Quadrennial report 21 – 22 – 23 – 24

University of Geneva

Institute of Global Health
Faculty of Medicine

With the support of a
Louis-Jeantet Foundation Chair

FACULTY OF MEDICINE
INSTITUTE OF GLOBAL HEALTH

UNIVERSITÉ DE GENÈVE

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50 + Staff Members

1 Master of Science in Global Health

1 PhD Program in Global Health

- PhD Program in Global Health
- 130 PhD candidates
- 68 PhD current candidates
- 20 PhD candidates affiliated to research departments of the IGH

6 Post-graduate programmes

- CAS promotion de la santé et santé communautaire
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8 MOOCs developed or in production

- 89 000+ Total Learners

II – B
Executive summary

The Institute of Global Health (IGH) is a structure within the Faculty of Medicine established at the University of Geneva since January 2014, built upon the foundations of the Institute of Social and Preventive Medicine. The IGH is one of the founding institutes of the Swiss School of Public Health (SSPH+). Its missions encompass research, teaching, and community services, particularly in the context of International Geneva. Indeed, Geneva, as the capital of global health, needed to establish an academic structure contributing to its influence in the field of health. Funded by the Geneva Department of Public Education and also supported initially by the Jeantet Foundation and subsequently by the rectorate and the dean's office for the past decade, the IGH has developed research activities and master's, doctoral, and postgraduate training programs, strongly oriented towards international organizations and non-governmental organizations dealing with global health. The institute is also engaged with the cantonal and federal services.

The IGH has assumed the co-presidency and organization of the Geneva Health Forum, with the aim of making it an influential conference in its field. Active at the cantonal and national levels, and present in national and international media, especially during the Covid-19 pandemic, the collaborators of the Institute of Global Health have, in less than a decade, established it as a platform for teaching, research, exchanges, reflections, and expertise, contributing to addressing the numerous challenges in global health, prevention, human rights, at the interface between animal health, health and the environment, and human health.

With the expertise gathered over this period, the institute now provides various courses and conducts a variety of research projects in the fields of epidemiology, data sciences, and modeling, as well as in global health law, and the intersection of environment and health. The Faculty of Medicine is the first in the world to have an integrated One Health Unit, at the IGH, offering original teachings to its students and providing international organizations with its expertise, supported by the Department of Foreign Affairs.

This report aims to assist those who will examine the recent achievements produced by the IGH and its collaborators, as well as the proposed perspectives for the coming years.


NatWest

III – C
Preface

This document aims to shed light on the transitional period at the Institute of Global Health (IGH), which began with several retirements, including those of Christine Bouchardy in 2019, followed by Jean-François Etter, Jean Simos in October 2023, Emmanuel Kabengele, Elisabetta Rapiti, Beat Stoll, and Antoine Flahault in the coming months or years. However, many other professors and promising young talents at IGH will remain in their positions.
This document will not address the issues of personnel replacement, but in addition to presenting the work and teachings carried out at IGH, it will open a discussion on the options for its future strategy.
This report introduces the next generation and discusses some of the challenges they will face.

IV – A Division of Global Health Epidemiology

Full Professor Antoine Flahault and Visiting Professor Christine Choirat

– Antoine Flahault

Antoine Flahault is the founding director of the Institute of Global Health. A physician epidemiologist and former director of the School of Public Health (Rennes, France), he assumed his position in January 2014, appointed as a full professor at the Faculty of Medicine at the University of Geneva and the University Hospitals of Geneva. He has been elected as the Dean of the Swiss School of Public Health (SSPH+) in Zurich and a member of the Swiss Academy of Medical Sciences in Bern.

IGH had developed, in collaboration with the Swiss TPH and the Federal Institutes of Technology in Lausanne and Zurich, a proposal for a National Centre of Competence in Research (NCCR) focusing on the modeling and anticipation of emerging infectious diseases. Unfortunately, this proposal was not accepted in August 2019. Despite the non-selection of our NCCR project, a fruitful collaboration was established at the beginning of the COVID-19 pandemic with the Swiss Data Science Center (EPFL-ETHZ). At that time, there were very few available data, and information on virus transmission mechanisms was limited. We thus focused on short-term pandemic evolution modeling, typically for a seven-day time horizon, in several countries of interest.

During this special period in our collective history, with available computers and "a lot of free time," we decided, without the need for significant funding, to work with EPFL and ETHZ on a "precision global health" project. We developed a model based on the idea that there would be seasonal and daily trends, along with a margin of error to consider. The mathematical concepts were relatively simple. Our goal was to automate estimates, providing a global perspective covering as many countries as possible, with as regular an update frequency as possible. It was a complex task, but we received repeated funding from the Private Foundation of HUG, which significantly supported our collaboration.

However, we faced numerous challenges along the way. The data were highly heterogeneous and subject to abrupt corrections, leading to missing or even negative case or death numbers. We had to address a multitude of situations that our model had to handle automatically. We followed data science approaches, working together with mathematicians, statisticians, computer scientists, and epidemiologists. We quickly created a dashboard, open to the public, for 200 countries, updated automatically every day for over three years. It was accessed by hundreds of thousands of people and featured in the press. It was used by the Swiss COVID Task Force and the WHO. It was reused in hubs, such as the CDC in the United States, authorities in Latvia, Swiss cantons, etc. This led to a publication in PNAS (Proceedings of the National Academy of Sciences). It was a grassroots project that produced both academic results and a practical tool for political decision-making. All of this gradually required the collaboration of a well-rounded team combining the expertise of the Swiss Data Science Center and the Institute of Global Health.

Christine Choirat has been a visiting professor at IGH since 2022, and after working at the Swiss Data Science Center (EPFL-ETHZ), she joined the Federal Statistical Office (OFS). Before being in Switzerland, she worked in the United States at the Harvard T.H. Chan School of Public Health in data science, an emerging discipline at the time. She studied the impacts of air pollution on health, serving as the lead data scientist for a large group of several PIs with substantial resources in terms of funding, computing, and personnel. The mission was to establish a platform that would gather a large amount of health data, particularly Medicare data (medical records of hundreds of millions of insured individuals), exposure data (such as air pollution and temperatures), smoking habits, demographic data, and poverty indicators. This allowed understanding how a complex issue, similar to the one addressed during the pandemic, could be transformed into an operational solution that works daily to enlighten health policies.

In the United States, articles published on air quality can be used to define acceptable standards, especially for fine particulate matter. It is, therefore, a highly political issue. It was essential to have a platform where everything was reproducible. Everyone could understand what had been done, how the data had been processed, etc. Everything was documented, and the team's work, including analyses, could be traced back to the original data.

In this field, which is that of data science and artificial intelligence applied to the implementation or evaluation of public policies, there is a significant risk of being attacked one day for the articles one publishes. Christine Choirat's team in the USA had faced these problems for two main reasons. The first concerns the use of health data that cannot be shared. Researchers were then accused of inventing them, casting doubt on the validity of analyses and conclusions. The other reason concerns the question of causality inference compared to merely observing correlations.

Since returning to Switzerland in 2019, Christine Choirat and her team seek to answer three questions: how to transition from open data to confidential data for analysis? How to work transparently with personal data? How to move from small amounts of data to immense volumes of data? This carries risks because it is easy to find correlations everywhere when the data are massive, making analyses more challenging. How to move from correlation to causality? If we can address these three points, we can genuinely carry out precision interventions, more targeted and effective.

Her team at OFS is responsible for data science and artificial intelligence for the public sector, bringing together a dozen collaborators. Their skills cover privacy techniques, what is called "evidence-based inference for policies," and a component dedicated to policy and innovation. Within this team, there are various profiles that have developed significant expertise in statistics, causal inference, and privacy.

Christine Choirat's team presented two examples illustrating how epidemiology can assist administration. The first example concerns the estimation of poverty in Switzerland. A survey was conducted at the level of seven major Swiss regions. The Federal Council now wants this information at the cantonal level, requiring the implementation of specific models combining machine learning methods with registry data. These models will provide official statistics, which we hope to see published soon. The second example concerns how to transform closed data, such as patient data, into open data that can be more easily worked with. This is an ongoing project for two years in collaboration with Harvard University via the OpenDP consortium (Open Differential Privacy, https://opendp.org/). We have health data scattered across different administrative silos, often subject to different legal bases. By using a randomization approach, random noise is added to queries made on this sensitive data. It's all about proportion: there must be enough noise to preserve individual privacy, but not too much to still be able to analyze these data meaningfully. This is crucial at the federal level because it could allow us to exchange data when the legal basis does not exist for such an exchange. This means that we could share insights without directly transmitting the data themselves. It is a pioneering approach in Switzerland, already practiced in the United States in the context of census data. We are convinced that these developments have strong potential for research, allowing data exchange while ensuring no problematic privacy violations. Moreover, there is a real demand in the private sector, pharmaceutical companies, and other entities to share their data and analyses without compromising confidentiality.

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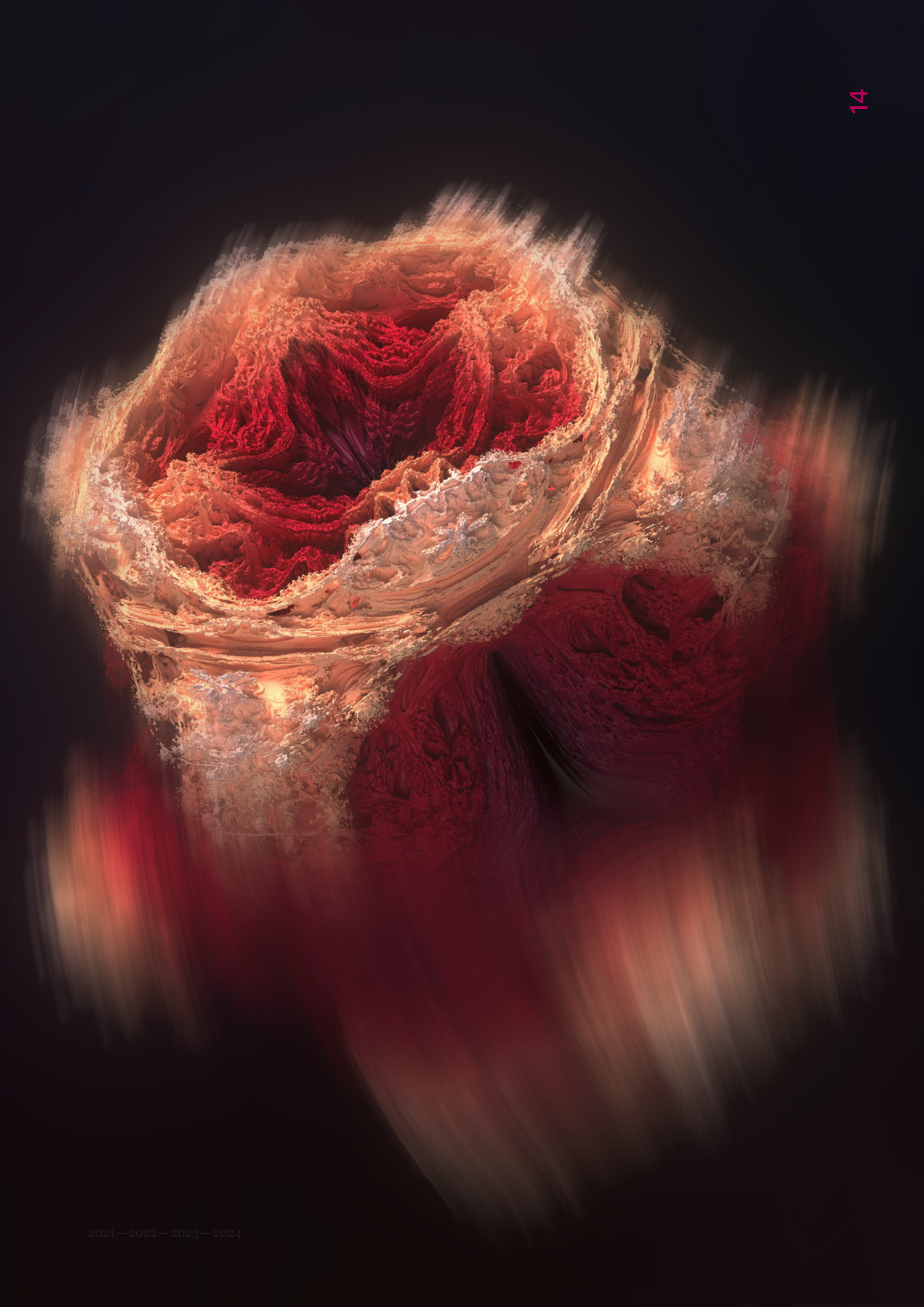
Liens internet

OpenDP: Open Source tools for Differential Privacy, https://opendp.org/.
Data Science Competence Center of the Swiss Federal Administration: Data Science Competence Center DSCC



IV – B Division of Infectious Diseases and Mathematical Models

Professor Olivia Keiser

– Olivia Keiser

Olivia Keiser is Associate Professor at the Faculty of Medicine, University of Geneva. Her team is organized into different sections. One group focuses on HIV research in sub-Saharan Africa, with a strong emphasis on mathematical modeling and machine learning. Another group collaborates closely with the Federal Office of Public Health and many hospitals in Switzerland, focusing on COVID and influenza surveillance. Additionally, there's a group that works on the GRAPH network ; all projects are described in more detail below.

