

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

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Message from the ACChemS President

John G. Hildebrand (jgh@neurobio.arizona.edu)

We live in the proverbial "interesting times," confronted by daily reports of economic and political woes and shocking acts of terrorism. The challenges we all face are distracting and sometimes disturbing. We are fortunate, however, to be scientists who love what we do and can participate in the

current, extraordinary flourishing of our fields of science. Indeed, one of the best reasons to develop and support professional societies like AChemS is to generate a shared sense of the accomplishments, excitement, opportunities, and beauty of our common scientific endeavor.

The Association is thriving, and our field never before has been as productive and prominent on the scientific landscape as it is today. Throughout the nearly 25 years since its establishment, AChemS has catalyzed the development of our fields and encouraged the efforts of established investigators, recruits from other fields, and young, developing scientists alike. We owe a great debt to Max Mozell and his fellow founders of the Association for the vision and efforts that gave rise to AChemS; to all of the officers who have led and worked hard for the Association over the past quarter-century; and to our management firm, Panacea Associates, for keeping the organization on track and especially for ensuring that its annual meetings have always been among the best in all of the life sciences.

The Annual Meeting on 9-13 April 2003 will mark the Association's 25th anniversary. We have much to celebrate, and celebrate we will in Sarasota! The Program Committee, led by Program Chair Chuck Derby, is organizing an Annual Meeting that will combine the important elements we look forward to each year with some special events in observation of the Silver Anniversary of AChemS. Don't miss it!

As your Executive Committee looks ahead, beyond this celebratory year, it is addressing questions about the annual-meeting venue and our relationship with Panacea Associates, and also striving for improvements in the services and communications provided by AChemS to its members. Your ideas and help are welcome, as always.

One development since the 2002 Annual Meeting that should be of interest to all members is the new contract with Oxford University Press, signed in August and providing for continuation of our strong relationship with our fields' key journal, *Chemical Senses*. Because the contract allows for adjustments to the cost of subscriptions to *Chemical Senses*, depending on the publishing industry's inflation rate, and because the membership of AChemS voted several years ago to link journal subscription to membership, the Executive Committee has resolved to hold membership dues constant even as subscription fees vary. Therefore the total dues-plus-subscription charge may vary from year to year so that increments to the subscription fee will not have to be subsidized by AChemS funds.

It is my pleasure and a privilege to serve AChemS as its President. With you, I look forward to an exciting 25th-anniversary annual meeting. All good wishes for the remainder of 2002 and for a prosperous, rewarding 2003!

About the Newsletter

John I. Glendinning (jglendinning@barnard.edu)

As you can see, this is a new format for your newsletter. The changes were instituted to make the newsletter more

interesting to read and to enhance communication among society members. I'd appreciate feedback on these changes, or any other aspect of the newsletter.

You are welcome to contribute several different types of essays: profiles of AChemS members, discussions of new research or clinical topics, profiles of laboratories, editorials, and obituaries. You may have other ideas for an article that you or someone else would like to write. If so, contact me via email.

I also welcome advertisements for positions (limited to 150 words), announcements of new books (written or edited by AChemS members), announcements of honors bestowed on society members, announcements of upcoming meetings, and reports on recent meetings.

Word limits depend on the type of article. Please submit all material electronically, preferably as an email attachment. Send queries or submissions to John Glendinning (jglendinning@barnard.edu).

An Advance at the 2003 AChemS Meeting

Charles Derby (cderby@gsu.edu)

The 25th annual meeting of the Association for Chemoreception Sciences (AChemS) will be held at the Hyatt Sarasota Hotel in Sarasota, FL, April 9 – 13, 2003. The program will include presentations of basic and applied research into all aspects of sensory chemoreception. More than 375 volunteer poster and slide presentations will be enhanced by symposia on important and timely topics relevant to chemical senses research. And of course, because this is our 25th Anniversary Meeting, special scientific and social events are planned. The program will include the following:

AChemS 25th Anniversary Events

Symposium: Perspectives on the Chemical Senses

Poster Session: The History of Chemical Senses

Friday Night Reception at the Ringling Museum

The Givaudan- Roure Lecture

Dr. Bert Hoelldobler, University of Wuerzburg:

"Multicomponent Signals in Ant Societies"

Symposia

Presidential Symposium: The Biology and Chemistry of Floral Scent

In Sync: Temporal Coding and Encoding Time in the Olfactory System

Hanging by a Thread: Scaffolds in Signal Transduction Interplay of Fragrance and Emotion

Patterning in Olfactory Systems: How Much is Pre-Specified?

Workshops

NIH Funding Opportunities for New Investigators

Olfactometry

Educational Outreach Event

GWIZ Science Center

Clinical Luncheon

Softball Game

For information about how to submit abstracts, visit the AChemS-XXV meeting web site at: <http://www.achems.org/Conference2003/confindex.htm>

Abstract Submission Deadline

January 6, 2003

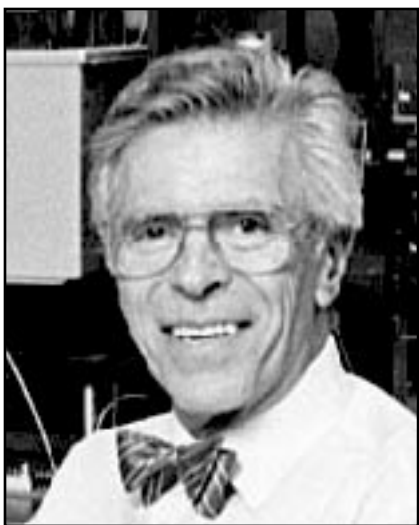
Deadline for Pre-Registration

March 1, 2003

A Scientific Profile of Maxwell M. Mozell

Theresa L White (whitet@mail.upstate.edu)

Maxwell Mozell (Max) was born in Brooklyn just before the stock market crash of 1929. For job security reasons, his family moved to Providence, Rhode Island, where he grew up during the Great Depression and World War II. After high school, Max decided to remain in Providence to continue his education. To say that Max Mozell is an alumnus of Brown University is a considerable understatement. He earned all three of his degrees, A.B., M.Sc., and PhD, in the Psychology Department at Brown. More importantly in hindsight, Carl Pfaffmann, an extraordinary chemosensory scientist who had earlier studied with Lord Adrian, agreed to accept Max as his first student in olfaction and supervised his Master's and Doctoral thesis research on the electrophysiology of the olfactory bulb. In addition to the physical environment, Pfaffmann's lab also contained a number of other chemosensory researchers, including Trygg Engen, Robert Benjamin, and Rosemary Pierell, who no doubt contributed to Max's life-long interest in chemoreception.



