



Curriculum vitae of Marcel TANNER

Basel, 25 January 2019

General Information

Marcel **TANNER** born 1
October 1952 in Basel Swiss
citizen (Basel & Eriswil)

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Languages

German (native)

English (read/write/speak: fluent)

French (read/speak: fluent, write: good)

Swahili (read/speak: good, write: basics)

Italian (read: fair, speak/write: basics)

Education & Employment Record

1959-1963 Primary School in Basel

1963-1972 High School in Basel

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- 1972-12.1976 University of Basel, Diploma in med. Zoology; Studies in Zoology, Botany, Chemistry, Medical Microbiology. Courses in Parasitology, Immunology and Electron Microscopy.
- 1977-12.1979 PhD thesis (*summa cum laude*) in Medical Zoology at Swiss Tropical Institute (STI) on: "Kultivation von *Trypanosoma (Trypanozoon) brucei* in vitro: Wachstumsbedingungen für Blutformen"
- 1.-2.1979 Field work in Cameroon and Liberia for studies on onchocerciasis and schistosomiasis on behalf of STI
- 1980-1.1981 Postdoctoral fellowship in the laboratory of immunology of STI on the immunoparasitology of filariasis
- 2.81-12.1984 Head, Swiss Tropical Institute Laboratory, Ifakara, Tanzania (now: Ifakara Health Research & Development Centre, an affiliate of the National Institute for Medical Research)
- 1.85-8.1986 Research Scientist STI; evaluation and write-up of field data
- 9.86-9.1987 London School of Hygiene & Tropical Medicine, Faculty of Medicine, University of London
- MSc in Community Health for Developing Countries (MPH); epidemiology option
 - In-depth studies in epidemiology and write-up of the "Habilitation" for the University of Basel
- 12.1987 Lalcaca Medal, Award from the London School of Hygiene & Tropical Medicine
- 6.1987 Venia Docendi (Habilitation) University of Basel, Faculty of Science
- 10.87-6.96 Head, Department of Public Health & Epidemiology, STI and Deputy Director (1995-6.1997)
- 10.87-6.97 Programme Director; Planning and Management of the Health Research Programme Ifakara Centre in the Kilombero District Morogoro Region, Tanzania, on behalf of the Swiss and the Tanzanian Government.
- 3.93-present** Professor and chair (Extraordinarius, 1.97 onwards and Ordinarius from 2.05 onwards) of Epidemiology and Medical Parasitology, University of Basel, Faculty of Science

9.95 Appointment (C4) as Professor for Tropical Medicine & Hygiene, University of Heidelberg (Succession Prof. H-J Diesfeld). Acceptance of appointment, but subsequently accepted counter-offer of Swiss Tropical Institute/University of Basel to return to Basel.

05.96 Appointment as director STI by the Kuratorium

7.96-2.97 Visiting Professor; Australian Centre for International Health & Nutrition, Tropical Health Program, University of Queensland Medical School, Brisbane, Australia

12.96-12.16 Honorary Professor, University of Queensland Medical School, Brisbane, Australia

7.97-6.2015 Director, Swiss Tropical Institute now Swiss Tropical & Public Health Institute (since 1.2010)

9.2000 Leverhulme Medal and Lecture, Award from the Liverpool School of Tropical Medicine

10.02-10-04 Dean, Faculty of Science, University of Basel

5.2003 Personal corresponding member Swiss Academy of Medical Sciences

12.2003 Appointment as Director of the UNDP/Worldbank/WHO Special Programme for Research on Tropical Diseases by the Director General of WHO, Dr. J.W. Lee (Appointment declined)

4.2004 Honorary Member Swiss Academy of Science

7.2007 Titular professor, Swiss Federal Institute of Technology Lausanne (EPFL).

11.2008 Honorary doctorate (Dr. ès sc) University of Neuchâtel, Switzerland

11.2009 Additional chair in epidemiology at the Faculty of Medicine, University of Basel (Doppelprofessur in zwei Fakultäten)

1.16 – present President Swiss Academy of Sciences (SCNAT)

Present and past Positions, Responsibilities and Memberships (ongoing in bold)

- 1. President Swiss Academy of Sciences (SCNAT); 2016 to present**
- 2. Member Scientific Advisory Board Novartis Institute of Tropical Diseases, Singapore (7.2004 – present)**
- 3. Member Board of Directors University Hospital Basel, 2016-present**
- 4. Member of Board Fondation Botnar; 2018 to present**
- 5. Chair (2007-6.2017) and treasurer (7.17-present) of the Board of Drugs for Neglected Diseases (DNDi);**
- 6. Member, Board of Trustees, INCLEN Trust, 10.2000 – present (chair 2000-2004).**
- 7. Professor of Epidemiology and Medical Parasitology, University of Basel (3.1993 – 2.2005: Extraordinarius, 2.2005: to present Ordinarius and additional chair in the Faculty of Medicine, University of Basel 11.2010) – until 12.2017.**
- 8. Director, Swiss Tropical and Public Health Institute (6.97 to 6.2015)**
- 9. Professor of Global Health, Federal Institute of Technology, Lausanne (EPFL) 2008-2017**
- 10. Honorary Professor, University of Queensland Medical School (12.96 to 12.2016)**
- 11. Adjunct Professor, James Cook University Townsville, Australia (2017-present)**
- 12. Founder Member, Board of Trustees, Ifakara Health Research and Development Centre (7.97 to 12.2017)**
- 13. Chairman Commission of Swiss Academy of Natural Sciences “Centre Suisse de Recherches Scientifique” Adiopodoumé, Ivory Coast, 1998 to 2008 (Board member of same commission since 1996). From 2008 onwards, with the change to the Leading House structure by STI on behalf of the Swiss Government, member of the CSRS Foundation as representative of the Leading House, STI until 12.2015.**
- 14. Co-chair Swiss Commission for Research Partnership with Developing Countries (KFPE; 2005 – 2012)**

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- 15.** Chair, Scientific and Technical Advisory Board, Barcelona Centre for Research on International Health (CRESIB), 2007 to present
 - 16.** Chair, Advisory Board to EPFL, Lausanne on Cooperation, 2005 to 2015.
 - 17.** Member of Wellcome Trust Funding and Strategic Committees, mainly Tropical Interest Group and Public and Population Health since 1999. Currently Chair of African Capacity building initiatives.
 - 18.** Member of strategic committee of the Bill & Melinda Gates Foundation, 11.2004 to 2016
 - 19.** Member Board UBS Optimus Foundation, 5.2008 to 2018
 - 20.** Editorial Board Member "Parasite Epidemiology & Control"; 2015 to present
 - 21.** Member, Editorial Board "European Journal of Tropical Medicine & International Health", 1996 to present
 - 22.** Member Editorial board "Parasitology International", 1996 to present
 - 23.** Regular reviewer for American Journal of Tropical Medicine & Hygiene, Journal of Infectious diseases, Lancet, Malaria Journal (also section editor on elimination), PNAS, PLoS Medicine, PLoS One, PLoS NTD.

