

## Postdoctoral Position in Computational Neuroscience

**Job Offer:** A postdoctoral position in computational neuroscience is available to analyze and model the spiking response of olfactory receptor neurons to odorant stimuli. The project is in collaboration with the experimental research group of Philippe Lucas at INRA Versailles (<http://ieesparis.ufr918.upmc.fr/spip.php?article244&lang=en>) and Jürgen Reingruber at Ecole Normale Supérieure in Paris (<http://www.biologie.ens.fr/~reingrub/index.html>).

**Duration:** 2 years.

**Location:** Shared between INRA Center in Versailles and Ecole Normale Supérieure in Paris.

**Project description:** Binding of odorants to their cognate receptors on olfactory receptor neurons (ORNs) initiates a signal transduction cascade that leads to the opening of both cationic and anionic ion channels in the dendritic membrane. The subsequent transduction current entails a sequence of action potentials in the soma. The overall goal of the project is to analyze electrophysiological recordings of action potentials obtained in the lab of Philippe Lucas (from moths and *Drosophila*), and, using a molecular model for the transduction current developed by Jürgen Reingruber, to derive a Hodgkin-Huxley type of model that explains how the stimulus dependent transduction current is transformed into a sequence of action potential firings. Ultimately, this will unravel how an ORN encodes the intensive and temporal properties of odorant stimuli into sequences of action potentials transmitted to subsequent neuronal layers.

**Application and starting date:** INRA provides basic funding for the project. However, to ensure a high quality, INRA additionally requires that candidates successfully apply for an AgreeSkills+ incoming fellowship (<https://www.agreenskills.eu/>), an international postdoctoral fellowship program co-funded by the European Union and coordinated by INRA. During the past years the application success rate was around 36%. With the fellowship the postdoc will be endowed with exceptional financial conditions including monthly gross salaries ranging from 3,500 to 4,800 €. In addition, successful candidates are given a promising chance to apply for a permanent INRA position after the postdoc. The next call for AgreeSkills+ submissions is 28 April 2017. Subsequent starting date is flexible.

**Candidate Profile:** We are looking for a highly motivated post-doc with interest in sensory transduction and computational neuroscience. Applicants should have solid foundations in physics, applied mathematics and computer simulations. A background in neuroscience would be welcome. Furthermore, the candidate should be interested in working in an interdisciplinary environment, analyzing electrophysiological data and interacting with experimentalists. Excellent written, verbal, and interpersonal skills are desired. Speaking French is not mandatory.

Interested candidates should send a cover letter summarizing their expertise and research interests, a CV with publications and 2 recommendation letters to Philippe Lucas ([philippe.lucas@inra.fr](mailto:philippe.lucas@inra.fr)) and Jürgen Reingruber ([reingrub@ens.fr](mailto:reingrub@ens.fr)).