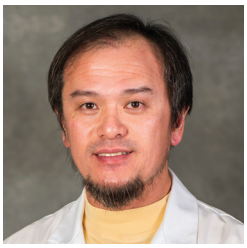
A TASTE OF SCIENCE

Huang receives funds for taste buds research



The American Association of Anatomists named **Anthony Huang, PhD,** assistant professor of anatomy, the winner of its inaugural Fellows Grant Award Program. He will receive $25,000 in grant funding to strengthen his proposal for future NIH submission.

Dr. Huang's research is focused on understanding the complex physiology and anatomy of taste buds. He is exploring the effect of neurotransmitter release on taste receptors to help explain the complex interplay between taste cells and chemosensory neurons.

Aversive taste (bitter) keeps us from eating harmful substances, while the preferred taste (sweet) drives intake of carbohydrates. Understanding the physiology of taste, as one of the five principle senses, is important and will better allow researchers to explore interventions that may alleviate or at least partially support taste sensation in clinical conditions that cause ageusia (loss of taste sensation). The enjoyable sensations of taste are sometimes lost to certain diseases and in chemotherapeutic treatments.

The characterization of local transmitters and their effects in the taste bud may have potential clinical applications, including the development of taste modifiers for use in the management of obesity, compliance in taking medications that taste bad and pharmaceutical development to help diminished taste sensation related to age or disease chemotherapy.

Dr. Huang's latest findings indicate that the antidepressant Prozac and Imiquimod, an immune modulator approved for the treatment of basal cell carcinoma, cause abnormal

transmitter secretion in taste buds. This may be the basis for taste disturbances that have long been observed in people taking these drugs but has never been understood.

Taste perception is altered by conditional changes in the mouth, such as temperature. For instance, the pungency of foods and beverages is influenced by the temperature at which they are consumed, their acidity, and, for beverages, their carbonation. A new focus in Dr. Huang's research involves taste sensation and chemesthesis, which is the general chemical sensitivity of the skin and mucus membranes in the oronasal cavities that is perceived as pungency, irritation or heat. Electrophysiology has revealed that taste perception is enhanced as the temperature of foods and beverages increases.

The mechanisms involved in interactions between chemesthesis and taste sensation have yet to be discovered. Despite the profusion of work identifying mechanisms of chemo-sensation, little information has been generated regarding the irritant–taste interactions.

Could a blood test determine which women are most at risk for breast cancer? Associate professor of internal medicine and Simmons Cancer Institute physician **Krishna Rao, MD, PhD,** is examining the role of a certain protein in breast cancer patients. Dr. Rao has identified a mechanism that promotes the spread and invasion of breast cancer cells. He's examining specimens from healthy volunteers and breast cancer patients undergoing chemotherapy to learn more.

How can a rat brain help neurosurgeons? **Thomas Brozoski, PhD,** research professor in the Division of Otolaryngology, and Boris Odintsov from the University of Illinois in Urbana-Champaign have created a comprehensive, interactive rat brain atlas. The atlas will aid researchers world-wide with a tool to compare specimens and data that can be used for research and medical diagnosis.