums according to new findings and experiences in the field.

In 2013, the institute introduced a pioneering professional postgraduate programme, the Master of Business Administration in International Health Management (MBA-IHM), hosted by the Medical Faculty of the University of Basel. Capitalising on Swiss TPH’s expertise and experiences in research, services and teaching and training, the MBA-IHM was designed to help overcome the lack of managerial competencies and capacities observed at various levels of health systems around the world. The modular programme goes beyond classical MBA programmes in healthcare, maintaining a global perspective and interdisciplinary approach throughout and a strong focus on meso- and macro-level leadership positions. The MBA-IHM’s blended learning approach to education combines distance-based learning periods supported by facilitators and tutors via an electronic learning management platform, with face-to-face tutorial periods that allow for deeper exchanges with facilitators and students. To date, 29 students from 18 countries are enrolled in the programme and the first graduates are expected in 2015. Future collaboration with internationally renowned business schools is currently under discussion.

In cooperation with the Clinical Trial Unit (CTU) at the University of Basel and the European Centre of Pharmaceutical Medicine (ECPM), Swiss TPH runs several certificate and diploma courses on clinical trial practice and management. These programmes prepare participants to take on management and leadership roles in clinical research settings in academia; pharmaceutical, medical device or biotech industries; clinical research organisations and regulatory agencies.

Swiss TPH also offers a professional postgraduate master programme — the MAS in International Health, and contributes substantially to the Master of Public Health programme of the Universities of Basel, Bern and Zurich, as well as to the MAS in Insurance Medicine.

In 2013, the Swiss Agency for Development and Cooperation (SDC) extended its contract with Swiss TPH to support the Summer School in Public Health Policy, Economics and Management in Lugano with scholarships for students from low and middle income countries for another four years. The institute is responsible for managing student participation in the summer school and contributes yearly with courses and plenary sessions for this unique event.

Within the scope of training professionals in specific topics, Swiss TPH invested in expanding its eLearning activities. These have been incorporated into individual courses and applied to projects and collaborations with partners.
Swiss School of Public Health and tropEd

To achieve its strategic goals in the field of teaching, training and learning, Swiss TPH collaborates extensively with national and international networks in this field. The Swiss School of Public Health (SSPH+) is a national foundation of eight Swiss universities, to which the institute contributes programmes, courses and strategic support as the representative of the University of Basel. At the international level, Swiss TPH is a leading member of tropEd, the Network for Education in International Health, with some 30 member universities worldwide. A staff member of Swiss TPH is the Secretary General of this network. The institute is also represented in the World Federation of Academic Institutions for Global Health (WFAIGH), founded in 2013 at the World Health Summit in Berlin to represent Global Health initiatives and networks on all continents.

Partners

Since 2013, Swiss TPH has been a partner in the Global Partnership Initiated Bioscience Academia for Controlling Health Threats (GIBACHT), a joint project of the Bernhard Nocht Institute for Tropical Medicine (BNITM), Swiss TPH, the African Field Epidemiology Network (AFENET) and the Robert Koch Institute (RKI) funded by the German Partnership Programme for Excellence in Biological and Health Security of the German Federal Foreign Office. Other teaching and training partners include the International Committee of the Red Cross (ICRC), SolidarMed, MSF, and the Swiss Red Cross (SRK). Together with Harvard University and the Barcelona Institute for Global Health, Swiss TPH also organises a course on the Elimination of Malaria. Our longstanding collaboration with the Tanzanian Training Center for International Health (TTCIH) continues, with a more recent focus on developing eLearning.
The Swiss citizens travel more than any other industrialised country’s population. The health risks of short and long term travellers and expatriates are the focus of our work. Whereas communicable diseases are relatively well documented among those groups, the risks of non-communicable diseases among travellers are only partially studied. Risks for travellers such as the impact of accidents (behavioural aspects), cardiovascular diseases and emerging tropical diseases require continuous efforts to provide meaningful recommendations and actions.
Travel Medicine and Returning Travellers

Pre-travel advice: The changing epidemiology of malaria in some countries led to an adaption of the advice on malaria prevention in many countries. Similarly, the changing epidemiology of diseases that can be prevented by vaccinations and the availability of new vaccinations require a continuous evaluation of vaccine indications in the pretravel clinic. In this area, Swiss TPH has leading positions in national and international committees.

Competence/reference centre for Switzerland: The Swiss TPH reference centre provides an umbrella for pre- and post-travel advice and management, working closely with all relevant centers and partners in Switzerland. It relies on income generated from its own services. Public funding is needed to maintain its reference function.

The pre-and post-travel clinic offers diagnostic and medical services and advice on personal protection against vectors via a telephone-service and in-person consultations. An increase in visits to the pre-travel clinic and in calls, plus media interviews related to emerging infections (e.g. Ebola outbreak) has absorbed a considerable amount of human resources.

Resistant microbes: The epidemiology of multidrug resistant bacteria in the gut (ESBL) and in the skin is studied in travellers.

Travellers with immunosuppression: We assess the efficacy and risk of vaccinations in patients with rheumatic diseases and treated with immunomodulators.

Outbreak investigation: Swiss TPH serves as a competence centre to investigate outbreaks of infectious diseases for the Swiss Federal Office of Public Health, i.e. the current Ebola outbreak. A dengue surveillance study will improve the knowledge of trends in imported dengue fever and the influence of the different strains on clinical presentation.

Cutaneous leishmaniasis: The diagnostic methods and treatment recommendations for cutaneous leishmaniasis differ among European countries. New diagnostic tools could allow for more specific management of the different species of leishmania. Swiss TPH has a leading role in the international leishman committee, conducting studies to compare the diagnostic molecular methods and harmonising treatment recommendations for cutaneous leishmaniasis. The influence of immunomodulators on cutaneous leishmaniasis was studied in a multi-centre retrospective study.
Chronic Disease Clinic Ifakara, Tanzania

In the Chronic Disease Clinic in Ifakara (CDCI), Swiss TPH studies patient’s adherence to antiretroviral treatment and the benefit of sertraline in treating HIV-associated cryptococcal meningitis. Swiss TPH was asked to help improve the management of diabetes and will focus on this subject in the near future.

Since December 2012, an optimised data collection system has been operating at the CDCI, allowing for the progressive transition to a paperless clinic. This step was made effective in June 2013. This system serves both to harmonise data collection among the CDCI clinicians and to collect comprehensive data for a better understanding of several aspects of the daily work. CDCI, the pharmacy and the laboratory are interconnected through this system, which has improved the efficiency of patient circuits, reduced waiting times and increased patient satisfaction.

Expansion of the CDCI Activities to the St. Francis Referral Hospital Wards

In order to provide a comprehensive service to all HIV-infected individuals attending St. Francis Referral Hospital (SFRH), an agreement has been reached to ensure that admitted patients can benefit from the expertise generated by CDCI. Hence, ward rounds and bedside teaching are now undertaken everyday by CDCI clinicians on a rotational basis, serving an educational purposes for medical interns and students at SFRH.

Integrating the CDCI with the St. Francis Antenatal and Under-Five Clinic

The ‘Antenatal and Under-five Clinic’ of SFRH was established to improve the care for HIV-infected pregnant women, including prophylaxis of mother-to-child transmission, early infant diagnosis and clinical outcomes of both pregnant women and HIV-exposed and infected children. Three CDCI consultation rooms have been set up at the antenatal clinic. A paediatrician, a Tanzanian doctor, a nurse and a counselor working for the CDCI are available to exclusively attend to children and pregnant women in this setting. Since the new consultation room has been established in March 2013, links to HIV-infected pregnant women and HIV-exposed children have increased by 60–80%. These encouraging preliminary results led to the establishment of a ‘One-Stop Clinic’ for HIV-infected mothers and their families. This initiative has been recently funded by the Merck for Mothers initiative. The ‘One-Stop Clinic’ aims to be a referral clinic in the Kilombero district, with periodic exchanges with and supervision by five clinical trial centers in the district. Universal antiretroviral therapy (ART) is administered to all pregnant women in accordance with the recently adopted new WHO recommendations.

Screening and Diagnosing Opportunistic Infections

Several protocols for screening and diagnosing HIV-associated opportunistic infections have been developed, namely TB screening and diagnosis through GeneXpert technology; cryptococcal meningitis screening and diagnosis; Cryptococcus antigen lateral flow analysis test; hepatitis B screening and diagnosis through HBsAg determination; syphilis screening and diagnosis through VDRL assessment; and cervical cancer screening through visual inspection with acetic acid at existing facilities at SFRH.

Monitoring Patients on Antiretroviral Treatment

Monitoring HIV patients on antiretroviral treatment has been strengthened by implementing plasma HIV RNA viral load monitoring. This is expected to yield better outcomes and survival rates among patients attending the CDCI. In addition, RNA sequencing has been implemented, allowing for the detection of drug resistant mutations. Data on transmitted and acquired resistances are expected by the end of 2014. These data are essential for monitoring and fine tuning the ART programme and for informing Tanzanian health policy makers. All these techniques have been validated through
collaboration with the laboratory at the University Hospital Basel. DNA PCR has been established for early infant diagnosis, in collaboration with the laboratory at the University Hospital Basel.

Research Activities

Our research aims to improve the quality of care in specific setting as well as to generate knowledge that may be extrapolated elsewhere in Tanzania and other African countries. Moreover, the research activities provide a unique opportunity for capacity building and career development among Tanzanian staff. In addition to the partners involved in the CDCI/KIULARCO platform, some of the studies will be pursued in collaboration with international partners of renown expertise, such as the Infectious Diseases Institute at Makerere University in Kampala; the University of Minnesota, USA; the Hospital Clinic of Barcelona; the Barcelona Institute of Global Health; the Social and Preventive Medicine Institute, University Zurich; the Division of Clinical Pharmacology and Toxicology, University Hospital Basel; the Institute of Psychosomatic Medicine, University Hospital Basel; and the Department Biomedicine, University of Basel.

HIGHLIGHTED PUBLICATIONS


SWISS TPH DEPARTMENTS

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Epidemiology and Public Health
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Medicines Research
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<td>Biostatistics</td>
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<td>Medical Centre for International Health</td>
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<td>Research Cluster - Academic Clinical Trials and Capacity Building</td>
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The Department of Epidemiology and Public Health (EPH) primarily conducts research to strengthen public health and health systems. The wide array of research activities include studying the distribution of infectious and non-communicable diseases in both the South and North; exploring the environmental, ecological, social, gender and molecular contexts of health and illness; determining the effectiveness of interventions and health systems; and elucidating patterns of access to, and use of, health services.

EPH develops and applies cutting-edge epidemiological, biostatistical and modelling methods to advance the broad field of public health according to the institute’s strategy of innovation, validation and application. Developing and applying health impact assessment tools also provides information about the public health relevance of policies, strategies, decisions or projects. In these ways, EPH contributes to improving health and policy making in Switzerland, Europe, and in low- and middle-income countries in Africa, Asia and the Americas.

Its 24 research groups are administratively and strategically assembled in eight interdisciplinary research units to address the dynamic clusters of cross-cutting public health topics.

EPH strengthens large-scale national and international research platforms of population-based cohorts and promotes the scientific use of dynamic cohorts established in large demographic surveys in Africa and Asia. Departmental expertise includes integrating analysis of health databases with social, cultural, environmental, molecular and genetic information (biobanking) as well as modelling and mapping diseases and exposures.

Through its support platform, EPH’s methodological expertise is available to all Swiss TPH staff, University of Basel research partners and external customers. Services include study planning, quantitative and qualitative methods support, biostatistics advice, data management, software development and geographical information systems support to strengthen public health research and services.

EPH scientists also give advice to policy makers, agencies and institutions, an activity that constitutes a key part of our strategic commitment to supporting science-based policy making. In line with this mission, EPH staff is also heavily involved in teaching and training at all levels and in various faculties and institutions.
Biostatistics

The Biostatistics Unit conducts collaborative, basic and applied statistical research in the fields of epidemiology, parasitology and infection biology. Major areas of methodological research include spatio-temporal modelling for disease burden estimation and surveillance, diagnostic error evaluation, cohort data modelling, exposure modelling, causal inference, meta-analysis and Bayesian computation. Primary application areas involve malaria, anaemia, neglected diseases, HIV, mortality, cancer and environmental epidemiology. Research is mainly funded by the Swiss National Science Foundation (SNSF), the Bill & Melinda Gates Foundation (BMGF) and by a European Research Council (ERC) Advanced Grant led by the unit head. The unit trains doctoral students and supplies teachers for statistics and epidemiology courses at the University of Basel, the Swiss Master of Public Health and the Postgraduate Programme for University Professionals in Insurance Medicine. The unit leads Swiss TPH’s scientific support services (study design, data management, statistical analysis and data interpretation). Clients come from within Swiss TPH and externally.

Chronic Disease Epidemiology

Non-communicable diseases (NCDs) contribute increasingly to the global burden of disease. Local risk estimates that consider disease risk and protective factors in their genetic, social and environmental context are needed to improve health, social and environmental policy planning. The unit conducts research based on data from Swiss, European and non-European cohorts and biobanks to identify causal risk factors and disease mechanisms of NCDs (cardiovascular, diabetes, COPD, cancer). Environmental pollutants (e.g. air pollution and noise exposure, tobacco smoke exposure) as well as obesity and physical activity are at the centre of the research agenda. The Unit Head also leads the Swiss “flag ship” study SAPALDIA, with its large network of Swiss TPH, national and international scientists. The unit generates scientific evidence and applies it at policy level through health impact assessments, surveys on risk factors and behaviours and broad participation in relevant commissions (e.g. Federal Commission for Air Hygiene, Swiss NCD strategy, Swiss Expert Committee on Genetic Testing of Humans and the WHO).
Ecosystem Health Sciences

The unit pursues a broadly applicable ecosystem health approach to improve people’s health and well-being, to reduce inequities and to enhance ecosystem services. Emphasis is placed on neglected tropical diseases and malaria, with activities mainly focussed on West Africa and Southeast Asia. The unit examines how behavioural, demographic, environmental and socioeconomic factors govern health at the individual and population level. The unit collaborates closely with other EPH units and across departments. Bridges have been built with the Chronic Disease Epidemiology Unit to deepen our understanding of the associations between neglected tropical diseases and non-communicable diseases. A network of partnerships with health research and development centres in Africa and Asia provides the backbone for linking innovative laboratory investigations with community-based intervention studies.

Environmental Exposures and Health

Researchers in the Environmental Exposures and Health Unit develop and integrate novel tools and methods to investigate the health effects of a wide range of environmental exposures. Such exposures include noise, non-ionising and ionising radiation, climate, UV radiation, environmental microbial exposures, environmental tobacco exposure, air pollution and geographic determinants of health. We conduct measurement studies and develop exposure models for use in national and international collaborations. Current epidemiological studies in the unit deal with childhood tumours, cardiovascular diseases, neurobehavioural effects, atopic and respiratory diseases and health-related quality of life in children and adults. The unit also conducts health risk assessments, including meta-analyses and systematic reviews. International collaborations are particularly strong in several studies jointly conducted with the Chronic Disease Epidemiology Unit.

Health Systems Research and Dynamical Modelling

The unit combines systems science for health systems strengthening with computational sciences and statistical and mathematical modelling to provide evidence on contemporary issues in global health. We focus on understanding disease transmission dynamics, specific system-level interventions and health interventions in a systems context. This is in line with Swiss TPH’s goal of creating global leadership in infectious disease modelling and integrated health systems research, systems strengthening and training. We work closely with major research institutions in low- and middle-income countries and in Switzerland. The unit consists of groups working on health systems, economics and policy, household-level health interventions, mathematical modelling of infectious diseases and public health computing. Our research is intended to inform both global health research donors and public health policy makers of appropriate priorities, strategies, and resource allocation for effective and equitable health development.
Human and Animal Health

The unit uses an extended One Health approach to control zoonoses and improve the health of mobile populations. It seeks closer cooperation between the human and animal health sectors to add value in terms of improved human and animal health status, financial savings and environmental benefits. Systemic approaches consider health as an outcome of social-ecological systems. Among neglected zoonoses in developing countries, brucellosis and rabies are central in our work, which spans from training and interventions to molecular genetic analysis. A textbook on One Health theory and practice will be published in March 2015. New projects include animal assisted therapy for brain injury patients, improving health monitoring of mobile pastoralists with new technology, and evaluating synergies of human, animal and plant health services. Our research on regional migrants benefits from long-standing work on the health of pastoralists, balancing the needs of both communities and service providers.

Health Interventions

The unit mainly develops new health interventions for malaria. All groups work on aspects of applied research, from testing new vaccines to implementing proven control tools at national level. The Malaria Vaccine and Clinical Epidemiology groups actively collaborate with successful malaria vaccine initiatives, including the combined Phase Ia/b testing of the first whole sporozoites vaccine and the nearly completed Phase III testing of the RTS,S vaccine, which may be registered in 2015. The Clinical Epidemiology group is continuously improving new management and treatment guidelines for fever in African children and developing a broad clinical epidemiology agenda. Large-scale monitoring and evaluation of malaria control in Papua New Guinea, as well as surveillance-response systems in Africa are new areas of work with great potential. The newly created Vector Resource Centre, a group in Basel and a group in Bagamoyo, Tanzania, develop and evaluate new vector control tools in addition to other mosquito-related work. Finally, the Malaria Control group implements large-scale malaria control activities in Tanzania and DR Congo, and supports the Roll Back Malaria partnership and WHO through the GlobMal project.

