



2018 Annual Report

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

Executive summary

2018 has been a challenging year for the Health Sciences eTraining (HSeT) Foundation. First, several important online programs required intense tutorship that was provided in a large part by the HSeT team. Second the production of new online programs was demanding. Finally HSeT had to deal with IT technical issues to satisfy the request from some of HSeT's partners. Along these lines, both the Universities of Geneva and Lausanne have requested HSeT to use Moodle as a learning management system. This requires extensive work but also funds that HSeT cannot support on its own.

Many Customized OnLine Training (COLT) activities in the form of online masters, bachelors, courses and workshops have been offered worldwide. The major achievements during 2018 were the following:

- **Bachelors and Advanced studies (Master, Diploma, Certificate).**
 - ◇ **Bachelor of Medicine (University of Mauritius).** The four modules with their 69 Case-based learning activities (CBL) and the related content have been completed and revised in 2018. The online bachelor of medicine for the 2nd and 3rd year produced in collaboration with the Geneva Faculty of Medicine for the Mauritius University has entered its 5th year in 2018. The first students that started in 2014 have now completed the bachelor (page 4).
 - ◇ **Bachelor of Medicine (University of Geneva).** Following several meetings in Geneva with the module leaders and with the Bachelor bureau, it was decided to adapt the 4 modules developed for the Mauritius University for the Geneva medical students. When requested by the module leaders and the teachers HSeT has translated many CBLs in French (page 5).
 - ◇ **International Master of Vaccinology (IMVACC) (University of Lausanne).** The IMVACC Master of Advanced Studies started on September 2016. The 4 students of the class 2016 are about to complete their master thesis and one student has received 60 ETCS and diploma from the University of Lausanne. He also accepted to contribute to HSeT's training activities. The 5 students of the class 2018 have successfully passed the exam of the first year and are presently working on their master thesis project. The 10 students of the class 2019 have been introduced to the Moodle and HSeT platforms during a kickoff meeting in January (page 5).
 - ◇ **DAS/CAS in Translational Nephrology (University of Bern).** The five eLearning modules on the renal control of homeostasis developed for the NCCRKidney.CH network are now offered as a Diploma (DAS) or Certificates (CAS) of Advanced Studies by the University of Bern (page 4).
 - ◇ **Postgraduate study curriculum in Translational and Entrepreneurial Medicine (University of Berne).** HSeT continued its collaboration with sitem-insel AG (Prof. Jürgen Burger) with respect to the study program in translational and entrepreneurial medicine, which is financed by sitem-insel AG. The first cohort has completed all modules of their MAS and is currently working on the MAS thesis. A second cohort has started in April 2018 and has already completed modules 1 and 2. Like the first cohort the results of the evaluation were very good (page 6).
 - ◇ **Master of advanced studies in toxicology (MASTOXICO).** A new session started in September 2018 with 24 participants for Module 1: "Basic Principles in Toxicology". The e-Learning format was appreciated by the participants who followed this curriculum in addition to professional activities. They come from Switzerland and several European countries. A new e-Learning module on "The oxidative stress" was developed by HSeT in collaboration with the coordinator of Module 3 (Organ Toxicology) (page 6).
- **Scientific advisory board (SAB).** The SAB created in 2017 consisted of two members, Profs Ivana Knezevic and Walter Reith. Professors Jean Gruenberg (University of Geneva) and François Verrey (University of Zürich) have now joined the SAB and during a meeting in November they accepted to actively participate in the management of HSeT and in contributing new learning activities and updating existing material. (page 8).
- **Relation with the Lausanne Faculty of Biology and Medicine and the Geneva Faculty of Medicine.** Following a meeting with members of the Lausanne and Geneva Dean offices, a steering committee (COFIL) has been created with the aim to propose solutions for the sustainability of HSeT. The COFIL has appointed a technical group, the task of which was to analyze the current IT situation of HSeT and evaluate which development would best fit with the platforms used by the 2 Medical Faculties. A report has been sent to the Deans of the two faculties (page 12).
- **IT development.** The collaboration with our IT partner Amaris in Renens, Switzerland for the development of new functionalities continued to be successful. HSeT has tested various strategies to implement its LMS elements in Moodle. As a proof of principle one CBL from the Bachelor of Medicine was fully developed on the UniGe Moodle platform, as well as modules 3 and 6 of the Translational and entrepreneurial medicine MAS on the sitem Moodle and are currently in use (page 9).

