University of Colorado **Anschutz Medical Campus**

Chemosensory Research Cluster

Department Research Retreat

Chemosensory Faculty- Cluster Leaders

Sue Kinnamon, PhD

- Role of the proton channel OTOP1 in taste transduction (MPI grant with Emily Liman, USC)
- Role of cell types and transmitters in taste buds (collaborations with Tom Finger and Linda Barlow)
- Role of extraoral taste receptors in the airway (collab with Vijay Ramakrishnan)

Conner Massey, MD

- Co-PI for Restrepo endoscope R21 grant
- AI validation studies in rhinology
- Environmental and occupational exposure in rhinology

Chemosensory Cluster: Taste focus

Tom Finger, PhD

- Neurotransmitters and role of cell types in taste bud (Collaborations with Sue Kinnamon)
- Connectivity of innervation in taste buds
- Taste loss during Covid-19

Linda Barlow, PhD

- Taste bud cells are continually and rapidly renewed, yet the sense of taste maintained throughout the lifespan. What are the mechanisms underlying homeostasis and therefore stable taste function?
- A large variety of cancer therapeutics cause quality of life disturbances. How do specific drugs that target genetic pathways affect taste homeostasis? (Collaboration with Sue Kinnamon)

Chemosensory Cluster: Olfactory Focus

Diego Restrepo, PhD

- Does nasal infection and reactivation of herpes viruses alter the innate immune system of the olfactory epithelium facilitating central nervous system infection thereby accelerating Alzheimer's disease?
- Development of an endoscope employing advanced neurophotonics to identify the olfactory vs. respiratory epithelia and amyloid plaques in Alzheimer's patients (collaborations with Khanwalkar and Massey).

Ash Khanwalkar, MD

- Clinical mentorship for T32 trainees
- Interests in olfaction, co-PI for Restrepo R21 olfactory endoscope grant