When COVID approached closer in January 2020, we already had an active surveillance system in place with six University hospitals focusing on influenza in Switzerland. We approached the Federal Office of Public Health to explore the possibility of expanding this system to cover COVID. After some discussions, we received approval. When the first COVID case was diagnosed in February 2020, the database was already operational. We were able to collect detailed clinical information on hospitalized COVID patients in Switzerland throughout the pandemic. We also rapidly expanded our network from six hospitals to 21 within a short period. For the Federal Office of Public Health, this system primarily serves as a surveillance tool. We had to create weekly and monthly situation reports, which were shared with hospitals, the Federal Office of Public Health, and later with the public. We continue to produce these weekly reports for the hospitals. However, since 2024, the system have been downscaled. Only a select number of hospitals are included, after application, and our team unfortunately has been downsized as a result. CH-SUR is not just a tool for surveillance; but it is also used as a research platform. We have a scientific committee, and everyone can submit concept sheets and propose analyses (Thiabaud et al 2021). We've also been been part of an European Covid project where we collaborate and conduct scientific studies. Additionally, there have been some discussions with FOPH (Federal Office of Public Health) about expanding the hospital surveillance to include an assessment of long COVID. While this idea did not materialize, they remain interested in gaining a better understanding of the national burden of the disease. They asked us to work on a mathematical model to project and analyze the burden of long COVID in Switzerland. This project has recently started, and Dr. Janne Estill has just submitted the first interim report to the Federal Office of Public Health.

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– GRAPH project

In early 2020, we were contacted by the Regional Office of Africa at the WHO regarding support for Member States in conducting statistical analyses on their data. These analyses primarily involved data shared by the 47 Member States with the WHO. We reached out to many colleagues, including students from the Master of science in global health and institutions like EPFL. Christine Choirat and the whole team at EPFL-ETHZ were particularly instrumental in providing us access to their platform at SDSC, enabling us to conduct collaborative analyses on a global scale. We involved many experts based in Africa, resulting in a multidisciplinary team of over 60 people, comprising members from academia, NGOs, and governmental organizations. We held regular Zoom meetings and also met onsite for a joint event with WHO during the Geneva Health Forum. The analyses were rather simple, mainly consisting of descriptive analyses, but we also worked on some scientific publications in parallel. The countries shared their data in Excel, which made it challenging to create a common, usable database for all countries. Cleaning the data was a significant task. While the data sheets were somewhat standardized, the quality of data varied widely between countries. We attempted to clean the data and develop standardized scripts as much as possible. Additionally, we had a qualitative team that consisted of in-country experts and students. They reviewed the literature and created regular situation reports, which were shared with WHO-AFRO and the ministries of health in the respective countries. In addition to the reports we generated, over 30 countries shared data with WHO-AFRO. These reports were not published to maintain confidentiality, and there were some challenges in sharing them publicly. We also integrated external data sources into the analyses, such as data from demographic health surveys and Google Mobility, to aid in forecasting trends and more. We realized that there was a significant lack of capacity, not just in Switzerland but especially in Africa, for conducting these types of analyses quickly. Data science expertise and epidemiological data analysis was limited, both in terms of data collection, interpretation, and decision-making. While countries had data managers, the number of skilled professionals was quite limited. We aimed to develop a more sustainable solution and offer courses to bridge this gap. One of the initiatives we launched was a mentoring system, along with the creation of instructional videos demonstrating how to perform these analyses. This approach gained popularity, and the person who created the videos became well-known. It became evident that this was an excellent way to teach these skills to a wider audience and rapidly scale up capacity. This eventually led to the creation of the GRAPH courses (https://thegraphcourses.org/). Our goal was to develop courses that were focused on epidemiology and public health. These courses should provide the option to watch videos, but also allow for downloading scripts for those with poor Internet connectivity, enabling them to work on the material at their

convenience. We aimed to make the courses multilingual, available not only in English but also in French, and later maybe in Portuguese, Spanish, or other languages. Additionally, the courses should be affordable or free, include community features for interaction among participants and with their tutors, offer progress tracking, and provide a certificate upon completion. We later received additional support from the WHO headquarters in Geneva, allowing us to create a first set of courses. These introductory data analysis courses used open-source software, R, and were made available free of charge to all. Currently, we have recorded over 1000 users. We also offer guided live cohorts, with 30 to 60 participants per cohort, led by tutors. For these cohorts, we ask participants to contribute financially. The cost is $145 per month over three months. However, we also consider those who are unable to pay and ask them to suggest an affordable amount. We provide discounts up to 80%. We believe that even a modest contribution is important to enhance retention rates. We already had four cohorts running, and the next one began on the 3rd of October 2023. We received very positive feedback from the participants. One thing we'd like to do, for which we currently lack funding, is to develop targeted training courses where individuals can work with their own data, potentially collaborating directly with ministries of health. For instance, we had 20 participants from the Malawian Ministry of Health in the last cohort. They used their own data for their final projects and had access to a discussion server for questions and support. There is significant potential to extend this approach to more countries and potentially collaborate with other universities. We also host interactive sessions where participants from around the world come together. It's a highly international audience, with representation from numerous countries, particularly from African nations. We've received interest and support from our institutions and PhD programs both in Geneva, and at the University of Bern, where our program are accepted for ECTS credits. At the same time, we also created Epigraphhub, a data platform similar to what Christine Choirat mentioned, which allows us to integrate various data sources (Coelho et al 2023). We primarily aimed to work with open-source data and provide secure data storage with different access levels as needed. We recognized that data in different countries is often fragmented across various systems. Our goal is to consolidate this data and develop libraries to improve data accessibility, analysis and visualization. There was also interest from the Global Fund in our courses, and we received a short-term mandate. Until the end of this year, we are developing courses for HIV, TB, and malaria, including the translation of existing courses into French. Additionally, there was some interest from USAID in Nigeria and we started doing a needs assessment around the data life cycle and capacity building in the country.

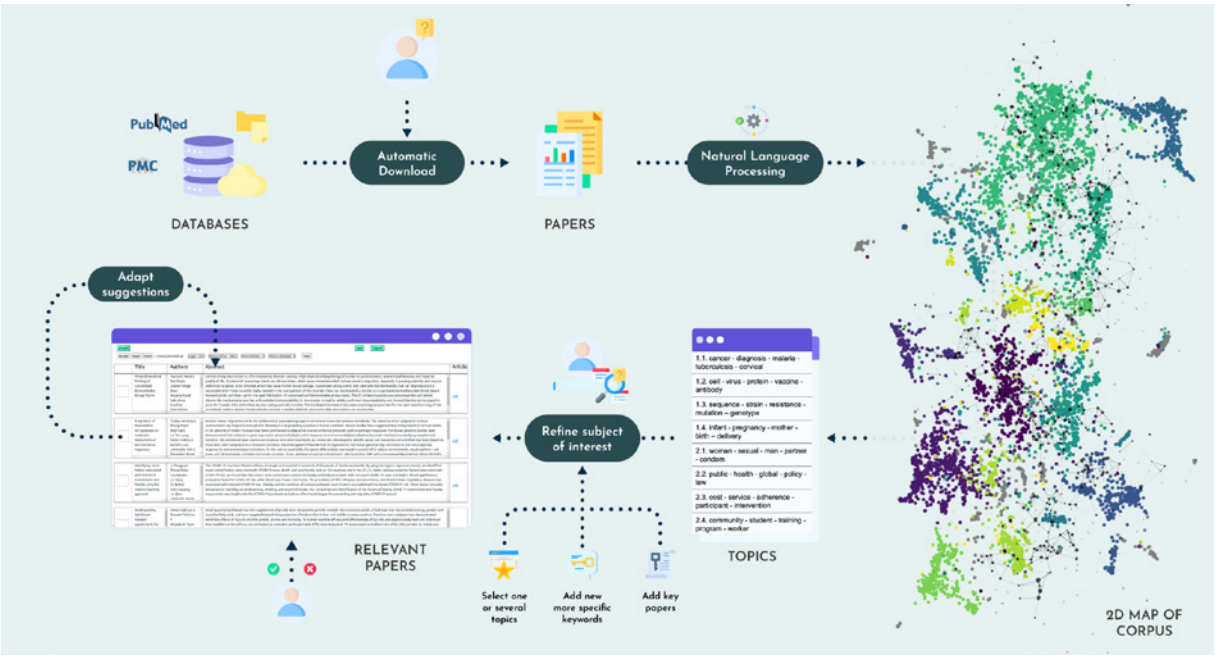
– Spatial distribution and heterogeneity of HIV

Apart from these projects, one of our main focuses has been understanding the social and behavioral drivers that explain the spatial distribution and heterogeneity of HIV in Sub-Saharan Africa. These variations exist not only between African countries but also within individual countries. Demographic health surveys collect hundreds of variables, including social and behavioral factors, as well as the uptake of treatments and other interventions. This was also part of Dr. Erol Orel's PhD project (who has defended at the end of 2023). During that time, we utilized various machine learning techniques to identify which factors might be more predictive of an HIV-positive status. In one sub-project we compared different methods, and in the end, the Extreme Boost algorithm proved to be the most effective (Orel et al 2022). This allowed us to reduce the initial set of 80 or so variables down to 9 variables for both women and men, which explained a significant portion of the spatial heterogeneity. These variables include location, age, lifetime number of sexual partners, condom use during the last sexual intercourse, age of the most recent partner, sex workers, and individuals in high-risk populations. So these characteristics may define new risk groups (as opposed to the classical key population groups) which are relatively hidden. We also engaged in discussions with implementing partners to explore the possibility of using this information for more targeted testing to identify individuals who may not have been previously identified as HIV positive. This could help uncover a high-risk population with a more than 90% probability of being HIV positive, comprising about 6% of women and 5% of men. We also received a grant from the Swiss National Science Foundation to examine mental health outcomes and the care cascade among HIV-infected individuals and vulnerable populations in Nigeria. Here we would like to just highlight one sub-project of this grant. It involves an index partner testing strategy where individuals of key population groups were asked to invite their sexual and injecting drug partners for HIV testing. Although the acceptance rate for participating in the study was only 30%, overall over 3,000 persons invited nearly 9,000 partners. Of the partners, 84% accepted to be tested, and half of them were found to be HIV-positive but had not previously been identified as such. This strategy has proven to be quite successful in identifying individuals who were previously undiagnosed with HIV (Onovo et al 2022).

– Evidence synthesis

LiteRev – This is a tool designed to streamline the process of conducting systematic and other reviews of scientific literature (see Figure below) (Orel et al 2023). It allows users to automatically download articles from Open Access and various literature databases using search terms. Employing natural language processing, it categorizes the articles into topics and subtopics and identifies those closely related to known relevant articles. This enables quick access to pertinent literature. We are currently developing a user interface for this tool and adding new functionalities. We hope it will be valuable for our students and the broader research community.

Since 2014 we also **collaborate** with the evidence medicine center at **Lanzhou University** in China (led by Janne Estill). Janne has contributed to several projects initiated by the Lanzhou team, including the RIGHT Statement reporting checklist for clinical practice guidelines, the STAR tool for evaluating guidelines, and the guidelines for prevention and management of COVID-19 in children and adolescents. Since 2021, IGH hosts also visiting students from Lanzhou University.



In addition we collaborate with the group of Caroline Perrin and Antoine Geissbühler on a project that aims to implement and evaluate telemedecine in Nepal and Mali.

Finally, an SNF project on the spread of Dengue in Colombia (in relation to climate change and migration) is currently under evaluation.

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IV – C
Division of Human, Animal, and Environmental Health

Professor Nicolas Ray

– Nicolas Ray

Nicolas Ray is an Associate Professor at the Faculty of Medicine, University of Geneva. His division comprises several entities, including the GeoHealth group, the One Health unit, and the Environmental Health Unit. The division's research and teaching activities emphasize interdisciplinary and transdisciplinary approaches, digital methods (geospatial data/analyses, artificial intelligence, etc.), and close collaborations with numerous international organizations based in Geneva and beyond. Projects are predominantly located in low- and middle-income countries and humanitarian contexts, with a growing portion conducted in Geneva, Switzerland, and Europe.

– The GeoHealth research group

The GeoHealth research group is strongly focused on the utilization and exploitation of geospatial data and methods in low- and middle-income countries.