Activities and Accomplishments

Courses

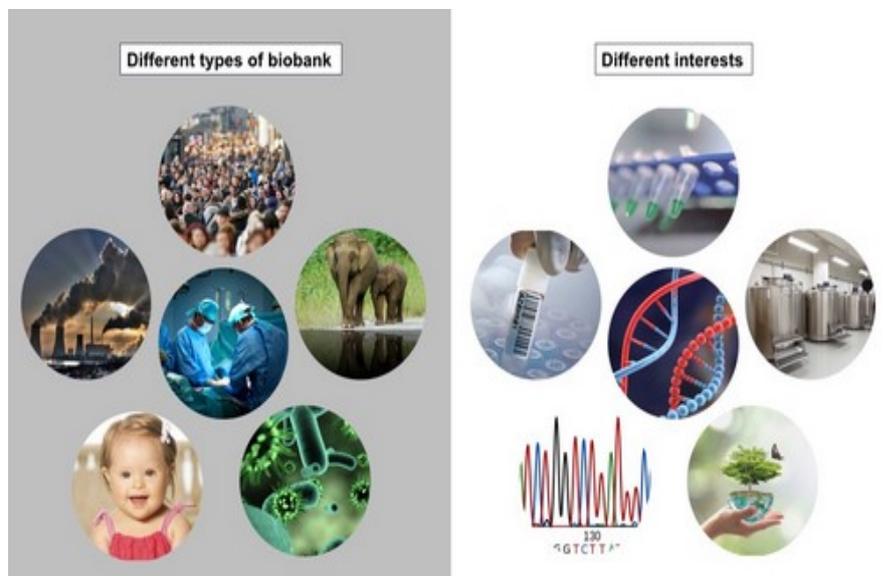
- **Course of biostatistics.** In September and October 2018 four series of a two-day course were organized by HSeT for master students in biology at UNIL to introduce the e-learning course “Biostatistics” developed by HSeT in collaboration with UNIL within the frame of FIP project (Fonds d’innovation pédagogique). This year for the first time the course was mandatory for three different specializations : cancer and immunity, neuroscience and pharmacology.

- **Vaccinology course at the Pasteur Institute.** Since 2008, HSeT is responsible for organizing the web-based activities of the Vaccinology Course at the Institut Pasteur, Paris. In 2018, the web-based activities were composed of two parts. The first part consisted of self-assessment tests and refresher training program in immunology and vaccinology to be taken before the course started to ensure that all the selected participants had a sufficient background in immunology. The second part consisted of training material for the participants to prepare for a 1-day workshop on vaccine strategies against malaria. Training material included a web-based course on malaria, selected articles on malaria with associated thought questions and a module on how to conduct clinical trials. This training material was available before the course and participants were asked to answer the thought questions before the beginning of the course. This format was very beneficial for the face-to-face workshop session.



The 2018 class of the Vaccinology course at the Pasteur Institut, Paris

- **Course of Biobanking.** This biobanking course is organized by the Pasteur Institute Bioresources network (PIBnet), the European Virus Archive goes Global consortium (EVAg, H2020 Grant N°653316) and HSeT. The purpose of this course is to enhance transfer of knowledge on biobanking by providing an online and practical training. The training emphasize the terms and conditions to create and coordinate a biobank of pathogen microorganism samples (virus, bacteria, fungi or parasites). The Pasteur Institute (PI), the Institut Pasteur International Network (RIIP) and the EVAg consortium have very large, varied and high-quality biobanks. Based on their past and ongoing experiences acquired during disease surveillance as well as throughout outbreaks and disaster situations, they will promote global information on biobanking management, quality, biosafety or biosecurity. In 2018, HSeT created 6 modules, the content and learning activities of which included annotated articles and case-based learning activities. The first students will be enrolled in the spring 2019.



● **Preanalytical Phase course**

- ◇ **University Cheikh Anta Diop in Dakar, Senegal.** A seven week course (June-July, 2018) 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. The students had to follow a tight schedule to study the online module and to answer self-evaluation questionnaires.
- ◇ **FAMH candidates.** A 4th session of this course was given in the frame of the continuous education of academic laboratory specialists (FAMH) program (September 5- to October 31). The course was entirely organized on the HSeT platform by the coordinator of the course, a member of the HSeT team.

Massive Online Open Courses

- **MOOC in immunology.** In collaboration with Prof. Bruno Lemaître (EPFL) HSeT participated in the development of a MOOC on Immunology which is now on line.

