

Bertarelli Fellowships in Translational Neuroscience and Neuroengineering Call for applications from EPFL Master students

→ **deadline January 31, 2023 (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 <https://fondation-bertarelli.org> sponsored Fellowship, supporting an academic mobility year spent in Boston/Cambridge, MA (USA) in 2023-2024, to carry out research at Harvard Medical School (HMS) that will qualify as EPFL Master thesis. The Bertarelli Fellowship Program (hereafter “Program”) grants awardees a discretionary allowance of **up to USD 30,000**^(*) for expenses related to travel and living costs during the mobility year (see <https://ptnn.epfl.ch> and <https://bertarelli.hms.harvard.edu/education> for details).

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 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 funds Professorships at the EPFL and HMS, sensory disorder research grants, as well as an EPFL-HMS collaborative education effort in neuroengineering 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.

Procedure – how to apply

The Call is open to 1st year Master students in Life Sciences Engineering, Basic, Engineering and Computer Sciences. An application dossier should consist of: a) 1-2 page Statement of Purpose, outlining motivation and research interests; b) CV; c) transcript of BSc and MSc grades, as available; d) list of labs envisaged to be joined, if awarded a Fellowship (browse possible HMS hosts labs here: <https://www.hms.harvard.edu/dms/neuroscience/fac/ResearchArea.php>).

Applications must be submitted by email to dietrich.reinhard@epfl.ch
in single file pdf format, **by January 31, 2023, midnight**

A limited number of applicants will be interviewed at Campus Biotech (Geneva) in week 6, 2023, by a jury composed of EPFL faculty members; the jury will select Fellowship awardees (up to five) based on dossier and interview. Outcomes will be communicated before February 20, 2023, start of the spring semester.

Important notes and recommendations

- The Program does allow for flexible departure dates, namely in fall or spring; in latter case, graduation is delayed.
- Bertarelli Fellows having joined EPFL at the Master may leave to HMS only after validating 90 ECTS at EPFL.
- Non-SV applicants are advised to discuss potential restrictions with their Section Office prior to submitting.
- Current EPFL Excellence Fellowship guidelines/requirements apply in full: <https://www.epfl.ch/education/master/master-excellence-fellowships/>
- Applicants should *not* contact HMS investigators at this stage; green light to do so will be issued in due course.

^(*) Bertarelli Fellows are required to spend at least ten and up to a twelve months in an HMS host lab. Their stipend of up to USD 30,000 will be calculated *prorata temporis*, based on effective duration of the Fellowship.