

AChemS (Association for Chemoreception Sciences) to Host ISOT (International Symposium on Olfaction and Taste): smell and taste experts to discuss new discoveries

Fostering chemical senses research and understanding smell and taste in health and disease

Contact:

Dr. Charles J. Wysocki, Chairman, Public Information and Affairs Committee; email: wysocki@monell.org. Before July 20th and after July 27th: Phone 1.267.519.4840; FAX 1.215.898.2084; July 20-27, **Hyatt Embarcadero Hotel in San Francisco CA**; Phone 1.415.788.1234

San Francisco - The International Symposium on Smell and Taste will be held at the Hyatt Embarcadero, in San Francisco July 21-26. Over 1,000 scientists will gather to present new information on the role of smell and taste in disease, nutrition and social interactions in humans as well as animals. Smell and taste play essential roles in our daily lives. These chemical senses serve as important warning systems, alerting us to the presence of potentially harmful situations or substances, including gas leaks, smoke, and spoiled food. Flavors and fragrances are also important in determining what foods we eat and the commercial products we use. The pleasures derived from eating are mainly based on the chemical senses. Thousands of Americans experience loss of smell or taste each year resulting from head trauma, sinus disease, normal aging and neurological disorders, such as brain injury, stroke and Alzheimer's disease. By providing a better understanding of the function of chemosensory systems, scientific and biomedical research is leading to improvements in the diagnoses and treatment of smell and taste disorders.

Among those contributing to advancements are members of the Association for Chemoreception Sciences (AChemS; <http://www.achems.org>), which will be holding its 30th annual meeting in conjunction with the XV International Symposium on Olfaction and Taste (ISOT; <http://www.achems.org/i4a/pages/index.cfm?pageid=3493>). During AChemS/ISOT, scientists from around the world are presenting their latest research findings on topics ranging from molecular biology to the clinical diagnosis and treatment of smell and taste disorders.

Additionally, there will be 16 special-subject symposia, lectures and workshops. Throughout the six-day meeting there will be nearly 700 research presentations by scientists from around the world. Selected new discoveries to be presented at the meeting include:

- **Autism: New Clues from the Nose** Fragile X syndrome (FXS), which affects 100,000 Americans, is the most common inherited cause of mental retardation and autism. Autism and many forms of mental retardation are diseases of synapses, the sites where brain cells communicate with each other and the outside world. Fragile X proteins were thought to act only on the postsynaptic, or receiving side of the synapse. In a surprising advance, scientists show that this protein is also found at presynaptic terminals, including those of olfactory sensory neurons. This novel finding opens up new avenues of research into defects in autism and mental retardation, which will benefit from the many tools available for studying the olfactory system. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3670>)
- **Is the rat olfactory system sensitive to the metabolic status?** Smell is sharpened in fasted animals, while fed ones become indifferent to food odors and stop eating. Obese rats do not show the diminished responses to food odors; these rats displayed higher smell acuity than normal. Intriguingly, known markers of metabolic control did not change their gene expression in the olfactory system of obese rats, suggesting a more complex interplay between smell and feeding. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3671>)
- **Insulin helps you to determine how much salt will be added to your next meal** Over 1 in 10 individuals aged 20 and above in the United States have diabetes, a disease in which insulin is not produced in sufficient quantities or the body's tissues have become insensitive to insulin. Untreated diabetes is a profound disorder that results in an imbalance of salt and water in the body that leads to serious complications including vision problems, kidney damage and cardiovascular complications. Since one role of the taste system is in nutrient detection to help correct nutritional imbalance, scientists wanted to determine the effects of insulin on salt taste and how diabetic mice behaviorally respond to salt. The data show that taste cells respond to insulin through an enhancement of salt-induced responses which are mediated primarily through the epithelial sodium

channel, one of the major salt receptors. Moreover, diabetic mice have dramatically altered salt taste consistent with the link between nutritional status and taste function. These data demonstrate a previously unknown link between insulin and peripheral taste function. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3668>)

- **How do we perceive pheromones? The Vomeronasal Organ a sixth sense: fact or fallacy?** The Vomeronasal Organ is the main receptor organ for social chemosignals, so-called pheromones, in most mammals, but, it is not known if the organ serves the same function in humans. Scientists blocked this organ in young women and investigated brain activations when they smelled a key component of male sweat. The results indicate that the organ is not involved in pheromone processing in humans. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3672>)
- **Sniffing out Alzheimer's Disease with an MRI scan of the "smell" brain** To date, the diagnosis of Alzheimer's disease remains a challenge, potentially impeding novel clinical interventions. Using non-invasive imaging techniques scientists have found that Alzheimer's patients have impaired brain responses to different smells. This olfactory bio-assay may enable disease detection, treatment, and perhaps even intervention, before overt symptoms first become apparent. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3673>)
- **Can a breath test replace the blood test at the doctor's office?** A family of nanoscale vapor sensors is capable of detecting human metabolites that are characteristic of infection. These sensors may find application in an electronic "nose" system that could assist in disease diagnosis and therapy selection. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3669>)
- **Intranasal Insulin alters brain chemistry, reduces anxiety, and enhances memory** Intranasal insulin has emerged as an alternative treatment for *Diabetes mellitus*, yet there is little known about its effects on brain chemistry and behavior. Scientists report that an intranasal insulin delivery treatment model similar to that of FDA-approved insulin inhalers alters brain chemistry, reduces anxiety, and improves object memory. (<http://www.achems.org/i4a/pages/Index.cfm?pageID=3667>)

More details can be found in the ISOT Program (<http://www.achems.org/files/public/ISOTPROGRAM.pdf>).