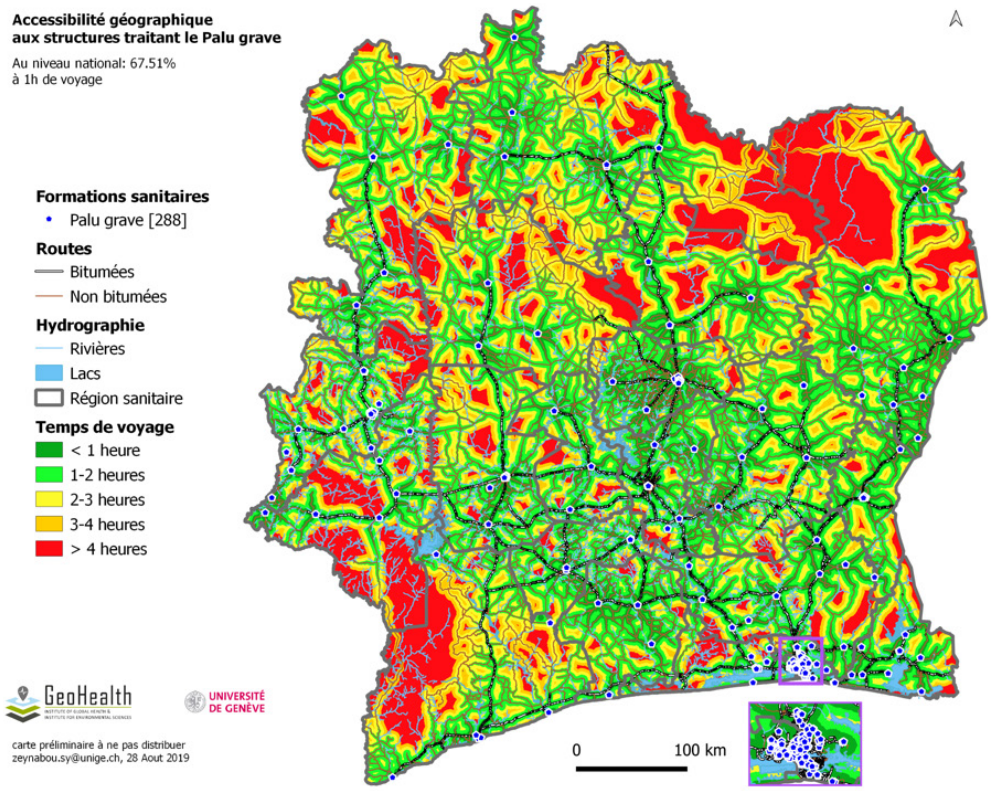
We actively work to make these data and methods more accessible to be used in informing national or local health policies in many countries to enhance healthcare systems. We are fortunate to have several doctoral candidates in global health on our team, based in international organizations, with access to primary and secondary data contributing to our research efforts. Due to space constraints at IGH (Institute of Global Health) and to facilitate collaboration with colleagues in the environmental field, the GeoHealth team is primarily based at the Institute for Environmental Sciences (ISE), located on Boulevard Carl Vogt in Geneva. In this context, Professor Ray's role also involves facilitating and strengthening the health-environment interface through teaching and research at both institutes, notably by leading the Digital Sciences for Environment and Health pole, one of the four poles at ISE.

GeoHealth's team has worked in over 20 countries, always in close collaboration with Ministries of Health and other local partners. We conduct capacity-building activities for local stakeholders through training on the collection, maintenance, exploitation, and sharing of geospatial data, as well as on geospatial modeling. In the future, we aim to further leverage this collaborative network for the benefit of colleagues at the Faculty of Medicine and HUG, (Geneva University Hospitals), as well as to explore synergies with colleagues already working in these countries or others.

Several core operational research projects consume the majority of our time and resources. We have been working closely with the United Nations Population Fund (UNFPA) for six years now. Together, we operate in around fifteen countries to assist national health ministries in better understanding the geographical accessibility to emergency obstetric and maternity services (EmONC), with the aim of optimizing their network of maternity facilities.

We have also been collaborating for several years with the Global Fund to Fight AIDS, Tuberculosis, and Malaria. We observe a growing demand for innovative methodologies to optimize resource allocation for these three diseases as well as community services. Additionally, we have collaborated with UNICEF, particularly in the post-disaster assessment of healthcare accessibility in Mozambique. This collaboration allowed UNICEF to lead the deployment of community health workers in the most affected areas, based on our analyses of accessibility before and after a disaster. We have also been under contract for two years with the WHO's HeRAMS program and the Foundation for Innovative Diagnostics (FIND).

Temps de déplacement aux structures de santé traitant le paludisme grave en Côte d'Ivoire, modélisé avec AccessMod



We also co-directed (with Prof. François Chappuis) the SNF SNAKE-BYTE project on the epidemiology of snakebite in Nepal and Cameroon, with a One Health transdisciplinary approach taking into account economic aspects related to household livelihoods. Our team was particularly involved in modeling the physical accessibility to antivenoms, calculating the risks of snakebite, and assessing the vulnerability of populations to snakebite.

Our modeling approaches rely heavily on the AccessMod tool, an official WHO software that is free and open-source, and we have been responsible for its improvement and maintenance for over 10 years. We also teach this tool in all the countries where we work to strengthen local capacities and enable countries to use this software autonomously to produce maps and regular analyses as their data evolves. AccessMod has been certified as a "digital public good," facilitating its adoption by countries at the national level.

Regarding future directions, we aim to increasingly integrate the dimension of planetary health, taking into account challenges related to climate and environmental changes. We have several ongoing projects in this field, particularly in Africa, where we analyze how precipitation and temperature affect access to maternal health services. We have also recently joined the OnTIME consortium that collaborates with Google to better understand accessibility to maternity services in large African cities, representing a complex challenge due to transportation constraints and other factors. Finally, we aim to strengthen our collaborations, particularly with other entities within the University and HUG.

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IV – D
One Health Unit

Dr Rafael Ruiz de Castañeda
and Dr Vet Isabelle Bolon

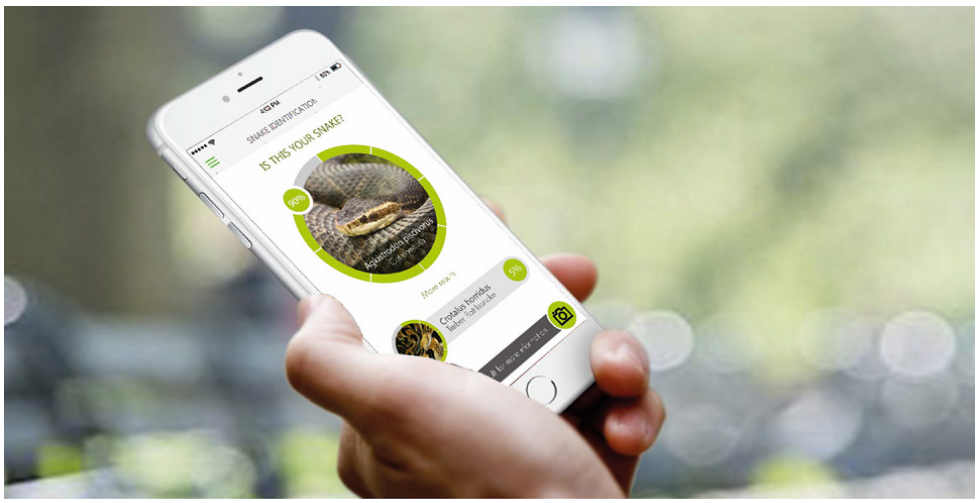
– Dr Rafael Ruiz de Castañeda and Dr Vet Isabelle Bolon

Dr. Rafael Ruiz de Castañeda and **Dre. Vet Isabelle Bolon**, co-lead the **One Health Unit** at the Institute of Global Health. This unit was established in 2016 by Prof. Antoine Flahault following the Ebola epidemic in West Africa and has since been strongly supported by Prof. François Chappuis and Prof. Nicolas Ray. It is a small, well-connected, active, and innovative unit in both research and education; since its creation, it has published 48 papers and collaborated with 124 researchers, 86 institutions and 27 countries worldwide.

One Health and Planetary Health are two prominent areas in our academic discussions, as well as in the media and among policymakers. We are currently witnessing an unprecedented political and scientific momentum in these fields. We strive to align our teaching and research activities with the international agenda and to develop One Health with a strong Geneva identity, in connection with the international community and with a humanitarian dimension.

In 2017, we launched the first Massive Open Online Course (MOOC) on Global Health at the Human-Animal-Ecosystem Interface with contributions from over 40 experts. More than 14,000 students from all over the world have already enrolled in this course. This MOOC served as the basis for developing a blended learning course for refugees at the Kakuma camp in Kenya (Bolon et al., 2020). We have also developed a course in this field as part of the MSc in Global Health at UNIGE, which is highly appreciated by students and attracts participants from the Graduate Institute. We are active at the Faculty of Medicine and the university, both at the postgraduate and undergraduate levels, offering courses and training in One Health and Planetary Health for a wide audience.

In the field of snakebite, a historical research area of the Division of Tropical and Humanitarian Medicine at HUG, we have created an unprecedented snake photo library comprising over half a million photos. This allowed us to develop, in collaboration with EPFL and AICrowd, the first AI algorithm capable of recognizing and taxonomically classifying snakes (e.g., Bolon et al., 2022). We have recently signed a collaboration agreement with Médecins Sans Frontières (MSF) to further develop and implement the AI model in the context of snakebite, including the construction of a specific photo library for South Sudan with the involvement of community health workers.



Source: *Snapp* team – SDG Summer School 2017, Geneva-Tsinghua Initiative

We are particularly interested in the development and application of One Health and Planetary Health approaches in humanitarian contexts in a practical and operational way. With the support of the Swiss National Science Foundation (SNF), we organized an international and interdiscipinary expert meeting and workshop in November 2023, bringing together around forty experts and humanitarian practitioners from Switzerland and around the world to reflect on the use of these approaches in humanitarian settings. Our aim is to lay the foundations for a project that was submitted to the SNF in October 2024.

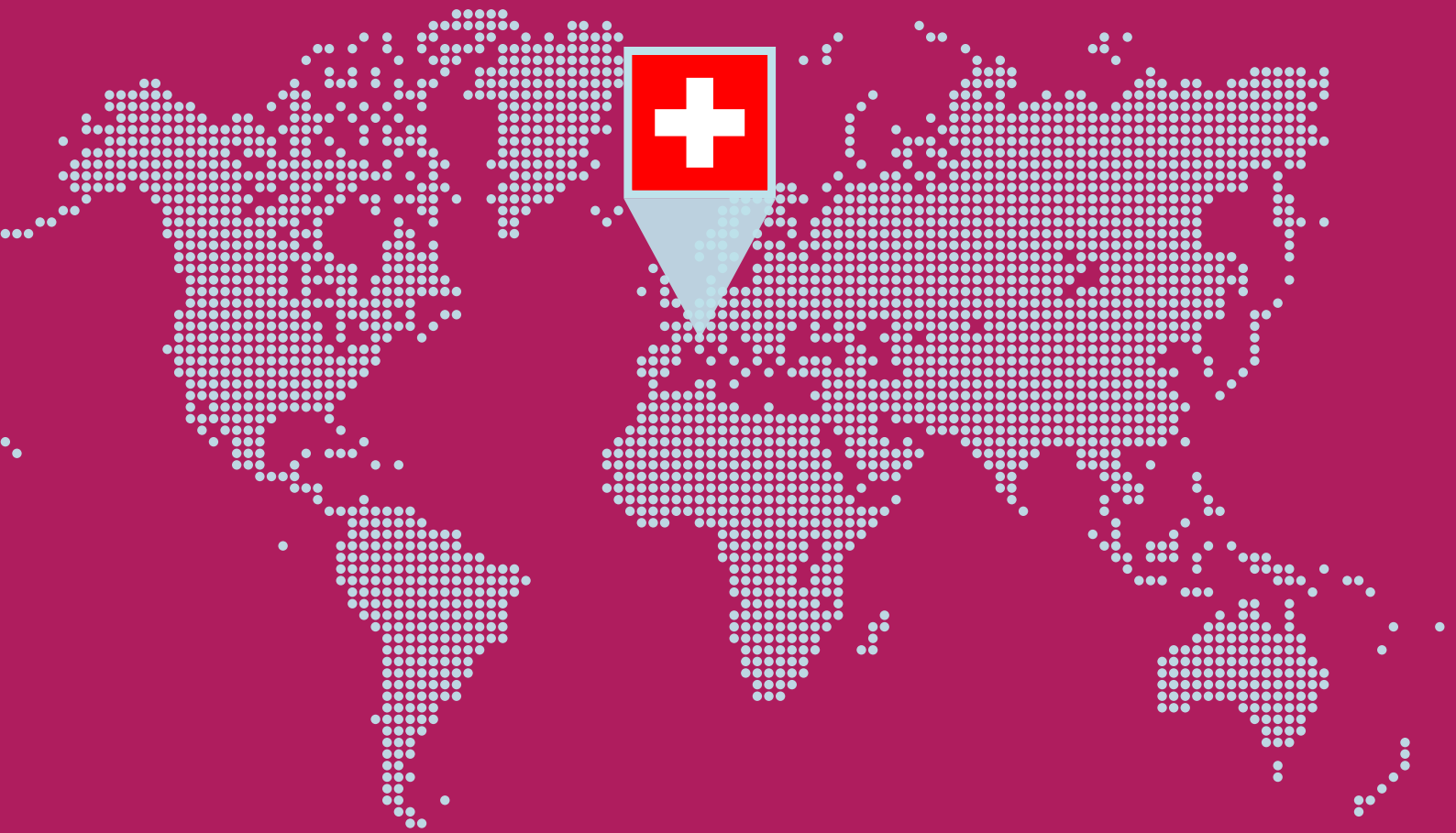
In 2021, we were commissioned by the Swiss Federal Department of Foreign Affairs (DFAE) to make science-policy recommendations and support the DFAE to define and plan future actions for improved capacity to early detect and respond to emerging infectious diseases.After analyzing the strengths and weaknesses of the One Health network in Switzerland and its international connections, and consulting over 30 Swiss and international, interdisciplinary and intersectoral experts, we provided recommendations for Switzerland to leverage its scientific excellence in One Health, diplomatic strengths, and international cooperation strategies to better prevent and control pandemics (Ruiz de Castañeda et al., 2022, Policy brief "Catalysing One Health with Swiss Diplomacy"). We are currently working on a follow-up to this project looking at the role of scientific diplomacy in the implementation of One Health in sub-Saharan Africa.

