



2021 Annual Report

HSeT Foundation
Chemin des Boveresses 155
1066 Epalinges, Switzerland
<https://hset.org>



Executive summary

HSeT is a Swiss non-profit organization created in 2006 that works with a network of leading experts from worldwide to develop online training programs in health and life sciences.

The training programs developed by HSeT are delivered through institution-specific websites and can be used to complement existing curriculum or construct new ones. They can be followed by students in a self-directed manner or in combination with traditional face-to-face teaching.

HSeT provides Customized On Line Training (COLT) that is tailored to the needs of specific groups of trainees as defined by the institutions themselves. COLT integrates novel pedagogical approaches and tools to map the student's individual progress at every step.

Changes in the HSeT organization

- **Board of directors.** Amadou Alpha Sall from the Institut Pasteur of Dakar, Senegal, has resigned from the Board.
- **Scientific Advisory Board.** Three new members Alia Benkahla, Laboratory of BioInformatics, bioMathematics and bioStatistics (BIMS), Institute Pasteur of Tunis, Amos Bairoch, Bioinformatics at the Department of Human Protein Sciences of the University of Geneva, and Victor Jongeneel, Emeritus Professor, University of Lausanne, Switzerland have been appointed by the Board to join the Scientific Advisory Board.

Major training activities

- **International Association of Gerontology and Geriatrics (IAGG)** has commissioned HSeT to create an eTraining site to fill the gap in Gerontology and Geriatric education. A first three monthly 3-hour training sessions has been organized for the Asian Academy for Medicine on Ageing (AAMA) in December.
- **DAS CAS in Translational nephrology.** The program provides relevant knowledge and insights into basics of nephrology and kidney pathophysiology. In 2021 a new module related to immunology and immunopathology of the kidney has been offered to the students.
- **International Master of Vaccinology (IMVACC) (University of Lausanne).** Since 2016, 39 students have enrolled in the program. Twelve students have completed their master thesis and received 60 ETCS credits and the diploma from the University of Lausanne.
- **Important new projects have been initiated in 2021**, including of
 - ◇ CAS (Certificate of Advanced studies) of Biobanking, including the Universities of Geneva (leading house), Lausanne, the Institut Pasteur, Paris, and the Swiss Biobanking Platform
 - ◇ MAS of Translational Oncology (Oncomas). Oncomas is a 2-year program providing training in Translational Oncology with an emphasis on molecular oncology and clinical research as well as clinical trial design.

IT development.

- HSeT in collaboration with Amaris has completed and implemented a new user responsive interface, thus facilitating its use on tablets and smartphones. The new interface is used as a content management System. HSeT in collaboration with the Swiss Italian University (USI) has set up a Moodle server hosted at USI which serves as a Learning Management System .

Programs of International Association of Gerontology and Geriatrics (IAGG)

In July 2021, the International association of gerontology and geriatrics (IAGG) contacted HSeT to discuss a collaboration to develop an eTraining program. The reason was that the 2020 COVID pandemic brought an end to the long-running, successful presence-based training sessions provided by the Academy for Medicine of Ageing in Europe (since 1995), Latin-America (since 2002), Middle East (since 2004), Asia (since 2017), South-east Asia (since 2018), and also forced IAGG to postpone the start of the African Academy of Ageing scheduled the same year.

For this reason, the IAGG-Federation, created in 2017, decided to go online with HSeT to develop online program aimed at "training the future leaders in Gerontology and Geriatrics".



- The training is organized in monthly sessions of 3 hours with presentations of experts, case studies and discussions. The first session on healthy aging took place on December 11, 2021 and was followed by 150 participants from China, Taiwan, and South East Countries. During the session the following topics were covered: Healthy Ageing Concepts, Age-friendly Health System and Community-Based Healthy Ageing.
- The following sessions will be related to Science of Muscle Ageing, Physical Frailty, Dementia and Cognitive Impairment, Falls and fracture, Geriatric Pharmacotherapy, Gerontechnology, Life course vaccination and Advance Care Planning.
- **3 EACCME** (European Accreditation Council for Continuing Medical Education) accreditation per one **3h-session** (valid in Europe, Canada, USA) will be granted after validation of the quality evaluation of the session


1.1

Older people as drivers of change

Two global civil society organizations - HelpAge International and the International Federation of Ageing - are in official relations with WHO. Both support WHO to champion the voices of older people. Featured are four older activists in their networks whose determined and passionate campaigning have achieved real change for older women and men around the world, helping shape the world they want to see.