Given the time period and the war that the world had just been through, it was natural that Max enlisted as an officer in military service following graduate school. He served four years as an Aviation Experimental Psychologist in the Navy. One of his research projects involved examining the effects of whole body vibration, which was quite a problem in aircraft at the time, by placing people onto a shake-table and into a human centrifuge. The rule that naval scientists must first undergo themselves what they will require of their

experimental subjects led to Max suffering a collapsed lung and a hospital stay. He recovered and the experiment was apparently perfected, since he published a paper on the topic in 1958.

Military service had placed Max in Pensacola for some time, and when he left the Navy, he went back to Florida to pursue Post-Doctoral work at Florida State University in the laboratory of Lloyd Beidler. This work marked a return to the study of olfaction and electrophysiology, which he carried with him into his first academic post. In 1961, Max accepted a position in the Physiology Department at the SUNY Upstate Medical University. He started his work at the same time as another of Pfaffmann's graduate students, Bruce Halpern. Jim Preston, who was the Chair of the Physiology, thought that with Max studying smell and Bruce studying taste, he'd soon have a strong research program in sensory systems. Unfortunately for Preston's departmental plans, Bruce Halpern left for Cornell. Luckily for Upstate, however, Max stayed in the Physiology Department. Perhaps echoing the earlier stability that he demonstrated in staying at Brown, Max has remained at Upstate for more than 40 years and has risen through the ranks from Instructor to his current position as a full Professor and Dean of the College of Graduate Studies. Max has supervised a number of graduate students who remain involved in olfactory research, including Bob O'Connell, Rich Costanzo, David Hornung, Steve Youngentob, Dan Kurtz, and Paul Kent.

The National Institute of Health has supported Max's research throughout his career at Upstate. This includes the continuous funding of the same R01 grant for 41 years (seven years of which was a Javits Neuroscience Investigator Award) and a clinical program project grant from 1983 to 2002. Max has served on numerous NSF and NIH committees, task forces and boards including (1989-1991) the Advisory Board to the then newly established National Institute of Deafness and Other Communication Disorders. Max's list of publications exceeds 75 refereed journal articles, as well as chapters in seminal books such as *Smell and Taste in Health and Disease*. His interests have centered on the physiological factors influencing olfactory perception, including mucosal sorption rates, airflow pathways, and electro-physiology. Much of his work was done in the bullfrog, recording from the nasal epithelium or olfactory bulb. These recordings have led to important advances in the coding of information in the periphery of the olfactory system. Max has also studied the sense of smell in people. His work with patients suffering from chemosensory disorders is well known, and he created a device that would allow laryngectomized patients to smell again. One of his "larger than life" research projects involved making a "super-sized" model of the human olfactory cavity in order to measure airflow patterns. The model, twenty times larger than an adult human nose, was used to make measurements to create numerical computer models that could estimate the flowpath and deposition of odorants entering the nose.

Perhaps Max's most important contribution to academia came in 1978, when he led the foundation of the Association for Chemoreception Sciences (ACheMS). AChemS

continues to provide a forum for interaction between chemosensory scientists in North America and to participate in the international chemosensory community. He reminisced about the events that led to the creation of AChemS in an invited address at the organization's 20th annual meeting and published the details concerning its history in *Chemical Senses* in 1998. He also served as an editor of that journal from 1992 to 1998.

Max has been, and continues to be, a leader in chemosensory research. His professional career of research, teaching, and administration reflects a dedication to the academic ideal. He has been recognized by his colleagues with a number of awards, including the Manheimer Award in Recognition of Career Achievements in the Chemosensory Sciences (from the Monell Chemical Senses Center), the Sense of Smell Award (from the Sense of Smell Institute), the President's Award for Excellence and Leadership in Research (from the Upstate Medical University) and the SUNY Research Foundation Award Honoring Excellence in Research in Science, Engineering and Medicine.

Remembering Pasquale P.C. Graziadei 1921 – 2002

Mike Meredith (mmered@neuro.fsu.edu) & Edward E Morrison (morriee@mail.auburn.edu)

Pasquale Graziadei, a pioneer in olfactory-system research and author of more than 60 research papers and hundreds of abstracts died June 2nd 2002 in Tallahassee FL, USA, where he was Professor Emeritus of Biological Science and Neuroscience at Florida State University. Pasquale Graziadei was a founding member of the Association for Chemoreception Sciences (AChemS) and a well known contributor to symposia and conferences on olfactory anatomy and development through the '70s, 80's and early 90's. A well loved character and valuable collaborator for many within the field, he could be uncompromising, insightful and funny all at the same time. Pasquale's "stories" were always entertaining and perceptive, his criticism constructive and at times pungent, his passing is the end of an era. He retired from Florida State University in 1996.

Pasquale Graziadei was born in Pavia, Italy, in 1921 and studied medicine at University of Pavia, graduating with an MD in 1947. He joined the Department of Anatomy Pavia, the institution of legendary anatomists Antonio Scarpa and Camillo Golgi, as the equivalent of Assistant Professor, and studied with a student of Golgi's. In 1952 he took a position as Associate Professor of Anatomy at the University of Genoa, becoming the equivalent of Full Professor in 1958. He spent summers at the "Stazione Zoologica" at Naples, meeting there J.Z. Young and others of the nascent international neuroscience community. In 1962 he moved to London at the invitation of Young and others to continue his anatomical research at University College. While there, he met Lloyd Beidler who invited him to Florida State University where he did the bulk of his work - and acquired an international reputation as an outstanding research scientist and innovator. In 1982 he was awarded the first IFF-Stanley K Freeman

award (through AChemS) for outstanding contributions to chemoreception research. In the same year he was awarded the Alessandro Volta Award from his alma mater, the University of Pavia. In 1987, he was honored by the "Istituto Neurologico C. Besta" for contributions to scientific discovery and, in that year also, received a prestigious Jacob Javits 7-year research-funding award. In 1993 Pasquale Graziadei was appointed Distinguished Research Professor at Florida State University. He was a regular ad-hoc panelist for many NIH and NSF site visits, a managing editor for *Journal of Applied Histochemistry*, associate editor for *Journal of Neurocytology*, and a contributor to the National Strategic Research Plan that led to the creation of the National Institute of Deafness and other Communication Disorders. Graziadei



was the first to suggest, and then to demonstrate that olfactory receptor neurons were continually generated in vivo and that the population of globose basal cells serves as progenitors for the newly born neurons. He showed that olfactory neuron axons were critical in inducing the formation of their normal target, the olfactory bulb, during normal development. Using embryonic transplants, he showed that these axons could even invade and form synapse-like structures with CNS neurons in a wide range of other brain structures. In these studies Pasquale Graziadei's collaborators included his wife Ariella Monti-Graziadei, who made critical contributions to many studies, in addition to a series of graduate students and postdocs at Florida State University.