2022

Policy brief

CATALYSING **ONE HEALTH** WITH **SWISS** DIPLOMACY

Three recommendations for leveraging Switzerland's science and diplomacy to prevent, prepare, and respond to future pandemics



UNIVERSITÉ DE GENÈVE
2021 — 2022 — 2023 — 2024

GENEVA SCIENCE-POLICY INTERFACE

GENEVA HEALTH FORUM

Swiss TPH
Swiss Tropical and Public Health Institute

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Foreign Affairs FDFA

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IV – E Division of NCD Prevention

Professor Jean-François Etter

– Jean-François Etter

Jean-François Etter is a Full Professor at the Faculty of Medicine of the University of Geneva, retired since October 1, 2023. He currently holds the title of Honorary Professor. His research on smoking spans 30 years at the IGH (Institute of Social and Preventive Medicine). When studying mortality in Switzerland, it becomes evident that people primarily die from cardiovascular diseases and cancer. A significant portion of cancer-related mortality is attributed to smoking, according to data from the Global Burden of Disease project, initiated at the WHO in Geneva and currently based in Seattle. Smoking ranks first, ahead of dietary factors, as a leading risk for mortality and disability in Switzerland. This insight provides guidance for public health priorities at the IGH, as it is a global health issue.

Lung cancer among men is a European issue, but it is also prevalent in Asia, particularly in China. This problem is expected to increase because traditionally, young women in Asia did not smoke, and now, like their Western counterparts, they are starting to smoke. Smoking-related mortality is projected to double in low- and middle-income countries in the coming years. Switzerland's insufficient response to this critical health problem is reflected in its near-bottom ranking on the Tobacco Control Scale. This scale evaluates countries based on their anti-smoking measures such as increasing taxes, banning smoking in public places, providing information on risks, and assisting smokers. Switzerland consistently ranks at the bottom of this scale. Similarly, on the Global Tobacco Industry Interference Index, which measures government efforts to combat tobacco industry influence, Switzerland also ranks near the bottom. Switzerland is one of the countries most influenced by the tobacco industry. This public health problem has political and industrial roots—a problem caused by human actions, market forces, and politicians who either do nothing or not enough.

The latest tobacco product law was substantially diluted by the Swiss federal parliament. Since 1992, health surveys have shown that the proportion of women who smoke has not changed: one-quarter of women smoke in Switzerland. For about fifteen years, there has consistently been approximately one-third of men who smoke. Although there was a slight decrease in the early 2000s, this proportion of smokers has not changed in Switzerland since then. The World Health Organization's response is a political one, as the Framework Convention is a binding international treaty in which ratifying countries commit to modifying their legislation to implement specified provisions: banning smoking, increasing taxes, prohibiting advertising, etc. However, Switzerland has not ratified this Framework Convention, neither did the United States.

The World Health Organization (WHO) is generally opposed to the harm reduction strategy and the advent of new technologies that are disrupting the tobacco market. As the market undergoes changes with the introduction of new technologies and the replacement of older ones (i.e. cigarettes), there are political decisions to be made and ne

campaigns that need to address new needs. Therefore, a research initiative is necessary to assess the situation and inform decision-makers, clinicians, smokers, and politicians appropriately. Over the past 30 years, our division of NCD prevention has conducted numerous studies in this field.

Our division was among the pioneers in conducting a randomized trial using nicotine substitutes to reduce the number of cigarettes smoked per day rather than for smoking cessation. The results influenced legislative changes, allowing this new indication. A meta-analysis of cytisine for smoking cessation, a natural insecticide chemically close to nicotine, was conducted. Although cytisine had been used in Eastern Europe for decades, it was not known in Western Europe before the publication of their meta-analysis. The results were subsequently confirmed by other meta-analyses and more recent randomized trials. Cytisine will soon be registered in Europe, introducing a new medication for smoking cessation after two decades without new products on the market.

Our division evaluated the "Université Sans Fumeurs" campaign initiated in 1996, along with interventions at a psychiatric hospital, other prevention campaigns, and the implementation of the "STOP TABAC" program. The team also focused on new products, such as e-cigarettes that vaporize a liquid containing nicotine. Since 2015, e-cigarettes have become the most widely used substitution device during attempts to quit smoking in Switzerland, surpassing nicotine patches and gum. This shift originates from the market itself, and research must address these changes. The health problem lies in tobacco combustion: "people smoke for nicotine but die from tar and toxic gases produced by smoke." There is a robust demand for nicotine, and the challenge is to help people obtain it without burning tobacco.

The situation is complicated by the fact that Big Tobacco companies, even though they entered this technological shift late, are now investing billions of dollars in research and development, often with top teams and advanced science. They conduct research in Switzerland, in cities like Neuchâtel or Lausanne. Their scientific contributions cannot be ignored. The complexity arises because the traditional adversary has decided to change its strategy, diversifying by investing heavily in research used to obtain market authorizations. The involvement of the tobacco industry represents both opportunities and threats concerning these technologies, with their actions remaining a constant threat. Let us recall that about two decades ago, a major scandal occurred in this Faculty regarding manipulated science and corruption by Philip Morris.

E-cigarettes also present an opportunity as they prove effective for smoking cessation and are significantly less hazardous than traditional cigarettes. Questions arise about their effects on young people, the toxicity of these products, and their addictiveness. Experts are strongly divided, and some lack objectivity, compromising the quality of science in this field. The team has published over forty studies on who uses e-cigarettes, why, and how they are used, including an overview of the gateway effect among young people. They have recently submitted the longest longitudinal study on regular vapers, followed-up over eight years, measuring nicotine exposure, cigarette dependence, liquid contents, and more.

A bibliometric study, which counts citations, ranked JF Etter as the twenty-seventh most cited author in all the

literature on tobacco control. Another study positioned him as the third most cited author in the field of e-cigarettes. A third independent study also listed one of their studies among the 100 most cited studies on smoking published in the last twenty-five years.

The team has developed several prevention programs utilizing the internet and smartphone apps to help people quit smoking. Stop-Tabac, a website created over twenty-five years ago and more recently a smartphone app, was recently transferred to the Federal Office of Public Health to ensure its funding and sustainability after JF Etter's retirement. The site, which had 300,000 visitors per month, and the app with 40,000 users per month before their transfer, was designed and conducted with Evelyne Laszlo, who now oversees its management at the Federal Office of Public Health and will soon be head of Cipret-Genève. Three separate independent studies, one American, one from New Zealand, and one from Hong Kong, all ranked this site among the best in its domain.

Regarding education, a semester-long course was introduced in a flipped classroom format for fifth-year medical students. In this format, students work individually before the session, reading texts or watching videos. During the session, they engage in team exercises, expressing their arguments and engaging in debates with each other and the instructor. This interactive teaching format has proven highly satisfactory.

Four years ago, JF Etter took over the directorship of the Master of Advanced Studies (MAS) in Public Health at a time when the program faced significant challenges, even the possibility of closure. He revitalized the program, assembling an excellent teaching team, and Olivia Keiser took over as director in September 2023. Over four years, the MAS enrolled one hundred students, with twenty-six students enrolled in September 2023, tripling the recruitment compared to previous years. Among the recently selected students, there is a deputy cantonal doctor, a cantonal dentist, and many physicians. The program is now thriving, attracting high-quality students with a robust curriculum.

Both Prof Jean-Paul Humair, who focused on tobacco, and Prof Barbara Broers, who addressed addictions, are leaving alongside JF Etter. It is crucial for the Faculty to maintain strength and expertise in the field of addictions and non-communicable disease prevention.

Historically, if we look at the leaders who initiated changes in tobacco legislation, they were physicians. France, during the time when Simone Veil was health minister, was among the the first country to adopt anti-tobacco laws, driven by physicians, cardiologists, and pulmonologists. Training physicians not only impacts patients but also serves as an investment in public health.

In conclusion, Switzerland needs to ratify the WHO Framework Convention, and seek how to diminish the influence of the tobacco industry. It is crucial to educate and inform policymakers, as they are currently influenced by the industry's information rather than ours, given the insufficient presence of researchers and prevention experts in the political arena. Continuing research on tobacco and nicotine, particularly regarding new technologies replacing tobacco combustion, is important. Additionally, addressing the divisions among experts on the theme of risk reduction is important too.

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IV – F Division of Global Health Law

Professor Stéphanie Dagron

– Stéphanie Dagron

Stéphanie Dagron is Professor at the Faculty of Law and the Global Studies Institute at the University of Geneva. She is also an associate Professor at the Faculty of Medicine, and directs the Division of Global Health Law at the Institute of Global Health (IGH). Since 2016, Professor Dagron has been teaching international health law, public health law, and social security law. She is the Director of the Master of science in Global Health since September 2022, and participates in the pre- and post-graduate programs at the Faculty of Medicine. She has developed an optional course on health and human rights for medical students, and offers a series of courses on public health and the law for the students of the Master of Advanced Studies (MAS) in Public Health.

Professor Dagron's research activities were initiated in 2013, during her tenure as a Swiss National Science Foundation (NSF) professorat the University of Zurich (2013–2016), then continued at the University of Geneva. Her research focus lies in examining the role of international law in addressing global health issues. From 2013 to 2017, she collaborated closely with the Tuberculosis department at the World Health Organization (WHO) and the WHO European Office, participating in missions across Eastern European countries. Since September 2019, Professor Dagron was appointed as a member of the WHO Research Ethics Review Committee, and of the Swiss National Advisory Commission on Biomedical Ethics since February 2023.

One example illustrating the role of international law in global health is found in tuberculosis control. Epidemiological data alone may not suffice to guide or influence national strategies, neither do arguments rooted in medical ethics. Examples include the systematic isolation of tuberculosis patients, or the access to non-approved medicines, such as multidrug-resistant tuberculosis. Human rights arguments can thus be used to convince states to amend their legislation, in respect to individual liberties, or to enhance access to new drugs that are yet to be approved for use within national borders. Arguments based on the European Convention on Human Rights and/or International Human Rights Treaties can be invoked. For instance, legal instruments can be used for decision-making and for delineating respectful conditions for isolating patients of infectious diseases, and for advocacy towards broader access to medicines.

International health law involves a spectrum of actors, norms, and mechanisms that apply to global health issues. These actors include public and private institutions, formulating public-private partnerships or developing and adopting standards, strategies, policies, norms and mechanisms to address global health issues. There are few examples of binding instruments and/or treaties that directly address public health issues, such as the International Health Regulations (2005) and the WHO Framework Convention on Tobacco Control (2003). However, other international and regional conventions and agreements have indirect impact on global and public health, such as those related to climate, environment, eco-

nomic agreements, and human rights.

These international norms, when implemented nationally, contribute to regulating the conditions, or social determinants of health for a population. These determinants depend on the legal system responsible for implementing the strategies of these regulations at all government levels. Research conducted since 2019 in cooperation with the Global Health Law Consortium, an international group of scholars in the field of international health law, focuses on standards applicable to communicable diseases (International Health Regulations) and discussions surrounding a new treaty on pandemics. Results from this collaboration have been published in journals such as Lancet and BMJ. A joint position developed with a non-governmental organization (International Commission of Jurists) active in human rights and addressing the protection of human rights during health crises was also published in 2023.

Another topic central to Professor Dagron's research foci is Universal Health Coverage (UHC). In accordance with the Sustainable Development Agenda 2030, UHC is a major goal to be achieved and maintained by all States worldwide by 2030. However, as shown in analyses from the International Labour Organization and other international organisations, there is only a limited number of countries having reached this goal, and the number of people who benefit from UHC remains limited on a global scale. Further, studies show significant healthcare access challenges for particular groups within States that are considered to have achieved UHC. These healthcare access and health inequalities may be due to legislative framework gaps or inadequacies. The paucity of comprehensive and up-to-date databases on national legislation renders research on this issue a major challenge, which demonstrates the need for in-depth legal analysis of health and social protection systems. To further this research focus, Professor Dagron supervises two doctoral students on the research of national UHC cases on Canada and China. Beyond these national analysis, Professor Dagron’s research on UHC aims more generally to establish the links between UHC and global health security, UHC and the fight against diseases such as Tuberculosis, as well as UHC and achieving health equity.