Early past Positions, Responsibilities and Past Committees / Expert Panels / Editorial Boards (past; for present and recent past ones see page 4-5)

Tanzania Ministry of Health Expert Committees on National Malaria Control Policy and National Pilot Control Projects for Schistosomiasis, 1982-1984

Member Steering Committee of the Scientific Working Group on Epidemiology, TDR/WHO-Programme, 1988-1989

Head, German Government Commission for the Evaluation of the German funded Schistosomiasis Control Programme in Malawi, 1989

Member Steering Committee and Chairman Field Research Subcommittee of the Scientific Working Group on Schistosomiasis, TDR/WHO-Programme, 1988 to 1993

Member Steering Committee of the Scientific Working Group on Social & Economic Research, TDR/WHO-Programme, 1989 to 1993

Member Steering Committee on Applied Field Research (AFR) TDR/WHO Programme, 1994 to 1997

Member Research Strengthening Group (RSG) TDR/WHO Programme, 1997 to 1999

Chairman, WHO/TDR/AFR Task Force "Healthy School-aged Children", 1994 to 1997

Member French Government Commission for the external evaluation of ORSTOM, France, 1991-1992

Member, Editorial Board "Acta Tropica", 1989 to 1996

Member, Advisory Editorial Board "Trends in Parasitology" (formerly Parasitology Today), 1991 to 2002

Member Joint Research Co-ordination Board, PR-Chinese Government and WHO/TDR, 1992 to 2001

Chairman Scientific Advisory Board for the Research Focus on Tropical Medicine, University of Heidelberg, Germany, 1994 to 2002

Member, Conseil Scientifique IRD, Ministry of Research, France 1999-2002

Chairman, Board of Trustees, INCLEN Trust, 10.2000 to 2.2004

Member, Scientific Technical Advisory Committee of TDR-WHO, 2000 to 2008.

Member Board of Trustees Int. Centre for Diarrhoeal Diseases Research (IDDR-B), Dhaka Bangladesh (1.2000-12.2006; Chair Programme & Chair Finance committee).

Professional Societies

American society for Tropical Medicine & Hygiene, since 2003

British Society of Parasitology, since 1986

International Epidemiological Association, since 1989

Naturforschende Gesellschaft Basel, since 1985

Royal Society of Tropical Medicine & Hygiene, since 1979 (also local secretary for Switzerland since 1997)

Swiss Academy of Medical Sciences, since 2003

Swiss Academy of Natural Sciences, since 1997 through the CSRS

Commission Swiss Society of Tropical Medicine & Parasitology, since 1985

Swiss Society of Social and Preventive Medicine, since 1990

Swiss Zoological Society, since 1989

Tanzanian Public Health Association since 1984

Third World Foundation, since 1986

Invited Key note lectures and honorary lectures

Over 300 lectures and addresses in different Universities such as for example in/at (list not complete):

- American Society for Tropical Medicine & Hygiene
- Bill & Melinda Gates Foundation
- Chulalongkorn University, Bangkok, Thailand
- Collège de France, Paris, France
- Fiocruz, Rio de Janeiro, Brazil
- Imperial College, London, UK
- Harvard Business School
- Harvard School of Medicine
- Harvard School of Public Health
- Institut Pasteur, Paris, France
- Linnean Society, London, UK
- Liverpool School of Tropical Medicine & Hygiene
- National University of Singapore
- Princeton University, Princeton, USA
- Royal Society of Tropical Medicine, London, UK
- School of Medicine, Vientiane, Laos
- University of Cocody, Abidjan, Côte d'Ivoire

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- University of Burkina Faso, Ouagadougou, Burkina Faso
 - University of Heidelberg
 - University of London, London School of Hygiene & Tropical Medicine, London
 - University of New South Wales, Sydney Australia
 - University of Sydney, Sydney, Australia
 - University of Queensland, Brisbane, Australia
 - University of Rio de Janeiro, Brazil
 - Yale University, New Haven, USA

Over 300 Key note addresses at international meetings and symposia (list available on request).

TEACHING

1. UNIVERSITY OF BASEL

Venia docendi: June 1987 and lectureship 2 hours, since 1 October 1990

Professorship: Chair Epidemiology & Medical Parasitology in the Faculty of Science, University of Basel, March 1993; Ordinarius 2/2005 and additional chair in epidemiology and tropical medicine in the Faculty of Medicine, University of Basel (11.2010)

Faculty of Science:

- Medical Parasitology (joint STI course); selected lectures and practicals on epidemiology, malaria, schistosomiasis and disease control within the frame of the BSc- and MSc-Curricula, 1985 to present
- Basic and advanced epidemiology; lectures and practical (4 hrs/week), 1988 to present
- Public health; basics and advanced topics (1hr/week and seminar)
- Immunoparasitology; seminar (2 hrs/week)
- Parasitology; lecture (2 hrs/week)
- Block course in biology of infection and epidemiology (4 hrs/week)
- Interdisciplinary Seminar on Applied Statistics; seminar (1 hr/week) ▪ Supervisor of 56 Diploma (MSc, MPhil) theses (52 completed; [see appendix 1](#))
- Supervisor of 48 (45 completed) and Co-supervisor of 119 PhD theses (102 completed; [see appendix 1](#))

Faculty of Medicine:

- Diploma in Tropical Medicine & Hygiene (now: Health Care & Management in Tropical Countries) run by STI; selected lectures and practicals (20-30 hrs/term) on epidemiology, public health, health policy
- Public Health and Health Systems, incl. topic days (1st year)

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- Parasitology within Medical Microbiology (3rd year, 6hrs/semester until 2000)
 - Molecular medicine: selected topics (2hrs/semester)
 - Seminars in Social and Preventive Medicine (6th year, 6 hrs/semester)
 - Health and Development; seminars (1 hr/week) within the HCMTC-course,
 - Co-supervisor of 12 MD theses (10 completed; see appendix 1)
 - Supervisor of 21 MPH and 12 MIH theses (17 and 8 resp. completed, see appendix 1)

Faculty of Humanities, Arts & Culture (Phil-I)

- Contributions to Medical Anthropology in collaboration with B. Obrist (M. Schuster until his retirement) and T. Förster (new chair of anthropology and speaker of the Centre for African Studies).
- Various lectures within the MA programme for African Studies such as African Ecology (2 SWS), Environment & Health (2 SWS)

2. LECTURESHIPS AT OTHER UNIVERSITIES

- **Zurich, Federal Institute of Technology (ETH);** Lectures within courses of the Institute of Civil Engineering and NADEL (postgraduate course on problems of developing countries), 1986 to 1989
- **Lausanne, Federal Institute of Technology;** Lectures within MSC course on infection biology (faculty of life sciences) and development cooperation (COOP) since 2002
- **Copenhagen, Danish Bilharziasis Laboratory;** lectures and practicals (8 hrs/term) on the epidemiology and control of schistosomiasis, 1989 to 1993.
- **New Haven (Ct), Yale School of Medicine, Dept. Epidemiology & Public Health;** Lectures and practicals (1 week/term) on health planning, 1991 to 1993
- **Bangkok, Chulalongkorn University, Faculty of Economics;** lectures and practicals on health planning within the context of the first Asian MSc course on Health Economics, 1992 to 2001
- **Brisbane, University of Queensland, Tropical Health Programme;** Visiting Professor for epidemiology and health planning, August 1996 to January 1997 and again from August 2009 to January 2010.
- **Vientiane, Lao PDR, Institut de la Francophonie pour la Medecine Tropicale;** Visiting Professor for epidemiology and public health, 2000 to present.

3. WORLD HEALTH ORGANIZATION

- **WHO Course on the Immunology of Infectious Diseases;** lectures and practicals on epidemiology with particular reference to malaria (6 hrs/course in both French and English course), 1986 to 2009.

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- **WHO/TDR Workshops for Strengthening Field Research**; Coordinator/ Organizer and lecturer in courses held in Arusha, Tanzania (1988), Kadoma, Zimbabwe (1989), Bhubaneswar, India (1992), Yueyang, PR China (1992), Madras, India (1993), Ifakara, Tanzania (1994), Darda/N'djaména, Chad (1997).