Recipients of the 2002 AChemS Awards

Essays and photos assembled by Shachar Eylam (eylam@ufl.edu) & Alan Spector (spector@ufl.edu)

Award for Outstanding Achievement in the Chemical Senses

Dr. John S. Kauer

Department of Neuroscience, Tufts University Medical School

The long-range goal of the work in Dr. John Kauer's laboratory is to characterize the principles by which information is processed and integrated in brain circuits. In a narrower context, their work focuses on elucidating mechanisms that underlie how the olfactory system encodes the chemical and physical properties of odors. To do this, his research group uses techniques that extend from investigations into odorant receptor gene expression in the olfactory epithelium, to electrophysiological and optical recording from individual and ensemble groups of receptor and brain neurons, to behavioral analysis of odorant recognition. Using methods they developed for precisely controlling and monitoring odorant presentation, techniques of extracellular and intracellular recording, and using specialized techniques



for optical recording, most of their studies are carried out in the tiger salamander, an animal model Dr. Kauer introduced in 1970 that has numerous, specific advantages for these experiments. More than 200 research articles on the anatomy and physiology of the salamander olfactory system have been generated by Dr. Kauer's lab and by the labs of others. These studies provide a wealth of directly comparable information that describes many properties of olfactory function in this one species. These data have enabled Dr. Kauer and his colleagues to assemble a strong hypothesis and mathematical model, based on principles of parallel distributed processing, of how the olfactory system may carry out molecular recognition of odorants in both the salamander and other vertebrates. In another line of research, Dr. Kauer, in collaboration with Dr. Joel White, built an 'artificial olfactory system' that uses fluorescent polymers as sensors, and physiological and anatomical principles from their biological studies as processing algorithms. Their system is unique in that it seeks to emulate not just the cross-reactivity of the sensors, but many other biological principles of olfactory function that have emerged directly from their anatomical and physiological experiments. Development of this device serves as both an analytical tool for guiding hypotheses about olfactory function, as well as a system with practical utility for detecting and discriminating volatile molecules in the real

world. Under certain conditions, the sensitivity of the device is slightly better than that of dogs for detecting nitroaromatic compounds, allowing detection of land mines by their vapor phase signatures. Such devices show promise at facilitating the characterization of odors related to process control, medical diagnosis, analytical chemistry, and detection of environmental compounds that include toxins, pollutants, and explosives.

Acknowledgments. No one works in a vacuum; and no one's ideas arise *de novo*. I have had the good fortune to be able to count as co-workers and friends in my lab wonderfully insightful, hard working, and creative colleagues that include: Kathy Hamilton, Angel Cinelli, Marjory Schwartz Levey, Skip Neff, David Wellis, Joel White, Kathy Dorries, Tom Bozza, Jim Marchand, Terry Alkasab, and Man-Ching Cheung. I have also been fortunate to have been able to work with mentors and peers who have shaped how I do science including: David Moulton, Gordon Shepherd, Tom Getchell, Mike Meredith, Charlie Greer, Frank Sharp, Ep Koster, Doron Lancet, Bert Menco, Larry Cohen, Barbara Talamo, and many others. These brief notes of thanks are not to exclude all the other people in AChemS, at Tufts, and elsewhere with whom I have been blessed to be able to interact. These are great times to be doing science and I have been extremely lucky to be able to think about and do experiments with Joel White. If I had my druthers, the person with whom I would spend all my time thinking and learning about things of this world is Barbara Talamo.

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Ajinomoto Award for Research in Gustation

Dr. Nirupa Chaudhari

Department of Physiology/Biophysics, University of Miami School of Medicine

Much progress has been made in the last ten years or so, in understanding the molecular mechanisms that allow taste receptor cells to detect and transduce a variety of taste stimuli. Dr. Nirupa Chaudhari's laboratory has been interested in a distinctive taste quality, termed *umami* (savory), which is imparted by the sodium salts of glutamate and aspartate, and is further enhanced by the presence of the monophosphates of inosine or guanosine. Their initial studies on understanding this taste involved a broad scan for all known ionotropic and G-protein coupled glutamate receptors, and sequences related to them. They employed reverse transcriptase-polymerase chain reaction (RT-PCR) and in situ hybridization to demonstrate the expression of mGluR4, one of the metabotropic glutamate receptors in

a limited number of taste receptor cells. Conditioned taste aversion experiments further demonstrated that to rats, the taste of glutamate is similar to that of L-AP4, a known agonist for mGluR4 and related receptors. The mGluR4 receptor was previously cloned and functionally characterized in the brain. In taste tissue, however, mGluR4 is expressed as a novel variant (taste-mGluR4) in which the extracellular N-terminal glutamate binding site is severely truncated. When expressed in heterologous cells, this truncated receptor responds to glutamate and L-AP4, but only at high concentrations close to the respective taste thresholds measured behaviorally in



rodents. Further evidence for the role of taste-mGluR4 as a candidate taste receptor for glutamate derives from its expression level in taste tissue, which correlates well with animals' sensitivity during development, and modification by dietary perturbations. To further examine signal transduction for umami, Dr. Chaudhari has measured levels of intracellular cAMP. Stimulation of intact taste cells with glutamate leads to a concentration dependent decrease of cAMP, which is further enhanced by nucleotide monophosphates. Dr. Chaudhari and her colleagues are currently using molecular and immunocytochemical methods to examine the adenylyl cyclases in taste cells and the G protein subunits that activate them in order to obtain a more comprehensive picture of the response of taste cells to glutamate and other umami stimuli. They are also using heterologous expression of individual and combinations of G protein coupled receptors to determine which, if any, faithfully replicate the pharmacological profile of umami responses in rodents. Collaborative experiments with other investigators focusing on electrophysiological and behavioral responses in rats serve to place their molecular studies in a firm biological context.