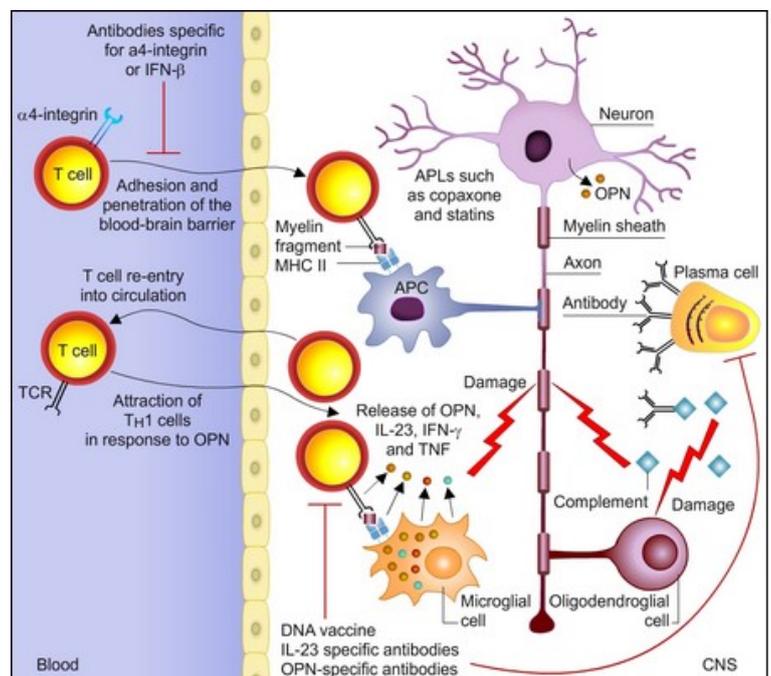
Diploma of advanced studies

- **DAS Pharmacology University of Geneva.** The e-learning module on basic principles of pharmacology was proposed for the sixth time to the students registered in the UNIGE DAS on management of clinical trials. The objective of the module is to provide knowledge about basic principles of pharmacology.
- **DAS CAS in translational nephrology.** Since 2012, HSeT developed a series of e-learning courses commissioned by the Swiss consortium NCCR kidney.ch for the participants of the Kidney.CH education program. The courses comprise five web-based modules on the renal control of salt and water homeostasis (module 1 delivered in 2012), the renal control of pH homeostasis (module 2 delivered in 2013), the renal control of calcium-phosphate homeostasis (module 3 delivered in 2014), the role of kidney in oxygen sensing and EPO production (module 4 delivered in 2015) and the impact of dietary components & metabolism on kidney functions (module 5 delivered in 2016). All modules are organized the same way with a kick-off and a return session with face-to-face lectures and group presentations and a 6 month e-learning part during which participants should review reading material, take quizzes, read key articles from the literature, explore clinical cases illustrating translational aspects, and prepare both individual and team works. The 5 modules are now part of a CAS/DAS in Translational Nephrology, which is hosted by the University of Bern and open to national and international graduates. The program officially started in March 2017 with module 1. In 2018 took place the return session of module 2, the entire module 3, and the kick-off of module 4, with 21, 16 and 21 enrolled participants, respectively. HSeT is still responsible for the e-learning courses of the program

Bachelors

- **Mauritius University Bachelor of Medicine.** In 2014, HSeT was commissioned by the University of Geneva (UNIGE) to develop an eLearning educational program in English for the Bachelor of Medicine of the University of Mauritius based on the curriculum of the Faculty of Medicine of UNIGE. The module 2 of the 2nd year of the bachelor (Heart and circulation / Kidney and homeostasis / Lung and respiration), the module 4

The inflammatory phase of multiple sclerosis. T cells, B cells and antigen-presenting cells (APCs), including macrophages, enter the central nervous system (CNS), where they secrete cytokines that damage the oligodendroglial cells. These cells manufacture the myelin that insulates the neuronal axon. The injured myelin cannot conduct electrical impulses normally.



of the 3rd year of the bachelor (Defense and Immunity / Infections) and the module 1 (Cell growth and aging / Digestion, Nutrition & Metabolism / Reproduction) of the 2nd year of the bachelor were integrated in the curriculum of the University of Mauritius in 2014, 2015 and 2017, respectively. In 2018, HSeT released the module 3 (Bones & joints, Introduction to the nervous system and Neurosciences) with 16 CBLs, which was used by the 3rd year-medical students of University of Mauritius since August 2018.

- **Bachelor of medicine (UNIGE).** In 2018, HSeT organized the web-based educational resources in nephrology and gastrointestinal physiology for the 2nd-year and in immunology for the 3rd-year students of the bachelor of medicine of UNIGE. The resources comprised interactive clinical cases supported by a web application and web-based reading materials in relation to each of the cases. The case-based learning process traditionally used by UNIGE was conserved, including a face-to-face analysis session where small groups of students explore the case (in the form of a brief clinical vignette printed on paper) with the help of tutors, a self-learning period with access to reading materials, and a face-to-face return session where groups of students meet again with tutors to share newly acquired knowledge. Students were asked to use the interactive clinical cases and associated online materials as additional training resources for the self-learning period. HSeT also developed a new interactive clinical case on multiple myeloma to be used by 3rd-year medical students in 2019. In Finally HSeT also contributed for the first time to the teaching of cell growth & aging and sexual reproduction for the 2nd-year students and of the introduction to the nervous system for the 3rd-year students.

Masters

- **Master of Pharmacology and Pharmacokinetics EPFL.** The e-learning Pharmacology module was proposed on March 2018 for the sixth consecutive time to the students attending the master of pharmacology and pharmacokinetics. This online program was opened simultaneously to the face-to-face courses, giving access to self-directed learning. Self-assessment quizzes and case-based learning were also available online.
- **Master of Advanced Studies of Vaccinology (IMVACC).** IMVACC is a master in advanced studies in vaccinology proposed by the University of Lausanne. IMVACC is an initiative of the Swiss Vaccine Research Institute (SVRI, Prof. G. Pantaleo and Dr. Claude Méric) and is produced in close collaboration with the HSeT team. It consists of 4 web-based modules with tutoring during the first year and a master thesis during the second year which will be carried out in an academic or industrial organization.
 - ◇ **Class 2016.** Four students started in September 2016. Nicolas Peyraud has completed his master thesis and received his UNIL diploma. The other three students are still in the process of completing their master thesis work.
 - ◇ **Class 2018.** Five students started in March 2018 with a kick-off meeting in Lausanne to present the course and its information technologies systems. The kick-off meeting was also the opportunity to do a team building activity in the form of a critical review of a published scientific paper. The class comprises four students from South Africa and one from Switzerland. During the year, regular calls with the students were implemented to compensate for limited requests for interaction with the tutors. The goal of these calls were to help the students to keep momentum and to answer their questions. This approach was very much appreciated. All the five students of class 2018 successfully passed the exam at the end of 2018 and are now preparing their master thesis project.
 - ◇ **Class 2019.** Out of 27 students that applied to the IMVACC program, 10 have been accepted by the Lausanne University registration service. Five students are from South Africa financially supported by fellowships from the South Africa Medical Research Council, two are from Tanzania and Kenya supported by fellowships from the European and Developing Countries Clinical Trials Partnership (EDCTP). One is from Nigeria with a fellowship from the Nigerian government, Two European veterinarians from Austria and Germany paid the 20'000 fees. The students started in December 2018 and successfully completed the prerequisites in immunology microbiology and epidemiology.