Society, Gender and Health

Social, cultural and gender-related issues are key determinants of public health and are central to effective disease control and health promotion. Areas of research pursued in the unit include gender and health, medical anthropology and cultural epidemiology, representing key aspects of the health social sciences. The Gender and Health Research Group focuses on how gender shapes health status and access to health care. It conceptualises gender as a socio-cultural health determinant and addresses sex/gender-related factors in epidemiological models of non-communicable diseases and health throughout the life course. The Medical Anthropology Research Group emphasises an actor’s role playing approach to studying health and illness, with a particular focus on reducing vulnerability, building resilience and maintaining livelihoods among women, youth, the elderly, migrants and mobile populations. The Cultural Epidemiology Group incorporates approaches from health social sciences and classical epidemiology. It integrates quantitative and qualitative methods to clarify the relevance of ethnographic interests and the effects of culture on health.
The Department of Medical Parasitology and Infection Biology (MPI) has broad and interdisciplinary scientific expertise in infection and parasite biology. Innovative concepts, methods and products are used to understand infectious diseases, especially poverty-related diseases. Traditional target disease systems primarily included parasitoses such as malaria, sleeping sickness, leishmaniasis and helminth infections. However MPI has extended its research portfolio in the last 15 years to take account of bacterial infections, such as mycobacterial diseases and bacterial meningitis.

MPI’s multidisciplinary research focuses on host-pathogen interactions and the determinants of infection morbidities and co-morbidities at the molecular, cellular, clinical and population level. The department seeks to develop innovative concepts and novel products to better control infectious diseases and co-morbidities. Integrating clinical, field and laboratory research is a guiding principle. The department covers a broad spectrum of classical cell biological, biochemical, genetic and immunological methods and has, in recent years, embraced innovative approaches based on systems biology, genomics, epigenomics, transcriptomics, proteomics, lipidomics and metabolomics.

Following the strategic line from innovation to application, MPI is closely involved in developing drugs, new treatments, vaccines and diagnostics. It is also active in validating and clinically testing new tools, and in supporting other Swiss TPH departments apply and use these resources towards strengthening health systems.
MPI works closely with other departments at Swiss TPH and plays an active role in national and international networks, research consortia, public-private partnerships and industry collaborations.

Nine MPI staff members hold formal teaching appointments at the University of Basel’s Faculty of Science, where they are very actively involved in teaching courses for the BSc and MSc in Infection Biology. They also supervise a number of PhD students and contribute to teaching at the Faculty of Medicine and for Swiss TPH’s postgraduate courses.

Clinical Immunology

Clinical Immunology focuses on systems-immunology-based approaches within the framework of Phase I to III clinical trials. The unit’s research aims to identify surrogates of protection and host factors elicited by subunit and whole parasite vaccines against tuberculosis (TB) and malaria. Clinical trials are performed in disease endemic countries, such as Tanzania, in long-standing research collaborations. Further, the unit develops novel diagnostic tools for paediatric clinical TB in high endemic countries. Co-morbidity studies analyse the impact of non-communicable diseases, such as diabetes mellitus, on immune responses against infectious diseases, particularly TB. Unit researchers also work to understand the consequences of helminth co-infections on malaria, TB and HIV pathogenesis and immunity.

Gene Regulation

Research in the Gene Regulation Unit focuses on different aspects of nuclear biology in the malaria parasite, Plasmodium falciparum. The main objective is to understand the mechanisms regulating the expression of genes linked to immune evasion and sexual differentiation. To achieve these goals, researchers combine classical molecular and cell biology tools with reverse genetics approaches, proteomics and genome-wide expression and chromosome signature analyses. Collaboration with several Swiss TPH research units and expert groups from other institutions in Switzerland and abroad facilitates sharing of scientific and technological expertise and optimises research outputs. Additional knowledge in these areas will greatly benefit our understanding of parasite virulence, chronic infection and malaria transmission and will support the development of new malaria intervention strategies.
Helminth Drug Development

The unit focuses on drug discovery, preclinical research and drug development (clinical trials) to kill intestinal worms in the human body. For this purpose, the unit maintains a unique collection of nematode (e.g. both hookworms *Necator americanus* and *Ancylostoma ceylanicum*) and trematode (e.g. *Schistosoma mansoni*) life cycles in the laboratory. Together with academic and industrial partners and in public-private-partnerships, the unit pursues *in vitro*, *in vivo* and clinical studies. Incorporating the latest technologies for *in vitro* assays, the anthelmintic drug discovery is constantly improved. Pharmacokinetics of anthelminthics are assessed in close collaboration with the Department of Pharmaceutical Sciences at the University of Basel, using bioanalysis methodology (liquid chromatography-tandem mass spectrometry LC-MS/MS). In addition, we conduct investigator-driven clinical and pharmacokinetic trials in the framework of long-term partnerships with institutions in Southeast Asia and Africa.

Molecular Diagnostics

The Molecular Diagnostics Unit develops new tools for diagnosing parasitic diseases and for genotyping parasite strains and species. Researchers investigate tropical diseases as well as parasites occurring in Switzerland. New diagnostic tests are applied to population-wide studies in endemic areas and are also used for individual diagnosis in returning travellers and in patients referred to Swiss TPH. Translational research is conducted primarily within multilateral collaborations and often involves exchange of research staff. The unit’s projects focus on malaria, *Leishmania* and HIV and aim to develop novel laboratory tests and strategies for analysing epidemiological data. Research products are transferred to the field and used for molecular monitoring of disease interventions. A major aim is to support malaria elimination efforts in our partner countries and to provide the knowledge-base for planning and choosing effective control strategies.

Molecular Immunology

Researchers in the Molecular Immunology Unit develop and evaluate new technologies for designing vaccines, developing diagnostic antigen detection systems and analysing the genetic and antigenic diversity of pathogens. These technology platforms are used in research and development for diseases such as Buruli ulcer, malaria and meningitis. For Buruli ulcer, a chronic necrotising skin disease caused by *Mycobacterium ulcerans*, a broad research portfolio comprising clinical, field and laboratory studies has been developed. Activities include studying the pathogenesis and transmission of the disease, optimising treatment and developing a vaccine and a point-of-care diagnostic test. For malaria, research focuses on designing a subunit vaccine and identifying and profiling new vaccine candidate antigens. In the area of meningococcal and pneumococcal meningitis, our longitudinal disease and colonisation studies in the meningitis belt of sub-Saharan Africa have provided the basis for comparative genomic analyses that aim to better understand natural immune defence and immune evasion mechanisms. Further, one research group focuses on lipidomics and the role of lipids in host-pathogen interactions.
Parasite Chemotherapy

The Parasite Chemotherapy Unit is the drug discovery centre for protozoan parasites. It draws on over 20 years of experience in parasite propagation to assess the chemotherapeutic potential of compounds against *Plasmodium* spp., African trypanosomes, *Trypanosoma cruzi*, and *Leishmania*. The unit has contributed to developing the majority of new chemotypes that have entered clinical testing for malaria or sleeping sickness in the last decade. A substantial part of the research concentrates on developing novel *in vitro* assays and *in vivo* models. Drug discovery activities are complemented by preclinical studies on drug absorption and pharmacokinetics. Further, molecular biology and bioinformatic approaches target the mechanisms of drug resistance and the mode of drug action. This multidisciplinary approach is supported by numerous collaborations involving academic and industry partners, as well as product-development-partnerships.

Tuberculosis Research

Researchers in the Tuberculosis Research Unit study the global diversity of *Mycobacterium tuberculosis*, the main causative agent of human tuberculosis (TB), the evolutionary factors that drive this diversity and the consequences which result for TB control. Of particular interest is the emergence and spread of multidrug-resistant strains of *M. tuberculosis*. The unit applies large-scale genomics technologies, like comparative whole-genome sequencing, RNA sequencing and quantitative proteomics, to address these research topics. These experimental approaches are combined with detailed molecular epidemiological studies in Switzerland and in endemic countries, and in partnership with various national and international institutions. The unit participates in clinical trials of new TB diagnostics, drugs and vaccines conducted with our partners at the Ifakara Health Institute in Tanzania and at the National Centre for Tuberculosis and Lung Diseases in Georgia. The Computational PathoGenOmics group assists in the design of -omics experiments and data analysis. As a research group affiliated to the Swiss Institute of Bioinformatics, the group furthermore coordinates bioinformatic activities in the -omics workgroup at Swiss TPH, and participates in teaching of bioinformatic courses at the University of Basel.

Molecular Parasitology and Epidemiology

During a malaria episode, malaria-infected red blood cells undergo dramatic changes whereby parasite proteins are transported to the erythrocyte and its surface. Subsequently, they become sticky and adhere to blood capillaries resulting in the leading cause of the pathology of malaria. Using an array of techniques including reverse genetics, the unit tries to understand these processes. We identified a number of proteins that influence cellular re-modelling. As the interaction of these proteins seems to be essential for the parasite’s survival, the group aims to find innovative intervention strategies. In collaboration with the Medicine for Malaria Venture, the WHO and industry partners, the unit also monitors drug and intervention trials for breakthrough parasitaemia and gametocyte carriage of *P. falciparum*. Similar studies have been conducted with *P. vivax* to determine the proportion of relapses after treatment. Furthermore, we determine point mutations of artemisinin-resistant *P. falciparum* and provide these data to the WHO.
The Department of Medicines Research (MedRes) is the cornerstone of clinical research at Swiss TPH. It provides clinical research and services for internal and external partners in resource effective ways. Its long-term experience in managing and conducting clinical research projects, particularly in Africa, and its close collaboration with Swiss TPH’s clinical and research units are its key assets, positioning it at the interface between industry and academia. MedRes manages small- to medium-sized clinical trials on poverty-related diseases. For instance, on behalf of the Drugs for Neglected Diseases initiative (DNDi), the department is currently assessing the safety and efficacy of fexinidazole, a new oral drug against human African trypanosomiasis (sleeping sickness). The drug has the potential to become a stepping stone towards disease elimination within the next three years. MedRes’ teaching activities are based on many years of field activity in Africa and elsewhere. The department offers graduate and postgraduate courses on clinical research and drug development and basic training in good clinical practices for professionals.
Pharmaceutical Medicine

The Pharmaceutical Medicine Unit (PMU) acts as an academic contract research organisation (CRO) providing services for clinical research to external clients from industry, public-private-partnerships and academia. It collaborates closely with Swiss TPH's clinical and research units. This distinct academic profile combined with its long-term experiences, particularly in Africa, and the quest for cost-efficient solutions differentiates MedRes PMU from other CROs. Services include planning, managing and monitoring clinical studies and trials on poverty-related diseases for industrial and non-commercial partners. In line with Swiss TPH priorities, the unit organises, monitors and conducts clinical trials on malaria, tuberculosis and several neglected parasitic diseases. Currently, the unit supports several malaria vaccine and challenge trials (Phase I) in Tanzania and Switzerland, most of them in collaboration with the Ifakara Health Institute (IHI). An observational study of artesunate-amodiaquine is underway in Côte d'Ivoire on behalf of Sanofi, while in the Democratic Republic of the Congo, the unit recently led an observational implementation study (Phase IV) of injectable artesunate against severe malaria with the Medicines for Malaria Venture (MMV). Recently, projects towards developing a paediatric formulation of praziquantel for treating schistosomiasis, on behalf of Merck, were added to the portfolio.

The Research Cluster

The research cluster drives Swiss TPH’s internal clinical research forward by taking advantage of the long-term experiences working in commercial environments. Its team investigates how clinical trials are conducted in low-resource settings. One specific aim is to acquire knowledge on how to optimise project implementation and render it more efficient, while adhering to pertinent regulations and to the highest ethical standards for patient safety and data integrity.

Quality Management Services

MedRes offers consultancies and training courses on topics relevant to clinical research. The teaching portfolio includes undergraduate and postgraduate courses in clinical research or drug development. The Quality Management Services (QMS) team constantly translates the knowledge acquired in the field into the classroom. It provides basic trainings for professionals in good clinical practice (SwissMedic accredited for investigators and sub-investigators) and advanced modules (CAS/DAS level) on clinical research and clinical trial practice, in collaboration with the University of Basel Clinical Trial Unit. In addition, QMS develops courses specially tailored to the needs of research organisations and sponsors. Services are offered worldwide, with a current focus on Switzerland, Europe, Africa and Russia/GIS countries. Further, a MedRes team is presently involved in setting up a comprehensive quality management system for the Ifakara Health Institute (IHI).
The Swiss Centre for International Health (SCIH) supports health systems development in Switzerland, Europe and around the globe. It facilitates people’s access to essential health services, and combines scientific knowledge and practical expertise to reduce health inequalities. SCIH’s major areas of expertise include health technology and telemedicine, sexual and reproductive health, health systems support and systems performance and monitoring.

SCIH provides programme management and implementation, consultancy and advisory expertise, teaching and training and operations research to sustainably strengthen health systems worldwide. SCIH employs about 160 staff members from over 35 nations with various professional backgrounds. They combine high scientific standards with practical experience. Through its various services, SCIH contributes substantially to the overall income of Swiss TPH.

The wide array of services offered by SCIH draws from the extensive research portfolio at Swiss TPH. It is a preferred partner for many institutions and agencies in Switzerland and abroad. For instance, the Swiss Agency for Development and Cooperation (SDC) relies strongly on the SCIH’s expertise in planning and executing various health projects in Tanzania and the Great Lakes Region.
Health Systems Support

Effective health services rely on strong health systems. SCIH identifies, analyses, reviews and compares health strategies and policies to enlarge scientific evidence and to facilitate decision-making in these critical areas. In Tajikistan and in Tanzania, for example, SCIH improves access to care through strengthening community involvement, skills of primary care providers and infrastructure and equipment availability and, more generally, through resource shifts away from hospitals towards primary care. In Tanzania, SCIH also designs and implements health insurance schemes for the poorest – with the conviction that health coverage should not be the privilege of a wealthy few.

Health Technology Management and Telemedicine

The steady influx of new methods, materials and clinical devices into health services shape the way healthcare is provided. New technology often comes with increasing recurrent costs, changes in medical practices and additional training needs. Appropriate infrastructure, medical facilities and equipment, health devices, logistics and proper management are vital to offering high standard health services to the population. SCIH leverages its expertise in health technology management, from introducing computerised inventory systems to providing medical engineering and telemedicine know-how and promoting eHealth.

Sexual and Reproductive Health

Improved sexual and reproductive health is a key to development and poverty reduction. Gender plays a strong role within this health dimension. SCIH supports governments to improve the quality of maternal and perinatal health services in Eastern Europe, Central and Southeast Asia and in Africa, with the ultimate aim of reducing the persistently high morbidity and mortality rate of women and babies during pregnancy, birth and after the birth period. It does this through activities at all levels of the health systems and at community level. In Eastern Africa particularly, SCIH promotes sexual health, family planning services and HIV/AIDS counselling, especially for younger people, and helps to overcome the social barriers that often prevent people from making use of such services.

Systems Performance and Monitoring

Performance assessment and monitoring are vital for analysing the outcomes and impacts of different health systems interventions. SCIH activities in this field aim to improve the performance of health services and programmes, in terms of quality and functioning, and to contribute to developing accessible, equitable and efficient health systems. As a Local Fund Agent for the Global Fund to Fight AIDS, Tuberculosis and Malaria, for instance, SCIH oversees programme performance and financial accountability in 15 countries.
The Teaching and Training Unit is responsible for administering all undergraduate, graduate, doctoral and post-graduate professional training activities at Swiss TPH and for planning and implementing professional postgraduate courses and programmes. The continuous pursuit of ‘mutual learning for change’ is the unit’s guiding principle and has been a distinct feature of all teaching and training activities at the institute since its creation. More than 60 Swiss TPH staff are committed to teaching in the University of Basel’s Bachelor and Master programmes, with major responsibilities in three faculties. Staff provide some 4,000 lecture hours and also supervise PhD and Master students.

A total of 184 students are enrolled in PhD studies at Swiss TPH in the areas of microbiology, cell biology, zoology and epidemiology.

In 2012 and 2013, 53 students were enrolled in the specialised master programmes, the MSc in Epidemiology and the MSc in Infection Biology. Between 2012 and 2013, eight students graduated from the MSc programme on Infectious Diseases, Vaccinology and Drug Discovery, jointly run with the National University of Singapore, the Biozentrum of the University of Basel and the Novartis Institute for Tropical Diseases (Singapore).
DEPARTMENTS: TEACHING AND TRAINING

DEPARTMENT HEAD: AXEL HOFFMANN
DEPUTY HEAD: BERNADETTE PETERHANS
STAFF: 16

University of Basel Bachelor/Master Teaching
Lecturing hours: 4,200/yr
Courses led: 15/yr
Master/PhD thesis supervision: 250/yr

Postgraduate Teaching
Lecturing hours: 4,630/yr
Courses led: 10/yr
Master/PhD thesis supervision: 75/yr

Professional Postgraduate Teaching and Training

Developing and implementing courses for health professionals holding a first degree is a strategic focus of the unit. Over the decades, the institute has successfully run various international master and diploma programmes as well as certificate courses. In addition to the programmes highlighted below, the institute also contributes substantially to the Master in Public Health programme of the Universities of Basel, Bern and Zurich, and the Master in Insurance Medicine.