Acknowledgments

I gratefully acknowledge the contributions of many people who helped develop the chemosensory projects in my laboratory: Angela Porter, Mynette Minyard, Cindy Lamp, Xiaoxi Zhou, Hui Yang, Ina Wanner, Ana Marie Landin, Tatjana Abaffy, Li Hua, Kristina Trubey, Shan-Shan Zhan, Schartess Culpepper and Yutaka Maruyama. Thanks are also due to my colleagues and collaborators, Albertino Bigiani, Eugene Delay, Rona Delay, Sue Kinnamon and Steve Roper. None of the work would have been possible without the financial support of the Umami Manufacturers'

Association of Japan and the National Institute of Deafness and Other Communication Disorders (NIDCD/NIH). I am very grateful for the help which I have received from the NIH and its officers.

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Moskowitz Jacobs Award for Research Excellence in the Psychophysics of Taste and Smell

Dr. Rachel Herz

Department of Psychology, Brown Univ.

Dr. Herz uses cognitive-behavioral, psychophysical and neurological techniques to investigate olfactory cognition and perception especially in relation to memory and emotion. Her recent work has incorporated neuroimaging techniques (fMRI) as well. Dr. Herz has shown that odor-evoked memory is distinguished from other memory experiences by its emotional potency. For example, when odor-evoked memories are compared to memories elicited by a range of



different sensory stimuli (e.g., verbal, vision, touch, music) all cues are shown to be equipotent for inducing accurate recall. However, olfactory cues elicit more emotional and evocative memories than any other type of cue. Dr. Herz

has also shown that novel odors experienced in conjunction with salient emotional experiences can acquire the hedonic tone of the emotional experience and thereafter be perceived accordingly. Another major direction of Dr. Herz's research is the study of the influence of context and language on odor-evoked memory and olfactory perception. She has found that odors need to be contextually distinctive in order to be effective retrieval cues and that verbal codes are not necessary. In research on odor perception, her laboratory has shown that verbal labels can induce olfactory illusions in the perception of ambiguous olfactory stimuli. In addition, she has recently found that the connotation of the name of an odor is more influential in driving olfactory perception than the sensory percept itself and that sensory codes are orthogonal to linguistic-connotation codes for odors. In collaboration with other investigators, she is currently testing Alzheimer's and aphasic patients to further examine the role (or lack) of semantic encoding and language in olfactory perception. In a developing line of research, Dr. Herz is examining the relationship between sensory cues, immune genetics and heterosexual attraction. Dr. Herz and her co-workers have found that women are more influenced by a man's body odor than any other physical feature and that the influence of smell exceeds the importance of all social characteristics examined (including money and ambition) except pleasantness. To date Dr. Herz's research in this area has used questionnaire and interview methods, but in future work she plans to incorporate genetic typing and testing.

Acknowledgments. I would like to thank Trygg Engen for his inspirational research and his warmth and support both personal and scholarly throughout my academic career. I would also like to thank The Monell Chemical Senses Center, The Sense of Smell Institute, International Flavors and Fragrances, H & R Florasynth and AromaSys for research support and for believing in a young scientist who came out of nowhere...

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Takasago Award for Research in Olfaction

Drs. Trese Leinders-Zufall & Frank Zufall

Department of Anatomy & Neurobiology, University of Maryland School of Medicine

Dr. Trese Leinders-Zufall's and Dr. Frank Zufall's current and past research has been almost exclusively in the field of molecular sensing using olfaction as a model system, with a particular focus on the molecular signaling mechanisms in the olfactory and vomeronasal (VNO) sensory neurons. One of the primary goals of their current research programs is to gain insight into the signal transduction events leading to odor and pheromone perception in mammals (mice). This goal includes

a detailed understanding of the behavioral consequences of genetic deletions of specific signaling molecules. A key hypothesis is that the mouse nose is organized into at least four different subpopulations of chemosensory neurons, each projecting to different areas of the forebrain, and each serving as somewhat distinct channels for different types of chemosensory information. To gain insight into the biological function of each of these neuronal subpopulations, they have developed methods by which activity in large subsets of mouse main olfactory and VNO sensory neurons can be monitored and spatially mapped with single cell resolution. This approach combines advanced electrophysiological and imaging methods that are performed in both intact olfactory epithelia and epithelial tissue slices and is compatible for use in mice with genetic deletions in specific signaling molecules. The combination of these approaches has enabled them to define a previously unexpected role of a modulatory cyclic nucleotide-gated channel subunit, CNGA4, in accelerating the Ca²⁺-mediated negative feedback in olfactory signaling. Subsequent behavioral testing using CNGA4 knockout mice shows that Ca²⁺ mediated channel desensitization is an essential mechanism for odor adaptation *in vivo*. Evidence has been provided, applying the same overall approach, that VNO sensory neurons employ a second messenger cascade for signal transduction that is distinct from that used by most neurons of the main olfactory epithelium. Mice with a homozygous deficiency of the cation channel TRP2 reveal a striking reduction in the electrophysiological response to pheromones as well as altered sexual and social behaviors. Thus, a detailed understanding of the signal transduction events in olfactory and VNO neurons affords the opportunity to examine the role that these neurons and their signaling cascades play in the detection of specific molecular cues and their involvement in the modulation of complex behavioral responses.



Acknowledgments. We would like to thank our mentors and former and present collaborators Randolph Menzel, Henk Vijverberg, Joep van der Bercken, Hanns Hatt, John Hildebrand, Gordon Shepherd, Stuart Firestein, Charles Greer, Colin Barnstable, Jeffery Kocsis, Milos Novotny, Adam Puche, Michael Shipley, Steven Munger, King-Wai Yau, Randall Reed, and Richard Axel, as well as all present and former members of our labs.

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Don Tucker Award for Outstanding Graduate Student Presentation in 2001

Josef Lazar

Department of Medicinal Chemistry, University of Utah

Why do odorant binding proteins bind odorants?

Lazar, J.,¹ Greenwood, D.,² Prestwich, G.D.,¹ and Rasmussen, L.E.³ ¹Medicinal Chemistry, University of Utah, Salt Lake City, UT; ²Hort Research, Auckland, New Zealand; ³Chemistry, Oregon Graduate Institute, Beaverton, OR.