4. EUROPEAN COURSE IN TROPICAL EPIDEMIOLOGY

- French-speaking course in collaboration with the European institutes for tropical medicine and public health (Paris, Antwerp, Marseille, Basel: 3 weeks/year); Lectures and practicals on study design, sampling, field study techniques, questionnaires, 1987 to 1993 (1988 Coordinator of course in Basel, 1992 Director of course in Basel)
- English-speaking course in collaboration with European institutes for tropical medicine and public health. Lectures and practicals on study design, community diagnosis and household surveys, 1992 to present (1995 Coordinator and Director of course in Basel)

5. MEDICAL ASSISTANTS TRAINING CENTRE, IFAKARA, TANZANIA (now:

Tanzania Training Centre for international Health)

- Lectures in medical parasitology/entomology, epidemiology and statistics (5 hrs/week), 1981 to 1984
- Lectures on international and public health; 1993 to present

RESEARCH

The following four main areas of research were covered:

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|----------------|------|---|
| 1976 - 1980 | I: | In vitro cultivation of trypanosomes
(6 major publications) |
| | II: | Immunoparasitology of experimental filariasis
(19 major publications) |
| 1980 - present | III: | Epidemiology and control of communicable diseases, public health (365 major publications) |
| 1989 - present | IV: | Health systems and health service management
(94 major publications) |

Publications (peer-reviewed)

- **>480 main publications** plus > chapters in books or books
- Over 300 published short communications/abstracts
- Numerous evaluation and consultancy reports for government ministries, agencies, WHO and Worldbank

A complete list of the main publications is found in appendix 2.

Main Research Grants (\geq CHF 50'000.-)

Principal Investigator and/or Main Grant Holder

- Swiss National Science Foundation #IZ70Z0-131378; Epidemiology and molecular monitoring of HIV resistance in Tanzania: 9.2010-08.2013, **CHF 450'768.-**
- Bill & Melinda Gates Foundation: Community effectiveness of intermittent preventive treatment delivered through the expanded programme of immunisation for malaria and anaemia control in Tanzanian infants. 2003-2008, **USD 6.7 million.**
- STARR, international Foundation: Basic research and implementation research for malaria control and elimination. 2008-2010, **USD 1.26 million**
- Malaria Vaccine Initiative: Malaria vaccine RTS,S phase II and III-trials in Bagamoyo, Tanzania, as part of the partnership between the STI and the Ifakara Health Institute. 2005 to present, **USD 5.2 million.**
- Swiss National Science Foundation: Integrated project # 4 "health & wellbeing" of the NCCR "north-south – mitigating syndromes of global change": 2001-2005,

CHF 3.2 million and extensions 2005-2009 **CHF 3.0 million**, 2010-2013 **CHF 2.8 million**.

- Swiss National Science Foundation #5001-0582721; Health impact and management of waste water use in small scale agriculture in urban Sahelian settings; risks and potential intervention strategies – out-phasing: 1.00-12.01, **CHF 80'380.-**
- Swiss National Science Foundation #5001-44773; Health impact and management of waste water use in small scale agriculture in urban Sahelian settings; risks and potential intervention strategies, 1.96-12.99, **CHF 468'000.-**
- Swiss National Science Foundation # 50-38118.93; Health impact of waste water use in small-scale urban agricultural projects in Sahelian countries, 1.94-12.95, **CHF 299'349.-**
- Sophie & Karl Binding Foundation: Web-based health planning courses, 9.97-8.98, **CHF 85'000.—**
- TDR/WHO # ID 910432; Social and economic impact of lymphatic filariasis - coordination of a multi-country study, 2.92-7.96, **US\$ 225'000.—**
- Stanley-Thomas-Johnson Foundation; Health impact of improved water supply and sanitation in rural Zimbabwe, 1991-93, **CHF 70'000.-**
- Medicus Mundi Switzerland; Health impact of improved water supply and sanitation in rural Zimbabwe, 1991-93, **CHF 70'000.-**

Research within development cooperation projects

- Swiss Agency for Development and Cooperation: Improving child survival – effectiveness of insecticide treated mosquito nets through social marketing. 1996-2001; **CHF 2.3 million**.
- Swiss Agency for Development and Cooperation; Support for the research, support and training activities at Ifakara, from 1982 to 1997 six project phases with a mean funding volume of **CHF 1.0 – 1.5 million per year**
- Swiss Agency for Development and Cooperation; Support of service support, training and research activities within the frame of the Dar es Salaam Urban Health Project, since 1990 5 project phases with a mean funding volume of **CHF 2-3 million per year**

Co-Principal Investigator

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- Wellcome Trust: Drug discovery for malaria based on novel drug targets, with the aim to find a one-dose cure for *P. falciparum* and a curative modality for *P. vivax* (coll. with NITD, MMV and Novartis), since June 2006, **CHF 1.766 million** (5 years).
 - Bill & Melinda Gates Foundation: Simulation modeling of the epidemiological impact and cost-effectiveness of malaria interventions, since October 2005, **CHF 2.4 million** (3 years) and extension 2009 and 2010, **USD 2 million** and extension 2011 to 2016, **USD 4.5 million**.
 - Bill & Melinda Gates Foundation through PATH/MVI and GSK: Modelling the impact of malaria vaccines. 2003-2005, **CHF 1.6 million**.
 - Bill & Melinda Gates Foundation: Urban Malaria in Africa: From Understanding the Epidemiology to Control Strategies. 2003 – 2006, **CHF 770'000.-**.
 - Novartis Foundation for Sustainable Development: Understanding and improving access to effective malaria treatment in rural Tanzania. 2003-2005, **CHF 800'000.—**
 - Favre Sturzenegger Foundation: Control of parasitic diseases in West-Africa, 2001-2003, **CHF 138'000.—**
 - FAG Basel: Entwicklung eines DNA-Mikroarrays für molecular-epidemiologische Fragestellungen und der Diagnostik parasitärer Erkrankungen. 2001-2003, **CHF 170'000.—**
 - Swiss National Science Foundation # 1215-059331: Growing old in the city – health transition among elderly in North Sulawesi, Indonesia, an anthropological approach to old-age research. 1999-2001, **CHF 181'000.—**
 - Swiss National Science Foundation # 32-43527.; Development of statistical approaches for estimating incidence and risk factors of morbidity from tropical diseases: analyses and validation with existing epidemiological data, 10.95-9.97, **CHF 244'088.-** ; extension 10.97-2.98, **CHF 65'419.—**
 - Swiss National Science Foundation #5001-44772; Gestion par ses occupants d'un espace urbain défavorisé, 1.96-12.99, **CHF 405'000.—**
 - Swiss National Science Foundation #1115-042488/1115-045431; Household decision-making in health care in Dar es Salaam, Tanzania. An anthropological inquiry, 4.95-3.97, **CHF 141'600.—**

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- Swiss National Science Foundation #4039-044867; Gesundheitsstrategien von Asylsuchenden und Flüchtlingen und die allgemeinmedizinische Versorgung in der Schweiz, 7.96-6.98, **CHF 320'000.—**
 - TDR/WHO # ID 930378: A trial of SPf66, a candidate synthetic malaria vaccine in Tanzania, 3.92-7.95, **US\$ 240'000.—**
 - AECL (Spanish Agency for International Cooperation); The Tanzania malaria vaccine programme, 10.95-9.99, **US\$ 3.0 million**
 - Wellcome Trust, Travelling Fellowship for Dr. H. Guyatt; Epidemiology and control of schistosomiasis, 3.92-7.94, **UK£ 77'000.-**
 - Wellcome Trust, Travelling Fellowship for Dr. M. Booth; Morbidity assessment of helminth infections, 8.94-7.97, **UK£ 99'000.-**

MAIN AREAS OF RESEARCH¹ (chronological order)

I: In vitro Cultivation of Trypanosomes (6 publications)

These studies aimed at identifying the factors that enabled the survival and growth of Trypanosoma brucei brucei as bloodstream form in vitro. In order to understand the mode of action of trypanocidal drugs or immune mechanisms, and to develop new chemotherapeutic or immunological approaches to attack the trypanosomes in the vertebrate host, the in vitro cultivation of the vertebrate forms, bloodstream forms, was a crucial element. The studies undertaken tested a newly developed cultivation system and revealed determinants of growth supporting/stimulating factors provided by the mammalian feeder layer cells of the in vitro system.