Master in International Health (MIH)
Successful collaboration with European, African, Asian, Australian and Central American Partners

The Master in International Health (MIH) is implemented in several European universities. The MIH is a joint master’s degree programme in which students not only pursue their studies at Swiss TPH, but also take a substantial number of accredited short courses at one of the more than 30 participating universities in Europe, Africa, Asia, Australia or Central America. Some 80 students are currently enrolled in the MIH programme at the University of Basel. The core course for the MIH is the diploma course on Health Care and Management in Tropical Countries (HCMTC), with around 24 students per year. The unit runs several certificate courses that students can also take to accumulate credit points for the MIH.

MBA in International Health Management

In 2013, Swiss TPH introduced the Master of Business Administration in International Health Management (MBA-IHM). This novel and unique MBA programme provides students with an opportunity to acquire the knowledge and skills required to work in meaningful and productive partnerships and to take leading positions in health institutions at various levels. Using a blended learning approach, the modular programme goes beyond classical MBA programmes in healthcare, maintaining a global perspective and interdisciplinary approach throughout. In the first two years, a total of 29 students enrolled in the MBA-IHM.

CAS General Tropical Course
‘Allgemeiner Tropenkurs’

One of the few courses taught in German, the institute has offered the General Tropical Course (Allgemeiner Tropenkurs) since its foundation in 1944. The eight-week, full-time course accommodates up to 50 participants and is open to anyone interested in life in tropical countries and key issues of development.

SSPH+ and tropEd – National and International Teaching Networks

Swiss TPH cooperates with postgraduate academic teaching and training networks at both the national and international level.

The Swiss School of Public Health (SSPH+) is a foundation of seven member universities: Basel, Bern, Geneva, Lausanne, Lugano, Neuchâtel and Zurich. Swiss TPH represents the University of Basel in this venture. SSPH+ facilitates exchange, collaboration and networking between the various programmes on offer (MAS, DAS, CAS and doctoral) and promotes the development of new training programmes. Swiss TPH is represented on the school board and in SSPH+’s extended management group.

tropEd – the network for education in international health, is an association of more than 30 institutions in 13 European and eight overseas countries (Australia, China, Indonesia, Mexico, South Africa, Tanzania, Thailand and Vietnam). Swiss TPH is a founding member and has been very active in the network since its beginning. Swiss TPH has hosted the network secretariat since 2011 and a staff member was elected General Secretary. The aim of tropEd is to promote excellence in postgraduate education and training in international/global health.
The Medical Services and Diagnostics Department (MEDDIA) is a national centre of excellence in travel and tropical medicine and in parasitological diagnostic services. The department’s travel clinic and the Praxis Föhre provide preventive, diagnostic and curative services for imported infectious diseases to the public, in the greater Basel area, including neighbouring France and Germany. The department also serves as the Swiss National Reference Centre for Imported Human Parasitic Diseases and provides medical advice to hospitals and doctors in Switzerland. The clinicians have formal appointments at the University Hospitals of Basel, Bern and Zurich, and at the Cantonal Hospitals of Aarau and Biel/Bienne. They maintain close contacts with the travel clinics in Lausanne and Geneva and teach in some 70 national and international tropical and travel medicine courses and seminars every year.
Medical Services

Specialists in tropical and travel medicine provide preventive counselling, diagnosis and medical care for travellers returning ill from tropical and subtropical countries and for check-up investigations. A 24-hour emergency phone line provides emergency advice on tropical travel-related health problems and emerging diseases for patients, medical doctors and people working abroad for national or international organisations. The medical clinic at Socinstrasse is visited by some 3,000 patients each year and also serves as an emergency medical service for Swiss TPH staff. Johannes Blum runs a private practice ‘Zur Föhre’, thus maintaining standards in internal general medicine.

Travel Clinic

The travel clinic offers pre-travel advice and vaccination services and is open five days a week at fixed times in the afternoons with no prior appointment necessary. In 2013 and 2014 combined, more than 20,000 clients visited the travel clinic. In addition, more than 50,000 callers sought advice via our service-phone line.

Swiss TPH Diagnostic Centre

National Reference Centre for Imported Human Parasitic Diseases

The Diagnostic Centre, accredited by the European Union (EN ISO/IEC 17025), examines blood, serum, stool and urine samples with various techniques, including immunodiagnostics, microscopic examination and PCR for presence of parasites. The samples originate from our travel clinic and the Praxis Föhre and from hospitals, private laboratories and private practitioners all over Switzerland and its neighbouring countries. Some serum-samples for detecting antibodies against very rare parasites are sent in from places around the world. Therefore, a foremost goal of the centre is to constantly improve the existing tests and to introduce newly developed ones in order to live up to our reputation as a leading reference centre. We attach great importance to developing and validating new assays, in addition to our diagnostic services. Outside of regular working hours, the emergency services for diagnosing malaria is requested almost 200 times per year.

Laboratory staff are regularly engaged in teaching courses on diagnostic parasitology in Switzerland and in several African and Asian countries. They actively participate in or carry out quality control examinations of parasite epidemiology projects in the field and clinical malaria trials. The unit leaders also teach biology courses at the bachelor and master levels at the University of Basel.
Clinical Research

The Clinical Research Unit (CRU) was established in June 2014. The new unit primarily focuses on clinical research for TB and HIV/AIDS, malaria and acute fevers and neglected tropical diseases, and investigates the interplay between infectious and non-communicable diseases. Interdisciplinary and interdepartmental collaborations strengthen the existing broad and internationally acknowledged expertise in clinical research at Swiss TPH. The unit currently coordinates, supports and conducts 22 clinical projects on TB, HIV/AIDS, malaria and acute fevers and infectious and non-communicable diseases. The unit aims to generate innovative clinical research together with in-house specialists at Swiss TPH as well as with external partner institutions.

The CRU also supports and coordinates clinical research conducted by other Swiss TPH units or by partner institutes to enhance synergies and consistency in projects with clinical content. The CRU’s support activities are embedded in the workflow of the Project and Grant Service Unit (PGS). Project ideas or project proposals with clinical content are shared with CRU at an early stage. The work and information flow and the scope of clinical support are defined in a standard operating procedure, developed by PGS and CRU. Moreover, the unit helps to define and assure quality standards in clinical aspects of new studies, in close collaboration with the MedRes Department.

Chronic Disease Clinic Ifakara

The Chronic Disease Clinic (CDCI) in Ifakara was set up in 2004 through collaboration between Swiss TPH, the Ifakara Health Institute (IHI), the St. Francis Referral Hospital (SFRH) and the Government of Tanzania. CDCI also receives technical support from the University Hospitals of Basel and Bern. As an integral part of the SFRH in Ifakara, the CDCI has been functioning since 2005. Initially built to support the Tanzanian National AIDS Control Programme, CDCI activities have expanded progressively to take care of all HIV outpatients and inpatients visiting SFRH, including pregnant and non-pregnant adults, and HIV-exposed and HIV-infected children. In addition, CDCI now includes the SFRH Tuberculosis clinic, allowing it to integrate services and to improve the outcome of patients with TB and HIV. CDCI aims to be a centre of excellence in managing HIV in rural Africa, with three main integrated activities, namely clinical care, research driven by local needs and training. In the past year, special attention has been given to optimising different areas of the CDCI, including clinical care, laboratory, pharmacy and voluntary counselling and testing (VCT) services.
World AIDS Day manifestation with the team of the Chronic Disease Clinic in Ifakara, Tanzania, 1.12.2013
Swiss TPH’s Administration Department is the backbone of the institute and provides internal services through six units: Finances, Human Resources, Infrastructure, Informatics, Project and Grant Service and Controlling. The latter two units were created in the last reporting period to meet the increasing demands of the institute’s research and service departments.
Finances

Swiss TPH’s budget was CHF 72 million in 2013, 83% of which was acquired competitively through research grants, medical and consultancy service fees and course tuition fees. Managing more than 500 projects with diverse funding sources remains a challenge, especially as donors are increasingly asking for detailed financial reports and additional audits. To accommodate these demands, the unit changed its accounting standards from IFRS for SMEs to Swiss GAAP FER, a “true and fair view” standard, which better fits the institute’s needs and requirements. Long-standing Head of Unit, Ms. Dominique Bourgau, retired in 2013 and was replaced by Martin Näf.

Human Resources

The Human Resources Unit (HR) has been engaged in defining and implementing a new International Assignment Policy, which includes a salary scheme compatible with the cost of living in the assignment country. In 2013, HR organised leadership training for Department and Unit Heads, in cooperation with the Institute of Applied Psychology (IAP). Furthermore, an online recruiting tool was implemented to facilitate the handling of job applications and the recruiting process.

Infrastructure

Building space has become a major challenge for Swiss TPH. In addition to maintaining, adapting and renovating our buildings, a feasibility study was conducted to answer strategic questions about the future building infrastructure. A total renovation of the premises at Socinstrasse is not a sustainable solution. Instead, a new Swiss TPH building in the proposed Innovationspark in Allschwil, on the outskirts of the city, seems to be an attractive and appropriate solution. Discussions about this project are currently underway.

Informatics

Some 750 customers demand ICT-support services at Swiss TPH. To meet their needs, the Informatics Unit was restructured and its processes were adapted to meet IT Infrastructure Library (ITIL) standards. ICT-infrastructure was streamlined and modernised, especially the printing system, storage capacity, network (Eduroam wireless network in public venues) and Lotus Notes facilities. Network connectivity was also extended to the new satellite offices at Eulerstrasse and Bildungszentrum 21. The service portfolio has been standardised and customers can now order hard- and software through an intranet-based shop. A hotline and ticketing system for support services are well established. In 2013, Alain Bertolotti joined Swiss TPH as the new Head of Informatics, after his predecessor, Marco Clementi, left the institute to explore new challenges. The Informatics team has grown to the equivalent of 10.5 full-time employees.
Controlling

The Controlling Unit was strengthened with the addition of a new staff member charged with improving internal administrative procedures and departmental controlling issues. The unit’s major achievement during the last reporting period was the implementation of a new workflow system for processing incoming invoices efficiently, in conjunction with an electronic archive to store all accounting documents and the institute’s contracts.

Project and Grant Service

The Project and Grant Service Unit (PGS) was launched in autumn 2013 to provide a central support structure for all processes during the project cycle, in order to secure long-term sustainability and quality of the institutional project portfolio. Michael Käser leads the unit, which serves as a central information resource for project-related knowledge within Swiss TPH. The unit works across departments and serves as a liaison between Swiss TPH and its external partners and stakeholders. In addition, the unit hosts the secretariat of the Swiss TPH research commission and coordinates activities to improve project quality at the institute.
Biosafety and Security

Work at Swiss TPH is associated with specific dangers and risks, including the use of hazardous biological or chemical agents and travelling to fragile and conflict-affected countries. Swiss TPH is highly committed to protecting the health of its personnel and the environment. The Biosafety and Security Unit, led by Marco Tamborrini, proposes and implements preventive activities related to occupational safety, health protection and travel safety. The integration of, and attention to, safety procedures in all research, service and teaching activities is a prime operative strategy for Swiss TPH safety concepts. Achievements during the reporting period include employing new and additional safety advisors, implementing new safety concepts and successfully passing external audits.

Communication and Public Affairs

In February 2013, the institute founded a new Communication and Public Affairs Unit to enhance public awareness of Swiss TPH’s activities. The unit is responsible for institutional communication, both internally and externally, managing media inquiries, producing various brochures and organising events, among other activities. It also supports departments and units with their specific communication needs. The Communication Unit organised all activities related to the 70-year anniversary of the institute, including an Open House that attracted well over 3,000 people to the institute. Currently, the unit is working on a new Swiss TPH website that will be launched in 2015.

Documentation and Library

The library plays a central role in delivering information to students, staff and the wider public. The team offers up-to-date services that rely on electronic resources. These include online data sources, library catalogues, bibliographic databases, electronic journals and e-books. The library offers a reading room with 15 workstations connected to all University of Basel electronic resources. In addition, users will find more than 8,000 books in the library. The library team offers training in database searching, in collaboration with the library of the University of Basel. The library collects and registers all publications authored by Swiss TPH staff and maintains the Swiss TPH website and other related sites. The Swiss TPH library participates in the library network of the Universities Basel and Bern and in the Network of Swiss Development Documentation Centres. It also assists partner institutions in the South.
FINANCES AND KEY NUMBERS

Swiss TPH is a public organisation, currently receiving 17.3% of its core budget from the two cantons of Basel and the Swiss federal government. The remaining contributions (of 82.7%) are received through competitive research funds and the earnings of the Swiss TPH service departments.

Spread over six buildings around Socinstrasse, 450 people and 141 PhD students are currently working for Swiss TPH. Another 100 people work in local offices abroad, in 20 different countries. Swiss TPH staff represents more than 60 different nationalities.

According to a study of 2014 by the Fachhochschule Nordwestschweiz, Swiss TPH contributes around 46 millions CHF gross value added in the Basel area, yearly.
Annual Accounts

**INCOME STATEMENT**

<table>
<thead>
<tr>
<th>Category</th>
<th>2013 in 1,000 CHF</th>
<th>2012 in 1,000 CHF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-managed income</td>
<td>57,011</td>
<td>50,074</td>
</tr>
<tr>
<td>Core funding from national and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>local government</td>
<td>12,453</td>
<td>11,894</td>
</tr>
<tr>
<td>Other operating income</td>
<td>1,712</td>
<td>2,131</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>71,982</td>
<td>64,776</td>
</tr>
<tr>
<td><strong>EXPENDITURE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>-47,325</td>
<td>-43,786</td>
</tr>
<tr>
<td>Material expenses</td>
<td>-4,839</td>
<td>-3,866</td>
</tr>
<tr>
<td>Depreciation of tangible assets</td>
<td>-970</td>
<td>-943</td>
</tr>
<tr>
<td>Amortisation of intangible assets</td>
<td>-31</td>
<td>-40</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>-2,684</td>
<td>-2,788</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>-18,205</td>
<td>-13,681</td>
</tr>
<tr>
<td><strong>Total expenditure</strong></td>
<td>-72,054</td>
<td>-65,104</td>
</tr>
<tr>
<td><strong>Operating result</strong></td>
<td>-72</td>
<td>-328</td>
</tr>
<tr>
<td>Financial result</td>
<td>-268</td>
<td>-67</td>
</tr>
<tr>
<td>Ordinary result</td>
<td>-340</td>
<td>-395</td>
</tr>
<tr>
<td>Extraordinary result</td>
<td>248</td>
<td>1,485</td>
</tr>
<tr>
<td><strong>Results overall</strong></td>
<td>-92</td>
<td>1,090</td>
</tr>
</tbody>
</table>

**BALANCE SHEET**

<table>
<thead>
<tr>
<th>Category</th>
<th>2013 in 1,000 CHF</th>
<th>2012 in 1,000 CHF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>17,027</td>
<td>19,333</td>
</tr>
<tr>
<td>Receivables</td>
<td>6,669</td>
<td>5,680</td>
</tr>
<tr>
<td>Inventories</td>
<td>157</td>
<td>162</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td>27,620</td>
<td>27,754</td>
</tr>
<tr>
<td>Non-current assets</td>
<td>10,747</td>
<td>11,288</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td>10,747</td>
<td>11,288</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>38,367</td>
<td>39,042</td>
</tr>
<tr>
<td><strong>LIABILITIES AND EQUITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term financial liabilities</td>
<td>0</td>
<td>636</td>
</tr>
<tr>
<td>Payables from goods and services</td>
<td>2,075</td>
<td>1,995</td>
</tr>
<tr>
<td>Other payables</td>
<td>775</td>
<td>756</td>
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<tr>
<td>Accrued liabilities and</td>
<td>21,281</td>
<td>22,273</td>
</tr>
<tr>
<td>deferred income</td>
<td>888</td>
<td>1,121</td>
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<tr>
<td><strong>Total current liabilities</strong></td>
<td>25,019</td>
<td>26,781</td>
</tr>
<tr>
<td>Long-term liabilities</td>
<td>394</td>
<td>280</td>
</tr>
<tr>
<td>Mortgages</td>
<td>4,400</td>
<td>3,900</td>
</tr>
<tr>
<td>Long-term provisions</td>
<td>1,096</td>
<td>531</td>
</tr>
<tr>
<td><strong>Total non-current liabilities</strong></td>
<td>5,890</td>
<td>4,711</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>7,458</td>
<td>7,550</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>38,367</td>
<td>39,042</td>
</tr>
</tbody>
</table>