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IV – G
Division of Health and Human Rights

Professor Emmanuel Kabengele Mpinga

– Emmanuel Kabengele Mpinga

Emmanuel Kabengele Mpinga is an associate professor at the Faculty of Medicine of the University of Geneva. Originally from the Democratic Republic of the Congo, he heads the Health and Human Rights division at the IGH.

When we talk about epidemiology, geography, medicine, or physiology, these are established disciplines. The definitions are set, the theoretical frameworks for the development of the discipline are known, and the possible interventions within these disciplines are also understood. However, when it comes to Health and Human Rights, one often wonders what it represents.

Here, we will present some projects, starting with the origin of the Health and Human Rights discipline, the key stages through which the process of creating a chair in this field has passed. We will outline the goals of this division, its achievements, and its prospects.

Contrary to what one might think, Human Rights issues are not a novelty within our institution. Within our faculty, we have predecessors. One of them is Professor François Naville, the first professor at the Institute of Legal Medicine at the Faculty of Medicine. His significant contribution was his involvement in the Commission created in the 1940s to shed light on the Katyn massacres in Poland in the early '40s, where Nazi Germany and the Soviet Union were shifting responsibility after the discovery of mass graves containing about 20,000 massacred Polish military personnel.

The second example is Professor Jacques Bernheim, a jurist and physician who served as the director of the Institute of Legal Medicine. Under his leadership, the therapeutic dimension of this medicine, clinical criminology, and forensic psychiatry experienced notable developments. It was also under his guidance that the ethics of penitentiary medicine made its appearance and expanded in Geneva.

His successor, Professor Timothy Harding, is particularly known for his foresight and the relevance of his expertise, notably advising against the parole of the sadist from Romont who committed crimes between 1981 and 1987. Serving as an expert for many years with the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment, Tim Harding preceded us as a member of the editorial committee of the journal "Health and Human Rights" at Harvard University.

The archaeology of this discipline in Geneva reveals two important features that characterize this field and should be kept in mind: an anchoring in the humanitarian tradition of this canton and its university on the one hand, and on the other hand, a certain internationalization. Far from this archaeology but certainly in its continuity, this "discipline" emerged within an international agency (WHO) confronted with the emergence and development of the HIV/AIDS crisis in the 1980s. Led by the late Dr. Jonathan Mann and Dr. Daniel Tarontala, the HIV control program team realized the impact that the health status (HIV) had on the rights (often violated) of individuals affected by this disease on one side, and later on, another link

between the respect or violation of fundamental rights and the health status of populations in several countries. These reciprocal links form the theoretical framework of this discipline.

As for the recognition and institutionalization of this discipline within our faculty, it should be noted that it has been realized through the following steps: (i) a body of research conducted within the Diploma in Public Health (predecessor of the current MAS-MPH) especially between 1999-2002; (ii) activities of the University Forum on Health and Human Rights (2002-2004) funded by the Société Académique de Genève; and (iii) obtaining funding for an assistant professor position in the field of health and human rights from the Swiss School of Public Health (August 2007-December 2012).

The Health and Human Rights Division created around this chair pursues the following objectives: (i) Identify violations of fundamental rights impacting public health; (ii) Clarify the epistemological foundations between health and human rights; (iii) Obtain reliable indicators for monitoring the implementation of human rights in the field of health globally; and (iv) Identify appropriate intervention strategies in the field.

Many research projects have been conducted, leading to the following achievements:

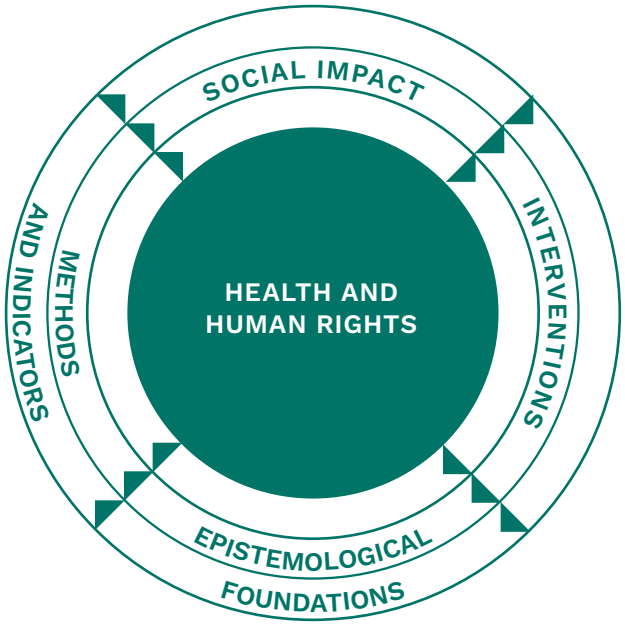
1. **The most severe forms of human rights violations and their impact on health:**
   This focused on the economic and social costs of torture and female genital mutilation. The estimation model developed and tested by our team, along with the estimated cost levels, is currently being used in Switzerland and Europe by institutions providing assistance and care to torture victims as an advocacy tool (Swiss Red Cross, IRCT-Denmark).

2. **Epistemological Foundations of Health and Human Rights Discipline:**
   Our work has clarified the status of this discipline by providing its definition for the first time, identifying its main schools of thought, analyzing its scientific production, and proposing a research agenda for the coming decades. This field can be defined as a set of multidisciplinary knowledge and practices aimed at analyzing and intervening in situations involving human rights, public health, and social development, with the goal of improving the well-being of individuals and communities. This involves mobilizing theoretical approaches and tools from various disciplines, including law and health sciences (Mpinga et al. 2011). The main schools of thought include ethicists, normativists, advocacists, and interventionists.

3. **Indicator Debates in Realizing the Right to Health:**
   The issue of indicators for monitoring the realization of the right to health has long been at the heart of expert debates and decision-makers' discussions. While some proposed up to 72 indicators, many of which lacked data collected in numerous states, we suggested and demonstrated why patient satisfaction could be a synthetic indicator in this domain.

4. **Understanding the Effects of State Action or Inaction on Rights:**
   Understanding the effects, consequences, or impacts of states' actions or inaction in preventing and promoting the rights of specific population groups allows for evidence-based advocacy. Our work has provided, for the first time, estimates of the economic and social costs of torture and Noma disease. Additionally, the effects of chronic political instability on the dynamics of HIV/AIDS have been studied in the context of a country in crisis (Guinea-Bissau).

5. **Intervention Strategies and Educational Initiatives:**
   The final focus of our work revolves around possible intervention strategies that, beyond the necessary and observed judicialization in certain states, aim to prevent human rights violations in healthcare systems or minimize their effects. Among these, we have established training programs, managed, and evaluated them.



To support these educational efforts, pedagogical materials have been developed, initially in the form of CD-ROMs (at the time), and in books whose references are included in the list below.

In terms of perspectives, we can first establish the following observations:

- *The field of health and human rights has deep roots within our faculty.*
- *This field is also a Geneva specificity, with its founders working at the WHO.*
- *Geneva has the assets for the development of this discipline, given the presence of organizations active in the field of global health and the highest instance for the protection of human rights (The Office of the High Commissioner for Human Rights).*
- *The epistemological foundations of this discipline have been laid; its research methods identified and justified.*
- *A theoretical research framework has been developed and implemented, representing our legacy to the next generation.*
- *Certain impacts of inaction have been estimated and are becoming advocacy tools.*

Future Prospects:

Furthermore, our hope is that this field will be maintained and consolidated within the faculty in the face of both longstanding and emerging challenges that our societies encounter. These challenges, which represent new research avenues, include:

- *Epidemics, pandemics, and human rights.*
- *Climate change, the environment, health, and human rights.*
- *New technologies, health, and human rights.*
- *Human rights and the governance of global health.*

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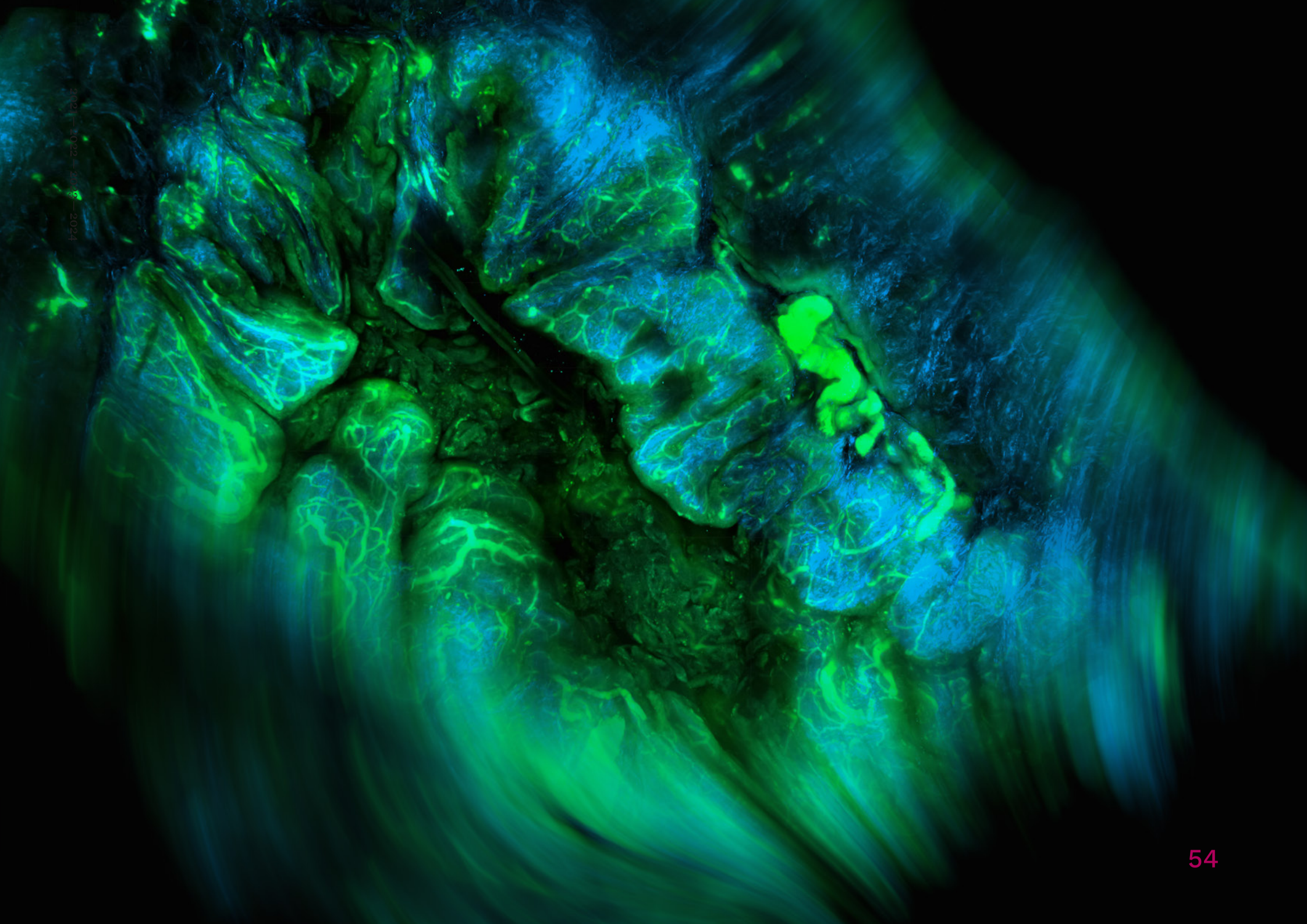

IV – H
Geneva Tumor Registry

Professor Elisabetta Rapiti-Aylward

– Elisabetta Rapiti Aylward

Elisabetta Rapiti Aylward is an associate professor at the Faculty of the University of Geneva. She is a physician epidemiologist who succeeded Prof. Christine Bouchardy as the head of the Geneva Cancer Registry (RGT) upon the latter's retirement. Elisabetta Rapiti Aylward herself will retire at the end of 2024. The RGT is an entity affiliated with the Institute of Social and Preventive Medicine (IGH) but operates with a significant degree of autonomy in terms of management and organization, including having a separate budget from that of the IGH.

The registration activity of the RGT is a mission entrusted and funded by the State to the University based on federal law. The registry has a database dating back to 1970. Data curation constitutes a substantial portion of the team's workload. The RGT data serve to assess the journeys of cancer patients at the cantonal level and contribute to the planning of the health system in the canton. They also aid in evaluating whether treatment standards are correctly followed in Geneva. Additionally, the data support etiological research. The RGT collaborates extensively with clinicians at the Geneva University Hospitals (HUG), private physicians, and patient networks. Nationally, it collaborates with other Swiss cancer registries, as each canton is required to report cancer cases in Switzerland since the 2020 law.