II: Immunoparasitology of Experimental Filariasis (19 publications)

In vitro and in vivo experiments using specially designed micropore chambers showed that the immune response to microfilaria in the laboratory model, rodent/ *Acanthocheilonema* (*Dipetalonema*) *viteae*, was due to an antibody-dependent cell-mediated cytotoxicity reaction. On the other hand the effector mechanisms against infective stage larvae only involved stage-specific antibodies and complement. These mechanisms prevented growth of infective stage larvae and their moulting to the next, preadult larval stage. Serological studies also demonstrated the stage-specificity of the immune responses. In addition, a novel in vitro system that enabled growth of infective stage larvae, their moulting and further development could be established. These studies further led to investigations on the larval surface antigens involved in the protective immune responses.

¹ For publications see appendix 2

III: Epidemiology & Control of Communicable Diseases / Public Health (365 Publications)

This topic of research involved both laboratory and field studies in Africa and Asia, as well as in Europe. A major result of the comprehensive community-based, epidemiological studies that not only look at biomedical problems, but included food consumption surveys, agricultural production assessment and studies on how the population perceives illness and disease, was the development of approaches to develop health and community development priorities that included the demand (felt need) of the population. These approaches allowed the development of novel strategies for diseases control as shown for schistosomiasis and malaria (see below).

Schistosomiasis

A series of studies aimed at developing tools for the individual and community diagnosis of urinary schistosomiasis, *S. haematobium*, based on biomedical measurements and the perception patterns of illness by the population concerned. A cost-effective approach using questionnaires directed to key informants of communities was established and validated in two districts in Tanzania and 7 other African countries. This diagnostic approach provides a basis for priority setting and targeting chemotherapy for morbidity control of schistosomiasis. Furthermore this approach is now also being tested for other communicable diseases that are perceived (as disease, symptom, sign or illness) by the population.

Investigations of schistosome-related morbidity have established the use of ultrasonography as an effective, non-invasive tool at hospital and community level for the diagnosis of schistosome-related pathology. During the field studies in Tanzania, ultrasonography was used for the first time for schistosomiasis at village level and could be compared to conventional invasive procedures as well as to indirect morbidity indicators such as hematuria, proteinuria and leucocyturia.

Studies on the transmission of urinary schistosomiasis led to descriptions of the intermediate host population dynamics and to approaches to identify the high risk transmission sites. This information was used to target control measures and to test the applicability of a local plant molluscicide, *Swartzia madagascariensis*, under field conditions. This plant molluscicide was identified with the help of the population who used it for fishing. It was subsequently characterised with regard to efficacy and effectiveness based on laboratory and field studies.

In collaboration with colleagues from Hunan Province in PR China, a series of studies on *Schistosoma japonicum* morbidity and transmission control strategies was

initiated that provided useful guidance for the provincial and national control programmes.

The long-term work on schistosome-related morbidity also allowed to establish new approaches to estimate attributable risk fraction estimates for different levels of symptoms and signs of *S. haematobium*, *S. mansoni* and *S. japonicum*.

The studies on schistosomiasis allowed to model and to assess comparatively the costeffectiveness of different control strategy options. This finally led to community-based disease control activities that have been adopted by the Tanzanian authorities and are considered at international level.

A series of studies aimed at improving risk mapping using GIS and remote sensing as well as estimating the cost-effectiveness of control strategies in China.

More recent laboratory studies and clinical trials established the preventive effect of artemether against juvenile stages of all human pathogen schistosome species.

Malaria

Initially, longitudinal studies over a period of 6 years focused on the development of drug resistance in a given endemic setting (Kilombero district, Tanzania). These findings led to a better understanding of chloroquine resistance in an area of high transmission and provided the basis for a model on the dynamics of resistance in the interplay with the host's immune response.

As candidate antigens for the vaccination against malaria were proposed, applied research investigated the immune response against these antigens among children and adults who are continuously exposed to infection and disease. An ELISA assay using novel synthetic peptides as antigens was used. Besides antibody profiles among the general population, the studies revealed that there is substantial inter-household variation in the immune response to these vaccine candidate antigens that cannot be explained by exposure to infectious mosquito bites. This had implication for the design of synthetic vaccine candidates.

Following theses studies a major community based project (2 villages in the Kilombero district; population base 6000) was launched that investigates the relationship between immune response, clinical malaria attacks and the exposure to mosquito bites. The results show the usefulness and applicability of parasitological, clinical and immunological indicators for infection and disease and led to a major intervention study on the efficacy of impregnated mosquito nets in an area of high perennial transmission. This study has now been expanded to a district-based operational research project on the effectiveness of impregnated mosquito nets at household level in with regard to child survival.

Based on the sound baseline data, the area also became the site where the first African phase I/III malaria vaccine trial with the synthetic peptide SPf66 was successfully undertaken. The trial (completed in late 1994) showed the safety and the potential of the SPf66 vaccine to reduce the risk of clinical malaria in an area of high perennial transmission. The first trial was followed by a second phase I/III trial among 1200 infants to assess the efficacy against clinical episodes and the possibility to combine SPf66 with other childhood vaccines. This second trial started in early 1996 and lasted 3 years. The vaccine trials also stimulated a series of recent and partly still ongoing ancillary studies on immunological issues (mechanisms of action of SPf66, cellular and humoral responsiveness), the dynamics of parasite genotypes and the relation between exposure, infection and morbidity. These molecular epidemiological studies also led to the formulation of novel hypotheses on the nature and development of premunity and semi-immunity in man.

A series of clinical trials established new malaria control strategies such as the comparison of iron supplementation with malaria chemoprophylaxis or the demonstration of the highly beneficial effect of intermittent preventive treatment of infants alongside with the EPI-programme.

Effectiveness studies on the social marketing of insecticide treated mosquito nets were undertaken at district level and led to a new programme of up-scaling this intervention to the national level in Tanzania.

Alongside with the structural and functional rehabilitation of the governmental health services in Dar es Salaam region (3 million inhabitants), a research-cum-action project on urban malaria was initiated.

The established epidemiological data base and the experience with control strategies enabled to attract a major research project on modelling of the potential impact of malaria vaccines in different endemic settings.

Intestinal parasites

As the community-based studies were no disease-specific, numerous findings were obtained on the prevalence and intensity of intestinal helminths and protozoa. These comprehensive results allowed investigations on interrelations between infection-nutrition-immunity which revealed the highly dynamic nature of those interaction and the importance of longitudinal studies. These initial studies led to more comprehensive longitudinal studies on the dynamics of multiple infections and their implication for community-based control, as they are currently undertaken in Western Côte d'Ivoire for three consecutive years. The wealth of data also allowed more theoretical considerations on analytical strategies and cost-effectiveness evaluations.

In Basel, a case-control study on pediatric cryptosporidiosis was undertaken and revealed the importance of person to person contacts in contrast to the prevailing opinion that animal to person contacts are the major route of transmission. These studies showed the specific role of respiratory symptoms in cryptosporidiosis.