**Income Statement by Activities 2013**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Income in 1,000 CHF</th>
<th>Total costs in 1,000 CHF</th>
<th>Balance in 1,000 CHF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESEARCH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPI</td>
<td>11,515</td>
<td>-12,005</td>
<td>-490</td>
</tr>
<tr>
<td>EPH</td>
<td>18,631</td>
<td>-17,162</td>
<td>-531</td>
</tr>
<tr>
<td>Institutional projects</td>
<td>3,510</td>
<td>-4,078</td>
<td>-568</td>
</tr>
<tr>
<td><strong>Total research</strong></td>
<td>31,656</td>
<td>-33,245</td>
<td>-1,589</td>
</tr>
<tr>
<td><strong>TEACHING AND TRAINING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching and Training</td>
<td>2,420</td>
<td>5%</td>
<td>-3,137</td>
</tr>
<tr>
<td><strong>SERVICES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical and Diagnostic Services</td>
<td>4,910</td>
<td>-4,693</td>
<td>217</td>
</tr>
<tr>
<td>Medicines Research</td>
<td>2,067</td>
<td>-2,121</td>
<td>-54</td>
</tr>
<tr>
<td>Swiss Centre for International Health</td>
<td>27,979</td>
<td>-25,908</td>
<td>2,071</td>
</tr>
<tr>
<td><strong>Total services</strong></td>
<td>34,956</td>
<td>-32,722</td>
<td>2,234</td>
</tr>
<tr>
<td><strong>Total activities</strong></td>
<td>68,032</td>
<td>100%</td>
<td>-69,104</td>
</tr>
<tr>
<td>Management</td>
<td>2,950</td>
<td>-2,950</td>
<td>0</td>
</tr>
<tr>
<td><strong>Income statement</strong></td>
<td>71,982</td>
<td>100%</td>
<td>-72</td>
</tr>
<tr>
<td>Management and infrastructure</td>
<td></td>
<td></td>
<td>-5,887</td>
</tr>
<tr>
<td>Costs included in total activities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FUNDING 2013**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount in 1,000 CHF</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total core contributions</td>
<td>12,453</td>
<td>17.3%</td>
</tr>
<tr>
<td>Total competitively</td>
<td>59,529</td>
<td>82.7%</td>
</tr>
<tr>
<td>acquired funds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>71,982</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Financial statements established in accordance with Swiss GAAP FER

**Funding from 2008 to 2013**

In millions CHF

- **2008**: 42
- **2009**: 53
- **2010**: 56
- **2011**: 59
- **2012**: 65
- **2013**: 72

- Core funding
- Third party funding and mandates

<table>
<thead>
<tr>
<th>Year</th>
<th>Core funding</th>
<th>Third party funding and mandates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>17%</td>
<td></td>
</tr>
</tbody>
</table>
This list shows Swiss TPH third-party funding partners making contributions of CHF 25,000 or more. In total there are over 415 funding partners contributing at least CHF 1,000.
Funding Portfolio of Competitively Aquired Grants
# STAFF LIST


## DIRECTORATE

**DIRECTOR**

Marcel Tanner, Director, Prof., PhD, DSc hc, MPH
Christine Walliser, Senior Administrative Assistant

**DEPUTY DIRECTORS**

Nino Künzli, Deputy Director, Prof., MD, PhD
Nicolaus Lorenz, Deputy Director, MD, MPH, Exec., MBA

**BOARD OF DIRECTORS**

Charlotte Braun-Fahrländer, Group Leader, Prof., MD
Christian Burri, Head of Department, Prof., PhD, MPharm
Christoph Hatz, Head of Department, Prof., MD, DTM&H
Nino Künzli, Head of Department, Prof., MD, PhD
Nicolaus Lorenz, Head of Department, MD, MPH, Exec. MBA
Stefan Mörgeli, Administrative Director, MAS
Gerd Pluschke, Head of Department, Prof., PhD

## ADMINISTRATION

**FINANCES**

Martin Näf, Head of Unit, MA (since 15.10.2012)
Evelyne Auer, Accountant (since 1.9.2012)
André Barbe, Senior Accountant
Christiane Birrey, Accountant
Dominique Bourgau, Head of Finance (until 31.5.2013)
Kevin Estermann, Apprentice (since 1.5.2014)
Deniz Gör, Senior Accountant
Mathias Kronig, Senior Administrator
Dario Pongan, Senior Accountant (since 1.5.2013)

**HUMAN RESOURCES / MAIN SECRETARIAT**

Silvan Bärtschi, Head of Unit
Tobias Schnell, Head of Unit, MAS (since 1.9.2014)
Myriam Baume, Main Secretary Coordinator (since 17.3.2014)
Monika Breton, Main Reception Assistant
Anja Acht, Main Secretary Coordinator
Nicole Harder, Main Secretary Coordinator

**INFORMATICS**

Alain Bertolotti, Head of Unit, MAS (since 1.8.2013)
Marco Clementi, Head of Unit (since 1.8.2013)
Fesha Abebe Jimma, Informatics Associate
Beatrice Bucher, Project Leader, MAS (until 28.2.2014)
Timo Flikigler, Apprentice (since 1.8.2014)
Dominique Forster, Informatics Associate
Eliane Knaus, Informatics Associate
Regula Nebel, Project Leader (since 1.6.2014)
Steven Paul, Informatics Associate
Kristina Pelikan, Scientific Assistant MA
Philipp Petermann, Server Administrator
Marco Ringenberg, Informatics Associate (since 6.5.2013)
Mike Schur, Server Administrator
Stephan Stöckli, Informatics Associate (since 13.1.2014)

## INFRASTRUCTURE

Paul Haas, Head of Unit
Antoine Bruchlen, Facilities Associate (until 19.10.2012)
Thierry Brun, Facilities Associate (since 1.2.2013)
Fabien Haas, Facilities Associate
Dirk Stoll, Facilities Associate
Kurt Walliser, Facilities Associate

## PROJECT AND GRANT SERVICE

Michael Käser, Head of Unit, PhD
Marco Waser, Project Leader, PhD

## EPIDEMIOLOGY AND PUBLIC HEALTH

Nino Künzli, Head of Department, Prof., MD, PhD, MPH
Nicole Probst-Hensch, Deputy Head of Department, Prof., PhD, MPH
Jakob Zinsstag, Deputy Head of Department, Prof., PhD, DVM

### COMMUNICATIONS

Christian Heuss, Head of Unit, PhD, MAS (since 1.2.2013)
Joanne Blackwell, Project Manager
Aline Cossy-Gantner, Project Manager, PhD
Manuel Kammermann, Project Assistant, MSc (since 1.4.2014)
Boris Kouakou, Apprentice (since 18.8.2014)
Lukas Meier, Scientist, PhD (since 1.1.2013)

### STAFF BASED IN OTHER INSTITUTIONS

Peter Balzer, Project Leader, Ifakara Health Institute, Tanzania (until 31.12.2013)
Emilio Angel Letang Jimenez de Anta, Physician, Ifakara Health Institute, MD (since 1.1.2013)
Kurt Long, Guest Scientist, Queensland University, Australia, PhD, MA (since 1.1.2014)
Peter Sasse, Facility Associate, Ifakara Health Institute
Maxine Anne Whittaker, Guest Scientist, Queensland University, Australia, Prof., PhD (1.6.2014 – 31.8.2014)
Dagmar Batra-Seufert, Administrative Assistant
Nora Bauer Ott, Administrative Specialist
Laura Innocenti, Administrative Assistant (since 14.1.2013)
Margrith Sloupi, Administrative Specialist
Maya Zvinyart, Administrative Assistant (until 28.02.2013)
Michael John Abramson, Guest Scientist, PhD (14.8. – 29.11.2013)
Carlos Pasos, Guest Scientist, PhD (20.8. – 14.11.2013)

BIOSTATISTICS
Penelope Younatso, Head of Unit, PD, PhD
Christian Schindler, Deputy Head of Unit, PD, PhD
Abbas Bolaji Adigun, PhD Student, MSc
Nyaguara Ombek Amek, PhD Student, MSc (1.12. – 12.3.2013)
Patricia Biedermann, Scientific Assistant, MSc (since 1.1.2013)
Habib Bou Sleiman, Scientist, PhD (since 1.2.2013)
Stefan Braun, Software Engineer, MSc (since 1.8.2014)
Frédérique Chammartin, Scientist, PhD
Eric Diboulo, PhD Student, MSc
Sabelo Nick Dlamini, PhD Student, MSc (since 1.8.2013)
Regina Ducret-Stich, Scientist, PhD
Federica Giardina, Guest Scientist, PhD
Lukasz Gintowt, PhD Student, MSc (since 1.4.2014)
Tracy Glass, Senior Scientist, PhD
Leticia Grize, Senior Scientist, PhD
Christian Herrmann, PhD Student, MSc
Clarisse Houngbedji, PhD Student, MSc (since 1.9.2013)
Denis Infanger, Scientist, PhD (until 30.4.2013)
Verena Jürgens, Scientist, PhD (until 30.4.2014)
Dimitrios-Alexios Karagiannis-Voules, PhD Student, MSc
Simon Kasasa, PhD Student, MSc (1.12. – 18.12.2013)
Dirk Kieidel, Scientist, MSc
Sammy Khagayi, PhD Student, MSc (since 1.8.2013)
Yingsi Lai, PhD Student, MSc
Erika Priscilla Lisboa Müller Langer, Scientific Assistant, MSc (until 31.3.2013)
Gianfranco Lovison, Guest Scientist, (since 1.4.2014)
Amanda Ross, Senior Scientist, PhD
Emmanuel Schaffner, Senior Scientist, MSc

CHRONIC DISEASE EPIDEMIOLOGY
Nicole Probst-Hensch, Head of Unit, Prof., PhD, MPH
Martin Adam, Scientist, PhD
Inmaculada Aguilera, Postdoctoral Scientist, PhD (since 1.6.2013)
Abdulsalam Alkaiyat, Postdoctoral Scientist, PhD
Christine Autenrieth, Postdoctoral Scientist, PhD (1.2.2013 – 28.2.2014)
Katja Beesdo-Baum, PhD Student, MSc (since 1.8.2013)
Nöelie Boillat Blanco, PhD Student, MD (since 1.2.2013)
Bettina Brinolf, Senior Scientist, MD, PhD Flavia Bürgi, Postdoctoral Scientist, PhD (until 30.4.2013)
Seraina Caviezel, Scientist, MSc (since 1.8.2014)
Ivan Curjuric, Senior Scientist, MD, PhD
Daniela Dyntar, Scientist, PhD (since 1.5.2014)
Dominique Ernst, PhD Student, MSc (until 30.11.2012)
Ikenna Eze, PhD Student, MD
Evelyn Fischer, Scientific Assistant, MSc
Benjamin Flückiger, Civil Servant (since 31.3.2014)
Maria Foraster Pulido, Postdoctoral Scientist, PhD, MPharm, MPH (since 15.6.2014)
Delphine Girard, PhD Student, MSc (since 1.8.2014)
Yann Haussherr, MD Student (1.10.2013 – 31.3.2014)
Angelika Hensel, Scientific Assistant
Nan Shwe Nwe Htun, PhD Student, MD (since 1.9.2013)
Medea Imboden, Senior Scientist, PhD
Simone Isler Paulin, Project Manager (since 1.8.2013)
Ayoung Jeong, PhD Student, MSc (since 15.3.2014)
Susie Kriemler, Group Leader, PD, MD (until 28.2.2013)
Meltem Kutlar Joss, Senior Scientist, MSc
Susanna Nusssumbaer, Study Nurse (since 15.6.2013)
Laura Perez, Senior Scientist, MSc
Carlos Quinto, Senior Scientist, MSc, MPH
Regula Rapp, Senior Scientist, MD
Tamara Schikowski, Scientist, PhD, MPH
Gian Andri Thun, PhD Student, MSc (until 30.11.2013)
Stephan Träub, Scientist, MSc (until 31.8.2014)
Katrin Uehli, PhD Student, MSc (since 11.12.2013)
Ana Maria Vicedo Cabrera, Postdoctoral Scientist, PhD (since 15.4.2014)

ECOSYSTEM HEALTH SCIENCES
Jürg Utzinger, Head of Unit, Prof., PhD
Sören Leif Becker, PhD Student, MD, DTM & H
Martin Bratschi, Project Associate, PhD
Guéladio Cissé, Group Leader, Prof., PhD
David Croll, Scientific Assistant, MSc (1.1.2013 – 30.6.2014)
Séverine Erisman, PhD Student, MSc (since 1.1.2014)
Armelle Forrer, PhD Student, MSc
Samuel Fuhrimann, PhD Student, MSc
Thomas Fürst, Postdoctoral Scientist, PhD (until 30.4.2013)
Eveline Hürlimann, Postdoctoral Scientist, PhD
Fabienne Jäger, Clinical Research Associate, MD, MPH (since 1.9.2012)
Virak Khieu, PhD Student, MD (until 17.12.2013)
Jonathan King, PhD Student, MSc (until 26.4.2013)
Astrid Knoblauch, PhD Student, MSc (since 1.1.2014)
Stefanie Knopp, Post Doctoral Scientist, PhD
Assare Kouassi Rufin, PhD Student, MSc (since 1.8.2013)
Stefanie Jennifer Krauth, PhD Student, MSc
Ivan Müller, PhD Student, MSc (since 1.4.2014)
Thi Trang Nhung Nguyen, PhD Student, MSc (since 1.8.2014)
Allasane Ouattara, PhD Student, MSc (since 31.12.2012)
Peter Odermatt, Group Leader, Assoc. Prof., PhD, MPH
Khampheng Phonglaxua, PhD Student, MD (since 17.12.2013)
Giovanna Raso, Senior Scientist, PhD
Aurélie Assunta Righetti, PhD Student, MSc (until 31.12.2012)
Kendyl Salcito, PhD Student, MSc
Somphou Sayason, Postdoctoral Scientist, PhD (since 21.3.2014)
Thomas Schmidlin, Scientific Assistant, MSc (since 15.3.2013)
Pierre Schneeberger, PhD Student, MSc
Akina Shrestha, PhD Student, MSc (since 1.2.2014)
Ibrahim Sy, Scientist, PhD
Sokhna Thiam, PhD Student, MSc (since 1.8.2014)
Larissa Vernier, Apprentice, MSc (1.4.2014 – 30.6.2014)
Youhanavanavonghachack, PhD Student, MSc, MD
Mirko Winkler, Postdoctoral Scientist, PhD, DTM & H
Peiling Yap, Postdoctoral Scientist, PhD
HEALTH INTERVENTIONS

Christian Lengeler, Head of Unit, Prof., PhD
Sandra Alba, Scientist, PhD [until 31.12.2012]
Jéréme Arendtjeu, PhD Student, MSc
Lucas Boeck, PhD Student, MSc
Konstantina Boutiaka Muckenschabel, Project Leader, PhD
Matthias Briel, PhD Student, MSc
Barbara Colucci, PhD Student, MSc [since 1.9.2013]
Valérie D’Acremont, Group Leader, MD, PhD, DTM&H
Massue Denis, PhD Student, MSc [since 1.9.2013]
Giovanni Francesco Ferrari, PhD Student, MSc
Marta Ferreira Maia, Scientist, DVM, PhD [since 1.8.2013]
Anita Gassner, Scientist, PhD [until 30.6.2013]
Blaise Genton, Group Leader, Prof., MD, PhD, DTM&H

Christian Herzog, Scientist, MD, PhD
Manuel Hetzel, Project Leader, PhD [since 17.9.2012]
Isabelle Jakovac, Project Assistant [since 16.8.2014]
Danica Jancayrová, Technical Assistant
Jennie Jaribu, PhD Student, MD, MSc
Jean-Emmanuel Julo-Réminiac, Project Leader, MSc [since 1.11.2013]
Judith Kahama Mano, PhD Student, MD [until 11.7.2013]
Kristina Keitel-Hasler, Guest Scientist, MD [since 1.7.2013]
Hannah Koenker, PhD Student, MSc
Catharina Kramer, Project Leader, MA
Nahya Salim Masoud, PhD Student, MSc
Ally Mnzava, Deputy Project Leader
Fabrizio Molteni, Senior Technical Advisor, MD [since 1.11.2012]
Laura Monzon Llamas, Apprentice, [since 1.7.2014]
Sarah Moore, Group Leader, PhD [since 1.8.2013]
Dominic Mosha, PhD Student, MSc [since 16.8.2014]
Pie Müller, Group Leader, PhD
Geoffrey Mwaigomole, PhD Student, MSc [since 27.5.2013]
Celestin Mwambi Kamulete, PhD Student, MSc [since 9.6.2014]
Nazmun Nahar, PhD Student, MSc
Henry Nuku, PhD Student, MD [since 1.9.2013]
Laura O’Reilly, PhD Student, MSc [since 1.5.2013]
Henry Frempong Owusu, PhD Student, MSc
Edith Patouillard, Senior Scientist, PhD [since 15.3.2014]
Clotilde Rambaud Althaus, PhD Student, MD [since 30.6.2013]

