



VANDERBILT
School of Medicine Basic Sciences
Department of Pharmacology

2023 - 2024 Seminar Series

“Cracking Codes in Cellular Communication”

Our sense of smell enables us to navigate a vast space of chemically diverse odor molecules. The immense chemical diversity of potential odorants, however, poses a central challenge for the olfactory system of all animals. In humans, approximately 400 odorant G protein-coupled receptors encoded in the human genome enable us to detect and discriminate the vast diversity of potential odorants. The fundamental molecular logic of how odorant receptors recognize such a diverse set of odorants to give rise to our perception of smell has remained mysterious. A central challenge is that we lack a structural framework to connect which odorant receptors are activated by any given odorant. I will describe our efforts to decode fundamental principles of odorant recognition by odorant receptors. Analogous to our deep understanding of the visual sensory system, a central hope for our work is that a foundational understanding of odorant molecular recognition may eventually enable precise prediction of an odor percept from the chemical structure of an odorant.



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4:00 PM

214 Light Hall

Host : Prashant Donthamsetti