Tilahun Abebe, Age Demands Action ambassador, Ethiopian Elderly and Pensioners National Association (EEPNA). Founder and leading actor of the National Movement for the Social and Economic Benefits of the Ethiopian Elderly, Ethiopia. Tilahun passed away on 1 November 2020.



Shashi Tyagi, co-founder of Gramin Vikas Vigyan Samiti (GRAVIS), activist and board member of many development organizations, advocating sustainable development inclusive of older people, India. Shashi passed away on 15 November 2020.



Nguyen Thi Diem, Chairwoman of the Intergenerational Self-Help Club of Thuy Ung and Association of the Elderly of Phung. Active participant in social and volunteering activities in the community, Viet Nam



"We must listen to the voices of older people on what matters most to them in their daily lives."

- Olive Bryanton

Olive Bryanton, Activist and Leader in the Older Adult and Caregiver Advisory Committee, AGE-WELL, and many other organizations. At the age of 82, she graduated with her PhD thesis on *Pioneers in Aging: Voices of Women Age 85 and Older Aging in Place in Rural Communities, Canada*

Certificate and Diploma of Advanced Studies in Translational Nephrology

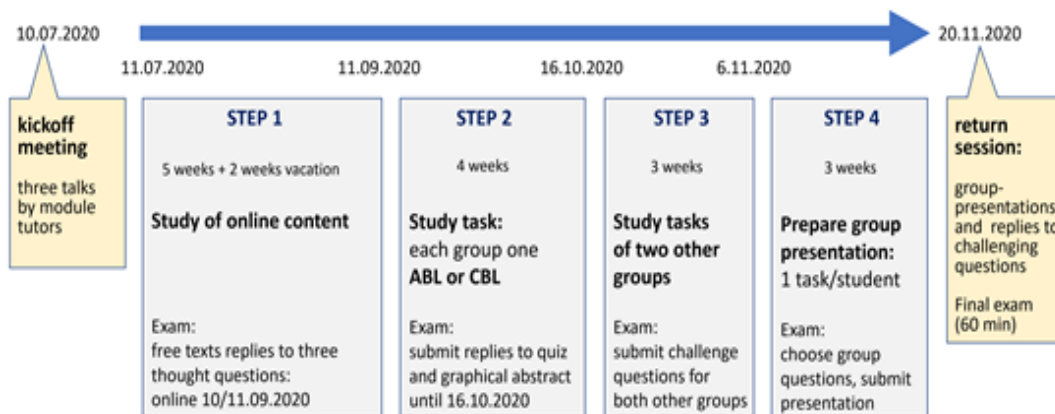
As of , **HSeT** has developed a **blended e-learning course** in Translational Nephrology commissioned by the Swiss consortium **NCCR Kidney.CH** for the education of its PhD students and postdocs. The course comprises now **six modules** with the following topic:

- Salt, Water and Hypertension
- Acid-base Homeostasis
- Calcium and Phosphate
- Oxygen Signaling and Cancer
- Metabolism and Kidney Function
- Inflammation and Immunology

Total number of participants up to now:	64
Number of participants having finished a full module cycle:	22
Number of participants having been awarded a CAS or DAS:	21
Number of current participants:	18

Modules consist of face-to-face and/or online kick-off and return sessions with lectures and group presentations and a e-learning part during which participants review reading material, take quizzes, read key articles, explore clinical cases and train in Translational Nephrology . Here the example of a module:

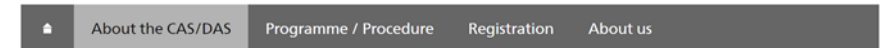
Module 2 – Acid-Base Homeostasis



The Translational Nephrology course is now recognized as a CAS/DAS of the University of Bern and is open to national and international graduates. This advanced study program officially started in March 2017. A new cycle of six modules lasting two years started in March 2020. HSeT is responsible for the e-learning courses of the program



Translational Nephrology



Objectives

Objectives of the programme

The programme provides to graduates in medicine and life sciences relevant knowledge and insights into the basics of nephrology and kidney pathophysiology. Participants will acquire and strengthen basic knowledge in pathophysiology of kidney disease by studying annotated online resources, clinical cases and key articles and test their progress with online quizzes and evaluations as well as face-to-face sessions with module leaders and tutors.