Sabine Renggli, PhD Student, MSc [since 1.12.2013]
Silvana Rigobon, Event Manager [since 1.6.2013]
Mohamad Rustom Abdul Sater, Technical Assistant, PhD Student, MSc
Nicolas Senn, Senior Scientist, MD, PhD [since 31.3.2014]
Amani Shao, PhD Student, MD
Tobias Suter, PhD Student, MSc
Emmanuel Audrey Temu, Senior Scientist, PhD [since 1.2.2014]
Amanda Tiffany, PhD Student, MSc [since 1.9.2013]
Maria Victoria Valero Bernal, PhD Student, MD
Désirée Van der Mei, Project Assistant, [since 1.3.2014]
Seraina Vonzun, Technical Assistant [since 1.2.2013]

HEALTH SYSTEMS RESEARCH AND DYNAMICAL MODELLING

Thomas Smith, Head of Unit, Prof., PhD
Ali Mohamed Ali, PhD Student, MSc [since 1.9.2013]
John Kokw Awoonor-Williams, PhD Student, MSc [since 1.8.2013]
Caitlin Bever, Scientist, PhD [since 1.5. – 31.10.2013]
Philipp Bless, PhD Student, MSc [since 1.2.2013]
Olivier Briët, Project Leader, PhD
Nadja Cerchetti, Project Assistant, MSc [since 1.12.2013]
Nakul Chitnis, Project Leader, PhD
Valerie Crowell, Scientist, PhD [since 31.1.2014]
Don de Savigny, Group Leader, Prof., PhD
Aurelio Di Pasquale, Project Coordinator, PhD Student, MSc
Henry Victor Doctor, Project Leader, PhD [1.9. – 30.11.2013]
Katya Galaktionova, Scientist, MA
Diggory Hardy, Project Coordinator, MSc [since 15.2.2013]
Stella Hartinger, Postdoctoral Scientist, PhD
Michael Hegnauer, Project Coordinator, MSc
Bernadette Huo, PhD Student, MSc [until 2.5.2013]
Yakubu Ismaila, PhD Student, MSc
Heidi Johnston, Project Leader, PhD
Almamy Malick Kanté, Project Leader, PhD [since 1.4.2014]
Aliya Karim, Scientific Assistant, MPH [since 25.8.2013]
Randee Kastner, PhD Student, MSc
Young Eun Kim, PhD Student, MSc
Irene Küpfer, Scientist, PhD
Zohra Lukmanji, PhD Student, MSc  
(since 1.10.2013)
Angelina Lutambi, PhD Student, MSc  
(since 2.4.2013)
Nicolas Maire, Group Leader, PhD
Irene Masanja Misuka, PhD Student, MSc  
(up until 28.3.2013)
Daniel Mäusezahl, Group Leader, PhD
Inez Mikkelsen-Lopez, PhD Student, MSc
Rajib Mitra, Software Engineer, MSc  
(since 1.4.2014)
Oscar Rwegasila Mukasa, PhD Student, MSc
Benson Obonyo, PhD Student, MSc
Carol Obure, Scientist, PhD  
(since 1.8.2014)
Emmanuel Kevin Omondi, PhD Student, MSc  
(since 1.8.2014)
Peter Pemberton-Ross, Scientist, PhD  
(since 1.4.2014)
Melissa Penny, Project Leader, PhD
Nadia Pillai, Scientific Assistant, MSc  
(since 1.12.2013)
Emilie Pothin, Scientist, PhD  
(since 1.9.2013)
Idda Romore, PhD Student, MSc  
(since 1.9.2012)
Pryjanka Saksena, PhD Student, MSc  
(since 1.2.2013)
Allan Schapira, Senior Scientist, MD, DTM&H, DSc
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Rima Shretta, PhD Student, MSc  
(since 1.9.2013)
Cara Smith Gueye, PhD Student, MSc
Christopher Stone, Scientist, PhD  
(since 1.9.2012)
Erin Stuckey, Guest Scientist, PhD
Simone Sutherland, PhD Student, MSc  
(since 1.6.2013)
Tessa Tan-Torres Edejer, PhD Student, MSc
Michael Tarantino, Project Coordinator, MSc  
(up until 30.4.2014)
Fabrizio Tediosi, Project Leader, PhD
Lekundo Tingitana, Scientific Assistant, MSc  
(15.3.–14.9.2013)
Yuki Tomonaga, PhD Student, MSc
Nathalie Van de Maelle, PhD Student, MSc
Fiona Vanobberghen (geb. Ewings), Scientist, PhD  
(since 15.1.2014)
Ashley Warren, PhD Student, MSc
Jennyfer Wolf, PhD Student, MSc  
(since 1.8.2013)

**HUMAN AND ANIMAL HEALTH**

Jakob Zinsstag, Head of Unit, Prof., PhD, DVM
Esther Schelling, Deputy Head of Unit, DVM, PhD
Mahamat Fayiz Abakar, PhD Student, MSc  
(since 1.8.2014)

Zolzaya Baljinnyam, PhD Student, MSc  
(up until 21.2.2014)
Oliver Balmer, Project Leader, PhD
Chimedseren Bayasgalan, PhD Student, MSc  
(since 1.9.2013)
Bolor Bold, PhD Student, MSc  
(since 1.9.2013)
Lisa Crump, DVM, Scientist, MSc
Jalil Darkhan, Scientist, MSc
Anna Dean, PhD Student, MSc  
(up until 30.4.2013)
Katarzyna Grabska, Scientist, PhD  
(1.8.–30.9.2013)
Helena Greter, PhD Student, MSc
Sophie Haesen, PhD Student, MSc
Jan Hattendorf, Senior Scientist, PhD
Karina Hediger, Postdoctoral Scientist, PhD  
(since 1.9.2013)
Vreni Jean-Richard, PhD Student, MSc  
(up until 31.10.2013)
Yousouf Kanoute, Scientific Assistant, PhD Student, MSc  
(since 1.2.2013)
Joldoshbek Kasyimbekov, PhD Student, MSc  
(up until 31.3.2014)
Brama Koné, Scientist
Kim Anh Le, PhD Student, MSc  
(up until 18.12.2012)
Monique Léchenne, PhD Student, DVM
Stephanie Mauri, PhD Student, DVM
Céline Mbilo, Apprentice, PhD  
(since 1.3.2013)
Andrea Meisser, Scientist, PhD  
(up until 30.4.2013)
Christine Murto, Scientist, PhD
Hung Nguyen Viet, Scientist, PhD
Kurt Pfister, Scientist, PhD  
(since 1.4.2014)
Germain Rives, Apprentice, PhD  
(1.9.–31.12.2013)
Sara Schärer, PhD Student, MSc
Tugseldeger Sodv, PhD Student, MSc
Rahel Struchen, PhD Student, MSc
Daniela Taborelli, Apprentice  
(1.11.2013–31.5.2014)
Julien Tessier, Apprentice  
Rea Tschopp, Senior Scientist, DVM, PhD
Vu Van Tu, PhD Student, MSc
Hind Yahyaoui-Azami, PhD Student, MSc  
(since 1.9.2013)

**SOCIETY, GENDER AND HEALTH**

Elisabeth Zemp Stutz, Head of Unit, Prof., MD, MPH
Ashwin Budden, Postdoctoral Scientist, PhD  
(up until 30.6.2013)
Julia Dratva, Scientific Project Leader, MD, MPH
Zuzanna Drozdzak, Scientific Assistant, PhD Student, MSc  
(since 1.5.2014)
Mari Dumbaugh, PhD Student, MSc  
(since 15.2.2014)

Christine Forrester-Knauss, Senior Scientist, PhD  
(up until 31.12.2013)
Sara Gari, PhD Student, MSc  
(since 28.2.2014)
Karim Gross, Senior Scientist, PhD
Sohe Hansen, PhD Student, MSc
Elisabeth Kurth, Scientist, PhD
Karen Maigetter, Scientist, MSc
Virginie Masserey, Guest Scientist, PhD  
(since 1.4.2014)
Sonja Merten, Project Leader, MD, PhD, MPH
Langelihle Mlotshwa, PhD Student, MSc  
(since 15.2.2014)
Sally Menga, PhD Student, MSc  
(since 1.2.2014)
Maurice Musheke, PhD Student, MSc  
(since 27.5.2013)
Emmanuel Ngabire, PhD Student, MSc  
(since 1.9.2013)
Brigit Obriat, Group Leader, PhD, MA
Constanze Pfeiffer, Project Leader, PhD, MA
Richard Faustina Sambaga, PhD Student, MSc  
(since 30.9.2013)
Christian Schätti, Postdoctoral Scientist, PhD
Cornelia Schneider, Scientist, PhD  
(since 10.9.2012)
Joëlle Schwarz, PhD Student, MPH
Patricia Schwaarzer, Senior Scientist, Lic.  
(since 31.8.2013)
Bettina Friederike Schwind, PhD Student, MA
Anna Späth, Senior Scientist, MPH
Luisa Streckenbach, Apprentice  
(since 31.12.2012)
Neisha Sundaram, PhD Student, MSc  
(since 1.2.2013)
Piet van Eeuwijk, Project Leader, PhD, MSc  
(since 1.10.2013)
Jen Wang, PhD Student, MSc  
(up until 29.4.2013)
Mitchell C. Weiss, Group Leader, Prof., MD, PhD, MA
Carine Weiss, Scientist, MSc  
(since 22.7.2013)

**MSC STUDENTS**

Million Abraha (since 1.8.2014)
Charles Achigaonye (since 1.8.2014)
Salome Adam (up until 28.2.2014)
Busola Adebusoye (since 1.8.2014)
Seid Adem (since 1.8.2014)
Reem Al Turk (since 1.8.2013)
Halah Aljofi (since 1.8.2014)
Abigail Audu (up until 28.2.2014)
Oluwakemi Awe (since 1.8.2014)
Seid Adem (since 1.8.2014)
Haimin Buergin-Liang (since 1.8.2014)
Kyu Suk Chung (since 1.8.2013)
Adelaide Damate-Yeboa (since 1.8.2014)
Carlos Orlando de Mestril Vargas (until 28.2.2014)
Suzanne Dhaini (since 1.8.2014)
Alessandra Fleurent (since 1.8.2013)
Caroline Fuhrer (until 31.7.2014)
Francesco Galli (until 28.2.2014)
Sirak Zenebe Gebreab (until 28.2.2014)
Joseph Gnanouday Giduthuri (until 31.7.2014)
Emily Gintwot (since 1.6.2014)
Jennifer Giovannoli Evack (since 1.8.2014)
Jerry Hella (since 1.8.2014)
Ramona Herz (since 1.8.2013)
Mulako Jaeger (since 1.8.2014)
Lars Kamber (1.8.–28.2.2013)
Nitin Khanna (since 1.8.2014)
Halah Kutaish (since 1.8.2014)
Aviv Ladanie (since 1.8.2013)
Nikita Lyensenko (since 1.8.2013)
Arthur Mai (until 31.1.2013)
Kimberly Mc Cord (since 1.8.2014)
Laura Mosimann (since 1.9.2012)
Matthias Müller (since 28.2.2014)
Lukas Muri (since 1.8.2014)
Yvonne Muthiani (until 28.2.2014)
Mwanajja Mwachui (until 14.5.2013)
Kelechi Kalu Ohu (until 28.2.2014)
Samuel Oppong (since 1.8.2014)
Daniela Rodriguez (until 28.2.2014)
Nathalie Rose (since 1.8.2014)
Manuela Runge (since 1.8.2014)
Kathrin Suter (since 28.2.2014)
Diana Timbi (since 1.8.2014)
Hannah Tough (since 1.8.2013)
Kira Ullmann-Kurz (until 28.2.2014)
Laura Vavassori (since 1.8.2014)
Viviane Wang (until 1.7.2014)
Syed Zain ul Abideen (since 1.8.2014)

**MEDICAL PARASITOLOGY AND INFECTION BIOLOGY**

Gerd Pluschke, Head of Department, Prof., PhD
Sébastien Gagneux, Deputy Head of Department, Assistant Prof., PhD

Peter Dieterle, Animal Care Assistant (until 28.2.2013)
Yvette Endriss, Senior Laboratory Technician
Anna Frommherz, Technical Assistant (15.2.–15.4.2014)
Zsuzsanna Gýörfi, Administrative Specialist
Pascale Steiger, Animal Care Assistant

---

**CLINICAL IMMUNOLOGY**
Claudia Daubenberger, Head of Unit, DVM, PD
Frederic Haraka, PhD Student, MSc (until 1.10.2013)
Catherine Mkindi, PhD Student, MSc (since 1.9.2013)
Maximilian Mpina, PhD Student, MSc (until 21.9.2012)
Tobias Rutishauser, PhD Student, MSc (since 15.8.2013)
Isabelle Zentkensen, PhD Student, MSc (since 1.4.2013)

---

**GENE REGULATION**
Till Voss, Head of Unit, Assistant Prof., PhD
Nicole Bertschi, PhD Student, MSc
Nicolas Brancucci, PhD Student, MSc (until 30.11.2013)
Angela Leu, PhD Student, MSc (since 1.3.2014)
Igor Niederwieser, Postdoctoral Scientist, PhD (since 1.7.2013)
Elvis Tasih Ajuh, PhD Student, MSc

---

**HELMINTH DRUG DEVELOPMENT**
Jennifer Keiser, Head of Unit, Assistant Prof., PhD
Roberto Adelíso, Laboratory Technician
Jean Coullibaly, Postdoctoral Scientist, PhD (since 1.4.2014)
Noemi Cowan, PhD Student, MSc (since 15.10.2012)
Urs Duthaler, Postdoctoral Scientist, PhD (since 31.3.2014)
Katrin Ingram, PhD Student, MSc (until 24.8.2013)

---

**MOLECULAR IMMUNOLOGY**
Elimsaada Kituma, PhD Student, MSc (since 31.1.2013)
Anita Lerch, PhD Student, MSc (since 1.8.2013)
Felista Mwingira, PhD Student, MSc
Daniel Simon Nyogea, PhD Student, MSc
Mariabeth Silkey, Senior Scientist, MSc
Priscila Thihara Rodrigues, PhD Student, MSc (7.7.–31.12.2013)
Rahel Wampfler, PhD Student, MSc

---

**MOLECULAR PARASITOLOGY AND EPIDEMIOLOGY**
Hans-Peter Beck, Head of Unit, Prof., PhD
Nathanael Beck, Civil Servant (since 24.4.2014)
Maira Bholla, PhD Student, MSc
Françoise Brand, Laboratory Technician
Olivier Dietz, PhD Student, MSc (until 20.12.2013)
Eva Maria Grosshann, Guest Student [14.4. – 11.7.2014]
Hyunjoo Hong, Guest Student, MSc [since 13.2.2014]
Simon Meier, Scientific Assistant, [19.2. – 18.7.2013]
Esther Mundwiler-Pachlatko, Scientist, PhD [6.1. – 31.7.2014]
Adrian Najer, PhD Student, MSc [since 1.1.2013]
Alexander Oberli, PhD Student, MSc
Sebastian Marco Rusch, Scientist, PhD
Beatrice Schibli, PhD Student, MSc [since 1.5.2013]
Tereza Cristina Vieira de Rezende, Guest Scientist, MSc [15.8.2013 – 14.8.2014]

PARASITE CHEMOTHERAPY
Pascal Mäser, Head of Unit, Assoc. Prof., PhD
Ingrid Bonilla-Rodriguez, Guest Student [since 1.10.2013]
Christiane Braghirioli, Laboratory Technician
Reto Brun, Scientific Project Leader, Prof., PhD
Monica Cal, Senior Laboratory Technician
Christoph Fischli, Laboratory Technician
Céline Freymond, Laboratory Technician, MSc
Matthias Fügi, PhD Student, MSc
Kirsten Gillingwater, Senior Scientist, PhD
Fabrice Graf, PhD Student, MSc
Eva Greganova, Scientist, PhD [until 30.6.2013]
Christin Gumpp, Apprentice [since 19.3.2014]
Joëlle Jourdan, PhD Student, MSc
Maja Jud, Laboratory Technician [since 1.1.2014]
Marcel Kaiser, Scientific Project Leader, PhD
Jolanda Kamber, Laboratory Technician [since 30.4.2013]
Sonja Keller-Märki, Laboratory Technician
John Thuita Kiburuth, PhD Student, MSc [until 19.10.2012]
Christina Kunz Renggli, Laboratory Technician
Ursula Lehmann, Laboratory Technician [since 1.11.2012]
Philipp Lugin, Postdoctoral Scientist, PhD [until 17.12.2012]
Michael Marzolla, Animal Care Assistant [since 1.3.2013]
Petros Papastogianni, Laboratory Technician [since 31.12.2012]
Ellen Reiff, Guest Student [since 12.5.2014]
Guy Riccio, Senior Laboratory Technician
Matthias Rottmann, Scientist, PhD
Sibylle Sax, Laboratory Technician

Christian Scheurer, Senior Laboratory Technician
Patricia Schildknecht, Scientific Assistant [7.1. – 5.7.2013]
Remo Schmidt, Scientist, PhD [since 1.2.2014]
Bhakti Irene Seth, Apprentice [16.6. – 25.7.2014]
Katarzyna Urbanska, Apprentice [5.8. – 4.11.2013]
Tanja Wenzler, Scientist, PhD
Sergio Wittlin, Scientist, PhD