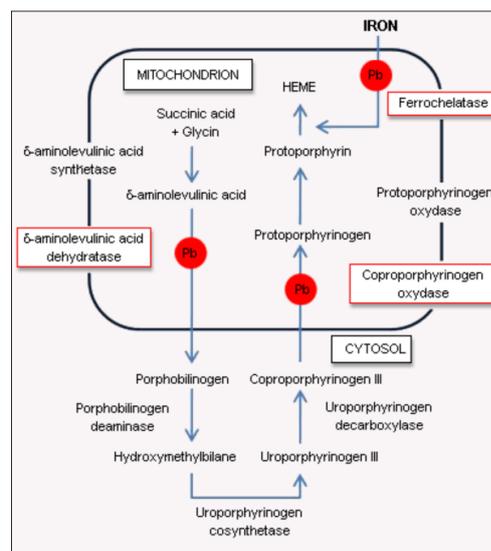
Nicolas Peyraud, from MSF, is the first student who received his Master diploma .

Starting with the 2018 IMVACC class, Moodle has been used as an entry point for IMVACC. The content in the HSeT system is accessed through links. For the time being, activities are still in the HSeT platform, but they will be moved to Moodle to facilitate the follow-up of activity completion and grade management. Quizzes can be easily imported from the HSeT system. Moodle has a powerful forum tool and a messaging system and offers access to a webinar system and to different type of activities.

• **Master of medical biology (MSc UNIL)**

- ◇ **Toxicology course.** The sixth session of the e-learning toxicology module was proposed in March & April 2018 to the MSc students in medical biology, within the course of pharmacology. This e-training module is intended to provide learning material supporting and/or complementing formal face-to-face lectures in toxicology.
- ◇ **Immunology and cancer course.** In 2018, HSeT organized for the tenth time the eLearning activities for the 'Immunology and Cancer' course of the Master in Medical Biology. HSeT is intervened responsible for providing a refresher training program and two self-assessment tests to be taken before the course starts to ensure that all students had a firm understanding of the basic principles in immunology and oncology from the beginning of the course. HSeT also provided four annotated articles, an interactive clinical case and virtual microscopy material as background for face-to-face activities and practical work during the first & second semesters of the course.

- **Master of advanced studies in toxicology (MASTOXICO).** A new session started in September 2018 with 24 participants for Module 1: "Basic Principles in Toxicology", ending on January 15th 2019. The e-Learning format was particularly appreciated by the participants who are actively engaged in their professional life. The students come from all parts of Switzerland and some from several European countries. A HSeT team member created a new e-Learning module on "The oxidative stress" in collaboration with the coordinator of Module 3 entitled Organ Toxicology. In addition, HSeT was in charge of posting the detailed programs and the handouts of the courses.

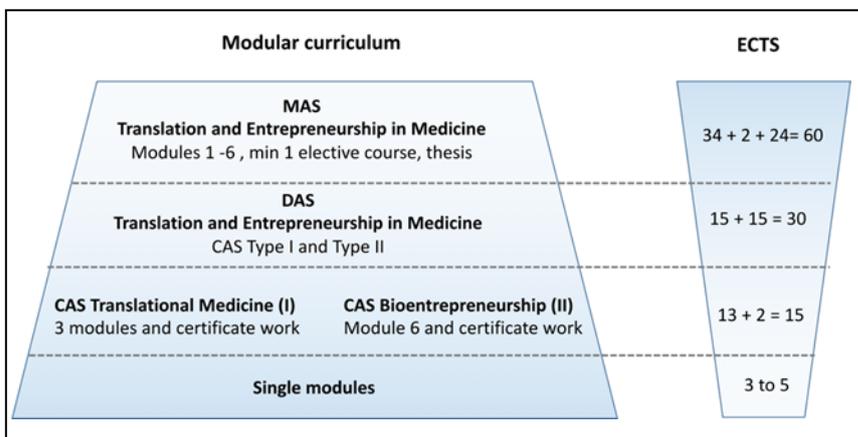


Effects of lead on heme synthesis

Lead inhibits the ferrochelatase, the coproporphyrinogen oxidase and the delta-aminolevulinic acid dehydratase.

• **Master of translational and entrepreneurial medicine..**

HSeT continued its collaboration with sitem-insel School, which is since August 2018 headed by Prof. Jürgen Burger. The program is financed by sitem-insel AG. Upon successful completion of the program either a CAS, DAS or MAS is awarded by the University of Bern. There are in total 6 modules: research and development (module 1), quality management and GMP (module 2), intellectual property (module 3), regulatory affairs (module 4), clinical trial design and performance (module 5) and biomedical entrepreneurship (module 6). HSeT is responsible for the development of material for modules 1 to 5. The first cohort consisting of 1 CAS and 9 MAS students has successfully completed all 6 modules including the certificate for sponsor and investigator recognized by Swissethics and are now in the process of writing their thesis. In April 2018 a second cohort consisting of seven MAS students, and one CAS student has started. Like the first cohort the evaluation results were very good. HSeT was strongly involved in helping sitem-insel to migrate its course material to the Moodle platform. In fact, in January 2019 the second cohort will start a pilot study using Moodle as LMS platform for module 3 and 6.