We have investigated the properties of soluble proteins that interact with Z7-dodecen-1-yl acetate (Z&-12:Ac), the sex pheromone of the Asian elephant. Our previous experiments showed that the pheromone is excreted in the female urine bound to albumin, and released from the albumin upon pH change caused by contact with trunk mucus. We have found an abundant 20 kDa protein in the mucus of the trunk, homologous to known odorant binding proteins (OBPs), that binds the



pheromone. A series of experiments has been carried out to ascertain the roles of the albumin and the OBP in transport and delivery of the pheromone to the receptor cell. Using the volatile odorant binding assay we have determined the dissociation constant of the OBP/pheromone complex. Using several methods, we have been able to estimate the rates of association and dissociation of the OBP and the pheromone. Our results indicate that the binding of the pheromone, as well as of other

odorants, by the OBP is too slow to play a significant role in the delivery of the ligand to the receptor. We also present evidence showing that even lipophilic odorants may travel across the mucus layer to the receptor cell without assistance from a binding protein. Our results suggest that the main function of mammalian OBPs is to sequester excess ligands, rather than to deliver ligands to the receptor. Since Z7-12:Ac is also a common insect pheromone, the relevance of our results to insect systems is discussed. Supported by NIH grant R01 DC03320.

Message from the Membership Chair

Mary Lucero (mary.lucero@m.cc.utah.edu)

As you may recall from last year, the AChemS Membership year now coincides with our fiscal year: both run from July 1 to June 30. This means that your dues for the 2002-2003 Membership year became due as of July 1, 2002. If you have not yet paid your dues, please do so today! Now it's easier than ever to renew your membership - you can even pay by credit card online at www.achems.org through our new secure-server site.

As in the past, your 2003 dues entitle you to a calendar-year subscription to the journal *Chemical Senses*, beginning with the January/February 2003 issue. Remember that Oxford University Press needs time to process applications, and that a delay in your dues payment may result in a delay in receipt of your first issue. We urge you, therefore, to get your dues payments to us as soon as you can!

Any organization like AChemS is only as strong as its membership, and for AChemS to continue to thrive and retain its special presence as one of the world's premier organizations in chemosensory research and education, we not only need to keep membership up, we need to grow. You can help us with this effort. Ask yourself - do you know of any colleagues with an interest in the chemical senses - students, post-docs, faculty, professional staff, etc. - who would benefit from a membership in AChemS? Then, direct them to our website where they will find all the necessary information they need to join online. If they prefer, they can mail an application on the form provided in this newsletter.

In 2003 we will convene AChemS XXV at the recently-renovated Hyatt in Sarasota, Florida. This year the Hyatt will have upgraded the pool area to further enhance the already first rate facilities. Among the many other benefits you enjoy as a member of AChemS, your dues entitle you to a discounted Registration fee for the next annual meeting to be held April 9-13, 2003-remember that the deadline for pre-registration is March 1, 2003. So whether you are an old friend or a newcomer to AChemS, NOW is the time to renew your membership for 2002-2003.

On behalf of all AChemS members, Thank You!

Message from the Treasurer

Debra Ann Fadool (dfadool@bio.fsu.edu)

I thought since I was reaching the half-way point in my office term, I would write a short note to you, the membership, describing the activity of our society budget and resources.

During the past couple of years, we have all seen some changes in our personal lives as far as the economy is concerned, and our society has experienced some of these same changes. I have tried to prepare the society for these changes by planning for future down turns in the market and trying to develop a society reserve in the midst of still being a non-profit organization.

The following are probably the major economic concerns society members have expressed to me and which I would like to provide some explanation to the society at large:

1. Inflation has increased the cost of food and services at the hotel from \$75 per person to \$110 per person. While the executive board members are currently investigating a new site for the AChemS Spring Conference, possibly out of Sarasota, meeting space and not cost savings is the driving issue. We are not likely to get more affordable services than what we are currently being provided, and we simply had no choice but to increase the cost of the conference.

2. Dr. Wayne Silver established an interest earning CAP business account during his time in office that grossed the society nearly \$12,000 per year in interest. Interest rates on our CAP business account began falling well before the 11 September tragedy and continue to remain pitifully low. Rates have fallen from nearly 5.8% to 0.9% for this interest-earning checking account. Although I have re-negotiated for a no fees account due to our non-profit status, and this has been granted, heavy use of our electronic abstract submissions and credit card registration fees comes with unavoidable costs associated with the technology. Thus I have looked into Treasury Bonds and other secure modes of earning higher interest on our account, and have moved approximately \$40,000 into a high interest earning Certificate of Deposit that is joined by an earlier type of investment made by Dr. Cathy Hamilton 5 years ago. Thus we have \$54,610.79 in such a deposit that can be drawn upon as a reserve. In researching such types of reserves established by other scientific societies, such as the Biophysical Society, most societies plan on at least a 60% reserve to buffer poorly attended or completely failed meetings. This appears logical when one considers potential lower attendance at AChemS in tighter NIH budget years, which we have all heard speculation concerning. Our estimated costs of a poorly attended meeting balanced against fixed costs due to Panacea Associates, Oxford Press, Community of Science, and the Hyatt, could be as much as \$158,000. This would be approximately \$62,000 less than our average CAP account balance in any given month. Thus our total reserves (62,000 (CAP) + 54, 610.79 (CD) = 116,610.79) between the two accounts would provide nearly a 74% reserve; setting us in very good standings, even in these uncertain economic times.

3. With the above established reserve, the executive committee and myself felt it was not necessary to increase membership fees at this time. Any increase felt in the membership for their dues, was contributed from Oxford University Press price increases; your membership fee (\$45 faculty/staff membership) was unchanged. Electronic abstracting services are currently running around \$16-18,000 per year for a society membership of our size. An abstract service fee of \$40 per submitted abstract helps to keep up

with this expenditure.

4. We have had the good fortune of having continued and new donations provided from a variety of corporations to fund the general operations of our conference including, IFF, Avon, Nestle, Firmenich, and Givaudan. Through the efforts of our former presidents, Drs. Stuart Firestein and Steve Roper and current president, Dr. John Hildebrand, AChemS has established a good relationship between the academic and industrial sides of research in the Chemical Senses.

5. We have had the opportunity of support of our activities through the National Institutes of Deafness and Communication Disorders at the NIH for the past 5 years. Dr. Barry Ache has graciously volunteered to prepare a resubmission of our R13 meeting grant with a deadline for competitive renewal in early December.

6. Lastly, this year marks the 25th year for the AChemS Society. In light of this wonderful accomplishment, we have elected to make a one time increase in our Scientific Program of \$15,000 to provide attendees with a strong program that will reflect the history and promise of our field in the Chemical Senses.