TUBERCULOSIS RESEARCH
Sébastien Gagneux, Head of Unit, Assistant Prof., PhD
Sonja Borrell, Scientist, PhD
Daniela Brites, Postdoctoral Scientist, PhD
Mireia Coscollà Devis, Postdoctoral Scientist, PhD
Tutty Isatou Faal-Jawara, Guest PhD Student, MSc [4.10. – 6.12.2013]
Julia Feldmann, Laboratory Technician
Lukas Fenner, Scientific Project Leader, MD [since 1.2.2013]
Sebastian Gygly, PhD Student, MSc [since 1.7.2013]
Khadija Ibrahim, PhD Student, MSc [since 1.8.2014]
Levan Jugbeli, Senior Scientist, MD, PhD [since 1.7.2013]
Anastasia Koch, Guest Student [10.9. – 12.12.2013]
Bijaya Mallia, PhD Student, MSc [since 8.3.2013]
Francis Mhimbira, PhD Student, MSc [since 1.9.2013]
Lilianna Tina Minja, PhD Student, MSc [since 1.8.2014]
Isaac Darko Ochere, Guest Student [5.9. – 12.12.2013]
Miriam Reinhard, Laboratory Technician [since 1.8.2013]
Liliana Ruralhwa, PhD Student, MSc [since 1.4.2014]
Christoph Schmid, Group Leader, PhD
Andreas Steiner, Scientific Assistant [since 1.1.2014]
David Stucki, PhD Student, MSc
André Trauner, Postdoctoral Scientist, PhD [since 1.7.2013]
Adwoa Wiredu Asante Poku, PhD Student, MSc

MSC STUDENTS
Simon Blaser [since 1.8.2013]
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Rhastin Castro [since 1.8.2013]

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Nadia Enríquez Casimiro (since 1.2.2014)
Anna Fesser (since 1.8.2014)
Esteban Finol (since 1.8.2013)
Dayana Alejandro Flores Widmer (since 1.8.2013)
Tanja Häfliger (since 1.8.2014)
Hana Haver (until 28.2.2013)
Lrisa Herig (since 1.8.2014)
Fabian Hia (since 28.2.2014)
Eva Hitz (since 1.8.2014)
Sabine Hoop (since 1.2.2013)
Li Ke (since 1.8.2013)
David Kessie (since 1.8.2014)
Lukas Kessler (since 1.8.2013)
Mithra Kumar (since 1.8.2013)
Iris Wing-Lam (since 1.8.2013)
Dorcas Adoeba Larbi (until 28.2.2013)
Mussa Maganga (since 28.2.2014)
Noëmi Meier (since 28.2.2013)
Camilla Messerli (since 1.8.2014)
Dorcas Mnzava (since 15.8.2013)
Jackson Mollel [since 31.1.2013]
Solomon Micksion Mwakasungula (since 28.2.2014)
Emiliana Ndomba (since 28.2.2014)
Pierre Ngabe (since 1.8.2014)
Thuy Khanh Nguyen (until 28.2.2013)
Ramadhani Ismail Ngwale (since 31.1.2013)
Peter Niba (until 28.2.2014)
Akua Boatemaa Ofori-Aninam (since 28.2.2013)
Patricia Otieno [since 15.8.2013]
Collins Owino (since 1.8.2013)
Armin Passecker (since 1.8.2013)
Alessia Raimondo (since 1.8.2014)
Hugo Samano-Sanchez (since 1.8.2013)
Blanca Scherer (since 1.8.2014)
Pablo Scholer (since 31.7.2014)
Claudia Setzer (since 1.8.2013)
Ankit Shukla (since 28.2.2013)
Varsha Srivatsan (since 1.8.2013)
Sandro Sterchi (since 1.8.2014)
Manuel Suter (since 1.8.2013)
Miguel Tenorio Molla (since 1.8.2013)
Lincoln Timinao (since 31.1.2013)
Annefelt Tumbo (since 1.8.2014)
Machteld van den Berg (since 1.8.2013)
Jan Warncke (since 1.8.2013)
Louisa Warryn (since 1.8.2014)
Michael Weber (since 1.8.2013)
Nadia Wipf (since 1.8.2014)
Laura Zurbrügg (since 1.8.2014)
## Medical Services and Diagnostics

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Institution</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christoph Hatz</td>
<td>Head of Department, Prof., MD, DTM&amp;H</td>
<td>Department</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Hanspeter Marti</td>
<td>Deputy Head of Department, PhD</td>
<td>Department</td>
<td>Tanzania</td>
</tr>
</tbody>
</table>

### Travel Clinic

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Institution</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernhard Beck</td>
<td>Physician, MD, DTM&amp;H</td>
<td>Vaccine Service</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Sara Berger</td>
<td>Physician, MD</td>
<td>Vaccine Service</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Anita Dimas</td>
<td>Vaccination Service Assistant</td>
<td>Vaccine Service</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Lars Henning</td>
<td>Registrar, MD</td>
<td>Vaccine Service</td>
<td>Tanzania</td>
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### Immunodiagnostics

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<tr>
<td>Beatrice Nickel</td>
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<tr>
<td>Anna Gamell</td>
<td>Physician, Ifakara Health Institute</td>
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<td>Andreas Euler</td>
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<tr>
<td>Ulrich Ax</td>
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### Praxis Föhre and Travel Clinic

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<td>Johannes Blun</td>
<td>Senior Registrar, Assoc. Prof., MD, DTM&amp;H</td>
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<tr>
<td>Alain Amstutz</td>
<td>Apprentice (1.4. – 31.5. 2014)</td>
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<td>Sabine Haller</td>
<td>Physician, MD</td>
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### Praxis Föhre and Travel Clinic

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### Pharmacy Medicine

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<tr>
<td>Marc Ulrich</td>
<td>Head of Unit, PhD</td>
<td>Department</td>
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</tr>
<tr>
<td>Eveline Ackermann</td>
<td>Clinical Research Associate, MSc (since 11.8. 2014)</td>
<td>Department</td>
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<tr>
<td>Sonja Bernhard</td>
<td>Project Leader, PhD</td>
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<tr>
<td>Julie Catusse</td>
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<tr>
<td>Eric Huber</td>
<td>Project Leader, MSc</td>
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<tr>
<td>Angela Lazarova</td>
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<td>Julian Meier</td>
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<td>Francoise Morier</td>
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<tr>
<td>Gabriele Pohlig</td>
<td>Project Leader, Clinical Research Scientist, PhD</td>
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<td>Stefan Schnetzer</td>
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<tr>
<td>Alina Signorelli</td>
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### National Reference Centre for Diagnostics

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<tr>
<td>Hanspeter Marti</td>
<td>Head of Unit, PhD</td>
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<tr>
<td>Fabienne Ahmarani</td>
<td>Medical Laboratory Technician (since 1.12. 2013)</td>
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<td>Sibylle Bregenzer</td>
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<td>Beatrice Cattelan-Schmidt</td>
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<td>Michelle Dobler</td>
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<td>Désirée Eckert</td>
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<td>Elisabeth Escher</td>
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<td>Isabelle Grilli</td>
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<td>Claudia List</td>
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### Medicines Research

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<tr>
<td>Christian Burri</td>
<td>Head of Department, Prof., PhD, MPharm</td>
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<tr>
<td>Kora Schneider</td>
<td>Accountant (since 15.8. 2014)</td>
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<tr>
<td>Nerina Vischer</td>
<td>PhD Student, MSc (since 1.2. 2013)</td>
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<tr>
<td>Monique Vogel-Aellig</td>
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### Swiss Centre for International Health

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<tr>
<td>Nicolas Lorenz</td>
<td>Head of Department, MD, MPH, Exec. MBA</td>
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<td>Kaspar Wyss</td>
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<td>John Lipsy</td>
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<td>Helen Prytherch</td>
<td>Project Leader, PhD, MPH, MA (since 1.1. 2014)</td>
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### Health Systems Support

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<td>Kaspar Wyss</td>
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| STAFF BASED ABROAD

### Cameroon

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<td>Emmanuel Gbaguidi</td>
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<td>Jean-Jacques Akamba</td>
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### Tajikistan

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<td>Khashan Dzoev</td>
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<td>Serge Biefnort</td>
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<td>Zulfiya Gulyamova</td>
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Mohira Khamidova
Zarofat Khamidova
Zulfiya Mengilboeva
Nargis Rakhmatova (since 21.11.2013)
Shalo Shakarova
Firuz Shomirzoev
Malobat Sultonshoeva
Erik van Twillert MD (since 15.4.2013)

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Agata Correia, Project Associate, MSc
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Olena Okhotnikova
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Laura Cartaña Llach, Project Manager, MA [since 1.11.2012]
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Joëlle Schwarz, Project Manager, MA, MPH, Mdev
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Marie-Eve Soder, Administrative Specialist (since 1.8.2013)

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Natacha Girumugisha (since 1.10.2013)
Françoise Iradukunda (since 1.2.2014)
Stella Karine (until 31.3.2013)
Jean Claude Mbarushima (until 31.3.2013)
Prosper Nbihama (since 1.9.2013)
Nina Ndabihore MD (since 1.5.2013)
Jean Ndagijimana (since 20.11.2013)
Claude Francois Niyomwungere (until 30.8.2013)
Rachel Niyondiko (since 10.4.2014)
Narcisse Nibiribuka (until 31.3.2014)
Barbara Pose MD, MPH (until 31.8.2013)
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Anita Zidona (since 1.2.2014)

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Octave Bifuko
Martin Longolongo (since 1.7.2014)
Christophe Mweze (since 1.7.2014)

MOLODOVA
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Cornelia Pislaru (until 31.8.2014)

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Emmanuel Kwimana (since 1.6.2014)
Protégé Ngtinshuti (since 1.7.2014)
Gaspard Nyibizi (since 4.8.2014)
Joselyne Niyodushima (since 1.7.2014)
Jean Désiré Ntezirizaaza (since 4.8.2014)
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Emanuel Pinheiro, Project Associate, MBA
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Luís Segura, Project Leader, MD, MSc
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César Wong Alcázar, Project Associate, MD, MPP, LLM [21.2.2013 – 11.4.2014]

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Claude Panou

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Vansisy Kossey (until 31.5. 2013)
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Chanthy Sav (since 4.8. 2014)
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Jonathan Jonas Mbanda (since 1.2. 2014)
Esther Weibel (until 31.12. 2012)

COLUMBIA
Jonathan Novoa Cain MD, MSc
(upto 30.9. 2013)

CÔTE D’IVOIRE
Ana Brou Santiago (since 13.5. 2013)

DJIBOUTI
Ilmi Awaleh Elabeh
Ismail Said Bouh (until 31.1. 2014)

EL SALVADOR
Ricardo Gavidia MBA (until 30.9. 2013)
Jaime Sanchez MD, MBA (until 30.9. 2013)

GUAMALA
Rosa Maria Hernandez, Head of Local Office
(until 30.9. 2012)
Gladys Nineth Jerez [until 10.1. 2012]
Sandara Mendez [until 30.9. 2013]
Carlos Enrique Mendoza Linares [until 31.1. 2013]

GUINEA
Jacques Gruloos, Head of Local Office
(since 20.1. 2014)
Mariama Diallo [since 3.2. 2014]
Ibrahima Diallo [since 2.5. 2014]

LAOS
Patrick Bergman, Head of Local Office
(since 4.8. 2014)
Indrajit Hazarika, Head of Local Office
(17.2. – 6.6. 2014)
Anousorn Dingavong

MALI
Sylvia Sangaré-Mollet, Head of Local Office,
MBA
Alassane Coulibaly [until 22.5. 2013]
Abdramane Maiga [since 13.5. 2013]
Eliane Moguem Fonkoua [until 30.9. 2012]

MYANMAR
Soso Getsadze, Head of Local Office, PhD, PharmaD
(until 31.10. 2012)
Olivia De Guzman [until 31.1. 2014]
Soe Soe Htun [until 30.4. 2014]
Janet Nundu Kimeu [since 1.4. 2014]

Teaching and Training

Axel Hoffmann,
Head of Unit, PhD
Bernadette Peterhans,
Deputy Head of Unit, MPH, RN

Ning Beyer, Administrative Specialist
Amena Briët, Course Coordinator
Annamaria Fahrnländer, Project Leader
Gaby Gehler, Project Associate, PharmaD
Yvonne Gilgen, Administrative Specialist,
(until 31.5. 2013)
Andrea Hofer, Administrative Specialist
(since 15.7. 2013)
Sarah Hostettler, Administrative Specialist
Esther Indra, Project Associate
(since 1.4. 2013)
ACTIVITIES AND CONTRIBUTIONS

Positions and functions of Swiss TPH staff in other institutions, organisations, foundations and review teams.

CLINICAL TRIAL MONITORING BOARDS

ACT REACT
Blaise Genton, Chairman

CELADEN Dengue
Blaise Genton, Chairman

Malaria vaccine C12-18 AMA1-DiCo, Phase 1a & b & safety and immunogenicity
Blaise Genton

Phase Ib MSP3 Mali
Blaise Genton, Chairman

GM22 malaria vaccine in children, Phase Ib safety and immunogenicity study of the recombinant lactococcus lactis hybrid
Blaise Genton, Chairman

SMC plus azithromycin
Blaise Genton

TRIAL STEERING COMMITTEE

IMPROV primaquine
Blaise Genton

INTERNATIONAL

Alliance for Health Policy and Systems Research – AHPSR
Xavier Bosch-Capblanch, Advisory Committee

American Board of Independent Medical Examiners – ABIME
Elisabeth Zemp Stutz, Advisory Committee

American Society of Tropical Medicine and Hygiene – ASTMH
Marcel Tanner, Honorary Member

Association of Social Anthropologists, Medical Anthropology Network
Brigit Obrist, Chairman

AveNet Consortium
Pie Müller, Management Committee Member

Barcelona Centre for International Health Research CRESIB
Marcel Tanner, Chairman Scientific and Technical Advisory Committee

Bill & Melinda Gates Foundation
Marcel Tanner, Expert Oversight Committee

ACT-Consortium, Chairman

Marcel Tanner, Malaria elimination R&D agenda: MalERA, Co-Chair

Conference Environment and Health (ISEE, ISES and ISIAQ joint conference 2013)
Nino Künzli, Conference Chair

Martin Röösli, Chair Scientific Committee

COST Action – European Network for Neglected Vectors and Vector-Borne Infections
Pie Müller, Management Committee Member

Cyprus International Institute for Environmental and Public Health – CII
Nino Künzli, Scientific Advisory Committee

Developing and evaluation communication strategies to support informed decisions and practice based on evidence – DECIDE
Xavier Bosch-Capblanch, Advisory Committee

Drugs for Neglected Diseases Initiative DNDI
Marcel Tanner, Chairman, Board of Directors

Eastern Africa Network for Trypanosomiasis – EANETT
Reto Brun, Management Board

Marcel Kaiser, Secretariat

Epidemiological Study on the Genetics and Environment of Asthma
Nino Künzli, Advisory Committee

European BioElectromagnetics Association – EBEA
Martin Röösli, Council for Biological and Medical Science

European College of Veterinary Public Health
Jakob Zinsstag, Diplomat

European Lung Foundation – Health Lungs for Life Campaign
Nino Künzli, Scientific Advisory Board

European Respiratory Society Environment and Health Committee
Nino Künzli

Expert group for the Swedish Radiation Safety Authority – SSM
Martin Röösli

Festival Committee for the Biennial Frame of Mind Film Festival, Schizophrenia Research Foundation, Chennai, India
Mitchell G. Weiss, Chairman

Foundation for Essential Medical Devices
Marcel Tanner, Foundation Council

Foundation for Innovative Diagnostics (FIND)
Marcel Tanner, Chair, Scientific Advisory Board

Foundation for the Centre Suisse de Recherches Scientifique en Côte d’Ivoire
Marcel Tanner, Foundation Council, Representative Leading House

Geneva Health Forum
Kasper Wyss, Scientific Review Committee

German Cooperation for Tropical Medicine and International Public Health
Manfred Zahorka

German Federal Ministry of Education and Research, Scientific Advisory Board on Zoonoses and Infectious Diseases
Marcel Tanner, Chairman

German National Platform for Zoonoses Research
Marcel Tanner, External Scientific Advisory Committee

Global Alliance for Vaccines and Immunization – GAVI
Nicolaus Lorenz, Independent Review Committee

Global Fund to Fight AIDS, Tuberculosis and Malaria
Don de Savigny, Technical and Evaluation Reference Group
Blaise Genton, Technical Review Panel

Global Risk Forum Davos – GRF
Guéladio Cissé, Scientific Advisory Committee

Global Sanitation Fund
Guéladio Cissé, Advisory Committee

Health Innovation in Practice
Daniel Müßezaahl, Board Member

Health Metrics Network – TAG
Don de Savigny, Chairman

HealthBridge Canada
Don de Savigny, Board Director

Ifakara Health Institute, Ifakara, Tanzania
Marcel Tanner, Board of Governors

Marcel Tanner, Board of Trustees

Innovative Vector Control Consortium
Christian Lengeler, Chairman ESAC 3

Institut de la Francophonie pour la Médecine Tropicale, PDR Laos
Marcel Tanner, Board of Directors
WHO Network for Household Water Treatment and Safe Storage
Daniel Mäusezahl, Advisory Group Member