Summary of modules and courses offered by sitem-insel and University of Bern .



Research Infrastructure Program

Infravec2 is an international and interdisciplinary infrastructure project on insect vectors of human and animal disease, including mosquitoes, sandflies, other flies, and ticks.

HSeT is a member of the Infravec2 infrastructure European consortium. Infravec2 was launched in February 1st 2017 and brings together 24 partners in Europe and in Africa (Senegal, Mali and Burkina Faso). It has a €10 million budget for 48 months. The project is coordinated by the Institut Pasteur (Dr Ken Vernick).

Infravec2 is not a research project, its objective is to develop and share large infrastructures and biological resources for research on diseases spread by mosquitoes, other insects, and ticks. The aim of Infravec2 is to provide easy online access to unique vectors, facilities, services and technologies at no cost to the researcher. The budget is used to support demands made through an online shop hosted in the project website. The shop currently offers more than 150 products and is managed by the Institut de Recherche pour le Développement in Montpellier. An originality of the project is that suppliers receive support only for products that are requested by users. The success of the project will be measured by the value of the requested products that determines budget spending.



HSeT has developed the public website including an online shop (<https://infravec2.eu>) and an intranet. It is also contributing to the courses proposed by the project by developing their online dimension. The intranet is hosted in the HSeT server while the public website is developed using the Divi framework in WordPress with the help of the digital agency troisdeuxun in Morges. An upgraded version of the website and shop have been available since July 31st, 2018. The focus is now on their maintenance and improvement as well as on the development of online courses in collaboration with Infravec2 partners.

The organization of the HSeT Foundation

The Board

Prof Jean-Louis Carpentier has resigned. The Board has appointed Prof. Isabelle Décosterd, Vice Dean of Education at the Faculty of Biology and Medicine, University of Lausanne. The Board composition is the following:

- Prof. **Dominique Sprumont**, University of Neuchâtel, President,
- Prof. **Jean-Pierre Kraehenbuhl**, HSeT Foundation CEO & Lausanne University.
- Prof. **Isabelle Décosterd** Lausanne University
- Prof. **Nicolas Fasel**, Lausanne University
- Dr. **Jonathan Fuchs**, Department of Public Health, San Francisco, USA.
- Prof. **Antoine Geissbuhler**, Vice Dean, Faculty of Medicine, Geneva University
- Prof. **Uyen Huynh-Do**, University of Bern.
- Prof. **William Pralong**, Federal Institute of Technology Lausanne (EPFL).
- Mr **Frédéric Rochat**, esq., Etude Kellerhals-Carrard, Lausanne.
- Prof. **Bernard Rossier**, Lausanne University & HSeT Foundation.
- Dr. **Michelle Rossier**, HSeT Foundation.
- Dr. **Amadou Sall**, Institut Pasteur, Dakar, Senegal.



Isabelle Décosterd , Vice Dean of Education, Faculty of Biology and Medicine, UNIL and new Board member

The audited financial 2017 report and the 2019 budget were approved by the Board during the Board meeting.



The scientific advisory committee

In 2018, two professors joined the Scientific Advisory Board (SAB). Prof. Jean Grunberg is emeritus Professor at the University of Geneva, His main interest was the study of the morphogenesis of sub-cellular organelles and the mechanisms that control intracellular membrane dynamics. He also is a member of LipidX (Systems Biology of Biomembranes) supported by the Swiss Initiative in Systems Biology. Prof. François Verrey, Zurich University, will retire in June 2019. The overall theme of his research is solute transport across epithelial barriers, and its role in maintaining the body homeostasis. He was the coordinator of the National Center of Competence in Research (NCCR) in translational nephrology. They joined Profs Ivana Knezevic (UNIL) and Walter Reith (UNIGE).

The HSeT core team

The scientific team

- **Pascale Anderle**, PhD, scientific coordinator of Bioinformatics, Statistics, Translational & Entrepreneurial Medicine.
- **Nathalie Debard**, PhD, scientific coordinator of Immunology, Microbiology & Nephrology.

- **Jean-Pierre Kraehenbuhl**, MD, CEO and scientific coordinator of Vaccinology and Oncology.
- **Li Long**, BS, MS, manager of software in biomedical research.
- **Claude Meric**, PhD, scientific coordinator of vaccinology.
- **Michelle Rossier**, MD, scientific coordinator of Laboratory Medicine and Hematology.
- **Bernard Rossier**, MD, scientific coordinator of Pharmacology & Toxicology & Nephrology.



The HSeT team. From left to right: Li Long, Alain Meystre Michelle Rossier, Nathalie Debard, Jean-Pierre Kraehenbuhl, Pascale Anderle, Claude Meric and Bernard Rossier

The technical team

- **Alain Meystre**, animation designer.
- **Nicolas Burle**, project manager, **Cyril Lacroix** and **José Torralbo**, computer scientists, from Amaris, Renens, Switzerland are responsible for the maintenance of the HSeT platforms and the development.
- **Matthieu de Morsier**, Troisdeuxun.ch, Morges, developer, assisted HSeT in the use of World Press

Website utilization

- Since 2006, the number of users is continuously increasing and presently HSeT manages about 8'500 active accounts.
- In 2018, a total of 1'076'017 pages were viewed during 99784 visits. An average of 15 pages were seen per visit.