Other disease systems

A series of hospital-based studies focused on the aetiology of liver disorders in the Ifakara (Tanzania) area. The results helped to improve the clinical and laboratory diagnosis at the hospital level. Another study looked at the Western-blot patterns of Ifakara sera to HIV antigens and revealed the presence of sera that only reacted against selected HIV antigens that in turn led to a diagnostic problem at the onset of the AIDS epidemic. This study formed the basis for a comprehensive assessment of different HIV screening tests in a district hospital setting. Currently the extension of these studies allows the planning of triple HIV therapy at peripheral level.

IV: Health Systems and Health Service Management (94 Publications)

The provision of effective, affordable and equitable health care in all countries is a continuing challenge. Research focused on the strengthening of health service management approaches at district level; i.e. to assist the health services management following decentralisation concepts.

An important finding represents the establishment of new approaches in the training of grass root health workers, village health workers. Our research proposed a training scheme that was cost-effective and led to its adoption at the national level in Tanzania.

An in-depth study analysed the health management information required for health care management. It pointed at the need to base data collection and use at all levels of health care and shows its applicability in the Tanzanian context.

Rapid assessment methods were investigated for their application in disease control strategies. Based on the experience from schistosomiasis (see above) the questionnaire approach using key informants in the community was extended to other diseases/conditions. This line of research led to a validation of the approaches developed in Tanzania in other comparable settings of developing countries.

A computer model was developed based on real data from the Kilombero district in Tanzania and from the Ayutthaya Province in rural Thailand. This model allows testing options in resource allocation and health planning, including sensitivity analysis. It is currently being further developed and validated to become a tool in health systems research and in health planning through a collaborative research project in Pune

District, India.

The district-based model also provided the basis for the development of a primary care utilisation model to optimise curative and preventive services at the first contact level. The model was validated mainly with data from Chad.

The experience from our long-term health development projects in Africa also stimulated health systems research in Switzerland. Studies on the prescription practices and compliance with treatment were initiated in collaboration with the Institute of Pharmacy (University of Basel), Swiss reference pharmacies and the medical outpatient department of the Basel Teaching Hospital (MUP-Kantonsspital). Another study focused on the feasibility of the introduction of the prescription of generics at hospital level in the Canton of Wallis.

Work on health planning involved analyses of the processes of priority setting in the the Swiss health sector as a basis to discuss approaches to rationalisation and rationing of health care by learning from countries with severe resources constraints.

Current health systems research projects focus on the quality (technical and perceived) of care, the determinants of health-seeking behaviours aiming at understanding compliance within a given socio-cultural context and thus improving access to treatment and care (mainly for malaria and TB). These studies are complemented by implementation research on how to carry efficacious tools/strategies to community effectiveness. Relevant examples are the malaria control strategies (such as ITNs and IPTi; see above) and new approaches of schistosomiasis control.

DEVELOPMENT COOPERATION

Since 1981, development co-operation was a main stream of activities. In fact, research undertaken on the epidemiology and control of communicable diseases and on health service management was only possible when linked to a long-term development project. This was the concept that governed the work in Tanzania and was extended to the whole department from 1987 onwards. These development co-operation activities involved:

1. THE IFAKARA HEALTH INSTITUTE, Ifakara, Tanzania (former SWISS TROPICAL INSTITUTE FIELD LABORATORY and IFAKARA HEALTH RESEARCH & DEVELOPMENT CENTRE)

1981-1984: Head of the Centre

1988-1997: Programme Director at STI

1997-present: Member Board of Trustees, Ifakara

The Swiss Tropical Institute Field Laboratory (STIFL) was founded in 1954. In recent years its activities have expanded considerably, with the initiation of the "Kihere Programme" (Kilombero Health Research Programme/Health Research Project Ifakara Centre; start 1982), which is conducted by the Institute in the closest collaboration with the National Institute of Medical Research (NIMR), the Ministry of Health, the local health authorities and the local communities themselves. Since 1981, STIFL was developed towards a Tanzanian health sciences resource centre, the Ifakara Centre - an affiliate of NIMR. The Ifakara Centre is capable of generating relevant information and providing support to health development emphasising primary health care in Tanzania. Thus, besides research activities the main objective was:

- to develop, assure and sustain Tanzanian capacities in the field of health service evaluation and health systems research at the peripheral level for the implementation of the Tanzanian primary health care policy

The main research activities in this health sector strengthening programme are:

Communicable diseases:

In general one aimed at long-term community-based studies to understand the interrelations between infection, immunity, nutrition and socio-cultural factors. Specific projects included:

Schistosomiasis; inexpensive community-based methods of identifying places where control measures are needed. Morbidity control within existing programmes.

Malaria; basic research on transmission - entomological and immunological determinants of clinical disease. Evaluation of different household-level control measures such as insecticide impregnated bednets. Implementation of phase I/III malaria vaccine trials.

AIDS; improvement of case-management in the St. Francis Designated District Hospital; introduction, quality control and validation of simple HIV tests at district hospital level.

Health systems research:

Studies of the costs and the functioning of the health system at the district level, and of health-seeking behaviour; activities include an evaluation of the quality and cost of care provided at the peripheral level, and help with supervision and training to improve the care provided. Data-collection and its use as a basis for setting priorities and distributing limited resources has been emphasised.

Capacity building:

On the management level, the Swiss Tropical Institute Field Laboratory developed towards a Tanzanian institution, the Ifakara Centre - an affiliate of NIMR, in 1991 that now reached the status of an autonomous Tanzanian Foundation ("Ifakara Centre

Trust") in 1996. This development and the current status of the Ifakara Centre will assure a high degree of sustainability.

2. DAR ES SALAAM, TANZANIA: URBAN HEALTH PROGRAMME

1989-1990: Design and preparation of the project together with all partners

1990-1992: Programme Director at STI

1992-present: Scientific advisor/collaborator

There was an integral contribution to the elaboration of this long-term bilateral Tanzanian-Swiss programme, which aims to improve the Dar es Salaam regional health care system using a health district-management approach. The programme was approved and initiated in 1990. The STI, through the Department of Public Health & Epidemiology, is the implementing agency on behalf of the Swiss Government.

The programme covers the Dar es Salaam region, comprising 3 districts with a population of 2 million. The programme includes the improvement of the infrastructure of the health services (3 district hospitals, 4 health centers, 51 dispensaries), and of working conditions within health facilities. It also aims at the improvement of the quality of care provided in these facilities through the strengthening of management capacities. Important partners in the realisation of the programme are the City Medical Officer of Health and the District Medical Officers.

The detailed objectives of the programme can be outlined as follows:

- To enable the Medical Officers and their staff to improve their skills in management and planning, especially of decentralised services.
 - Evaluation of the precise needs for health services of different types.
 - Rehabilitation of existing facilities, and construction of new ones where they are needed. This includes providing medical equipment and supplies.
 - Organisation of the supply of essential drugs for the district health facilities.
- Finally, it is hoped that the project's activities can be integrated into the health sector of the Dar es Salaam region, and that the results of the work will help to provide guidelines for the provision of urban PHC in the country as a whole.

3. HEALTH PROGRAMME IN CHAD

1988-present: Scientific collaborator/advisor

Since 1987, the STI has been the implementing agency for a major programme comprising several health projects based at central (training and internal medicine)

and district level (service support) in the Republic of Chad. The programme has enlarged its activities within the following main objectives:

- to assist the Ministry of Health in the elaboration of global and coherent manpower resources management and in the implementation of its training aspects
- based on previous experiences in strengthening the curative activities of one of its medical department, to support the National Central Hospital in improving its curative managerial capacities
- to extend the support from the two health district, assisted for many years, to the region concerned and, therefore, to strengthen the managerial capacities of these two regional health offices
- with almost the same objectives as for the Dar es Salaam Urban Health Programme (see above 2.), to improve the infrastructure (3 social health centres, 3 maternities and 3 dispensaries) as well as working conditions and the quality of care within all first and secondary level services of the city of N'djamena; these objectives are pursued with a health district management approach
- to provide assistance to the governmental, non-governmental and community initiatives that aim at developing the health sector

Similar to the situation in Tanzania, the Chadian liaison office of the STI has also developed towards the status of an international NGO, Bureau d'Appui Santé & Environnement (BASE). The STI maintains an office, Centre de Support en Santé Internationale, that assists the Chadian ministry of Health and international organisations in implementing health programs, monitoring and evaluation and operational research. .