Among the projects initiated several years ago, the first focuses on breast cancer in young women, with a component addressing pregnancies and breast cancer. This is a national project bringing together data from other Swiss tumor registries. It investigates the quality of care for young women diagnosed with breast cancer in Switzerland. There are current plans to expand the project to the European level, utilizing data from the Concord project involving forty-four European tumor registries. A second project involves a cohort of 5000 individuals diagnosed with colorectal cancer, including 3000 from whom biological tumor material has been collected to test various mutations (microsatellite instability, BRAF mutations, among others). The aim is again to assess the care of these patients and compare survival with and without mutations. The project will also evaluate the risk of colorectal cancer in the family members of the cohort's patients. This project involves the Departments of Pathology at HUG and Bern, as well as the Department of Oncogenetics at HUG.

We also have other more recent projects that have already started or are in the preparatory phase. One of them involves developing and validating an individual prognosis model for patients with breast cancer (the RGT has collected data from over twelve thousand breast cancer patients). The idea is to utilize variables available in the registry and compare four different machine learning models with two traditional models (Cox and Competing risks). This is a collaborative project with the University of Basel and the Department of Oncogenetics at HUG.

There is also a project with Dr Nathalie Bot focusing on the use of Molecular Tumor Boards for rare cancers in Geneva. Another project explores the risk of cancers and cancer mortality among incarcerated individuals in Geneva, in collaboration with the penitentiary medicine service at HUG. Additionally, there is a project on the right to be forgotten concerning cancer survivors' ability not to disclose their medical history when applying for loans or insurance in the canton of Geneva, thereby reducing potential discrimination.

We are working to optimize data transmission with the hospital, physicians, and laboratories at the cantonal level. Even today, a significant amount of information is manually entered. Therefore, we are attempting to computerize and code as much available data as possible.

IV – I Division of Humanitarian Public Health

Professor Karl Blanchet

– Karl Blanchet

Karl Blanchet is a full professor at the Faculty of Medicine at the University of Geneva. He leads the Centre for Humanitarian Studies, contributing to research and teaching at the Institute of Social and Preventive Medicine (IGH).

The Centre for Humanitarian Studies focuses on Humanitarian Health and Public Health in humanitarian crises. It has been in existence for 25 years and is affiliated with the Faculty of Medicine and the Graduate Institute (IHEID). While not the sole entity at the university interested in the humanitarian context, other teams, such as François Chapuis's, also work on health-related issues. In the field of law, the Geneva Academy focuses on humanitarian law. Dr. Johnny Polonsky coordinates the researchers in the Centre's diverse team, covering cultural and disciplinary aspects. Polonsky's expertise lies in epidemiology and infectious diseases. Others in the team work on non-communicable diseases, migration, data analysis, health systems in crises using system thinking methodologies.

Dr. Majrooh, former Minister of Health in Afghanistan, and Dr. Mirzazada, his deputy, are Scholars at Risk welcomed as researchers at the University after fleeing Kabul. Their extensive knowledge of the context proves crucial for a significant study in Afghanistan. The Centre collaborates with international organizations and research institutes in both the global North and South, including partnerships with universities like Aga Khan University in Pakistan, Addis Ababa University, and institutions in Kabul. When working in Southern countries, they always collaborate with national universities, a natural and justified principle for them.

Of course, in Public Health research, the focus is on applied research, not just producing papers but generating evidence and facts to improve humanitarian practices and assist professionals.

The Center's steering committee includes the International Committee of the Red Cross (CICR) and Médecins Sans Frontières (MSF). Collaborations also involve UNICEF and several United Nations agencies, including WHO, ensuring the science they produce can be utilized. A key challenge is translating research findings into understandable language to bring about changes in practices, through training or policy changes.

Senselet project healthcare supply in Ethiopia

The Centre's research primarily addresses armed conflicts, conducting studies to understand population movements concerning conflict epicenters and devising strategies to respond effectively. Armed conflicts represent 1% of the total global disease burden, but their indirect consequences are substantial. When hospitals are bombed, ambulances are targeted, and healthcare professionals are abducted, trust in healthcare diminishes, hospitals become targets for armed groups, and health professionals lose access. Conflicts disrupt various services, leading to severe repercussions on the affected populations.

In summary, the Centre for Humanitarian Studies, under the leadership of Karl Blanchet, plays a crucial role in conducting applied research and contributing to the improvement of practices in the field of Humanitarian Health and Public Health during crises. Non-communicable diseases, for example, were not extensively studied in the 1990s as most humanitarian crises occurred in sub-Saharan Africa, primarily focusing on infectious diseases. In recent times, armed conflicts have shifted to the Middle East, involving relatively affluent countries with aging populations burdened by high rates of non-communicable diseases (Senselet project). Surprisingly, research in this field was limited until 2017. Another research bias involves a disproportionate focus on refugee camps. Researchers find it more convenient to study camp populations as they remain stationary. However, 70% of refugees today do not reside in camps, requiring adjustments in research practices.

The complexity and duration of certain research designs pose challenges in the humanitarian field. Researchers often employ mixed methods to address data collection constraints effectively. Research focuses on non-communicable diseases and health issues in urban populations.

For example, among the one million refugees in Lebanon, half a million live in Beirut, presenting challenges for humanitarian organizations to identify and track individuals in urban settings, fundamentally changing crisis response approaches. Additionally, studies explore continuity of care for highly mobile populations moving between countries, bridging the gap between migration and refugee health.

The Centre collaborates with renowned institutions like Harvard, Stanford, Aga Khan University, Johns Hopkins, and research institutes in affected countries. Their work spans ten of the world's largest conflicts, sending teams to collaborate with national researchers to understand maternal, child, and adolescent health. In challenging circumstances, humanitarian workers may opt for easier interventions to minimize risks to national and international health personnel. Despite having clear guidelines, evidence, and knowledge, professionals may struggle to implement all interventions due to various constraints.

During the COVID-19 pandemic, we realized that guidelines were established only for affluent countries but not tailored to those affected by humanitarian crises. Applying measures like social distancing, lockdowns, and quarantine in refugee camps posed challenges, especially regarding access to water. Therefore, we conducted bottom-up studies, interviewing practitioners, gathering guidelines, and understanding their daily adaptations to these new practices during the pandemic. Medical and Global Health students from the Faculty of Medicine contributed by identifying relevant scientific papers daily, which were then published on our highly visited website.

We questioned the WHO and UNICEF about their risk communication strategies, aiming to reduce vaccine resistance and ensure that scientific voices were heard (PULSE project). Simultaneously, we challenged Northern states aiming to reduce international aid, debunking narratives that portrayed migrants as vectors of of diseases (Lancet Migration Europe). We are preparing a series of ten excellent papers for The Lancet, reevaluating evidence related to migrants, detention camps in Greece, and demonstrating the mental health impact of migration. In Afghanistan, supported by UNICEF funding, we collaborate with Johns Hopkins, Harvard, and Aga Khan University to work on their community health and primary care system.

Additionally, we produce Massive Open Online Courses (MOOCs), translating evidence into practical training quickly accessible to everyone. One MOOC on operational research is already available, and two more are in development focusing on migration and public health in humanitarian crises in collaboration with MSF.

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TUDOR
RICHARD MILLE

IV – J
Geneva Health Forum

Dr Eric Comte

Coordin.: Mrs Diama Kane

– Eric Comte

Eric Comte is the Executive Director of the Geneva Health Forum and a physician, formerly serving as the Medical Director of MSF in Geneva.

The Geneva Health Forum, a non-profit initiative, aims to foster dialogue among various stakeholders in the health sector of the International Geneva, centered around the WHO and other international organizations in the field. With over 300 non-profit organizations dedicated to global health in Geneva, it serves as a hub of initiatives.

The role of the Geneva Health Forum is to be a neutral platform facilitating dialogue among these diverse actors. The goal is to bring together organizations from the private sector, academia, civil society, and policymakers, fostering dialogue among entities that may not traditionally engage with each other and often have different cultures.

Currently, Geneva hosts around 40 international organizations and 180 permanent missions to the United Nations. The United Nations Office at Geneva (ONUG) serves as the office of the UN Secretary-General's representative in Geneva, making it the largest UN Secretariat outside New York. Several UN organizations, including IOM, ILO, UNHCR, and UNICEF, play a role in health.

Established in 2006 by the HUG and the University of Geneva, the Geneva Health Forum has since expanded to involve an active partnership with over twenty-four organizations dedicated to health in Geneva.

We aim to influence policies on global health strategies by facilitating dialogue and creating synergies with organizations present in Geneva. The Geneva Health Forum (GHF) seeks to bring visibility to global health challenges and innovative actors. The GHF facilitates networking and initiates collaborations among various stakeholders. Workgroups and roundtable discussions enable our partners to launch initiatives. The solutions discussed and proposed by the GHF are pragmatic and aim to represent advancements for organizations.

To avoid spreading efforts too thin, given the broad scope of global health, the GHF focuses on four main themes: the links between health and the environment, the impact of digital technology on health issues, health in fragile contexts (humanitarian, development...), and universal access to health seen as a common good.

The last conference hosted 65 activities and involved 1700 participants. Starting in 2024, the GHF conference will be held annually with a more compact format. The 2024 edition has taken place during the World Health Assembly, at a time when the 194 government delegations of the WHO member states come to Geneva to plan the roadmap of the UN organization. In parallel with official discussions, numerous side events are organized by organizations aiming to

showcase their actions or advocate for various causes. At this event, GHF provided scientists and civil society with an opportunity to offer a perspective that is often eagerly anticipated during this period. What makes us unique is the interdisciplinary voice of the scientific community and civil society that we represent, particularly in a humanitarian context and in resource-limited countries.

During the World Health Assembly 2023, our team co-organized the World Resilience Summit at Campus Biotech. The summit aimed to discuss issues related to the pandemic agreement, which failed to be finalized during the 2024 World Health Assembly..

The GHF also hosted a meeting to request the inclusion of Noma on the WHO list of neglected tropical diseases. We have been working on this issue with several partners for over seven years, and Noma is expected to be officially listed by the end of 2023. Previously, we participated in the mobilization that led to adding snakebite envenoming to the WHO list of neglected tropical diseases.

As a recent example, we organized a conference on indoor air quality with the WHO Europe office. Dr. Hans Kluge, the Regional Director, was present and actively engaged. The conference took place in Bern to involve Swiss parliament members. While the issue of indoor air quality gained prominence during COVID-19, it also concerns chemical pollutants within buildings. The Geneva Science to Policy Interface (GSPI) at the University of Geneva supported our efforts. In this format, we gathered 90 in-person attendees and had over 1,500 active online participants throughout the discussions. Some topics can attract significant attention when they are timely and relevant. We will produce a report and submit an article to the British Medical Journal, whose editor-in-chief was present in Bern and associated with this initiative.

The GHF contributes to the functioning of the Institute of Global Health by helping students find internships with several international organizations in Geneva. It also assists in identifying interested partners for research projects with the Institute of Global Health. Finally, the GHF provides visibility to our projects.

Furthermore, the GHF helps better engage universities that have established connections with the University of Geneva (LERU, EGHRIN, Alliance 4EU+, G3, networks of six African universities, Global Coalition of Deans of Schools of Public Health, etc.).


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Member of Council of States, Swiss People's Party (SVP)
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World Health Organization
European Region
Geneva Health Forum

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V
TEACHING AT IGH

Courses to undergraduate medical students

The IGH offers several courses to medical students throughout their studies, starting with courses on the Swiss health care and health insurance systems in the first year, optional courses for 2nd and 3rd year students, a course called "immersion in the community" for 3rd year students, a semester course on public health for 5th year students, and supervision of master's theses. The IGH also offers courses for dental students

V – A
PhD in Global Health

Direction: Professor Nicolas Ray;
Coordin.: Drs Nathalie Bot and Fleur Hierink

The eleventh cohort of doctoral students has just been selected for a program with an excellent reputation, attracting students from around the world. This program offers remarkably effective training in the field of global health, encompassing dimensions of health leadership, global health research, and methodology. The uniqueness of this doctoral program lies in its primary orientation towards practicing professionals within global health institutions, such as international or non-governmental organizations. These professionals, employed and in leadership positions, aspire to undertake doctoral research, publishing at least two scientific articles with their academic supervisors (from the Faculty of Medicine at the University of Geneva) as part of their work during the minimum three years of their doctoral program—a requirement imposed on them, in addition to doctoral training credits accredited by the program and falling under the Swiss School of Public Health.

It is imperative that their employers grant them the necessary time to carry out this research. The subject of their doctoral thesis aligns with ongoing projects within their institution, thus fostering fruitful synergy. Although the program also welcomes more conventional doctoral students benefiting from grants from the National Fund or other sources of funding, allowing them to dedicate all their time to research in our teams, employed professionals face a particular challenge: ensuring alignment between their professional commitments and the completion of their doctorate, along with associated publications.

The official title of this doctoral program is "Doctorate in Biomedical Sciences, with a focus on Global Health." Candidates submit their applications online, accompanied by a detailed project of five to seven pages. Each candidate must also find a thesis supervisor from the Faculty of Medicine, sometimes from a different discipline due to the often interdisciplinary nature of the theses.