Minutes from the Executive Committee Meeting—April 24, 2002

Present

Stuart Firestein, John Hildebrand, Debbie Fadool, Alan Spector, Chuck Derby, Tom Christensen, Mary Lucero, Leslie Tolbert, Scott Herness, Steve Roper, Dave Hill, John Scott, Chuck Wysocki, Susan Lampman, Michael Lampman, Pat Meredith. The meeting was called to order at noon by President Stuart Firestein.

Treasurer's Report

The Treasurer's spreadsheet report was submitted to the Executive committee. Treasurer Debi Fadool highlighted the following points. There were two notable points in the INCOME section of the report. One, increases in the Abstract Fee to \$40 helped to prevent a projected deficit of \$6,000. Second, interest rates have dropped and interest income dropped in parallel. When rates stabilize, about \$50 to 100K will be moved to a higher interest bearing account.

In the EXPENSES section of the report, highlights include that the Panacea contract has been continued and ISOT contributions are being made. The Hyatt hotel has increased conference expenses from about \$85 to \$100 per person. There was \$42,000 budgeted last year, but the actual expense was closer to \$52,000. An increase in the conference fee was made to offset these increasing expenses. The Abstracting service cost \$16,900 and \$16,500 was budgeted. The student travel fund was budgeted at \$12,000 though only about \$9,000 was spent. Travel support for minority and clinical fellows falls short of its budget, only about \$2000 to \$4000 was spent. Page charges for Chemical Senses are increasing, leaving our budget about \$3000 short. If a symposium for the 25th Anniversary (2003) is published, it will require additional funds.

Secretary's Report

The Secretary, Linda Barlow, suggested that we reduce the frequency of the newsletter from twice to once a year. This year's newsletter was sent out to the membership in late December 2001. Based on email comments, it is suggested to send out the newsletter a little earlier, perhaps after Thanksgiving. This will mean that information regarding the annual meeting will need to be submitted to Panacea earlier as well.

There was discussion of mechanisms to keep the email address database up to date. It was decided to give the task to the Membership Chair with the help of the junior councilor.

PR Committee Report

Chuck Wysocki, head of the PR Committee, reported that a Press page has been established on the AChemS web site for the purposes of communicating Press Releases to news media and companies. The PR committee sent out embargoed copies of Press Releases one week prior to the meeting to its established contacts. Additionally, the committee contacted the Sarasota Chamber of Commerce to send Press Releases to local contacts. Another press release, prepared by Senior Councilor Leslie Tolbert, regarding the Educational Outreach at GWIZ, was also released. One or two reporters will be attending the AChemS meeting. Registration fees for attending press were waived. Last year a charge was made to the PR committee for a hard copy pamphlet highlighting the society. Estimated charges for this pamphlet are \$3700 to make a copy suitable to send to a printer and \$1400 (1500 copies) to \$3000 (6,000 pieces in 5 colors) printing costs. After discussion, the production of a hardcopy pamphlet was tabled with other avenues, such as CD, to be considered.

President Elect's Report

The AChemS Awards Committee (Vincent Dionne, Marion Frank, Robert Margolskee, John Prescott, and John Hildebrand, Chair, 2001-02) concluded its deliberations with selection of the winners of the 2002 AChemS Award for Outstanding Achievement, Ajinomoto Award, Moskowitz-Jacobs Award, and Takasago Award. The committee additionally secured the renewal of sponsorship for the Anjinomoto, Moskowitz-Jacobs, and Takasago Awards. The 2002-03 Committee should seek renewal of the sponsor's (International Flavors & Fragrances) support for The Stanley K. Freeman Award for Research in Olfaction. In 2003-02, retiring members Margolskee and Prescott will be replaced.

Past President's Report

Steve Roper, past president, was Chair of the Elections Committee, which consisted of members David Hill and Barbara Talamo. The committee made a slate of elections and executed an electronic vote via the AChemS website. Two hundred and five votes were cast, (down from 250 last year but still up from non-electronic voting) which translates to about 1 of 3 members. This voting rate is on par with other groups, like ARVO, Cell Biology, and SFN. Election Results: President Elect, John Scott, Program Chair Elect, Tim McClintock, Secretary John Glendinning, Membership Chair Mary Lucero, and Councilor, Linda Buck.

Councilor's Report

Senior Councilor Leslie Tolbert processed and awarded student travel funds. There were 57 applications for student travel and/or housing. All but two are presenting their work at the meeting. Travel requests totaled \$17,961. Using a system of deductibles, \$9,654 was offered in awards. Ten rooms were offered to 36 students. A total of \$9,330 in travel awards were accepted by students with 23 students housed in 7 rooms. Alan Nighorn, Pat Meredith, and Scott Herness will handle work assignments to awardees that include help with registration, projection, and poster boards.

Twelve volunteers joined organizers Leslie Tolbert, Scott Herness, and Gina Nelson at the G.WIZ Center for the Educational Outreach, held this morning between 9am and noon. Aleksandra Spalvins, from G.WIZ, arranged for 200 elementary school students and 120 honors high school students to participate. Activities included hands on events centered on the chemical senses and impromptu talks from the AChemS volunteers.

Program Chair's Report

Alan Spector, Program Chair, reported that 529 individuals preregistered for the meeting with expectations that total registration will grow to over 600. There were 397 accepted abstracts and 79 requests for slide presentations, of which 43 were possible to assign. An attempt was made in planning the meeting to limit the number of presentations in poster session topics so as to minimize potential schedule conflicts.

The Program Committee consisted of Chuck Derby (Program Chair Elect), John Scott (Past Program Chair), John Boughter, Pamela Dalton, Valerie Duffy, John Glendinning, Scott Herness, Trese Leinders-Zufall, Steve Munger, and Suzanne Sollars. Symposium organizers included Susan Travers, Jim Schwob, John Glendinning, Stuart Firestein, Barry Ache, Sue Kinnamon, and Larry Marks.

Program support from the AChemS NIH grant, donations from corporate sponsors, and the Taste and Smell Program of NIDCD allowed for 11 outside speakers in 6 symposia.

Abstract services this year were provided by COS and worked well. A windows based and Mac-based computer are available at the meeting for PowerPoint presentations.

Since AChemS discontinued the practice of having award winners give talks, a poster was made this year with the awardee's photos, research descriptions, and representative references.

Panacea's Report

Hotel: Our meeting is outgrowing the Hyatt accommodations and Panacea recommends a few members investigate the Tradewinds on St Petersburg beach.