CONSULTANCIES

Numerous assignments involved consultancies for the Swiss Agency for Development and Co-operation (SDC; "Direktion für Entwicklung und Zusammenarbeit), the German Ministry for Economic Co-operation, the German Agency for Technical Co-operation (GTZ), the French Ministry for Research, Worldbank and WHO/TDR. The major assignments were:

- The preparation of the Dar es Salaam Urban Health Project on behalf of SDC, the Tanzanian government and Worldbank.
- Evaluation of 2 out of 10 WHO/TDR-Rockefeller Foundation Joint Funding Ventures on health research and technology transfer in the Philippines and Papua New Guinea.

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- Evaluation of the GTZ schistosomiasis control and primary health care programme in Malawi on behalf of the German Ministry of Economic Cooperation (participation as head of mission).
- Evaluation of the research activities of the health department of ORSTOM (Institut Français de Recherche Scientifique pour le Développement en Coopération) on behalf of the French Ministry of Research (participation in the committee of 12 international members).
- Evaluation of the WHO courses on the immunology of infectious diseases on behalf of SDC.
- Evaluation of health risks associated with night-soil use in urban areas of Hubei Province, PR-China, on behalf of World Bank.
- Preparation of a concept paper on the Swiss co-operation with Tanzania in the health sector up to the year 2000.
- Evaluation of ODA work programmes with the Liverpool School of Tropical Medicine and Hygiene, on behalf of DFID (ODA), UK.

The findings of these evaluation missions are compiled in a various reports that can be obtained from the relevant authorities/organisations.

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Appendix 1: Supervised Graduate Studies (PhD, MD, MSc; chronological order; last update: 2.2010)

A. Completed PhD or MD Theses; Principal Supervisor

Lengeler Ch.; Individual and community diagnosis of urinary schistosomiasis and their relevance for disease control; A study in an endemic area of Southeastern Tanzania. **PhD thesis**, University of Basel 1989

Mnzava A.; Epidemiology and control of malaria transmission by residual house spraying with DDT and Lambdacyhalothrin in two populations of the *Anopheles gambiae* complex in Tanga Region, Tanzania. **PhD thesis**, University of Basel 1991

Gammeter H.; From the general practitioner and family physician to the primary care physician. The evolving concept of general medicine and its relevant role in Primary Health Care. A review with considerations for a planned residency programme in general medicine in Bhutan. **MD thesis**, University of Basel 1992 (**Faculty Award 1993**)

Hurt N.; Markers of malaria morbidity in children exposed to intense transmission in Tanzania: Characterization and validation of indicators of cell-mediated immune responses. **PhD thesis**, University of Basel 1994 (**Faculty Award 1994**)

Odermatt P.; Comparative investigations on the population dynamics of *Bulinus globosus* (Morelet, 1866) and *Biomphalaria pfeifferi* (Krauss, 1848) (Gastropoda; Planorbidae) with special regard to the assessment of high risk areas for the transmission of intestinal schistosomiasis. **PhD thesis**, University of Basel 1994

Wyss K.; Utilisation des services de santé en milieu urbain à N'Djaména (Tchad). Etude des déterminants et de leurs interactions. **PhD thesis**, University of Basel 1994

Hodel U.; Primary Health Care Utilization Model. **PhD thesis**, University of Basel 1995

Gessler M.; The antimalarial potential of medicinal plants traditionally used in Tanzania, and their use in the treatment of malaria by traditional healers. **PhD thesis**, University of Basel 1995

Huber W.; Tracking the genotypes of natural infections of the malaria parasite

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- Plasmodium falciparum* during the life cycle. **PhD thesis**, University of Basel 1995
- Godelmann L.; Health Planning under resource constraints: a computerized model for health planning at district level. **PhD thesis**, University of Basel 1995.
- Mäusezahl D.; Measuring health impact of improved water supplies and sanitation in Zimbabwe. **PhD thesis**, University of Basel, 1996.
- Kitua A.; Incidence of *Plasmodium falciparum* infection and disease among infants living in a rural area under intense and perennial malaria transmission. **PhD thesis**, University of Basel, 1996
- Meier M.; Qualitätssicherung in Offizinapotheken – der Beitrag der PharmaAssistentinnen. **PhD thesis**, University of Basel 1997.
- Binka F.N.; Impact and determinants of permethrin impregnated bednets on child mortality in northern Ghana. **PhD thesis**, University of Basel 1997.
- Blöchliger C.; Institutionsbasierte Erhebung der ambulanten medizinischen Grundversorgung und der gesundheitlichen Situation von Asylsuchenden und Flüchtlingen in der Schweiz. **PhD thesis**, University of Basel 1997.
- Hugenschmidt B.; Knowledge, attitude and practice of health workers in Dar es Salaam, Tanzania, with regard to Diabetes mellitus. **MD thesis**, University of Freiburg i.Br. (Germany) 1997.
- Genton B.; Baseline studies of the epidemiology of malaria in preparation for malaria vaccine trials in Papua New Guinea. **PhD thesis**, University of Basel 1997.
- Müller Ch.; Bovine Spongiform Encephalopathy – risk factors on Swiss dairy farms, a case/control study. **PhD thesis**, University of Basel 1998.
- Matthies F.; Traditional herbal antimalarials – their role and their effects in the treatment of malaria patients in rural Tanzania. **PhD thesis**, University of Basel 1998.
- Utzinger J. Novel approaches in the control of schistosomiasis: from rapid identification to chemoprophylaxis. **PhD thesis**, University of Basel 1999.
- Hausmann-Muela S. Community understanding of malaria, and treatment-seeking behaviour, in a holoendemic area of southeastern Tanzania. **PhD thesis**, University of Basel 2000.

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- Mshinda M. H. The challenge of drug resistance in malaria: studies in an area of intense perennial transmission, Kilombero District, Tanzania. **PhD thesis**, University of Basel 2000.
- Boller C. The quality of antenatal care: a comparison between public and private providers in the urban context of Dar es Salaam, Tanzania. **MD thesis**, University of Basel 2000.
- Khanna S. Utilization and quality of a primary care unit in Calcutta. **MD thesis**, University of Basel 2000.
- Krönke F.A. Perception of ill-health in a FulBe pastoralist community and its implications on health interventions in Chad. **PhD thesis**, University of Basel 2001.
- Gerstl S. The economic costs and impacts of home gardening in Ouagadougou, Burkina Faso. **PhD thesis**, University of Basel 2001.
- Bischoff A. Overcoming language barriers to health care in Switzerland. **PhD thesis**, University of Basel 2001.
- Mwanakasale V. A study on the interactions between *Schistosoma haematobium* and HIV-1 in Zambia: the effects of coinfection on the efficacy of praziquantel, egg excretion, and symptoms. **PhD thesis**, University of Basel 2001.
- Wirz C.A. Comparing the approach of western trained doctors and traditional African herbalists: the case of dyspeptic patients. **MD thesis**, University of Basel 2001.
- Rosset-Burkhalter C. Le pharmacien comme partenaire en reseau de sante dans le traitement de l'asthme. **PhD thesis**, University of Basel 2001.
- Prüss A. Developing methods for assessing disease burden from environmental risk factors. **PhD thesis**, University of Basel 2001.
- Mwanakasale V. A study on the interactions between *Schistosoma haematobium* and HIV-1 in Zambia: the effects of co-infection on the efficacy of praziquantel, egg excretion, and symptoms. **PhD thesis**, University of Basel 2001.
- Hutin Y. Evidence and information for national injection safety policies. **PhD thesis**, University of Basel 2003.