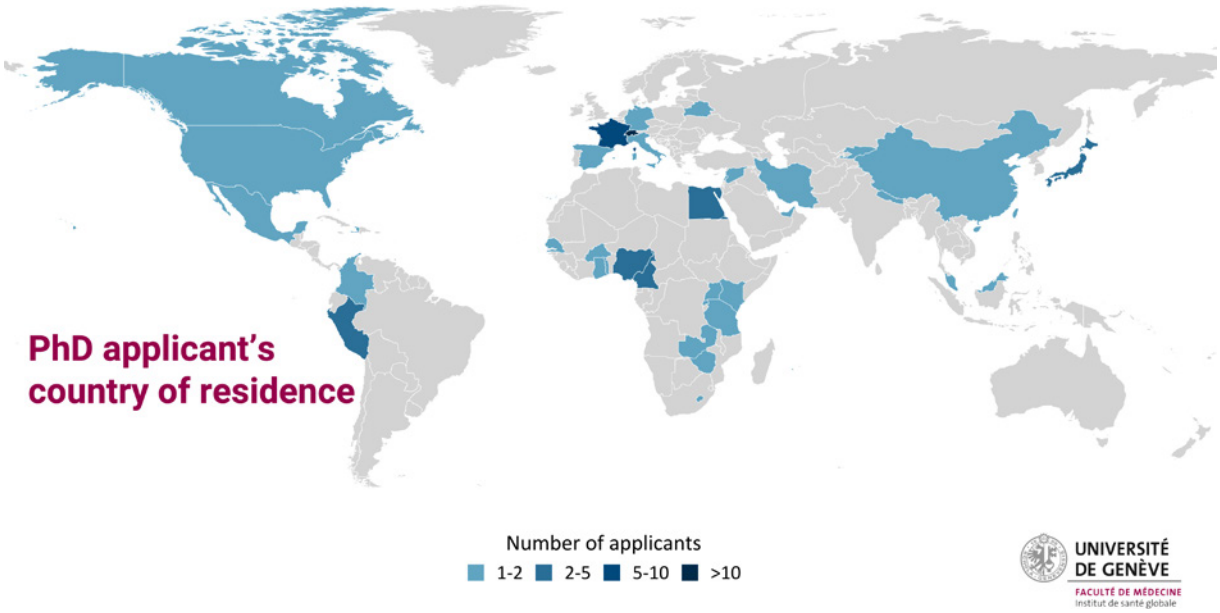
Minimal requirements for pedagogical training include acquiring 18 ECTS credits over the entire study period, with 4 to be obtained during the Spring School of Global Health offered by the doctoral program in Global Health. This week-long course takes place each spring and covers various topics related to global health. The Spring School allows students to gather in person in Geneva, collaborate with their peers, and benefit from the international environment of Geneva. They can complete the rest of their credits by choosing from a selection of courses offered by the Swiss School of Public Health (SSPH+), and even earn credits for participating in two MOOCs accredited by the program's steering committee.

Students at the time of enrollment in the program are often highly mobile, providing a broad distribution globally, with representation on all continents. However, nearly half of our students are based in Switzerland (e.g. WHO, ICRC, MSF, Global Fund, GAVI) or neighboring France, where many international organizations are based in the Lake Geneva region. The second half is composed of individuals from various countries.

The WHO holds a central position in the affiliation of our students (not necessarily in Geneva but also in regional offices, especially EMRO and AFRO), followed in frequency by the HUG, the ICRC, and the Global Fund. The rest of the affiliations reveal a remarkable diversity of entities and universities spread across many countries, forming an extremely rich fabric. Students, coming from diverse backgrounds, bring with them an interesting characteristic: upon arrival, they bring opportunities to exploit data that is often underutilized within these organizations. Consequently, through these institutions, stimulating research opportunities emerge, resulting from exploring data that their colleagues may not necessarily have the time to undertake. *https://www.unige.ch/medecine/isg/teaching/doctoral-program-in-global-health-phd/biosketch*

The duration of doctoral programs is slightly more extended than traditional courses, mainly due to the fact that our doctoral candidates, already subjected to full-time professional responsibilities, must juggle their duties, which was particularly challenging during the COVID-19 period. Despite these challenges, the majority still manages to complete their doctorate within the stipulated five-year timeframe before requesting a deans' exemption.

Approximately 40 students have already defended their theses on a wide range of critical topics such as mental health, digital health, medical humanitarian action, international health regulation, one health, health geography, epidemiology, and healthcare associated infections. The program has currently more than 60 dedicated students who are actively engaged in their PhD training.



V – B
Master of science in global health

Direction: Professor Stéphanie Dagron

Established by **Professor Antoine Flahault**, the first Director of the program, the Master of Science in Global Health has welcomed its 9th cohort, a decade since its inauguration. Administered within the Global Studies Institute, an interfaculty institute affiliated with the University of Geneva, and of which the Faculty of Medicine is a member, this Master's program is unique in its interdisciplinary approach, by involving lecturers from various backgrounds and faculties. Before taking over as the Master's program Director in September 2022, Professor **Stéphanie Dagron** spent a year on a thorough evaluation of the program and its implementation. Through this work, Professor Dagron identified the program's strengths and weaknesses, and made proposals for further improvements and future developments. In addition to its interdisciplinarity approach, another one of the program's strengths lies in the contemporary relevance of global health, and its capacity in training students from a vast selection of backgrounds.

Since the program's creation, there has been a significant increase in the number of applicants throughout the years. In 2023, there were more than 250 applicants, of which 188 met the eligibility criteria, but only 25 to 40 candidates are selected every year. Each candidate is carefully selected, based on their academic background, performance and motivation. The applicants come from diverse backgrounds: medical doctors, pharmacists, economists, political scientists, lawyers, midwives, psychologists, etc. Coming from various corners of the world, students bring valuable experience to one another, both professional and personal, to learn and tackle real-life global health issues together, from different perspectives.

Furthermore, this program generates significant interest due to the exceptional quality of our teachings, and the close ties forged with the international scene in Geneva, giving our students ample opportunity provided by the program's trainings and future prospects. Courses are taught by lecturers who work in academia as well as professionals working within international organizations and public health practioners. The Health Economics course, for instance, is taught by a World Health Organization (WHO) health economist. Further, the students are presented with great opportunities to meet experts within their own areas of interest. In each course, experts are invited to give presentations on current global health issues, and students are encouraged to interact with them for a more profound understanding of different global health topics. More recently, a visit to the WHO was organized to the new cohort with an opportunity to meet experts on varied topics, such as Tuberculosis, Poliovirus, and health system governance.

The strengths of our Master's program are increasingly important to ensure our students' success, since they are required to complete a minimum of 3-month full-time internship to graduate. The aim of this internship is to allow the students to apply their learned knowledge and skills under a professional setting. In addition to our close ties with

international organizations and non-governmental organizations in Geneva, our collaboration with the Global Health Forum has also been particularly helpful in supporting our students in finding their internship, and to kickstart their global health career.

The two-year program is designed to provide a set of courses covering various areas in the first year, with a focus on establishing global health skills, including qualitative and quantitative methods, data analysis, learnings of systemic approach, and legal approach to tackle global health challenges. We offer around forty courses, which are available with the aim to equip students with fundamental knowledge and encourage innovation, such as courses on identifying global health challenges and providing solutions through team work.

Until this year, students were required to select and define their own 3rd semester as their specialized training semester, via our partner institutions. Like our close associations with organizations in Geneva, we also have a vast array of partnerships in other parts of Switzerland for students to select from. For instance, we are partnered with the Swiss TPH in Basel for students interested in specializing in epidemiology, the IHEID in Geneva for students who wish to pursue a career in international affairs and development, or EPFL for digital health. For students who wish to increase diversity in their international experience and career paths, they can also choose to go further abroad, thanks to our international partnerships, such as our close ties with Tsinghua University in Beijing, China. The students must acquire a determined number of credits during this 3rd semester of specialization.

While the offer for diversed experience has been vastly appreciated, we saw a considerable number of students who expressed a keen interest in maintaining a close connection with Geneva, by staying in the region during the 3rd and 4th semesters of their Master's program. In answering to this large demand, the Director of the program has formed a scientific committee to assess the students' needs, to identify and to introduce new topics. As a result, a 3rd semester was introduced this year, with a new series of courses being developed for the enrichment of the program's teachings. Topics such as global health inequalities, decolonization issues, innovations in global health and the use of artificial intelligence, gender issues are among some of the new courses that were introduced this year. With the series of these new courses, students who wish to stay during their second year of their Master's study can now continue to sharpen their skills and increase their knowledge at the University of Geneva.

In summary, the current program has been enriched by new developments. Further opportunities will continue to be explored, in order to continue to provide an integral education to our students. Other international partnerships, such as Sorbonne University, Copenhagen, Heidelberg, or with the 4EU+ alliance, are currently under evaluation since last year, with an objective of offering more opportunities to our students who wish to travel and deepen their learning on specific subjects on global health.

V – C
MAS Santé publique

Direction : Professor Olivia Keiser;
Coordin. : Dr Mathias Waelli

Olivia Keiser has taken over the direction of the Master of Advanced Studies (MAS) in Public Health since the fall of 2023, with significant support from a team of six part-time staff members: Mathias Waelli (PhD), Dr. Verena Carrera, and Mrs. Manuela La Greca, each devoting 50% or more of their time to the program. Additionally, Dr. Beat Stoll, Dr. Olivier Duperrex, and Émilien Jeannot (PhD) collaborate, contributing 10% to 20% to the program's teaching. Students in this MAS are professionals who work concurrently with their studies, gathering five times a year for intensive week-long sessions in Geneva.

The MAS in Public Health is one of the oldest continuing education programs at the University of Geneva, now in its 34th cycle. With the new team in place since JF Etter took over as director, the number of enrolled students has significantly increased. Each year, a new cohort joins the program, sharing part of the journey with the two previous and two subsequent cohorts. The team guides these students in developing three distinct skills over a three-year period. The instruction is delivered in French.

In terms of future perspectives, discussions are underway to maybe restructure the program into a nested format of Certificates of Advanced Studies (CAS), Diplomas of Advanced Studies (DAS), and Master of Advanced Studies (MAS). Such a revision would condense the training offered into durations of one, two, or three years. However, this transition would involve a notable modification of the current structure, and is therfore still under discussion.

The main consideration behind this restructuring is to seek increased attractiveness, especially for individuals who may find a three-year commitment too burdensome. Historically, the program has faced challenges in terms of enrollment, although recent years have been more favorable, allowing for covering necessary salaries. Nevertheless, it seems worthwhile to explore more extensive marketing initiatives and develop potential collaborations with other continuing education master's programs in Switzerland.

Another proposed measure to increase the number of students is the validation of medical students' internships as prior professional experience, thus allowing more flexible admission. Currently, the requirement to demonstrate three years of prior professional experience imposes recruitment restrictions, even for medical students with significant experience.

The program, lasting three years, can sometimes demand more time from students, who may stay for four or even five years. This discrepancy can have financial consequences since funding is currently based on a three-year duration. The need to supervise all student projects is substantial, and additional resources may be required to optimize this supervision. This program is accredited for the title of specialist in public health medicine awarded by the FMH, regularly attracting 5 to 6 students annually through this specific route.

The master's program is structured around acquiring three types of skills:

1. **The ability to communicate with peers in interdisciplinary teams:**
   Students must acquire a common language, attending "fundamental" courses in qualitative and quantitative methods, epidemiology, economics, project management, and health law. They develop a general public health culture to build their overall perspective on health-related issues.

2. **To foster interdisciplinary dialogue, each student must develop individual expertise.**
   At the beginning of the program (which lasts three years), each student creates their training plan, defining the skills needed to gain a specific expertise. Every semester, students must submit personal projects anticipating the final thesis work. These assignments can include a review of scientific literature on a topic, writing a research protocol, a funding application, or conducting a small project.

3. **The ability to actively participate in discussions within interdisciplinary research groups:**
   Throughout the program, students engage in collective exercises, including a final exam simulating real-world public health problem-solving situations. Students contact experts, immerse themselves in contexts similar to those they might encounter professionally, and gain analytical and collaborative skills. Former students currently hold various positions, such as local or national political responsibilities, roles as cantonal physicians, or positions within international organizations.

V – D
CAS en promotion de la santé et santé communautaire

Direction: Professor Emmanuel Kabengele Mpinga;

Coordin. : Dr Nicola Cantoreggi

This is the oldest continuing education program at the Certificate of Advanced Studies (CAS) level, integrated into the Faculty of Medicine since 1982, totaling 41 years of existence. Under the dedicated leadership of a steering committee, this program has welcomed over 500 participants since 2003. Recognized and appreciated by Health Promotion stakeholders in Switzerland, it exclusively focuses on this field. We maintain strong relationships with these stakeholders who regularly refer individuals to us for training.

While this program has clear advantages, including its reputation and partnership with Health Promotion stakeholders, it can also pose challenges, particularly in terms of perspectives. As a one-year program designed for active professionals, the target audience consists mainly of nurses, with a significant proportion being school nurses and other professionals in administrative or lower-level professional roles. Statistics from the last three years reveal a marked trend towards a clinical nursing audience, which historically has been the majority participant profile. This specific audience expresses a growing need for skills in developing concrete health promotion projects. This reflects a demand for additional qualifications among experienced nurses, typically around 40 years old, seeking to expand their skills to better guide their professional activities. The CAS provides tools to this audience, which comes with varying levels of expertise in Health Promotion. These tools aim to develop their ability to think in the field of Health Promotion, especially for those from clinical backgrounds, which can be challenging.