Policy Log: Panacea has created a policy log and descriptions of officer positions, as earlier suggested, helping improve "corporate memory" of our organization.

Dues: The Oxford University Press portion of the membership dues has increase from \$27 to \$30 for electronic and from \$65 to \$71 for hard copy Chemical Senses in

2001. Another increase is expected. These increases subsequently decrease the amount of member income available, which must be supplemented by conference fees.

Corporate Membership: We have one corporate member, Firmenich. The fee for Corporate membership dues is \$2500. This includes listing in front page of program and abstract books and on the website, two complimentary registrations to the conference, two corporate memberships including hard copies of *Chemical Senses*. We should consider how to solicit more corporate members and whether that should be done exclusively by the President and/or others.

Corporate Sponsorship: Sponsorship refers to either sponsorship or an award or a symposium. A corporation sponsoring \$2500 or more for an award will receive two complimentary registrations to the meeting and two subscriptions to *Chemical Senses*. Corporate sponsors are listed in the front page of the program and abstract books and above their symposium session. It is suggested that the Program Chair and Symposia Chairs approach Corporations other than our current Corporate Members so that we don't lose a Corporate Member fee translated into a sponsorship. Panacea will maintain a database of Corporate Members and Sponsors.

Minutes from the Business Meeting—April 26, 2002

ACChemS President Dr. Stuart Firestein called the meeting to order.

Program Report (Alan Spector)

There were 629 paid registrants for the meeting. There were 43 accepted slide presentation of the 79 submitted. The program was organized unconventionally this year with purposeful crossing of typical modality and species boundaries.

Educational Outreach, organized by Leslie Tolbert, Gina Nelson, and Scott Herness, which took place on Wednesday morning, was a reported success. Over 300 students were in attendance.

Thanks were expressed to Paul Attar, who organized the Industrial Reception, and to Gerd Kobal, who organized the Clinical Luncheon.

Six symposia are scheduled for the meeting. The ACChemS NIDCD meeting grant, supplemented with corporate donations, allowed for the presentation of our speakers.

A new abstracting service was employed this year, Community of Science (COS). COS has allowed for minor revisions of abstract prior to publication; however, this is considered the last year for abstract revisions. Revisions are costly, estimated between \$400 to \$1000, as well as an administrative burden. The costs are associated with the generation of a new output file. COS allows for two output files. A third, needed for revisions, is an extra expense. The ACChemS Executive Committee has decided to eliminate revisions for 2003 meeting

unless there is strong opposition from the membership.

Problems with the internet provider for the ACChemS web site, which occurred last December, have been addressed by Michael Lampman. The importance of maintaining valid email addresses in the membership database is stressed. At present, email verification for membership or registration costs paid by credit card on the ACChemS web site is not possible. The present software does not allow this capability and upgrading to one that does will be expensive.

The Program Chair-elect Chuck Derby made announcements regarding 2003 meeting. The usual model of retaining half of the existing program committee to provide continuity will be employed. Dr. Derby welcomed suggestions for next year's program.

Secretary's Report (Scott Herness for Linda Barlow)

Linda Barlow submitted the secretary's report in absentia. Last year it was decided to reduce the frequency of the newsletter from twice to once a year. This year's newsletter was sent out to the membership in late December 2001. Based on email comments, it is suggested to send out the newsletter a little earlier, perhaps after Thanksgiving. This will mean that information regarding the annual meeting will need to be submitted to Panacea earlier as well. Additionally, Linda reported the arrival of her daughter, Cordelia Irene Barlow-Kelley, born 6 lbs 2 ounces on Feb. 9, 2002. Linda looks forward to introducing Cordelia to the membership in 2003.

John Glendinning, Secretary-elect, commented that the newsletter ought to give more communication and suggested having two newsletters, one for the business of the annual meeting and the other for communication among the membership. It was decided to poll the membership for input on the newsletter.

Membership Report (Tom Christensen)

The membership of ACChemS continues to grow. At present, there are 530 regular, 142 student, and 10 emeritus members totaling 682 paid members from 23 countries. This represents an increase of about 50 members from this time last year. However, if all had paid current dues, there would be about 900 members. At present the date to renew membership is January 15th or subscription to *Chemical Senses* will lapse. It was stressed that members should ensure that their contact information, which can be found on the web site, is correct.

Treasurer Report (Debbie Fadoo)

The treasurer provided a spreadsheet report of the income and expenses of the ACChemS budget and highlighted the following points in her report.

Corporate donations were \$17,000 last year and this year about 16,000, comparable to last year. Considering the economic downturn ACChemS is fortunate that corporations continue to provide the same level of support. The Abstract fee has increased to \$40 from \$25, primarily since the COS Abstracting service is about \$17k and last year only \$9,000 was budgeted. The NIH Grant provides about \$30,000 per year to provide for expenses such as minority travel, page charges, and symposiums. Interest was last year about \$14,000 in our

interest bearing checking account, but since the interest rates are declining, when rates flatten, it is planned to transfer \$50,000 to \$100,000 into a higher interest yielding account. About \$200,000 needs to be maintained in the month-to-month account for crisis insurance. The account currently carries about \$280,000.

On the EXPENSES side, some salient expenses include the Panacea contract, contributing to ISOT on three year cycle, and the increased hotel food cost from \$85 to 110 per head. This produced about a \$10,000 short age on hotel costs, precipitating the increase in conference fees.

Approximately \$12,000 was budgeted for student travels with only about \$9,000 spent. Additionally, extra funds for minority and clinical fellow travel are also available. The page charges for Chemical Senses, are increasing and additionally funds will need to be budgeted for the 25th anniversary meeting (2003) if additional pages for special symposium proceedings are to be published. As present AChemS receives 100 free pages for abstracts and 25 pages for symposium.

Election committee report (Steve Roper)

THE ELECTION COMMITTEE CONSISTED OF DRS. BARBARA TALAMO, DAVID HILL, AND STEVE ROPER, CHAIR. THE COMMITTEE SOLICITED AND CONSIDERED NOMINATIONS, PREPARED THE ELECTION SLATE, AND MONITORED THE ELECTION PROCESS. ABOUT 1 OF 3 ACHEMS MEMBERS CAST VOTES, A VOTING RECORD ON PAR WITH OTHER SCIENTIFIC ORGANIZATIONS. THE RESULTS OF THE ELECTIONS WERE President Elect John Scott, Program Chair Elect, Tim McClintock, Secretary John Glendinning, Membership Chair Mary Lucero, and Councilor, Linda Buck.