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Fleischmann C. Acceptance and use of medicinal plants in the Seychelles. **MD thesis**, University of Zürich 2003.

Guo J. Schistosomiasis control in China: strategy of control and rapid assessment of schistosomiasis risk by remote sensing (RS) and geographic information system (GIS). **PhD thesis**, University of Basel 2003.

Fretz-Männel R. Epidemiology and public health significance of Norovirus in Switzerland. **PhD thesis**, University of Basel 2004.

Mayombana, Charles. Local understanding and practices related to IMCI interventions in eastern Tanzania. 2004, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.

Koudou, Guibéhi Benjamin. Etude de la transmission et des aspects parasitocliniques du paludisme en relation avec le rendement des paysans en zones d'agriculture vivrière intensive de Zatta et de Tiémélékro, dans le centre de la Côte d'Ivoire. 2005, **PhD Thesis**, Université de Cocody.

Hobbins, Michael. Home-based drinking water purification through sunlight from promotion the health effectiveness. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.

Gehler Mariacher, Gabriela. Drug donations in Tanzania : stakeholders' perception and knowledge. 2008, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.

Geissbühler, Yvonne. Ecology and epidemiology of integrated malaria vector management in Dar es Salaam, Tanzania. 2008, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel

Mak, Tippi. Evidence and guidance on vaccine safety and effectiveness in subpopulations. 2008, **PhD Basel**, Universität Basel.

Manzi, Fatuma. The development and implementation of a public health strategy - cost and health system analysis of intermittent preventive treatment in infants. 2008, **PhD Thesis**, Universität Basel.

Mrisho, Mwifadhi. Neonatal survival in rural Tanzania : home deliveries, neonatal mortality and subsequent help and health seeking behaviour for the newborn by mothers in rural Tanzania. 2008, **PhD Thesis**, Universität Basel

Dongus, Stefan. Urban agriculture and operational mosquito larvae control : mitigating malaria risk in Dar es Salaam, Tanzania. 2009, **PhD Thesis**, Universität Basel

Ong, Swee Hoe. Molecular epidemiology of dengue viruses from complete genome sequences. 2009, **PhD Thesis**, Universität Basel.

Santosh Karvande, Shilpa. Process of couple communication in reproductive health among rural married couples in India. 2009, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.

Tekeli-Yesil, Sidika. Factors affecting the process of taking action at individual level regarding: mitigation and preparedness for an earthquake in Istanbul. 2009, **PhD Thesis**, Universität Basel.

B. Completed PhD or MD Theses, Co-Supervisor

Biro S.; Investigations on the bionomics of anopheline vectors in the Ifakara area. **PhD thesis**, University of Basel 1987

Beck M.; Prospektive Studie über Zusammenhänge zwischen Eisenstoffwechsel, Anämie und Malaria bei Malnutrition und deren Rehabilitation. **MD thesis**, University of Basel 1990

Carlen I.; DCI-Verordnung und Generica im Spital. **PhD thesis**, University of Basel 1994

Roncari D.; Abgabepaxis von rezeptpflichtigen Medikamenten in Schweizer Apotheken. **PhD thesis**, University of Basel 1994

Baba-Moussa A.; Etude de la pollution bactériologique de la nappe phréatique à partir d'une latrine en Afrique Subtropicale. **PhD thesis**, Federal Institute of Technology, Lausanne, 1994

Schlagenhauf P.; Mefloquine based antimalarial strategies for travellers. **PhD thesis**, University of Basel 1995

Cissé G.; Impact sanitaire de l'utilisation d'eaux polluées en agriculture urbaine – cas de maraîchage à Ouagadougou (Burkina Faso). **PhD thesis**, Federal Institute of Technology (EPFL) Lausanne 1997.

Van Eeuwijck P.; "Diese Krankheit passt nicht zum Doktor" Medizinethnologische Untersuchungen bei den Minahasa (Nord-Sulawesi, Indonesien). **PhD thesis**, University of Basel 1997.

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- Drager N.; Aid and international development in low income countries – an analysis of aid flows and practices: proposals for strengthening the effectiveness of aid for health development. **PhD thesis**, University of Geneva 1997.
- Ross A.G.P.; Epidemiological and immunogenetic aspects of the asiatic schistosome in China. **PhD thesis**, University of Queensland, Brisbane, Australia 1998.
- Stirnadel H.A.; The relative contribution of genetic and environmental factors to variation in malaria immunity, infection and related morbidity in areas highly endemic for *Plasmodium falciparum*. **PhD thesis**, University of Basel 1999.
- Müller I. Application and validation of new approaches in spatial analysis as tools in communicable disease control, health systems and environmental epidemiology in tropical countries. **PhD thesis**, University of Basel 2000
- Käser Y.A. Individuelle Medikationsprofile als Grundlage der Qualitätssicherung in der pharmazeutischen Versorgung – Analyse anonymisierter Krankenkassendaten. **PhD thesis**, University of Basel 2000.
- Abdulla S.M.K. Malaria control strategies in the Kilombero Valley, Tanzania. **PhD thesis**, University of Basel 2000.
- Gyapong M. Socio-cultural aspects of lymphatic filariasis and the role of communities in its control in Ghana. **PhD thesis**, University of Basel 2000.
- Knopf L. Rolle des Parasitismus in der N'Dama Viehzucht in der Feuchtsavanne der Côte d'Ivoire. **DVM thesis**, University of Berne 2000.
- Röösli M. Spatial variability of air pollutants in the Basel area and associated carcinogenic and non-carcinogenic health risks. **PhD thesis**, University of Basel 2001.
- Minja H.D. Introducing insecticide-treated mosquito nets in the Kilombero Valley (Tanzania): socio-cultural dimensions. **PhD thesis**, University of Basel 2001.
- Zinsstag J. Gastrointestinal nematodes of N'Dama cattle in the Gambia: Effects of productivity and options for control. **PhD thesis**, University of Antwerp 2000.
- Bugmann N. Le concept du paludisme, l'usage et l'efficacité *in vivo* de trois traitements traditionnels antipalustres dans la région de Dori, Burkina Faso. **MD thesis**, University of Basel 2000.

Gagneux S. Molecular Epidemiology of meningococcal disease in northern Ghana. **PhD thesis**, University of Basel 2001.

Armstrong Schellenberg J.R.M. Socially marketed treated nets and child survival in southern Tanzania. **PhD thesis**, University of Basel 2001.

Wiesner C. Arzneimittelsicherheit in der Perihospitalphase. **PhD thesis**, University of Basel 2001.

Marchant T.J. The health of pregnant women in rural Tanzania with specific emphasis on anaemia and the impact of socially marketed insecticide treated bednets. **PhD thesis**, University of Basel 2002.

Kahlmeier S. Environmental health promotion: Development, implementation and evaluation. **PhD thesis**, University of Basel 2001.

Owusu-Agyei S.O. Patterns of *Plasmodium Falciparum* infection and morbidity in a rural community in northern Ghana. **PhD thesis**, University of Basel 2001.

Abdelrahman A.N. Investigations on the antiparasitic activity of selected african medicinal plants. **PhD thesis**, University of Khartoum 2001.

