CURRICULUM VITAE

1. PERSONAL INFORMATION

Name – surname	:	CHAPPUIS François Daniel
Sex	:	Male
Birth date and location	:	13.10.1964, Geneva, Switzerland
Nationality	:	Swiss
Marital status	:	Married
Number of chidren	:	2
Private address	:	20, rue Le Corbusier, 1208 Geneva – Switzerland

2. EDUCATION

- 1991: Federal Diploma of Medicine, University of Geneva (UNIGE)
- 1996: Master of Clinical Tropical Medicine at Mahidol University, Bangkok, Thailand (Thesis: "Evaluation of a newly developed dipstick test for the rapid diagnosis of scrub typhus in febrile Thai patients")
- 1997: Doctorate of Medicine (MD), UNIGE
- 2008: Privat-Docent (PD), UNIGE
- 2008: PhD in Medical Sciences, University of Antwerp (Thesis: "Evaluation of field diagnostic tests for visceral leishmaniasis"); PhD supervisor: Prof. Marleen Boelaert

3. EMPLOYMENT HISTORY

Past:

- 1991 - 1994 : resident, Department of Internal Medicine, Geneva University Hospitals (HUG), Switzerland
- 1996: medical director, Bardera Hospital, Somalia (Médecins sans Frontières, MSF)
- 1996 - 1998 : chief resident, Department of Internal Medicine, HUG
- 1998 - 2013: chief resident/senior lecturer : Division of Tropical and Humanitarian Medicine, HUG
- 1999 - 2013: medical advisor for leishmaniasis, trypanosomiasis and snakebite, MSF

Current:

- Head of Division, Division of Tropical and Humanitarian Medicine, HUG
- Associate professor, faculty of medicine, UNIGE
- Medical advisor (human African trypanosomiasis), MSF, Geneva

4. INSTITUTIONAL RESPONSABILITIES

- Pre- and post-travel consultations of travel and tropical medicine
- International projects in development and humanitarian action
- Research projects (neglected tropical diseases – NTDs, non-communicable diseases, travel medicine)
- Teaching & training

5. APPROVED RESEARCH PROJECTS (MOST RECENT & RELEVANT)

- SNF; tackling the second deadliest NTD: predicting and reducing the impact of snakebite on human and animal health through interdisciplinary analyses of hotspots and access to care
  Main applicant; period 2018-2022; subside: CHF 835'450.-
- EU SICA, FP7. Development of diagnostic guidance for NTDs (NIDIAG)
  Role: work package leader; Main applicant: M. Boelaert, ITM Antwerp
  Period: 2010 – 2016; subside for UNIGE-HUG: EUR 604'000.-
- Development of diagnostic tools for snakebite in Nepal and Myanmar (funding: UBS Optimus Foundation)
  Main applicant; period 2010 – 2017 (2 separate projects); subside for UNIGE-HUG CHF 325'000.-
- SNF; randomized control trial : two dosages of antivenom against neurotoxic snakebite in Nepal
  Main applicant; period 2011 – 2014; subside for UNIGE-HUG: CHF 415'000.-
- SNF (r4D): addressing the double burden of disease : improving health systems for non-communicable and neglected tropical diseases; Co-applicant; period 2016 – 2021; total subside CHF 3'289'000.-

6. SUPERVISION OF RESEARCHERS (PRE- AND POST-GRADUATE: PERIOD 2012 - 2017)

Pre-graduate : Masters in Medicine (UNIGE):

- Jonathan Deriaz & Julie Sartoretti : *tests diagnostiques rapides pour le dépistage de la maladie du sommeil : revue de litérature et analyse d'un projet en République Démocratique du Congo* (2013-2015)
- Ludovic Van Delden : *extension géographique des arboviroses en Europe et analyse des déterminants* (2017-2019)

Post-graduate: PhD in Biomedical Sciences – Mention Global Health (UNIGE): all ongoing

- Kanika Koirala: *improving clinical care of patients with persistent fever in Nepal*
- Martin Schneider : *palliative care and humanitarian assistance*
- Debashish Das: *Predictors of malaria-attributable mortality in complex medical emergencies in Africa*
- Gabriel Alcoba: *Snakebite incidence, public health impact, clinical prediction, risk and access mapping and modelling, in 5 countries of tropical Asia and Africa*

7. TEACHING ACTIVITIES (MOST RECENT/RELEVANT)

Pre-graduate (UNIGE):

- Co-director of the course « Médecine humanitaire : les nouveaux enjeux » (3rd y. med. students)
- Co-director of the community immersion programme (3rd y. med. students)
- Director of the 4-week course "tropical medicine & global health" (6th y. med students)