The second objective is to acquire project management skills, for which they are trained. An introduction to epidemiology is also provided because there is a growing professional demand for the ability to interact with other professionals. Possessing skills such as critical reading, understanding scientific literature, and possibly applying it in professional practice is also a sought-after competency.

The program is delivered in modules, covering various themes throughout the year. Not all modules have the same weight, and the training consists of one day every two weeks, totaling twenty-five days per year, including various thematic days. Participants are released by their employers to attend these sessions, involving a one-year commitment with various modules led by academic speakers and professionals sharing practical aspects in the explored areas.

An extension on fund planning has been added in response to a specific request, as well as the evaluation of Health Promotion projects. The content is delivered in module form to meet the specific needs of participants from various disciplinary backgrounds.

The training is validated by an epidemiology exam and a final project. For the latter, in addition to the traditional thesis format, a second format has been introduced, structured around the development of a project concept with a direct professional application. This practice-oriented approach has been well-received by participants, primarily

professionals already in the field. It has contributed to training and supporting a high-quality workforce in the field of Health Promotion in French-speaking Switzerland, despite not necessarily having competitive offerings, being one of the few in this linguistic region.

Two major challenges arise in the context of this program. Firstly, the diversification of participant profiles is a significant issue. It is necessary to explore ways to attract a more diverse audience, covering different professional and disciplinary backgrounds. Secondly, synergies with other continuing education programs are a subject of consideration. Unlike some programs that are structured in multiple stages (CAS, DAS, MAS), the current CAS cannot serve as the first part of a MAS. These discussions need to be deepened, as there are emerging requests from individuals wanting to continue their education with a MAS after completing the CAS. Currently, these individuals must restart the entire three-year cycle, which can be perceived as frustrating. Although these requests are in the minority, it would be relevant to find solutions to meet these aspirations and optimize the participants' journey.

V – E CAS/DAS/MAS Management des institutions de santé

Direction: Professor Karl Blanchet; Coordin. : Dr Mathias Waelli

The Healthcare Institutions Management program is offered by the IGH at the Faculty of Medicine in partnership with the Faculty of Economics and Management of the University of Geneva, in collaboration with the Geneva University Hospitals (HUG). Until July 2022, the program was under the direction of the Faculty of Economics and Management. Following a restructuring, program responsibility was transferred to the Faculty of Medicine, led by Karl Blanchet with pedagogical direction by Mathias Waelli.

This program, one of the most popular continuing education programs at the University of Geneva, annually attracts over 250 students from various Swiss cantons, primarily from Geneva, including a significant number from HUG. It is highly appreciated, inheriting a well-established and efficiently organized structure. The transition from the Faculty of Management to the Faculty of Medicine was facilitated by the continuity of the administrative team, consisting of three members with prior experience in management and maintaining established relationships with former students.

The program is also overseen by a steering committee representing each of the involved institutions. In the field of management, Didier Jacquard represents HUG. The committee also includes external members such as Étienne Minvielle, a professor at the École Polytechnique in Paris, leading a laboratory focused on Health Management.

We currently observe an audience increasingly similar to that described in the MAS in Public Health above. The boundaries between public health, clinical work, and management are gradually blurring, with more professionals working across these domains in clinics or management roles. Thus, we see a convergence between public health professionals and those in hospitals, primarily composed of doctors, caregivers, and administrators seeking to advance throughout their careers, a trajectory that we are able to support and contribute to promoting.

The program in question significantly differs from the MAS in Public Health. It is structured into several stages. The Certificate of Advanced Studies (CAS) primarily focuses on the first stage, concentrating on a "micro" level of management. It offers courses oriented towards teamwork challenges in health, suitable, for example, for healthcare management executives. Subsequently, the Diploma of Advanced Studies (DAS), situated at an intermediate organizational level, provides more general reflections, with courses addressing economic and quality-related issues that are particularly relevant to the healthcare domain. Finally, the Master of Advanced Studies (MAS) in Strategic Management offers courses focused on strategic thinking in institutions, healthcare systems, funding modalities, and management methods. These three stages allow participants to obtain a certificate, a diploma, and finally, a Master's degree. The third year of the Master also includes the completion of a thesis.

The training that garners the most interest is the Certificate of Advanced Studies (CAS). This is mainly targeted at micro-level professionals and attracted 103 participants last year, divided into three classes. Following that, the Diploma of Advanced Studies (DAS) had 60 participants divided into two groups. Finally, the Master of Advanced Studies (MAS), with 20 participants this year (37 the previous year, some of whom have not yet completed their thesis, explaining the third suspended year we continue to follow). Thus, with bridge students and those completing their theses, nearly 300 students are enrolled annually in healthcare organization management training programs. They are primarily nurses and physician managers, sometimes directors who may also be nurses or doctors, as well as physiotherapists, pharmacists, administrators, and paramedics, with the latter increasingly attracted to university continuing education.

Given the requirement to acquire minimal experience, some professionals who apply for this program do not

have managerial experience at the time of their application. However, they need a certificate to access specific positions. Therefore, we have established a bridge program in place of managerial experience. An innovation at this level is the integration of an internship period, during which participants will observe the field, generating reflection on practical experience.

Themes identified by our partners, such as patient partnerships and co-responsibilities, which are not currently part of the program, will be addressed through workshops, panels, and interventions by professionals from HUG or CHUV. This year, we will hire two clinicians to gradually develop course content, starting with panels and evolving into workshops, ultimately creating a complete module.

Furthermore, we have noticed that our students leave the master's program without reference documents. Although they have access to courses and articles, we have decided to create a manual on Healthcare Organizations Management. Dunod Editions have accepted our publication project for 2024. This will provide a reference for participants after their departure. We aspire to make this course a flagship for the Faculty of Medicine, contributing to its reputation in the French-speaking space. Instead of creating competition, we opt for alliances with other institutions working on the same theme. The language barrier is a challenge, but we are gradually considering introducing English into the course to facilitate access to Anglophone literature, while remaining aware of the difficulties some participants may face for whom English remains a barrier.

We are considering organizing an annual symposium, scheduled to start in September 2024 at the Faculty of Medicine. The event will bring together stakeholders from both Paris and Switzerland for crucial discussions on current management challenges. Post-pandemic, themes such as teamwork and the role of patient partnerships would be explored from various perspectives, including clinical and managerial.

Additionally, an idea we have developed based on participant feedback involves the possibility of pursuing a professional doctorate. Unlike Continuing Education Masters in Switzerland, which do not allow for obtaining a traditional doctorate due to an insufficient number of ECTS, we are exploring the feasibility of creating a professional doctorate. This doctorate could be of interest not only to alumni of the MAS in Healthcare Management but also to other students (for example, those from the MAS in Public Health). The idea is for professionals to continue their work and further explore the subject of their practice within their teams. We are currently working with Mathias Waelli and the university to establish a legal framework for this initiative, providing new perspectives for participants and the opportunity to produce documented work on the changes they implement in their teams.

VI
OPTIONS FOR THE FUTURE OF IGH

Professors Karl Blanchet, Stéphanie Dagron, Olivia Keiser, and Nicolas Ray

VI – A Vision

The IGH aims to contribute to creating a world where populations, regardless of their location, religion, socioeconomic status, and ethnicity, have equitable access to comprehensive and quality healthcare without jeopardizing their livelihoods. The IGH aspires to be a center of excellence for research and education in global health, closely linked to the international community in Geneva, global research institutes, and the HUG (Hôpitaux Universitaires de Genève). Its approach promotes transdisciplinary methods to address the current and future major challenges in global health.

VI – B Mission

The Institute of Global Health (IGH) holds a privileged geographical and institutional position. Located in the global capital of global health, it actively interacts with international organizations, maintains close partnerships with clinical researchers from the Faculty of Medicine and HUG (Hôpitaux Universitaires de Genève), and is housed within the Swiss center of excellence in biotechnology and life sciences known as Campus Biotech. The mission of the IGH revolves around three pillars: research, education, and policy influence.

The IGH leverages its recognized expertise in various research areas, including the dynamics of infectious diseases and epidemiological surveillance, geospatial approaches to strengthen health systems, legal and human rights approaches in global health, humanitarian health, migration and health, and health systems. Using diverse methodological approaches and incorporating digital sciences and inter/trans-disciplinarity when necessary, the IGH aims to be an innovative and responsive institution striving for research excellence.

Through a range of undergraduate, postgraduate, and continuing education programs, the IGH contributes to providing students, researchers, and professionals with reflective and technical tools to address contemporary challenges in global health. The content of the teachings, often rooted in ongoing research at the institute, is designed to best illustrate the challenges of aligning theoretical knowledge with on-the-ground realities.

The IGH greatly benefits from its connection to the international community in Geneva and actively collaborates with numerous public health and global health stakeholders, including national, UN, international, and non-governmental organizations. This collaboration takes the form of joint projects, technical skills sharing activities, and efforts to strengthen national capacities.

VI – C
Goals

Research

A. Strengthen the existing research areas by ensuring a critical mass of researchers and securing funding.

B. Develop and enhance key cross-cutting research areas:

- **Environmental Health**: Strongly relying on themes such as "planetary health," "One Health," and "climate change," in close collaboration with UNIGE and HUG stakeholders (e.g., Institute of Environmental Sciences, planetary health group FACMED), Swiss entities (e.g., Swiss TPH), and international partners (e.g., WHO, IOM, EcoHealth Alliance).

- Legal Approach to Global Health and Human Rights.

- Digital Sciences and Data Sciences: Utilizing machine learning, GIS, mathematical modeling, big data, mobile health, and text mining. This aligns with UNIGE's digital strategy to provide a cutting-edge toolbox for innovative investigations in global health.

C. Invest in **new themes** and reinforce existing themes for the IGH by initiating or reinforcing research units, particularly in the following areas: clinical infectious diseases, non-communicable diseases, mental health, health economics, and reproductive health.

Teaching

A. Strengthen the Master's in Global Health, leveraging collaboration with the international community, and adopting interdisciplinary and transdisciplinary approaches in global health.

B. Sustain the doctoral program with a growing number of supervised students.

C. Increase IGH's involvement in the medical students' curriculum (pre-graduate courses, elective courses, supervision of Master's in Medicine, etc.).

D. Develop new interdisciplinary teaching units involving public/global health for enhanced integration into other UNIGE programs (e.g., Master in Environmental Sciences, GSI).

E. Introduce new executive courses for professionals in public/global health, covering topics such as GIS, R programming, etc.

F. Ensure the sustainability and optimal utilization of continuing education opportunities (Master of Advanced Studies (MAS) in Public Health, Certificate of Advanced Studies (CAS), Diploma of Advanced Studies (DAS), and MAS in Health Institution Management with HUG).

Collaborations

- Internal Collaborations at UNIGE and HUG

A. Strengthen collaborations with HUG research teams, building on current active collaborations, such as tropical medicine for One Health and snakebite, pediatrics for health law, health and migration, mental health, InZone, Patient Safety, and the Infection Prevention and Control Service for Covid and influenza surveillance.

B. Explore promising new avenues (e.g., neonatology, disease surveillance).

C. Enhance connections with the Institute for Environmental Sciences and the Department of Computer Science, particularly through collaborative projects and Master's and doctoral thesis topics.

D. Increase the visibility of IGH activities at the Faculty of Medicine by ensuring greater representation of its members in events, committees, and projects within the Faculty.

E. Regularly organize seminars at the CMU (Centre Médical Universitaire).

- External Collaborations

A. Continue to promote flagship activities that enhance IGH's visibility (e.g., Geneva Health Forum).

B. Maintain strong collaboration with the Swiss School of Public Health (SSPH+).

C. Optimize existing institutional networks and collaborations (e.g., 4EU+ Alliance, EGHRIN, Tsinghua University, CERN).

D. Increase the visibility of IGH's activities externally, particularly by investing more in communication through digital channels (website, social media), scientific channels, and community services.

E. Formalize and sustain research and teaching collaborations with key international actors in Geneva (e.g., WHO, Global Fund, GAVI, MSF, ICRC, UNICEF, CERN).

F. Strengthen our enduring network of research partners in Switzerland and worldwide, particularly in low- and middle-income countries, through research projects and student and researcher exchange programs.

VI – D
Needs to reach goals

A. Appoint a new director with an international profile, a broad collaboration network, and a research theme that complements existing strengths.

B. Increase internal career development and promotion opportunities for young researchers at the Institute.

C. Renew senior professor and researcher positions based on identified needs in research and teaching.

D. Explore the possibility of future office space expansion.

E. Enhance collaboration opportunities with foundations.

F. Appoint a dedicated person responsible for communication.

G. Provide administrative support tailored to the size of the institute.

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"In global health, transdisciplinarity is necessary to address complex health issues which cross borders, and to look for accessible and sustainable innovative solutions through systems thinking approaches."

Antoine Flahault
Director of the Institute of Global Health

SSPH+
SWISS SCHOOL OF PUBLIC HEALTH

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