The NCCR Kidney.CH will end in 2022 and will thus no longer sponsor the TN course or provide participants. To continue the course, it will be crucial to attract PhD students and postdocs working on kidney-related topics and MD's working in nephrology independent of the NCCR. Currently we have three MD's not associated with the NCCR taking the course.

It is planned that a new «**Kidney**» **Center of Competence** of the University of Zurich will take the academic lead of the TN course after the end of the NCCR.

Translational Nephrology
CAS/DAS



International Master of Vaccinology

- **IMVACC** an initiative of the Swiss Vaccine Research Institute (SVRI, G. Pantaleo and Fabio Candotti) and the HSeT team, is proposed by the University of Lausanne which offers 60 ECTS and a diploma. IMVACC consists of 4 web-based modules with tutoring during the first year and a master thesis during the second year which can be carried out in an academic or an industrial organization (<https://imvacc.org>) as shown in the figure.
- Since the starting date in 2016, a total of **39 students** have been enrolled in the Master program. Most of the students come from low and middle income countries (see figure) and 12 have completed and successfully defended their master thesis. They received the UNIL diploma.
- The high tuition fees (20'000 Swiss francs) are not compatible with the financial resources of students from low and medium income countries. Fellowships were therefore requested and obtained for such students .
 - ◊ 17 South African students received a fellowship by the South African Medical research Council (MRC). Seven students from Kenya, Uganda and Tanzania were supported by the European and Developing Countries Clinical Trials Partnership (EDCTP) program. One student from Cameroon received a fellowship from the Fondation Biochimie in Lausanne, Switzerland and a South African student from a Geneva Foundation.
 - ◊ Unfortunately, due to financial constraints the South African MRC fellowship program was dis-continued in 2020, and the EDCTP proposal ended in 2021 .
- **Customized OnLine Training (COLT)** is the main educational approach of IMVACC. It offers flexibility, accommodates the time constraints of the trainees, and saves long-distance travel and housing expenses. It focuses on case studies and problem-solving exercises. It is moderated by tutors who are in biweekly contact with the students to guide them, to answer questions, and to maintain momentum. All the students from class that have not defended their master thesis are currently actively working on their master thesis projects under the supervision of a local thesis director.
- **Assessment fits a formative paradigm** designed to assess learning and acquisition of skills. Each module finishes with an Online exam and at the end of the first year the students undergo the final exam in the form of the design of a novel vaccine. The self-assessment link to all the learning activities provide an opportunity i/ to make up for gaps in knowledge by offering links to relevant teaching material, and ii/ to acquire skills and competence to solve problems related to the design vaccines.
- **The students' experience** with the IMVACC program is summarized in the [IMVACC website](#).

Austria	1		Morocco	1	
Cameroon	1		Mexico	1	
Germany	1		South Africa	18	
India	2		Switzerland	4	
Kenya	2		Tanzania	1	
RDC	1		Uganda	4	



Deshnee Achary, a student of IMVACC class 2021, working at Pfizer vaccines in Johannesburg South Africa, received an award from the former President of South Africa Thabo Mbeki and The University of South Africa Principal and Vice-Chancellor (VC), Professor Puleng LenkaBula, who honored her for the work she has done in vaccines for the past 17 years.

Other training activities

Course in Biobanking. The Institut Pasteur Paris, the Network of Biological Resources of the Institut Pasteur (BIPnet), the European Virus Archive goes Global (EVAg), and the HSeT Foundation have developed an online training course, that is based on their experience in the surveillance of infectious diseases, and is adapted to the training and transfer of knowledge to students and staff of biobank structures, especially in developing countries. Due to the Covid-19 pandemic, the course was entirely online with 16 participants from Africa, Asia, South America and Europe. The students received 5 ECTS from the University of Lausanne after passing the final exam



Institut Pasteur Vaccinology course. Twenty eight participants from all over the world followed the 13th vaccinology course of the Institut Pasteur. The course consisted of face-to-face lectures, a workshop on Vaccine Design, and online, self-directed learning activities to be conducted before and during the course.