Resource and customized websites

- The HSeT team manages 18 resource websites stored in the HSeT's content management system (CMS) which serve as a repository for learning activities (table page 10).
- The CMS feeds in about 25 eTraining websites available to Swiss and international academic institutions and organizations (table page 10).

Activity and project reporting

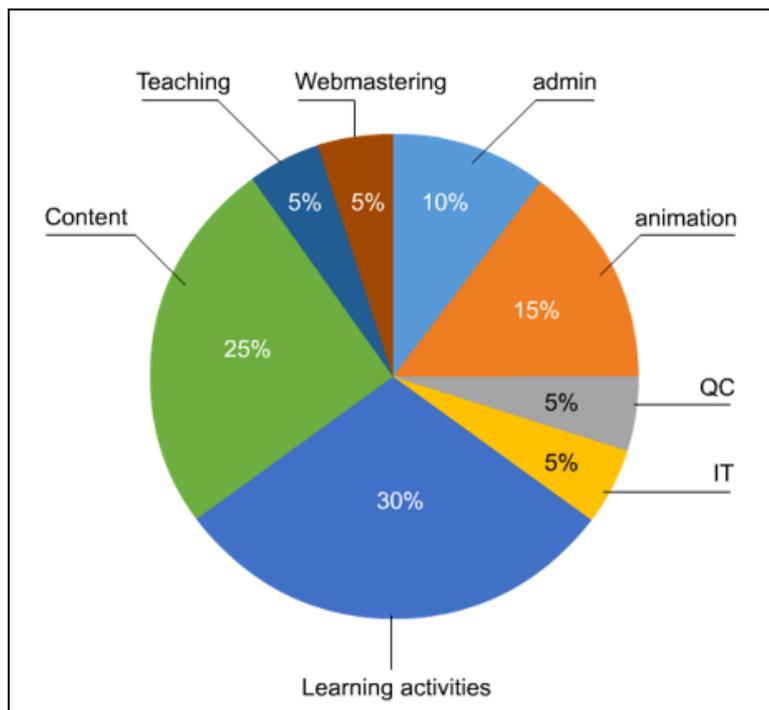
HSeT team members keep track of their activities and produce a daily report which is used to:

- **allocate** resources based on the consolidated information,
- **evaluate** resource distribution for each type of activity,
- **monitor** the costs of individual projects and contracts, which is particularly important for the reports requested by the EU commission.

As seen in the diagram, the HSeT team spends more than half of its time in producing content and learning activities. The animations and illustrations created by our animation designer represent about 15 % of the total HSeT activities. Webmastering consists in creating the trainees' portals, creating user groups and managing the communication tools.

The HSeT team also participates in teaching activities and tutoring.

Since HSeT's IT development is taken care by Amaris, the team spends little time with IT problems.



Type of activities

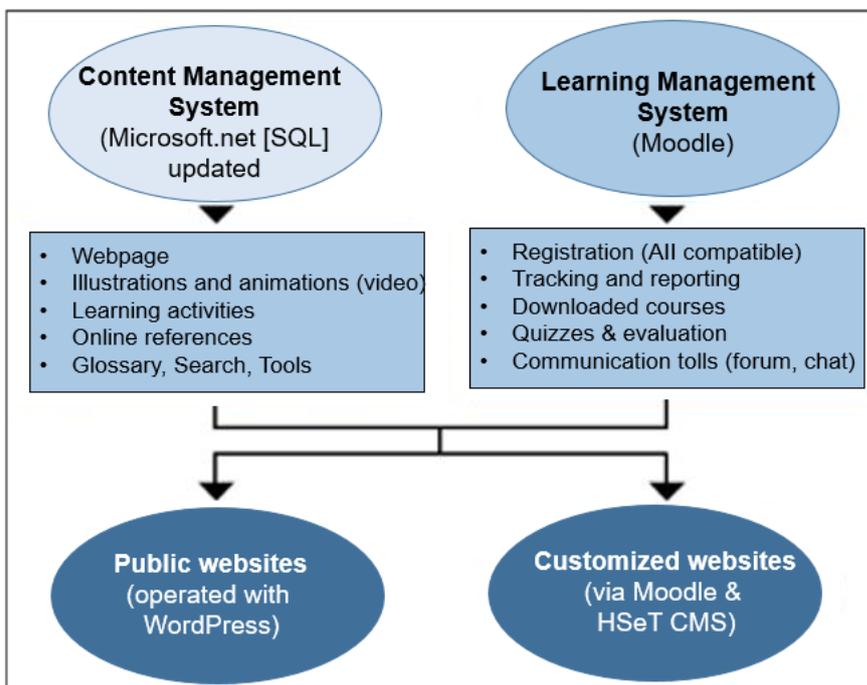
IT Infrastructure

HSeT uses the Microsoft technology for running its Content Management System (Microsoft SQL) and Moodle as a Learning Management System for two of our Master programs. In the future most programs will be handled by Moodle.

The HSeT's servers are hosted at the University of Geneva which also has taken the license for the Microsoft technology.

To keep up with technical advances (web 2.0 standards, HTML 5) and with HSeT's needs for learning tools, including communication and social networking the following developments have been made.