WHO Product Development Team for the Malaria Vaccine Candidate MSP1-42
Blaise Genton, Chairman

WHO Steering Committees for the Development of the Malaria Vaccine Candidates AMA-1, PFC102 and PFCP-2.9
Blaise Genton, Chairman

WHO Regional Office for the Western Pacific, Regional Programme Review Group
Jürg Utzinger

WHO Roll Back Malaria Procurement and Supply Chain Working Group
Don de Savigny

WHO Technical Advisory Group on Buruli Ulcer
Gerd Pluschke

WHO/AFRO African Malaria Expert Committee
Don de Savigny, Member

WHO/TDR M. tuberculosis Strain Bank
Sébastien Gagneux, Advisory Committee

WHO/TDR Scientific Advisory Committee for Evidence for Anti-Malarial Policy and Access
Don de Savigny, Chairman

WHO/TDR Scientific Advisory Committee for Malaria Vaccines – MALVAC
Blaise Genton

WHO/TDR Scientific Advisory Committee on Drug Development and Evaluation for Helminths and other Neglected Tropical Diseases – HNR/BL6
Jennifer Keiser

WHO/Technical Consultation Group on Radio Frequency Research Agenda, Geneva
Martina Rööski

World Health Organization Pesticide Evaluation Scheme
Pie Müller, Working Group Member

SWITZERLAND

AGUASAN
Daniel Mäusezahl

Aidsfocus Switzerland
Kate Molesworth, Steering Committee

Art for the Tropical Forests
Marcel Tanner, Member of Board

Basel Biometrics Society
Penelope Vounatsou, Directory Board

Basel Institute for Clinical Epidemiology
Marcel Tanner, Scientific Advisory Committee

Basler Stiftung für experimentelle Zoologie
Reto Brun, Chairman

Calcutta Project
Kate Molesworth, Directory Board

Commission of the Natural History Museum Basel
Marcel Tanner, Member of Board

Competence Center Environment and Sustainability of the Federal institute for Technology, Zurich ETHZ
Marcel Tanner, Chair, External Review Board

Eidgenössische Kommission für Lufthygiene (EKL)
Nino Künzli, President

Nicole Probst-Hensch

ETH Conference on Combustion Generated Nanoparticles
Nicole Künzli, Scientific Organizing Committee

Expert Committee for Travel Medicine
Blaise Genton, Chairman

Christoph Hatz, Chair and Committee Member

Federal Expert Committee on Law on Genetic Testing in Humans – GUMEK
Nicole Probst-Hensch

Foundation Biobank Suisse
Nicole Probst-Hensch, Member Foundation Council

IAMANEH Switzerland
Marcel Tanner, Patronage

Initiative for the Prevention of Suicide in Switzerland – Ipsion
Mitchell G. Weiss

Kommission für Atmosphärenchemie und -physik der Schweizerischen Akademie der Wissenschaften
Nino Künzli

Master of Public Health – MPH Programme, Universities of Basel, Bern, Zurich
Axel Hoffmann

Martin Rööski, Study Steering Committee
Marcel Tanner, Study Board Member

Elisabeth Zemp Stutz

Nachdiplomstudium für Entwicklungsländer – NADEL, ETH Zurich
Christian Lengeler

Peter Odermatt

Manfred Steerner

Marcel Tanner

Jürg Utzinger

Kaspar Wyss

National Expertenkommission für das MD PhD Programm der SAMW
Charlotte Braun-Fahrländer

Nicole Probst-Hensch

Hanspeter Marti, Expert Advisor for Parasitology

Swiss Commission for Research Partnership with Developing Countries KFPE
Marcel Tanner, Board Member

Swiss Development Cooperation; Humanitarian Aid; Zoonoses Intervention Group
Esther Schelling, AG 200

Jakob Zinsstag, AG 200

Swiss Forum for Epidemiology and Animal Health
Esther Schelling, Directory Board

Swiss Foundation for Sexual and Reproductive Health – PLANeS
Elisabeth Zemp Stutz, President

Swiss Gender Health Research Network
Julia Dratva

Elisabeth Zemp Stutz, President

Swiss LivestockNet
Esther Schelling, Directory Board

Swiss Malaria Group
Christian Lengeler

Eric Huber

Swiss Medicus Mundi Network
Bernadette Petershaus, Directory Board

Swiss School of Public Health
Charlotte Braun-Fahrländer, Director

Axel Hoffmann, Extended Management Board

Marcel Tanner, Chair of Foundation Council

Swiss Society of Microbiology
Hanspeter Marti, Committe Member

Swiss Society of Tropical and Travel Medicine FMH
Johannes Blum, Examination Board

Christoph Hatz, Chairman
GRADUATES
SEPTEMBER 2012 TO AUGUST 2014

PHD, UNIVERSITY OF BASEL

Alkayait Abdulsalam (18. 3. 2013): Key elements of HIV/AIDS control in the Arab world
Baljinnyam Zolzaya (21. 2. 2014): Molecular epidemiology of animal and human brucellosis in Mongolia
Brancucci Nicolas (19. 1. 2013): Novel insights into the epigenetic regulation of Plasmodium falciparum virulence genes
Bratschi Martin (25. 10. 2013): Epidemiology of Buruli ulcer in the Mapé Basin of Cameroon
Chammartin Frédérique (19. 2. 2014): Geostatistical model-based predictions of Helminthiasis risk to assist control interventions
Dean Anna (9. 4. 2013): Epidemiology of brucellosis and Q fever in Togo and the risk of disease spread through cattle trade in West Africa
Ducret-Stich Regina (17. 12. 2012): Modelling of personal exposure to traffic air pollution and assessment of associated health effects
Gari Sara (18. 10. 2013): Equity in access to HIV/AIDS services in Zambia: the role of social cohesion in HIV prevention and care
Giardina Federica (16. 12. 2013): Bayesian spatial models applied to malaria epidemiology
Hürlimann Eveline (27. 3. 2014): Effects of parasitic infections on clinical outcomes, self-rated quality of life and physical fitness in Côte d’Ivoire
Huho Bernadette (2. 5. 2013): Measurement of malaria transmission in Africa; an entomological perspective
Ingram Katrin (28. 6. 13): Accelerating antischistosomal drug discovery: Preclinical studies of antimalarials, synthetic peroxides and praziquantel derivatives
Jean-Richard Vreni (15. 5. 2013): Crowding at Lake Chad: An integrated approach to demographic and health surveillance of mobile pastoralists and their animals
Jürgens Verena (27. 5. 2013): Bayesian spatio-temporal modeling of cancer-related mortality in Switzerland
Kasyymbekov Joldoshbek (31. 3. 2014): Epidemiology, cost and surveillance of brucellosis in people and livestock of Kyrgyzstan
Kaiser Marcel (17.1. 2014): New drugs against trypanosomatid parasites: Rediscovery of fexinidazole
Khieu Virak (17. 12. 2013): Epidemiology of Strongyloides stercoralis in Cambodia
King Jonathan (26. 4. 2013): Novel approaches to evaluate the impact of the SAFE strategy on trachoma and other neglected tropical diseases in Amhara National Regional State, Ethiopia
Levy Serej (29. 4. 2014): Molecular epidemiology of tuberculosis in selected sites across Papua New Guinea
Ludin Philipp (Dez 2012): Comparative genomics of parasites
Lutambi Angelina (1. 4. 2013): Mathematical modeling of mosquito dispersal for malaria vector control
Malla Bijaya (8. 3. 2013): Molecular epidemiology of tuberculosis in Nepal
Masanja Irene (28. 3. 2013): Influence of health systems in malaria case management as part of malaria control in Tanzania
Mikkelsen-Lopez Inez (1. 7. 2013): Health system governance in Tanzania: Impact on service delivery in the public sector
Mosha Dominic (16. 4. 2014): Safety, efficacy and pharmacokinetics profile of antimalarial drugs in pregnancy: pharmacoepidemiology studies
Murto Christine (21. 9. 2012): Leprosy and migration Brazil
Musheke Maurice (27. 5. 2013): Factors influencing uptake of HIV testing, non-initiation of and attrition from antiretroviral therapy care in Lusaka, Zambia
Olds Cassandra (21.9.2012): Towards integrated control of East Coast fever, a devastating disease of cattle


Ragetti Martina (17.10.2013): Measurement and modelling of short- and long-term commuter exposure to traffic-related air pollution

Rajkumar Sarah (12.7.2013): The effect of a smoking ban on exposure and cardio-respiratory health of non-smoking hospitality workers in Switzerland

Bighetti Aurélie (24.9.2012): Aetiology of anaemia and public health implications in the Taabo health demographic surveillance system, south-central Côte d’Ivoire

 Bölgen Katharina (26.10.2012): Development and application of new approaches to study the epidemiology of Mycobacterium ulcerans disease (Buruli ulcer) in Ghana

Roduit Caroline (23.4.2014): Development of atopic dermatitis and its association with prenatal and early life exposures

Rosenthal Rachel (25.6.2014): Reporting in surgical research


Schär Fabian (25.4.2014): Diagnosis and epidemiology of Strongyloides stercoralis in Cambodia

Schwarzler Patricia (12.7.2013): De nos jours, chacun fait ce qu’il veut: dynamiques des relations sociales et pratiques sexuelles dans le contexte du VIH/SIDA à Ouagadougou, Burkina Faso


Stuckey Erin (7.4.2014): Application of mathematical modelling for malaria control decision-making in settings of varying transmission intensity

Stucki David (22.7.2014): Transmission and evolution of Mycobacterium tuberculosis

Thuita Kibuthu John (10.10.2012): Biological and pharmacological investigations of novel diamidines in animal models of human African trypanosomiasis


Wenzler Tanja (17.1.2014): Novel diamidines for 2nd stage sleeping sickness

Yap Peeling (25.11.2013): Epidemiology and burden of soil-transmitted helminth infections among school-aged Balang children in Yunnan province, People’s Republic of China

PHD OTHER UNIVERSITIES

Foraster Pulido Maria (25.7.2013, University of Barcelona): Noise and air pollution from road traffic: understanding their role in blood pressure

MSC IN INFECTION BIOLOGY AND EPIDEMIOLOGY, UNIVERSITY OF BASEL

Abakar Fayiz (2014): Seroprevalence of Rift Valley fever, Q-fever and brucellosis in ruminants on the southeast shore of Lake Chad

Adam Salome (2014): Access barriers to primary health care in tajikistan and determinants of household out-of-pocket expenditures for antenatal care, child delivery and vaccination service


Audu Abigail (2014): Developing a framework for using system dynamics for improving health policy planning in Switzerland

Awe Oluwaseyi (2014): Determinants of treatment seeking behaviour in Zambia

Bui Hai (2014): Determining Plasmodium falciparum antigens exposed on the surface of infected red blood cells by mass spectrometry

Crump Lisa (2014): The seasonal dynamics of human retinol status and its environmental determinants in Sahelian mobile pastoralists

De Mestral Carlos (2014): HIV prevalence and risk of infection with HIV and other STIs associated with the use of Internet to find sexual partner in a sample of men who have sex with men in the central region of São Paulo, Brazil

Eze Ikenna (2013): The Tanzania National Voucher Scheme: an analysis of key determinants of voucher redemption rates

Fulcher Caroline (2014): Using global burden of disease estimates for health planning in low-, middle and high-income countries

Gebreab Zenebe Sirak (2014): Spatial air pollution modeling for a West-African town

Giduthuri Joseph (2014): Developing and validating a tablet version of an EMIC interview for influenza vaccine acceptance in Pune, India

Haesen Sophie (2014): Synergies between human, animal and plant health systems in Uganda

Hia Fabian (2014): Deciphering the preferred menus for intracellular pathogens – metabolic strategies for targeting infections


Jeong Ayong (2014): Development of geostatistical interolation model for estimating annual mean PM10 and NO2

Maganga Mussa (2014): Species-specific detection of antibodies in sera of malaria patients

Mai Arthur (2013): Accuracy of the mini-FLOTAC and other techniques for the diagnosis of helminth infections in Côte d’Ivoire

Mollel Thomas Jackson (2013): Molecular epidemiology of Mycobacterium tuberculosis in Bagamoyo, Tanzania

Moser Wendelin (2014): The seasonal and spatial distribution of schistosomiasis and fascioliasis intermediate host snails in W'Djamenia, Chad

Müller Matthias (2014): Prevalence and outcome of cryptococcal antigenemia in severe immunocompromised people living with HIV in southern rural Tanzania

Muthiani Yvonne (2014): Epidemiology and control of selected neglected zoonotic diseases in ICONZ-Africa case study countries

Mwakasungula Solomon (2014): Prevalence of hemoglobinopathies and glucose-6-phosphate dehydrogenase deficiencies in coastal Tanzania

Mznava Dorcas (2013): Co-infection studies of helminths with clinical tuberculosis and HIV in the coastal region of Tanzania

Mwachui Mwanajaa (2014): Epidemiology and control of selected neglected zoonotic diseases in ICONZ-Africa case study countries

Niba Peter Thelma (2014): Phase variable DNA methylation in the bacterium Neisseria meningitides

Olu Kahu Kelechi (2014): Learning from failure – systematic review of published randomized controlled trials that were discontinued due to insufficient recruitment

Otieno Patricia (2013): Discrimination of human monocyte sub-populations by in vitro immuno-phenotyping and whole cell MALDI-TOF MS fingerprinting


Rodriguez Daniela (2014): Dynamics of rising demand for maternal health services, transport needs and mobile phone technology in Kongwa district, Tanzania

Rutailwa Liliana (2013): Novel genome-based phylogenetic markers and SNP-typing assays for the classification of Mycobacterium tuberculosis into sublineages

Scholer Pablo (2014): Protein expression, antibody generation and localization of P. falciparum exported proteins

Suter Kathrin (2014): Campylobacteriosis in Switzerland

Timinao Lincoln (2014): Development of genotyping tools for P. falciparum gametocytes


Vernier Larissa (2014): Epidemiology and control of water-related diseases within a water and sanitation programme in Ngozi, Burundi

Vettiger Andrea (2013): Characterisation of immunodominant Mycobacterium ulcerans protein antigens

Wang Viviane (2014): Global commitments to the control and elimination of onchoceriiasis, lymphatic filariasis and human African trypanosomiasis

JOINT MSC IN INFECTIOUS DISEASES, VACCINOLOGY AND DRUG DISCOVERY, UNIVERSITY OF BASEL/ NATIONAL UNIVERSITY OF SINGAPORE

Haver Hana (2013): Exploring the molecular basis of drug resistance of drug resistance to PA-824 and TMC-207

Larbi Dorcas (2013): Mechanistic characterisation of dengue virus RNA dependent RNA polymerase non-nucleoside inhibitor binding pocket through in vitro biochemical assays and reverse genetics analyses

Meier Noemi (2013): The importance of an allosteric pocket in the dengue protease

Nguyen Thy Khanh (2013): Establishment of transposon mutagenesis for Mycobacterium smegmatis

Ofori-Anyinam Akua Boateama (2013): Understanding the respiratory mechanisms of mycobacteria

Shukla Ankit (2013): Characterization of mycobacterial esterases/lipases using combined biochemical and computational enzymology

Srivatsan Varsha (2013): Characterisation of drug induced cell death in Mycobacterium smegmatis

MIH (MASTERS OF ADVANCED STUDIES IN INTERNATIONAL HEALTH), UNIVERSITY OF BASEL

Orji Philomena Ogochukwu (2012): An assessment of the knowledge, attitude and practices (KAP) regarding tuberculosis among residents of the Abuja Municipal Area Council (AMAC), FCT, Nigeria


Wattiri Mburu Josephine (10. 2012): Promotion of point-of-use water treatment at primary school level by use of flocculant disinfectant

Minnik Vera (10. 2012): Community based health insurance and health equity fund: a comparative analysis of approaches to reach universal health coverage for the poor and the informal sector in Cambodia with focus on Kampot, Oddar Meanchey and Banteay Meanchey provinces

Ruach Barbara (10. 2012): Comparison mid-upper arm circumference toward weight for height as screening/admission criteria based on regular program data and nutritional survey

Reside Evelyn (10. 2012): The determinants of satisfaction for quality of services offered at selected TB dots units in an urban setting in the Philippines

Christinet Yana Tijé Vanessa (12. 2012): Does HIV have an influence on Buruli ulcer’s incidence and clinical manifestations?