Master of advanced studies in toxicology (MASTOXICO). A new session started on September 2020. The 21 students came from all parts of Switzerland and from several European countries. As the participants were actively engaged in their professional life, they particularly appreciated the distance format of HSeT's module, "Basic Principles in Toxicology". In response to a request from the MAS direction, the content prepared by HSeT for several modules was transferred to the UNIGE Moodle LMS platform.

CAS in laboratory medicine. This new program was launched in 2020 by the University of Geneva to replace the mandatory "FAMH courses". HSeT course on the Preanalytical phase canceled in March because of the Covid-19 pandemic. The HSeT course on Statistics in Laboratory Medicine was scheduled from August 6 to October 9 and was followed by 22 students. The program started with the study of HSeT online courses and self-assessment quizzes. The initially planned one day face-to face-course was instead given by videoconference.

Preanalytical Phase course of the University Cheikh Anta Diop in Dakar, Senegal. A three-week course (July-August, 2020) on the preanalytical phase was organized in collaboration with the French African telemedicine network (RAFT, Geneva) within the superior study diploma (DES) of Clinical Biology for MDs and pharmacists.

Faculty of Medicine, University of Geneva. HSeT was approached by the Faculty of Medicine of the University of Geneva to update the online clinical cases used for bachelor studies at Mauritius University, to adapt case studies for the bachelor curriculum in Geneva, to explore the development of online article-based learning for the Masters curriculum, and to participate in the development of new MAS and CAS programs.

IT development

HSeT uses Microsoft technology for running its Content Management System (Microsoft SQL) and Moodle to handle its Learning Management System. HSeT has created two public websites in WordPress that describes the features of the [HSeT Foundation](#) and [IMVACC](#) to advertise the International Master of Vaccinology.

Moodle platform

The HSeT Moodle platform (<https://elearning.hset.org/course/index.php>) was developed by Christian Milani at the University of Italian Switzerland (USI). Some HSeT activities are also hosted on the Moodle platform of the University of Geneva.

Registration of the students, tracking their progress and reporting and communication is performed on the Moodle platform.

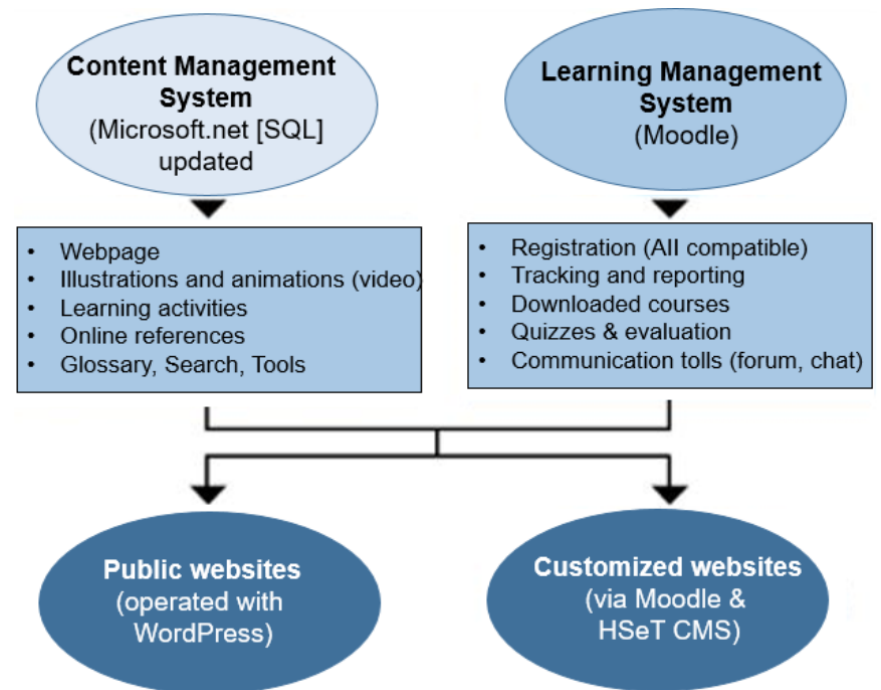
HSeT platform

The collaboration with our IT partner Amaris in Renens, Switzerland for the development of new functionalities has continued to be successful. HSeT has further developed the new user interface that has a more modern look and is responsive, such that it can be used on tablets and smartphones. The platform also offers many tools, including a print function, a search function, a glossary, and a sitemap.

Moreover, HSeT has advanced significantly with the procedure for extracting high quality content material from its CMS, and is in the process of developing a WordPress based prototype.