- All animations that were generated via Adobe Flash have been converted into a video format which is compatible with tablets and smartphones.
- Last year we started to evaluate what would be the cost to upgrade our Microsoft CMS. Next year we intend to restrict our Microsoft platform to the CMS, the LMS being operated with Moodle



HSeT management infrastructure

Table

Learning activities

- Article-based learning
- Case-Based learning
- Protocol-based learning
- SOP-based learning
- Role play
- Virtual microscopy
- Individual and team work
- Self assessments & exams

Resources

- Anatomy & Physiology
- Bioinformatics
- Clinical Research & trials
- Hematology
- Immunology
- Laboratory
- Medicine
- Microbiology
- Nephrology
- Oncology
- Pharmacology
- Toxicology
- Translational medicine
- Statistics
- Vaccinology

Major customized websites

Swiss Institutions

- [EPFL](#) Swiss Federal Institute of Technology. *MSc Pharmacology*
- [IAL](#) Lausanne University Hospital CHUV Immunology & Allergy
- [UNIBE](#) Bern University *DAS nephrology*
- [UNIGE](#) Geneva University. *MAS Human Toxicology (SCAHT) Bachelor Medicine*
- [UNIL](#) Lausanne University. *MSc Medical biology, IMVACC International master of vaccinology*

Swiss organizations

- [FAMH](#) Foederatio Analyticurum Medicinalium Helveticorum
- [HelVietMed](#) Swiss-Vietnam medical association
- [IMVACC](#) International master of vaccinology
Swiss Vaccine Research Institute
- [NCCR kidney.CH](#) National Center of Competence in Research
Kidney homeostasis regulation
- [SitemInsel](#) *MAS Translational and Entrepreneurial Medicine*

European organizations

- [ADMIRE](#) Aldosterone and mineralocorticoid receptor
COST action
- [Biobanking](#) Biobanking courses from the Pasteur Institute
- [CLIC](#) Clinical Investigator Course, European
consortium Pharmatrain
- [InfraVec 2](#) Insect vectors of human and animal disease,
[LIVE](#) Leading International Vaccine Training
- [Pasteur courses](#) Vaccinology Course, Institut Pasteur, Paris
Epidemiology Course, Institut Pasteur, Paris

International agencies

- [WHO eTraining](#) WHO Immunology Research and Training Center
- [GADI](#) WHO Global Adjuvant Development Initiative

International organizations

- [HDI](#) Host Defense Interactions, MRC Durban South Africa
- [HKU- PRP](#) University of Hong Kong Pasteur Research Pole
- [HVTN](#) HIV Vaccine Trial Network, Seattle, USA
- [IPD](#) Institut Pasteur Dakar, Senegal
- [Mauritius](#) Mauritius University. Bachelor of Medicine
- [JDM](#) Cameroon: Université des Montagnes

Pharma companies

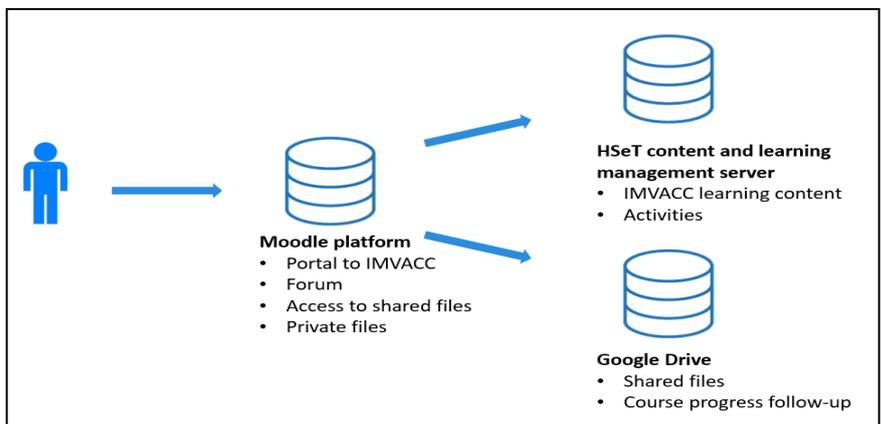
- [Sanofi Pasteur](#) Continuing education of Sanofi Pasteur

- The domain name of the HSeT public website is now <http://hset.org> and is hosted at Infomaniak Network in Geneva as is the IMVACC public website (<https://imvac.org>).
- The HSeT's course contents (80), 30'000 web pages distributed into 1'900 directories (folders), assessments (1'300 with 11'000 questions), references (9'000+), glossary (7'600 terms), mediaboxes (illustrations and animations 7650), and case-based learning (230 cases) have been migrated to a platform-independent environment and/or to other learning platforms. With great effort, Li Long has successfully developed a set of software tools to help this process. At this time, she could systematically and automatically extract and reconstruct all the major components and she will continually improve the automated process.

In 2018 pilot projects were migrated to both WordPress and Drupal, and feasibility issues, complications and difficulties were identified with a good understanding of the migration process and basis to estimate efforts with different CMS choices.

The Moodle platform is now used for the IMVACC and the Translational medicine platform master and for the UNIGE bachelor. IMVACC requires intense interactions between students and tutors. The Moodle learning platform is used as an entry point to the IMVACC course content. It provides communication tools (forum, chat and web conferencing), storage of personal information (private files feature) and file sharing (see the figure).