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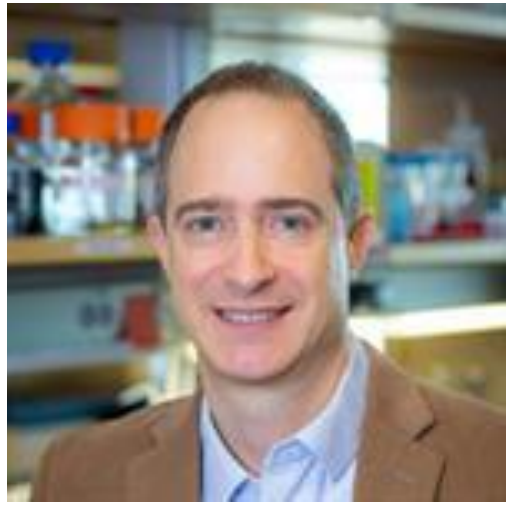
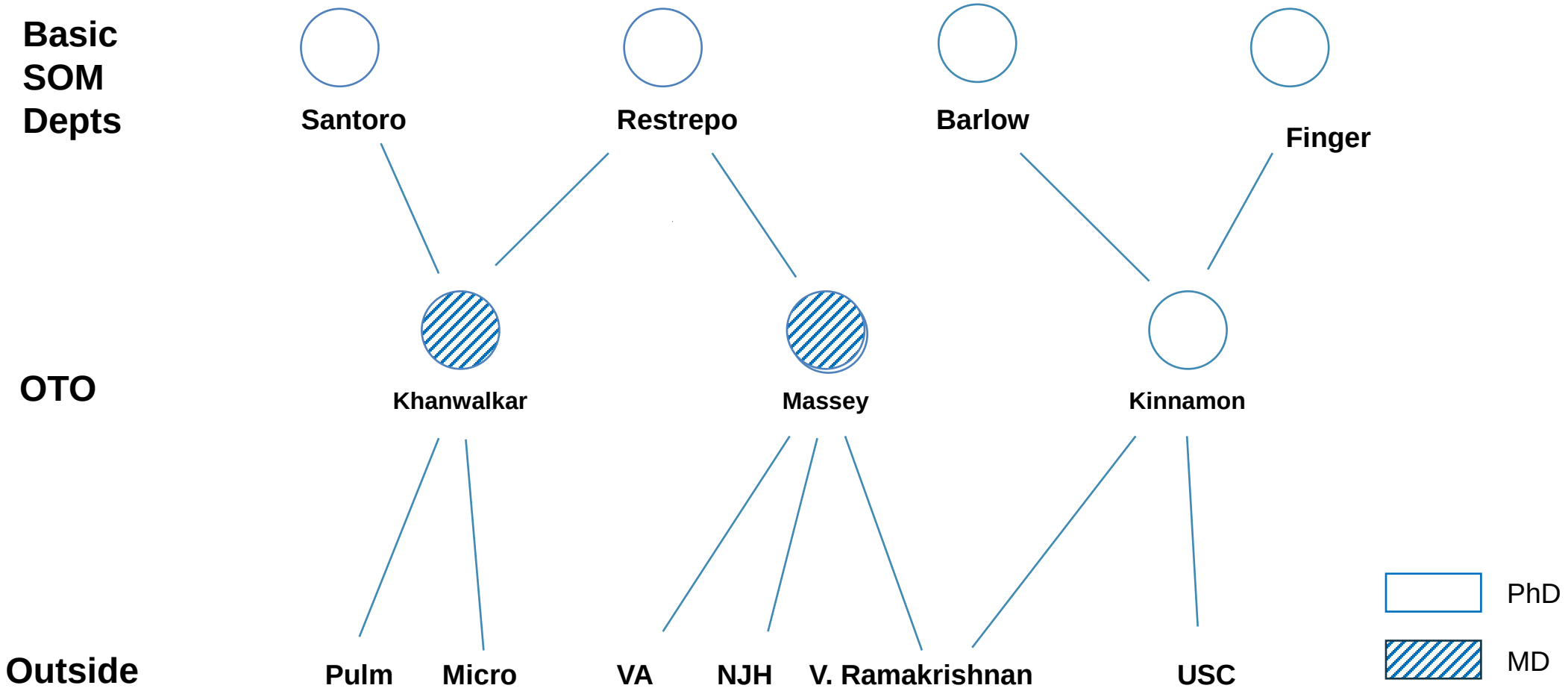
Chemosensory Cluster: Olfactory Focus

Stephen Santoro, PhD

- Does persistent olfactory sensory neurogenesis in mammals perform an adaptive function, in addition to a reparative one?
- What mechanisms govern recovery of the olfactory sensory neuron population following injury?
- How does olfactory experience affect the lifespans of olfactory sensory neurons of distinct subtypes?
- What mechanisms govern the connectivity of olfactory sensory neurons?
- T32 trainee mentorship



Key OTO Faculty Collaborations



Key Collaborators

- Sue Kinnamon
  - Emily Liman- USC (taste transduction mechanisms)
  - Tom Finger (taste cell types and transmitters) and Linda Barlow (cancer inhibitors of taste renewal)
- Tom Finger
  - Covid-19 and taste loss (Goron Hellekant-Sweden and Thomas Hummel- Germany)
- Linda Barlow
  - Peter Dempsey- Peds (intestinal organoids)
  - Eric Larson- Penn (bioinformatics)
- Diego Restrepo
  - Herpes studies: Andrew Bubak (Neurology), Maria Nagel (Neurology), Christy Niemeyer (Neurology)
  - Neurophotonics: Emily Gibson (Bioengineering)
  - Ash Khanwalker- trainee mentorship and tissue samples
- Conner Massey
  - Stephen Humphries (NJH, Radiology/AI)
  - Vijay Ramakrishnan (clinical/research mentor, database studies)
  - Silpa Krefft (Occupational exposure, VA pulmonology)

Cluster Strengths

- Long history of extramural funding
- Predominantly senior faculty
  - 4 professors
  - 1 associate professor
  - 2 assistant professors (clinical faculty)