LinkedIn platform

With the help of Ivan Santos from the SITEM/INSEL Foundation HSeT has created a [HSeT website](#) LinkedIn with the aim of valorizing and promoting its activities and online training programs.



HSeT organization

Foundation Board

- **Michelle Rossier**, HSeT Foundation, President
- **Jean-Pierre Kraehenbuhl**, HSeT Foundation CEO & University of Lausanne
- **Uyen Huynh-Do**, University of Bern
- **Mathieu Nendaz**, Vice Dean, Faculty of Medicine, University of Geneva
- **Armelle Phalipon**, Institut Pasteur, France
- **William Pralong**, Federal Institute of Technology Lausanne
- **Walter Reith**, University of Geneva & HSeT Foundation
- **Frédéric Rochat**, esq, Etude Kellerhals-Carrard, Lausanne
- **Bernard Rossier**, University of Lausanne, HSeT Foundation
- **Amadou Sall**, Institut Pasteur, Dakar, Senegal
- **Dominique Sprumont**, University of Neuchâtel
- **François Verrey**, University of Zurich

Professors Isabelle Décosterd and Nicolas Fasel (University of Lausanne), and Dr. Jonathan Fuchs, resigned in 2020. We wish to thank them for their valuable collaboration. They have been replaced by Walter Reith (Emeritus professor, University of Geneva), François Verrey (Emeritus professor, University of Zürich) and Dr. Armelle Phalipon (Institut Pasteur, Paris, France).

The HSeT team

- **Pascale Anderle**, Translational medicine
- **Nathalie Debard**, Immunology, Microbiology
- **Jean Gruenberg (SAB member)**, Cell Biology
- **Jozsef Kiss (SAB member)**, Neurosciences
- **Ivana Knezevic (SAB member)**, Vaccinology
- **Jean-Pierre Kraehenbuhl**, Immunology, Vaccinology
- **Claude Meric**, Entomology, Vaccinology
- **Li Long**, Computer science
- **Patrick Linder**, Microbiology
- **Alain Meystre**, Infographic design
- **Walter Reith**, Immunology, Pathology
- **Bernard Rossier**, Nephrology, Toxicology
- **Michelle Rossier**, Laboratory Medicine
- **François Verrey (SAB member)**, Nephrology



Pascale Anderle



Nathalie Debard



Jean Gruenberg



Patrick Linder



Jozsef Kiss



Jean-Pierre Kraehenbuhl



Claude Meric



Li Long



Ivana Knezevic



Alain Meystre



Walter Reith



Bernard Rossier



Michelle Rossier



François Verrey

Perspectives

HSeT has been approached by members of the Faculty of Medicine of the University of Geneva to participate in the development of two new MAS and CAS programs.

CAS in Biobanking The aim of the Certificate of Advanced Studies (CAS) in Biobanking is to extend the scope and depth of the Biobanking course of the Institut Pasteur. In collaboration with selected specialists from the Faculty of Medicine of the Geneva University and Hospitals (HUG), and the Swiss Biobanking platform ([SBP](#)), a one year program will be offered. The proposed CAS will be open to healthcare professionals, researchers, clinicians, biobank managers and database managers from Switzerland and abroad. The CAS will provide theoretical and applied training relevant to the principles, skills and operations required to create new biobanks, or to further develop and maintain existing ones. The training program will consist of online content and learning activities dispatched in 5 modules addressing the following themes: basics of biobanking; governance and planning; quality management systems; biosafety & biosecurity; regulations; ethics, privacy, security and informed consent; biospecimen collection, processing, storage and distribution; data systems and records management; specificities of different types of biobanks (e.g. microbiological samples, healthy and pathological tissues, body fluids).

The CAS will be operative in 2022 and recruitment will start in the spring of 2023.



MAS in Translational Oncology

The creation of an International Master of Advanced Studies in Translational Oncology using innovative approaches to effectively promote integration in the rapidly changing field of Oncology is an initiative of members of the Faculty of Medicine, University of Geneva.



The aims of the two-year program is to provide training in Clinical research with an emphasis on molecular oncology and in clinical & translational research as well as clinical trial design. The MAS program will include partners from the Lemanic Oncology (SCCL), the Universities of Geneva and Lausanne and the Swiss Federal Technology Institute of Lausanne. HSeT will provide its expertise in distance learning.