Post-graduate:

- Course on *NTDs* at the "general tropical" course and on *fever in returning travelers* at the "travellers' health" course of the Swiss TPH, Basel
- 10-20h teaching at the WHO International Course of African Trypanosomiasis (2005, 2009, 2014)

8. MEMBERSHIPS (PANELS, BOARDS) AND REVIEWING ACTIVITIES

- Kuratorium of the Swiss TPH, Basel
- WHO Expert panels on African trypanosomiasis and leishmaniasis
- Board of director of CERAH (Geneva Centre for Education and Research in Humanitarian Action), Geneva
- Steering committee of the doctoral school of global health (UNIGE)
- Academic board of the Haute Ecole de Santé (HES), Geneva
- NTD working group, Médecins sans Frontières, operational center Geneva
- Reviewer for various scientific journals (~10 manuscripts/y)

9. MEMBERSHIPS (SCIENTIFIC SOCIETIES)

- Member, vice-president (2017-2012) and president (2012-2013) of the Swiss Society of Tropical Medicine and Parasitology
- Swiss Society of General Internal Medicine
- International Society of Travel Medicine
- American Society of Tropical Medicine and Hygiene

10. ORGANISATION OF CONFERENCES

Journée Romande de Médecine des Voyages (every two years)

11. PRIZES, AWARDS, FELLOWSHIPS

1996: Kanjika Devakul award (best foreign student): Diploma of Tropical Medicine and Hygiene (Mahidol University, Bangkok)

2009: Bizot award, best privat-docent thesis (faculty of medicine, UNIGE)

2010 & 2013: Clinical research awards (Geneva University Hospitals) for: Chagas disease in Geneva (Jackson et al. *PLoS NTD* 2010;4(2):e592) and sleeping sickness in DRC (Alirol et al. *Clin Infect Dis* 2013;56:195-203)

12. CAREER BREAKS : NONE

MAJOR SCIENTIFIC ACHIEVEMENTS

I will focus here on research conducted on neglected tropical diseases (NTDs), in particular snakebite, over the past 5 years. What drives my research focus is **improving access to quality care for neglected populations** presenting disfiguring or lifethreatening conditions such as snakebite, leishmaniasis, human African trypanosomiasis (HAT) and Chagas disease. My main research objectives are to both improve the performance of preventive, diagnostic and treatment tools, and to simplify them so that they can be used where patients are, most commonly in the rural tropics. In recent years, I have also focused on **breaking the silos** where NTDs are (too) often constrained, as illustrated by the following two projects:

- **NIDIAG** (2010 – 2016): In this EU-funded project (FP7), we developed innovative diagnostic guidance tools for patients presenting with common clinical syndromes in the tropics, i.e. persistent fever, persistent digestive disorders and neurological disorders (www.nidiag.org), to replace current diagnostic algorithms that focus on only one disease (e.g. visceral leishmaniasis, HAT); I led the clinical WP and replaced the study coordinator based at the Institute of Tropical Medicine, Antwerp, during her absences. Examples of published scientific papers are Alirol et al. *PLoS Negl Trop Dis* 2016; 10: e4749[1] and Becker et al. *Clin Microbiol Infect* 2015; 21: 591[2] but more (including those with the main study results) have been submitted or are in preparation. A NIDIAG-2 implementation study is foreseen.
- **COHESION** (2016 – 2019/22): This project is funded by the SNF and the SDC within the Swiss programme for research on global issues for development (r4d) and led by my colleague David Beran. It aims at finding synergies between non-communicable diseases and NTDs at policy, health systems and community levels in Peru, Mozambique and Nepal (www.cohesionproject.info; Beran et al. *Lancet Diabetes Endocrinol* 2016; 4(9): 731-2)[3].

SNAKEBITE

Most of my research activities on snakebite have taken place in Nepal, even though community-based surveys have been (Cameroon, 2016) or will be (India, 2017) conducted elsewhere. Together with our research partner, Prof. Sanjib Sharma, an initial community-based survey was conducted in selected villages of Eastern Nepal, where high incidence of snakebite and snakebite-induced mortality were found. Risk (e.g. consultation with traditional healers) and protective (rapid transport to treatment centre, treatment with antivenom) factors for death were identified (Sharma et al. *Am J Trop Med Hyg* 2004; 71: 313-7)[4]. An intervention based on community health education and rapid transport of victims to a snakebite treatment centre by **motorcycle volunteers** was then implemented, which drastically decreased snakebite mortality (Sharma et al. *Am J Trop Med Hyg* 2013; 89: 145-50).[5] This programme remains active today in eastern Teraï, more than 10 years later, with the support of the Nepali Red Cross.