Progress is followed using a shared Google Sheets file. Shared files are also used for collaborative work in group activities. Shared files are stored in a Google Drive account that allows simultaneous file



IMVACC data management structure

Financial situation

HSeT's finances & human resources are very efficiently managed by Mrs Françoise Mugny from PMM & D conseils SA. HSeT is grateful to her and thanks her.

- **The HSeT 2018 financial situation** is balanced, with a lower operational deficit (34'764.98) when compared to 2017 (57'149.54). The total income was 207'379.12 CHF and the total expenses 242'144.10 CHF. The deficit is mainly due to IT expenses. The salary of Dr. Nathalie Debard was paid by the University of Geneva, and the salary of Dr. Pascale Anderle by the SITEM Foundation, Bern. Dr. Claude Meric, now a free lancer, who is in charge of IMVACC and INFRAVEC2, is paid by the Swiss Vaccine Research Institute (SVRI) and by a grant from the European Commission to HSeT, respectively.
- The major funders are:

Swiss universities. The Geneva University supports the salary of Nathale Debard, the Microsoft license, the two HSeT's production and validation servers. The University of Lausanne provides offices and funds for the production of content and learning activity. The position proposed by the Dean in January 2019 has still not been filled.

Swiss organizations. The Swiss National Science Foundation via the NCCR program has been supporting the Translational Nephrology training program. The sitem insel Foundation supports the MASW in translational and entrepreneurial medicine. The Swiss Vaccine Research Institute supports the Mas in vaccinology (IMVACC).

European institutions and organizations. The Pasteur Institute Paris, EU funded consortia (GlycoGastroExplorer and Infravec2).

International organization includes WHO, HIV vaccine trial network (HVTN), University of Hong Kong, the South African MRC

Industrial partners Sanofi Pasteur.

Future plans

Universities

- The task force set up in January 2018 composed of Isabelle Décoster (FBM Unil), Antoine Geissbuhler (Medical Faculty Geneva) and Bernard Rossier, HSeT) has submitted its report including a technical appendix at the end of 2018 to the deans of the two medical faculties. For the sustainability of HSeT, a public-private operational model has been proposed, a concept supported by the Dean Jean Daniel Tissot and the Vice Dean Antoine Geissbuhler. The model implies:
 - ◇ A new governance of HSeT in partnership with the two Faculties.
 - ◇ A new HSeT / Lausanne / Geneva partnership agreement replacing the 2009 (UNIGE) and 2014 (UNIL) agreements based on the new governance.
 - ◇ Changes of the Foundation's bylaws in agreement with the new governance.
 - ◇ Funding within the Vaud-Geneva collaboration seems appropriate for the proposed model including a scientific collaborator in Geneva (post existing since 2014 and financed until December 2019) and a scientific collaborator in Lausanne (post to be created).

A reply from the deans is expected in the first semester of 2019.

New projects

- The National Center of Competence in Research (NCCR) of the Swiss National Science Foundation (NSF) has financially supported two programs involving HSeT.
 - ◇ The first one on Molecular Oncology has contributed to the production of material and learning activities used in the MSc Medical Biology of the Biology School.
 - ◇ The second entitled "Kidney control of homeostasis" has supported the creation of a Certificate of Advanced Studies (CAS) and a Diploma of Advanced Studies (DAS) in Translational Nephrology.

HSeT has been approached by the coordinators of two new NCCR projects which are in the final evaluation stage by the NSF.

- ◇ Skininnovative is coordinated by Sabine Werner from ETH. HSeT has been asked to propose a Master of Advanced Studies in cancer prevention with emphasis on skin cancer. The proposed MAS will consist of 5 modules including R & D, translational research and clinical trials (Module 1), Skin injury and repair (Module 2), Inflammatory skin diseases (Module 3), Skin cancers and their prevention (Module 4) and Enabling technologies (Module 5). A position for a scientific collaborator in charge of developing the master has been included in the budget.
- ◇ The second project on Orphan diseases is coordinated by Uyen Huyn Do. The program will bring together groups from UZH, ETH and UNIGE. The interest is that all rare diseases are not rare and that they can identify very specific therapeutic targets. HSeT will develop the training program if the project is funded.

The final decision of these two programs is expected in the fall of 2019 and if accepted and funded start early 2020.

Informatics technology

In 2019, HSeT will be facing major challenges in terms of its CMS and LMS, especially as its financial resources are limited.

- First our CMS has to be updated or replaced with an open source CMS. Having considered several options, and in view that UNIGE and UNIL will not support the transfer of our CMS to a new one, we have decided to update our Microsoft .net CMS. Amaris, our IT partner, has analyzed the functionalities of our CMS and has evaluated the costs. We will probably update the CMS in a stepwise manner. The updated website will have to be reactive, the CSS (Cascading Style Sheets) redesigned, to satisfy the requests of some of our customers and also harmonize it with Moodle.

- Second, we will switch from the LMS that was developed by our previous IT developer to Moodle. The Moodle platform provides communication tools (forum, chat and web conferencing), storage of personal information (private files feature) and file sharing. It also allows the teachers to follow the activities of the students, design quizzes and webpages. Moodle will serve as an entry point to the HSeT course content and learning activities. Our Moodle platform will be hosted on the server of the Swiss Italian University which will also provide maintenance and help for the development of tools when required.

Epalinges, February 25, 2019



Jean-Pierre Kraehenbuhl