Schelling E. Human and animal health in nomadic pastoralist communities of Chad: zoonoses, morbidity and health services. **PhD thesis**, University of Basel 2002.

Paget W.J. The surveillance and epidemiology of sexually transmitted diseases in Switzerland. **PhD thesis**, University of Basel 2001.

Dobingar A. Gestion spatiale et construction urbaine: l'assainement, un reveleveur de gestion urbaine a N'Djamena au Tchad. **PhD thesis**, Louis Pasteur de Strasbourg 2001.

Kleinschmidt I. Spatial statistical analysis, modelling and mapping of malaria in Africa. **PhD thesis**, University of Basel 2001.

Obrist van Eeuwijk B. Struggling for health in the city, an anthropological inquiry in Dar es Salaam, Tanzania. **Habilitationsschrift**, Institute of Anthropology, University of Basel and Swiss Tropical Institute 2000.

Li Y. Schistosomiasis japonica in the Dongting Lake of China: longitudinal studies of human exposure, infection, morbidity and immunological markers of susceptibility. **PhD thesis**, Tropical Health Program, University of Queensland, The Queensland Institute of Medical Research Herston 2000.

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- Luo D. Spatial prediction of malaria in the red river basin, Yunnan, China using geographical information systems and remote sensing. **MD thesis**, University of London 2000.
- Wiese M. Vulnerability to ill-health among nomadic people in Chad –A case-study from geography of health and healthcare-. **PhD thesis**, Albert-Ludwigs-Universität Freiburg i. Br. 2002.
- Hodgson A.V.M. Meningococcal meningitis in Northern Ghana: epidemiological and clinical features, risk factors, survival and sequelae. **PhD thesis**, University of Basel 2002.
- Parkar S.R. Gender and the cultural context of urban mental health in Mumbai. **PhD thesis**, University of Basel 2003.
- Semali I. Understanding stakeholders' roles in the health sector reform process in Tanzania: the case of decentralizing the immunization program. **PhD thesis**, University of Basel 2003.
- Auer Ch. Strategies for tuberculosis control from experiences in Manila: the role of public-private collaboration and of intermittent therapy. **PhD thesis**, University of Basel 2003.
- Thierfelder C. Female genital mutilation and the Swiss health care system. **MD thesis**, University of Basel 2003. (*Faculty Award 2004*)
- Bossart R. "En ville chacun est dans son chacun" – une etude athropologique sur l'importance des relations sociales en cas de maladie à Abidjan (Côte d'Ivoire). **PhD thesis**, University of Basel 2003.
- Gemperli A. Development of spatial statistical methods for modeling point-referenced spatial data in malaria epidemiology. **PhD thesis**, University of Basel 2004.
- N'Guessan A.N. La lutte contre les schistosomoses en Côte d'Ivoire : Facteurs de complexité épidémiologique et contraintes opérationnelles à la lutte. **PhD thesis**, University of Cocody, Côte d'Ivoire 2003.
- Leuenberger R. Surveillance of wild boar in Switzerland: prevalence of infections relevant to domestic pigs. **PhD thesis**, University of Basel 2004.
- Hobbins M.A. Home-based drinking water purification through sunlight: From promotion to health effectiveness. **PhD thesis**, University of Basel 2004.

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- Auckenthaler A.G. Transport von mikroorganismen in einem Karstaquifer am Beispiel der Lützelquelle. **PhD thesis**, University of Basel 2004.
- Mayombana Ch.C. Local understandings and practices related to IMCI interventions in southern Tanzania. **PhD thesis**, University of Basel 2004.
- Raso G. Assessment, mapping and prediction of the spatial distribution of parasitic infections in westerns Côte d'Ivoire and implications for integrated control. **PhD thesis**, University of Basel 2004.
- Fischer L.M. Inflammation, non-steroidal anti-inflammatory drugs and the risk of acute myocardial infarction – a pharmacoepidemiological study. **PhD thesis**, University of Basel 2004.
- Budke C.M. Echinococcosis on the Tibetan plateau. **PhD thesis**, University of Basel 2004.
- Lötscher N. Anaemia management in dialysis patients in Switzerland “AIMS”. **PhD thesis**, University of Basel 2005.
- Luginbühl, Anne Katharina. Social perception of water associated infection risks - concept of an awareness campaign using visual media. 2005, **PhD Thesis**, Universität Bern.
- Ochola, Lucy Beldinah. Estimating the sequestered load in *Plasmodium falciparum* malaria. 2005, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Othingué, Nadjitolnan. Etude épidémiologique et spatiale du paludisme en milieu urbain au Sahel : N'Djaména, Tchad. 2005, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- .Rondini, Simona. Development of new molecular genetic tools to study *Mycobacterium ulcerans* infection (Buruli ulcer). 2005, **PhD Thesis**, Universität Basel.
- Wang, Shr Jie Sharlenna. Changing malaria epidemiology in four urban settings in sub-Saharan Africa. 2005, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Waser, Marco. Exposure to indoor microbial agents, allergens and pets, and their relation to asthma and allergy prevalence in farmers' children and their peers from rural areas. 2005, **PhD Thesis**, University of Basel.

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- Wymann, Monica Natalie. Calf mortality and parasitism in periurban livestock production in Mali. 2005, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Amer, Sherif. Towards spatial justice in urban health services planning : a spatialanalytic GIS-based approach using Dar es Salaam, Tanzania as a case study. 2006, **PhD Thesis**, Utrecht University.
- Bernhard, Sonja Christine. Treatment of African trypanosomosis with DB 75 pharmacokinetics, relapses and cross resistance. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Brauchli, Kurt. Telemedicine for improving access to health care in resourceconstrained areas : from individual diagnosis to strengthening health systems. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Dongo, Kouassi. Analyse des deficiences dans la gestion du drainage urbain et des dechets solides et liquides dans les quartiers precaires de Yopougon (Abidjan, Côte d'Ivoire) : approche cartographie-SIG modelisation et socioanthropologie. 2006, **PhD Thesis**, Université de Cocody.
- Hilty, Markus. Molecular epidemiology of mycobacteria : development and refinement of innovative molecular typing tools to study mycobacterial infections. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Kenfack, Siméon. Helio-photocatalytic enhancement of the biodegradation of biorecalcitrant pollutants in water : physiochemical and technical aspects. 2006, **PhD Thesis**, École Polytechnique Fédérale de Lausanne.
- Lévesque, Jean-Frédéric. Inequalities in access to health care in urban south India. 2006, **PhD Thesis**, Université de Montréal.
- Maina, Naomi Wangari Njogu. Isolation, propagation and characterization of *Trypanosoma brucei gambiense* from human African trypanosomosis patients in south Sudan. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Masanja, Honorati Michael. Evaluation of the implementation of health interventions and their impact on child survival in Tanzania. 2006, **PhD Thesis**, Universität Basel.
- Matthys, Barbara. The effect of irrigated urban agriculture on malaria, schistosomiasis and soil-transmitted helminthiasis in different settings of Côte d'Ivoire. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.

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- Merten, Sonja. Strategic traditions : changing livelihoods, access to food and child malnutrition in the Zambian Kafue Flats. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Mugittu, Kefas Nasongelya. *Plasmodium falciparum* drug resistance, molecular genotyping and generation of a malaria resistance genogram by DNA microarray-based technology. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Sama-Titanji, Wilson Bigina. Statistical analysis of within-host dynamics of *Plasmodium falciparum* infections. 2006, **PhD Thesis**, Schweiz. Tropeninstitut, Universität Basel.
- Schwendimann, René. Patient falls : a key issue in patient safety in hospitals. 2006, **PhD Thesis**, Universität Basel.
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