In addition to improved snakebite victims' access to life-saving treatment (antivenom and ventilatory support), we aimed at improving the quality of patient management by developing diagnostic tools that determine the species of the snake that bites the victim, and by improving the dosage of antivenom in neurotoxic envenoming:

- **Diagnosis:** between 2010 and 2017, I coordinated two consecutive studies in Nepal and Myanmar (sponsored by the UBS Optimus Fundation) during which two innovative diagnostic

[1] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004749

[2] http://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(15)00305-5/abstract

[3] http://www.thelancet.com/journals/landia/article/PIIS2213-8587(16)30148-6/abstract

[4] http://www.ajtmh.org/docserver/fulltext/14761645/71/2/0700234.pdf?expires=1490563450&id=id&accname=guest&checksum=EEE1F01F47D38DA50B4B20C7D6772DA0

[5] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3748471/

tools were developed with our German partners (Dr Ulrich Kuch at the University of Frankfurt and Miprolab, a diagnostic test company based in Göttingen):

(i) **A PCR-based test** inspired by forensic medicine, which detects traces of DNA left by the snake (saliva) at the bite site and sampled by forensic cotton swabs. Despite its limited sensitivity, the test is very sensitive and helps to better characterize the snake species responsible for envenomed bites in a given area and thus to determine if the venom of these snakes are adequately covered by the antivenoms locally available (Sharma et al. *PLoS Negl Trop Dis* 2016; 10(4): e0004620)[6].

(ii) Two **rapid diagnostic tests** (RDTs) in cassette format that detect in the patient's blood venom components that are specific to some snake species: one test that detects Russel's viper venom and one (two-line) test that detects cobra sp or krait sp venoms. A distinction between cobra and krait is of high clinical relevance as krait-induced neurotoxic envenoming does not respond to available antivenoms. Data on the diagnostic performance of these two tests are currently being analysed.

- **Treatment:** we compared the antivenom dosage recommended by the Nepalese guidelines (low-initial dose followed by continuous infusions) with the dosage recommended by international snakebite experts (high initial dose) in patients with neurotoxic envenoming in a double-blind RCT supported by the SNF (2011-2014; personal status: main applicant). We found no difference in safety and efficacy between the two dose regimens but the single high initial dose was more simple to use and will be recommended in the Nepali guidelines (under revision). Two manuscripts (efficacy & safety) are in press or under review at PLoS NTD.

The **SNAKE-BYTE project** we are submiting to the SNF would perfectly fit my/our long-term research strategy on snakebite. Not only would we for the first time be able to determine the incidence of snakebite and complications in Cameroon and in the whole Teraï region of Nepal, but we would develop a predictive model of areas at high risk of snakebite with the ultimate objective to **improve the deployment of antivenom and other life-saving treatments.**

Other NTDs

I supervised community-based studies in **visceral leishmaniasis (VL)** endemic areas, in Sudan (Mueller et al. *PLoS Negl Trop Dis* 2012; 6(11): e1872[7]; Nackers et al. *PLoS Negl Trop Dis* 2015; 9(11): e0004187[8]), India and Nepal (Picado et al. *PLoS One* 2014; 9(1): e87641)[9], to assess the burden of VL and determine risk factors for clinical (VL) and asymptomatic *Leishmania donovani* infections, which led to recommendations for VL control strategies. Research activities to validate RDTs for VL were continued in recent years with a prospective diagnostic study in Kenya (Mbui et al. *PLoS Negl Trop Dis* 2013; 7(9): e2441)[10] and a systematic review for the Cochrane Database (Boelaert et al. *Cochrane Database Syst Rev* 2014; 6: CD009135)[11].

In the field of **American (Chagas disease) and African (sleeping sickness) trypanosomiasis**, I supervised or participated in several studies that assessed the efficacy of first-line treatment, once deployed in the field (Alirol et al. *Clin Infect Dis* 2013; 56: 195-203)[12], and searched for predictors of cure/relapse (Priotto et al. *PLoS Negl Trop Dis* 2012; 6(6): e1656[13]; Santamaria et al. *BMC Infect Dis* 2014; 14: 302[14]).

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[6] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004620
[7] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0001872
[8] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004187
[9] http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0087641
[10] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002441
[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4468926/pdf/CD009135-0001.pdf
[12] https://academic.oup.com/cid/article-lookup/doi/10.1093/cid/cis886
[13] http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0001662
[14] https://bmcinfectdis.biomedcentral.com/articles/10.1186/1471-2334-14-302