Bertarelli Fellowships in Translational Neuroscience and Neuroengineering
Call for applications from EPFL Master students
→ deadline January 31, 2018 (midnight) ←

Bertarelli Program in Translational Neuroscience and Neuroengineering
Harvard Medical School and EPFL Center for Neuroprosthetics

First-year EPFL Master students are invited to apply for a Bertarelli Fellowship, supporting two mobility semesters at Boston/Cambridge, MA (USA) in 2018-2019 for carrying out a Master thesis project at Harvard Medical School (HMS). The Bertarelli Fellowship Program (see https://ptnn.epfl.ch) grants awardees a CHF 20,000 allowance for travel and living expenses.

Background

Understanding of brain circuitry and signaling has advanced phenomenally in recent years, based on developments in technology for recording the electrical signals associated with small sets or larger groups of neurons in the brain, as well as analysis of the complex data that derives from these neuronal networks and its association with function (e.g. motor, cognitive, sensory). These advances have given rise to the new field of neuroprosthetics, focused on development of technology to deepen our understanding of the brain, spinal cord and peripheral nervous system, and on the use of this technology and knowledge for recovery or augmentation of neural function lost to disease or trauma.

Aligned with recent breakthroughs in understanding neural circuitry and signaling, and translating that understanding toward restoration of function, the Bertarelli family has funded the Bertarelli Center for Translational Neuroscience and Neuroengineering at HMS, Chairs in Neuroengineering and Neuroprosthetics at the EPFL, as well as a collaborative research and education effort between both institutions in the domain of neuroprosthetics and related topics.

Areas of interest include, but are not limited to:

- Signal processing and device engineering for advanced auditory augmentation
- Noninvasive sensing for brain-machine interfaces
- High-density electrode array-based neural recording in the brain
- Combined stimulation and recording, for development of mechanistic insight into deep brain stimulation
- Biologics and their delivery for stabilization of the electrode-nervous system interface and induction of neural tissue regeneration including in the spinal cord
- Machine learning for decoding neural recordings and development of prosthetic control algorithms.

How to apply

The Call is open to 1st year Master students in Life Sciences & Technology or Bioengineering, Engineering, Basic and Computer Sciences. Application dossiers should consist of: a 1-2 page Statement of Purpose outlining motivation and research interests, a CV, and a transcript of available grades (BS + MS). HMS host labs the applicant would be interested in joining if awarded a Bertarelli Fellowship should be indicated (see relevant labs here http://www.hms.harvard.edu/dms/neuroscience/fac/ResearchArea.php).

IMPORTANT: do not contact HMS investigators at this stage (green light to do so is issued in due course).

Applications must be submitted by email to dietrich.reinhard@epfl.ch, as one single pdf file, by January 31, 2018, midnight.

A limited number of applicants will be invited for an interview by a Jury composed of EPFL faculty members. Awardees will be selected out of this shortlist, and competition outcomes communicated before February 19, 2018, start of the spring semester.

NB: students enrolled in an EPFL Minor requiring classes to be taken at EPFL during the Ma3 semester are not per se excluded from this call; the Bertarelli Program does allow for flexible dates of departure, namely in fall or spring (in latter case graduation is delayed by half a year). Interested applicants are advised to check formal eligibility with their respective Section prior to submitting (specific restrictions may apply).