Post-doctorate position in Neuroscience of flavor perception

Flavor perception is the mental representation of the food provided by the taste, smell, and somatosensory senses. The flavor is decisive in food choices, and the interactions between the senses (e.g., odor-induced taste enhancement) complexify our understanding of the mechanisms at play in food formulation and/or involved in certain pathologies like obesity.

Our last findings in sensory evaluation (Aveline et al., 2021) and neurosciences with EEG and fMRI (Bonny et al., 2017; Sinding et al., 2021) help us to understand the mechanisms that underly the interactions between the senses, and how these mechanisms modulate the food representation during the eating process. These questions were investigated in people with obesity because they present modifications of certain brain structures involved in flavor perception (cf. review, Sinding et al., 2022) and we would like to understand how these modifications might modulate odor-induced taste enhancement.

We are starting new studies within the AROMA (ANR funded) project and we wish to investigate further these questions with different possible approaches.

- fMRI of the sweet odor-induced taste enhancement
- EEG on the effect of co-exposure to an unfamiliar odor with a taste, to highlight the construction of the odor-taste interactions

We are open to investigation proposals within the frame of the AROMA project, that is neuroscience of flavor perception with a focus on odor-induced taste enhancement.

The CSGA structure and the FFOPP team

You will be recruited at the Centre des Sciences du Goût et de l'Alimentation, a multidisciplinary unit whose objective is to better understand the physicochemical, biological, and psychological mechanisms underlying sensory perceptions and eating behavior throughout life. The unit is composed of ten research teams and a platform, ChemoSens, whose mission is to develop original methods and tools for the characterization of food and its perception.

Within the Flavor, Food Oral processing and perception team, we study the mechanisms at play during the consumption of food from the oral sphere to the brain, in different populations. Within the AROMA group, we are interested in the brain mechanisms of the flavor network. Our goal is to better understand the perception of flavor in order to increase health while maintaining pleasantness in food. The group is composed of two Ph.D. students, one assistant engineer, and several engineers and MSc2 students. Within the AROMA project, we collaborate with several neuroscience platforms: AgroResonance (INRAE – Clermont Ferrand), Neuraxess (CHU – Besançon), IC3M (UAM – Mexico), the CHU-Dijon and labs: Smell & Taste Clinic (Dresden, Germany) and the University Autonomous Metropolitan of Mexico.

You will receive advice from the whole AROMA collaborators: in neuroscience (Dr. Charlotte Sinding, Dr. Jean-Marie Bonny, Dr. Sylvie Clerjon, Dr. Alexandre Comte, Dr. Damien Gabriel), in sensory evaluation (Dr. Thierry Thomas-Danguin), and in nutrition and endocrinology (Dr. Marie-Claude Brindisi).

Expected skills

- Ph.D. in Neuroscience of chemosensory perception
- Ability to work in a team and to be quickly autonomous on the tasks entrusted
- Good organizational skills, rigor, and sense of responsibility
- EEG or fMRI analysis
- Good writing skills in English

Application

- CV up to date
- Cover letter (please explain, among other things, **your interest and your proposal to investigate the topic**)
- Publication list
- Ph.D. diploma

Supervision and contact

Dr. Charlotte Sinding, Neurosciences of food perception, Centre des Sciences du Goût et de l'Alimentation à Dijon
https://www2.dijon.inrae.fr/csga/
Please send your application to charlotte.sinding@inrae.fr before **31 July 2022**
Feel free to contact charlotte.sinding@inrae.fr for any further inquiries on the position

References:

Aveline, C., Leroy, C., Thomas-Danguin, T., & Sinding, C. (2021). Odour-Induced Taste Enhancement in normal-weight and obese people. In E. Guichard & J. L. le Quéré (Eds.), *Proceedings of the 16th Weurman Flavour Research Symposium*. https://doi.org/10.5281/zenodo.5518084

Bonny, J. M., Sinding, C., & Thomas-Danguin, T. (2017). Functional MRI and sensory perception of food. In *Modern Magnetic Resonance* (pp. 1–20). Springer International Publishing. https://doi.org/10.1007/978-3-319-28275-6_132-1

Sinding, C., Aveline, C., Brindisi, M.-C., & Thomas-Danguin, T. (2022). Flaveur et obésité. *Cahiers de Nutrition et de Diététique*. https://doi.org/10.1016/J.CND.2022.02.001

Sinding, C., Thibault, H., & Thomas-Danguin, T. (2021). Odor-Induced Saltiness Enhancement : Insights Into The Brain Chronometry Of Flavor Perception. *Neuroscience*, *452*, 126–137. https://doi.org/10.1016/j.neuroscience.2020.10.029