FILIÈRE
PHARMACOLOGY
AND TOXICOLOGY

AGE 0-4
AMONELIN
4-12
RITALIN
12-18
APPETITE
SUPPRESSANTS
18-24
NO-DOZ
24-38
PROZAC
38-65
VIAGRA
65—EVERYTHING
ELSE
The majority of drugs act on receptors, pumps or ion channels.

Chemical or physical message

Drug target

- ions
- neurotransmitters
- hormones
- odors
- light
- ...

Pharmacology studies how drugs interact within biological systems to affect function.
1. Fundamental Principles
   Pharmacokinetics–Pharmacodynamics
   Pharmacogenetics–genomic (personalized medicine)

2. Practical Aspects
   Drug design and discovery
   Drug development
   Optimization of drug treatment
   Regulations and Regulatory agencies

2. System Pharmacology
   Neuropharmacology
   Cardiovascular pharmacology
   Endocrine pharmacology
   ...

3. Principles of chemotherapy
   Cancer
   Infectious diseases
   Industry visit, seminars, PBL, optional classes

4. Toxicology
   Pharmacotoxicology
   Food toxicology
   Ecotoxicology
   (e-learning, visits, Case study)

Program
Involved teachers

Dmitri Firsov
Laurent Schild
Nicolas Leuenberger
Alex Ocampo
Marie-Christne Broillet
Laurent Descosterd
Grégoire Vuagnaux
Leonardo Scapozza
Davide Staedler
Nathalie Chêvre
Dario Diviani
Pascal Steullet
Chin Eap
Edith Hummler
Nancy Hopf
Jean-Maurice Dumont
Emanuela Felley
Christian Giroud
Stephan Kellenberger
Olivier Staub
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...PBL: Problem-based learning activities will provide critical thinking about the Pharma industry... with precise examples of drug development from the finding of an interesting active principle to a commercialized drug to... regulatory affairs, pharmacovigilance,...ecopharmacovigilance
Visit of an INDUSTRY research center
Optional courses:

- «Inflammation and cancer» Dr. Felley Bosco
- «Poisonous and hallucinogenic plants» Dr. Giroud
- «Analytical techniques in toxicology and ecotoxicology» Dr. Staedler
A whistleblower: Rachel Carson

Rachel Carson

Rachel Carson was born May 27, 1907 in Pennsylvania and died April 14, 1964 in Maryland, as a consequence of an heart attack occurred after several years of illness (she was diagnosed with breast cancer). As a professional marine biologist, she worked for the Bureau of Fisheries and the Fish and Wildlife Service, before dedicating herself almost exclusively to writing in the fifties, mostly as a result of her passion for environmentalism and popularization. She has been ranked by Time magazine as one of "the most influential women of the twentieth century". See GRAHAM, Frank Jr., November-December 1978: Rachel Carson.

Silent Spring

Silent Spring is the fourth book written by Rachel Carson and it was first published in The New Yorker magazine in the June 16, June 23 and June 30, 1962 issues, and subsequently published in its entirety by the publisher Houghton Mifflin (Boston) on September 27, 1962. Considered one of the most important books in the history of the U.S. environmental movement, Silent Spring systematically analyzes and documents for the first time the possible negative effects of massive and indiscriminate use of pesticides.

Throughout the 17 chapters of Silent Spring, Carson gives us a careful and rich in testimonies analysis of pesticide use in the U.S., their impacts on different natural environments and their inhabitants, and the consequences of the improper use of these substances.
Visit of a water purification plant
(STEP, Vidy, Lausanne)

Program
Visit of TRIDEL a waste recycling plant
Visit of TRIDEL a waste recycling plant
Department of Biomedical Sciences

Bugnon 27
1005 Lausanne

...where the classes are taking place
What we offer

- Entry in the world of pharmaceutical drugs with theoretical and practical knowledges
- Active awareness of the different toxicology issues
- Multidisciplinary approaches: neurosciences, cardiovascular, cancer, metabolism, etc.
- General Basis for future careers in biomedical and pharmaceutical research
Job Openings

Academic Research
Pharma
Biomedical Industries
Biotechs
Lab Med
Hospitals (FAMH)
Tox Labs
Patent Offices
Regulatory affairs
Governmental Agencies
Teaching
What we offer:

- Finish classes and evaluations in May 2021
- The TOPIC of pharmacology and toxicology offers >20 projects
- Learn and apply advanced techniques
- Work in a caring and collegial atmosphere
Learn and apply advanced techniques

- Cell cultures
- Imaging
- Electrophysiology
- Transgenesis
- Different animal models
WANTED

...students who are motivated, curious and involved...

Questions & Infos
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