Koberg Caroline (2. 2013): Retention in PMTCT – factors influencing retention in care PMTCT programs in sub-Saharan Africa: a systematic literature review

Ikwuonu Cajetan Chukwuma (6. 2013): A study of the knowledge, attitude, and practice of emergency contraception among the full-time students of the Lagos State University, Ojo, Lagos State. Nigeria

Swannet Sarah (7. 2013): Interaction between first and second line: an analysis from patient-provider perspective. Focus on patients of sub-Saharan African origin


Shieh Mae-Mae Yi-Fong (12. 2013): Policy of free healthcare for children under six in Vietnam: assessment of its non-use during hospitalization for diarrhea in Ho Chi Minh City

Ghimire Damar Prasad (12. 2013): A study of the barriers of access to HIV and AIDS related services for rural women of Mahottari (Terai) district, Nepal

Ernst Irene Lucia (1. 2014): Factors and implications favoring over-diagnosis of malaria at the Mbingo Baptist hospital, Cameroon


Habegger Simon Nicolas (5. 2014): The epidemiology of human alveolar echinococcosis: the influence of the environment on its causative organism; how its vector biology affects transmission to humans; issues to consider when allocating resources towards its control


Anoma Stephane Herve (6. 2014): Viral load monitoring: “Optional or necessary to detect HIV antiretroviral treatment failures?” a descriptive observational study in a district hospital – Douala / Cameroon

Pannus Pieter Jozef Annie (6. 2014): Pooled HIV-1 viral load testing using dried blood spots from finger pricks to reduce costs of care in a limited resources setting of rural Malawi

Waider Sandra (7. 2014): Peer support programs for humanitarian aid workers – an evaluation of a pilot project executed by MSF-Switzerland

Onoh Obialinnama Ukamaka (7. 2014): Perception of climate impact on public health by health workers: a case study in Abuja, Nigeria

Büscher Fortunat Christian (7. 2014): Giving the elderly people a voice: Care arrangements for and by frail elderly people in rural and remote communities in Tanzania
Dominique Bourgau
(until 31.5.2013)

Dominique Bourgau joined the institute on 13 August 2001 as Head of Finances. Until her retirement, the budget at the institute has quadrupled with all consequences for the Finance Unit. Dominique pursued the adaptation and improvement of our procedures resolutely with great energy, vigour and enthusiasm. She implemented the use of several features of the ERP-software and was substantially involved in migrating our accounting and reporting standards into a “true and fair view” framework. With prudence and care she safeguarded and ensured the liquidity and cash flow. Her specific expertise and her qualities to transfer knowledge allowed her to train, support and develop all collaborators at Finance Unit and to be them a sensitive and competent leader. A good heart, a big friend of humans, an excellent professional specialist and a literate bookworm went to her well-deserved retirement. Thank you Dominique.

Stefan Mörgeli

Charlotte Braun-Fahrländer
(until 30.4.2014)

The international community celebrated Prof. Charlotte Braun-Fahrländer (MD) in a Farewell-Symposium as a pioneer of environmental epidemiology. She profiled Basel as a globally recognised hub for research on the health effects of environmental factors. Her seminal studies about the protective role of environmental conditions for the development of allergies and asthma received highest international recognition. The Swiss School of Public Health (SSPH+) – were she acts as Director until the end of 2014 – memorizes her also as the engine behind the development of the successful inter-university PhD Programme in Public Health. As member of the Swiss TPH Directorate, her in-depth knowledge of the former Institute for Social and Preventive Medicine (ISPM) and her collaborative spirit made essential contributions for the successful integration of ISPM into the Swiss Tropical Institute, thus, the development of Swiss TPH. We wish Charlotte good luck on her ways of new shores.

Nino Künzli

Jrène Krebs
(until 30.4.2014)

When we first met back in the last millennium, she made it clear that the secretariat of the Medical Department was the place she wanted to work. Almost 16 years later, the entire staff can confirm that she was right. Dedicated, careful and creative, balancing the sometimes unbalanced things, a strong character with a warm commitment to the work and to the people, she was the natural centre forward player of a team that did not win the Champions League but the hearts of many people in and outside the institute. Thank you for everything, Jrène, and have a lot of fun in Zebrania.

Christoph Hatz

Erna Schäfer
(until 31.5.2012)

Erna Schäfer joined the institute in May 1996 as an administrative assistant. She helped to develop the administrative processes for the post-graduate professional programmes and courses in the Teaching and Training Unit. Thanks to her great professionalism and dedication, we could offer quality courses with very high standards. Highly appreciated by students and facilitators alike, she was often the first contact for those asking questions, or seeking support and advice. For her colleagues, Erna was a great source of wisdom and support. In 2012, Erna decided to take an early retirement; we would like to take this opportunity to thank her for her valuable contributions and dedication. We wish Erna all the best for the future and hope that she will enjoy the time she spends with her family and friends.

Bernadette Peterhans

Jutta Werlein
(until 31.8.2013)

Jutta came from Africa to the Swiss Tropical Institute with a backpack full of experience in tropical medicine and surgery. Her positive, hands-on and psychologically exceptionally strong character soon became an indispensable trait of the department for all the staff and our patients. Always available for almost any job within the Medical Department or for the Institute way beyond her retirement age, she also managed to retain her private interests and was most respected and liked by all of us. Consequently, she now left Swiss TPH for new pastures in the tropics ... Good luck and many thanks, Jutta. We keep in touch!

Christoph Hatz
BOARD
OF GOVERNORS
2012 – 2014

Prof. Dr. med. Felix Gutzwiller [Chair]
Director, Institute for Social and Preventive Medicine, Zurich, Switzerland

Dr. Andreas Burckhardt
Chairman and Member of the Board of Directors, Bâloise Holding AG, Basel (Vice-Chair, since November 2013)

Prof. Dr. Philippe Burrin
Director, Graduate Institute of International and Development Studies, Geneva, Switzerland

Prof. Dr. Sabina De Geest
Head, Institute of Nursing Science, University of Basel, Switzerland

PD Dr. Monika Griot-Wenk
Senior Teamleader, Crucell Switzerland AG, Bern

Joakim Rüegger
Head, Higher Education, Cantonal Department of Education, Basel, Switzerland

Prof. Dr. Didier Trono
Dean, Life Sciences, Swiss Federal Institute of Technology, Lausanne, Switzerland

Christoph Tschumi
Administrative Director, University of Basel, Switzerland

Prof. Dr. med. Werner Zimmerli
Head, Internal Medicine/Infectiology, Cantonal Hospital, Liestal, Switzerland

Prof. Dr. Marcel Tanner
Director Swiss TPH [ex officio]

Stefan Mörgeli
Administrative Director, Swiss TPH (Secretary to the Board, ex officio)

Dr. Guido Miescher, State Secretariat for Education, Research and Innovation, Bern (Observer)

Jörg H. Schwarzenbach
(Vice Chair – until November 2013), Aquila & Co. AG, Basel

Prof. Dr. med. Jacques Louis
(unti June 2013), Professor emeritus, Cheseaux-sur-Lausanne
### EXTERNAL REVIEW TEAMS

#### 2012

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
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<tbody>
<tr>
<td>Prof. Dr. Carlos M. Morel, FIOCRUZ</td>
<td>Rio de Janeiro, Brazil (Chair)</td>
</tr>
<tr>
<td>Prof. Dr. Peter Abplanalp, University of</td>
<td>Applied Sciences North-Western Switzerland,</td>
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<td></td>
<td>Olten, Switzerland</td>
</tr>
<tr>
<td>Prof. Dr. Fred Binka, University of Health</td>
<td>and Allied Sciences, Ho, Ghana</td>
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<tr>
<td>Dr. Vicky Doyle, Capacity Development</td>
<td>International, Liverpool, UK</td>
</tr>
<tr>
<td>Dr. Walter Fischli, Actelion Pharmaceuticals Ltd., Allschwil, Switzerland</td>
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<tr>
<td>Prof. Dr. Thomas Löscher, Munich University Clinic, Germany</td>
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<tr>
<td>Dr. Bergis Schmidt-Ehry, Public Health</td>
<td>Consultant, Wetzlar, Germany</td>
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<tr>
<td>Prof. Dr. Martin Schumacher, Freiburg</td>
<td>University Clinic, Germany</td>
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<td>Prof. Dr. Carol Vlassoff, University of</td>
<td>Ottawa, Canada</td>
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#### 2013

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<th>Name</th>
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<td>Prof. Dr. Carlos M. Morel, FIOCRUZ</td>
<td>Rio de Janeiro, Brazil (Chair)</td>
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<td>Prof. Dr. Michael Alpers, Curtin University, Perth, Australia</td>
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<td>Prof. Josep M. Antó, Director Center for</td>
<td>Research in Environmental Epidemiology,</td>
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<td>Barcelona, Spain</td>
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<td>Prof. Dr. Christoph Binkert, Actelion</td>
<td>Pharmaceuticals Ltd., Allschwil, Switzerland</td>
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<td>Prof. Bonnie Buntain, University of Calgary</td>
<td>Faculty of Veterinary Medicine, Canada</td>
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<td>Prof. Dr. Ulrich Certa, F Hoffmann-La Roche Ltd, Basel, Switzerland</td>
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<td>Prof. Kelly Chibale, University of Cape Town, South Africa</td>
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<td>Prof. Susan M. Gasser, Friedrich Miescher</td>
<td>Institute for Biomedical Research, Basel,</td>
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<td>Prof. Jayashree Ramakrishna, National</td>
<td>Institute for Mental Health and Neuroscience,</td>
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<td>Bangalore, India</td>
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<td>Prof. Dr. Beate Ritz, UCLA School of Public Health, Los Angeles, USA</td>
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<td>Prof. Dr. Martin Schumacher, Freiburg</td>
<td>University Clinic, Germany</td>
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#### UNIVERSITY OF BASEL AND SWISS TPH BOARD MEMBER LIAISONS TO THE EXTERNAL REVIEW:

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<td>Prof. Dr. Alex N. Eberle, University of</td>
<td>Basel, Switzerland</td>
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<td>PD Dr. Monika Griot-Wenk, Crucell, Bern,</td>
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<td>Jörg H. Schwarzenbach, Füllinsdorf,</td>
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<td>Prof. Edwin Constable, University of Basel</td>
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<td>Swiss TPH Board Member</td>
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The R. Geigy Foundation

The R. Geigy Foundation (RGS) supports Swiss TPH in many ways. It supports research and training projects and facilitates the procurement of new equipment for the laboratory or books for the library. Young researchers, especially, are close to the foundation’s heart. The RGS supports doctoral research projects and every second year it confers the ‘R. Geigy Foundation Award’ to distinguished scholars in the field of tropical and neglected diseases or public health who combined laboratory and field research in novel ways.

www.geigystiftung.ch/en/

Rudolf Geigy (1902–1995)

Rudolf Geigy, first director of the Swiss Tropical Institute, was a well-known citizen of Basel. Despite his connection to the chemical dynasty, Geigy AG, he decided instead to fight against tropical diseases such as malaria, sleeping sickness and relapsing fever. Geigy was a charismatic personality. His research activities were imbued with a love for adventure and a pioneering spirit. He was convinced that health could only be improved by working together with scientists, politicians, entrepreneurs and the local population. His conviction that things can only be moved through research partnership still resonates strongly at Swiss TPH today.

‘Thus something fundamental has been said, but something has not been pointed out [that] the scientific laboratory cannot do without or should not do without even today: the ‘field’. That place where the natural scientists should seek new inspiration again and again, and where now, more than ever, urgent tasks await him.’

Marcel Tanner
Board Member, 1993 – present
President of the R. Geigy Foundation, 1998 – present
Director, 1997 – present

Jean Marc Joerin
Board Member, 1988 – present
Vice-President of the R. Geigy Foundation, 1998 – present
President of the Sonnenrain Foundation 1989 – 1998
Advocate / MBA
Mediator SAV

Leo Jenni
Board Member, 1985 – present
President of the Rudolf Geigy Foundation, 1989 – 1992
Head of Programme, Man-Society-Environment (University of Basel), 1992 – 2003
Deputy Head of the Swiss Tropical Institute (STI), 1987 – 1992

Jörg Schwarzenbach
Board Member, 2003 – present
Vice-Chair of the Board of Governors of the Swiss Tropical and Public Health Institute (Swiss TPH), 2002 – 2013
Member of the Management and Executive Board of Credit Suisse, 1985 – 1999

Jürg Toffol
Board Member, 1998 – present
Architect, Swiss Federal Institute of Technology, Zürich

Beat Berger
Board Member, 2008 – present
Economist HWV / MBA
Estate Trustee
Administrator Berger Liegenschaften

Nicolaus Lorenz
Board Member, 2012 – present
Deputy Head of the Swiss Tropical and Public Health Institute (Swiss TPH), 2010 – present
Head of the Swiss Centre for International Health (SCIH), 2000 – present

Ulrich Wasser
Administrator of the R. Geigy Foundation, 1987 – present
Head of Administration, Swiss Tropical Institute (STI), 1987 – 2009
The R. Geigy Foundation is sponsoring a special Jubilee Award to honor the 70 years of success of Swiss TPH. The 70,000 CHF award supports an innovative proposal linking the expertise of different departments to go along the chain from innovation to validation to application: The 'Connecting the Dots Project' in the Greater Lake Region was selected as the winner by the R. Geigy Award Committee. It will combine research, training and implementation elements to specifically strengthen implementation research projects in close collaboration with the National Institute of Public Health in Burundi.

Swiss TPH is operating a local headquarter in Bujumbura, Burundi, acting as a hub for currently three multinational programmes. Swiss TPH’s engagement in the Great Lakes Region in East Africa dates back to the year 2002 when cooperation started with Rwanda, followed by Burundi and South Kivu province in the Democratic Republic of the Congo in 2006.

“To be present on the spot is very important,” says Manfred Zahorka from the Swiss Centre for International Health (SCIH) and promoter of the project. The office in Bujumbura helps Swiss TPH to thoroughly collaborate with local partners and international donors. Moreover, this hub allows Swiss TPH to combine research, training and implementation elements – a combination that has propelled the institute to a leading position in the global health arena. Swiss TPH experts have been doing research in the Great Lake Area in the field of water, sanitation and hygiene; strengthened local health services; or monitored and evaluated projects financed by international donor agencies.

Teaching and Training as Major Pillars

‘Connecting the Dots’ especially focuses on capacity building in collaboration with the National School of Public Health in Burundi. It proposes comprehensive training modules to increase managerial and financial capacities, and on qualitative research methods. Only selected applicants are admitted to the courses to ensure high quality and sustainability.

“This project really opens up new prospects,” says Zahorka. Not only will this help to facilitate other Swiss TPH projects with better skilled personal. “Teaching at these institutions also helps to spread the professional image of Swiss TPH in the several countries.”

Last but not least, ‘Connecting the Dots’ offers specific opportunities for collaboration between the different research, training and service departments at Swiss TPH. In that sense, it can act as role model and catalyse other projects in different regions of the world.
The R. Geigy Award 2014 goes to Dr. Somphou Sayasone for his dedicated and successful intervention research on neglected helminthic diseases in Lao PDR. With his work, Somphou Sayasone laid the groundwork for relieving thousands of people in rural villages in Lao PDR of water-borne worm infections. Somphou Sayasone is a shining example of how Professor Geigy’s vision of combining research, training and public health action can be applied in practice and of what the process of ‘mutual learning for change’ can mean for improving the health of populations.

Trained as a medical doctor in Vientiane, Somphou Sayasone decided to pursue a career in epidemiology and public health research, rather than in cardiology. As a student at the Institut de la Francophonie pour la Médecine Tropicale (IFMT) in Vientiane, he participated in surveys on food-borne trematodes and their impact on disease severity and patterns. Based on this work and related interests, he started a PhD in epidemiology at Swiss TPH and the University of Basel.

Since 2005, Somphou Sayasone has spent several months each year in the southern part of Lao PDR, conducting fieldwork to determine the prevalence and morbidity of water-borne diseases in remote villages. He pursued this line of research first as a doctoral student and later as a postdoctoral fellow and project leader of a research-cum-action programme in partnership with Swiss TPH, the National Institute of Public Health and IFMT. With his openness, dedication and great diligence, he was the first to diagnose Echinococclus japonicus and Capillaria philippinensis in Lao PDR. Importantly, he also documented the network of causality and the interrelations between water-borne diseases such as Schistosoma mekongi and the prevalence of food-borne flukes Opisthorchis viverrini in Lao PDR. In turn, his findings provided the basis for integrated and community-based interventions such as increasing the availability of latrines. This led to a drop in the prevalence of schistosomiasis from 58% to 20%.

“This prize has great meaning to me,” says Somphou Sayasone. For him the prize is also a reward for the months of privations due to fieldwork far away from home. “But most importantly, it also indicates to policy-makers the importance of this research.” Although Somphou Sayasone’s work has demonstrated the great effect of proper sanitation on the health of populations, most of the villages in the region still lack latrines or clean water connection. Further efforts are urgently needed.

Unfortunately, schistosomiasis, other water-borne and food-borne parasitic diseases are still among the most neglected diseases, not only in Lao PDR, but also in many places throughout the world. Policy makers’ lack of awareness and scarce resources hamper progress. As co-director of a unit in the National Institute of Public Health in Lao PDR, Somphou Sayasone continues to conduct intervention research in close collaboration with researchers from Swiss TPH.

About the R. Geigy Foundation Award

Offered since 2000, the R. Geigy Foundation Award recognises an individual young or mid-career scientist or global/public health specialist for his or her excellent achievements in tropical disease or neglected disease sciences or global/public health implementation and capacity building, combined with outstanding dedication to working in the field.

The award commemorates the spirit and the achievements of Rudolf Geigy, the founder of the Swiss Tropical Institute who was born in Basel on 20 December 1902.