Miscellaneous Items

ECRO president, Gerd Kobal, announced the upcoming ECRO meeting, July 23 -27, 2002 to be held in Erlangen, GERMANY. A preliminary program including a plenary lecture, oral sessions, demonstration courses, and three satellite symposiums was presented. Further information is available on the web site, www.ecro.de.

The upcoming GORDON CONFERENCE on the Chemical Senses was announced by Susan Travers. The conference will be held July 6–11, 2003 at a new venue, Colby Sawyer in New Hampshire. The change of venue is due to construction at the Salve Regina site. As the NIH grant for the Gordon Conference is due in November, Dr. Travers urged interested individuals to submit ideas to her.

Plans for the AChemS membership to grow to 1000, for recognition of our society among other scientific organizations will likely require losing the venue at the Sarasota Hyatt. Next year it is planned to have more rooms available at the beach with the Hyatt providing an hourly shuttle service. A new venue on beach in St. Petersburg, the Tradewinds, with three main hotels and 600 rooms, will be investigated.

Dr. Jim Battey, Director of the NIDCD, presented a report of ongoing NIDCD research activities and granting appropriations.

The possibility of removing the AChemS membership

requirement of two years in field of the chemical senses was discussed as a means to increasing our membership.

The gavel was officially passed to from outgoing President Stuart Firestein to incoming AChemS President John Hildebrand. Dr. Hildebrand adjourned the Business meeting.

Results of the Annual Softball Game

Once again, the tongues licked the noses clean. It is unclear why the taste folks continue to be so dominant on the baseball field. It has been suggested that some of the Pls on the taste team are recruiting postdocs with extraordinary baseball abilities, but this has yet to be confirmed. We expect great things of the olfactory folks next year.....

Don't forget to bring your baseball glove for the rematch!

Training Programs in the Chemical Senses

As a service to students interested in pursuing a career in the chemical senses, AChemS provides a list of Chemical Senses Training Programs on its website. This list may be found at:

<http://achems.org/training.htm>

If you would like to see your program listed in this Directory, please obtain a downloadable copy of the *Application Form* also located at this site. Completed forms may be emailed or faxed to:

Scott Herness, Ph.D.

ACChemS Councilor
College of Dentistry, The Ohio State University
305 West 12th Avenue, Columbus, OH 43210
FAX: 614 247-6945
herness.1@osu.edu

Job postings and Meeting Announcements

Upcoming Meetings of Interest

Gordon Conference: Chemical Senses, Taste & Smell
"Perspectives in Chemosensory Systems Research"
July 6-11, 2003, Colby-Sawyer College, New London, New Hampshire

Keynote Speaker: Dr. Semir Zeki

Sessions:
Influence of neurotrophins on developing and adult sensory systems
Development of glomerular specification

Processing and modulation at multiple levels of the taste system
Processing at the first synaptic station in olfaction
Questions arising from molecular findings in transduction:
Amino acid taste
Correlating physiology and psychophysics: Insights into neural coding
Principles of gustatory & olfactory coding in the cortex
Network and molecular substrates of chemosensory learning

Co-chairs: Susan Travers (travers.3@osu.edu) & John Scott (johns@cellbio.emory.edu)

Co-vice chairs: Linda Buck & Stephen Roper



Invertebrate olfaction, gustation and neuropharmacology

The Society for Experimental Biology is holding its Annual General Meeting at the University of Southampton, England next year (March 29th - April 4th 2003). Under the auspices of the Society we are hosting five symposia on invertebrate olfaction, gustation and neuropharmacology. The programme will cover a range of molecular, physiological, pharmacological and behavioural advances in these fields and will have relevance to a wide range of biologists. Plenary speakers will include Randolph Menzel (Berlin, Germany), John Hildebrand (Arizona, U.S.A.), Jelle Atema (Boston, U.S.A.) and John Pickett (Rothamsted, U.K.). The meeting will include 5 symposia on olfactory and gustatory processing, modulation of olfaction, gustation and feeding, insect-plant interactions, animal-animal interactions, and invertebrate neuropharmacology. Contributions are welcome towards poster sessions related to these symposia and also to a general neurobiology poster session. Postgraduate students who are members of the SEB may qualify for grants from the Society to attend the meeting. Abstracts will be published in the journal of Comparative Biochemistry and Physiology. Enquiries can be directed to Phil Newland (pln@soton.ac.uk), Guy Poppy (gmp@soton.ac.uk) or Lindy Holden-Dye (L.M.Holden-Dye@soton.ac.uk). Registration and submission of abstracts can be made through the Society website <http://www.sebiology.org>

Postdoctoral Positions

Neuroscience (gustation)

Postdoctoral position available to study the neural processing of "bitter" tasting stimuli by the brainstem. A multidisciplinary approach, using anatomical tracing, functional mapping with fos, immunohistochemistry, in situ hybridization, neuropharmacological manipulations, and electrophysiology is being used to determine the pathways, neurotransmitters, and coding mechanisms for this behaviorally potent group of compounds. Experience in electrophysiology, in situ hybridization, or immunohistochemistry is preferred. The position is available for at least five years, with salary commensurate with experience. The Ohio State University has a large, dynamic neuroscience community including several interactive chemical senses laboratories. Columbus, Ohio is a pleasant, small midwestern city with many amenities. Send inquiries, along with vitae and statement of interests to Dr. Susan Travers at Travers.3@osu.edu

Behavioral Neuroscience (gustation)

A position for a postdoctoral associate/visiting assistant in the Department of Psychology at the University of Florida is available. The individual will participate in an NIH-funded project aimed at assessing the functional consequences of nerve regeneration and cross-regeneration in the rodent gustatory system through the use of state-of-the-art animal psychophysical procedures. The position should provide a unique opportunity to gain experience in the most recent advances in behavioral methodologies used to assess sensory function and should appeal to neuroscientists interested in the behavioral manifestation of neuroplasticity. Funding is available for up to 4 years. The University of Florida has a very active neuroscience community as well as a Center for Smell and Taste, and is situated in a very pleasant location. If interested, send a curriculum vitae along with the names and addresses of 3 references to: Dr. Alan C. Spector, Department of Psychology, PO Box 112250, University of Florida, Gainesville, FL, 32611. For more information call 352-392-0601 x288, or email: spector@ufl.edu. The University of Florida is an EOE/AA employer.

Neuroscience (olfaction)

A post-doctoral research position is available in neurophysiological studies of the olfactory bulb. The laboratory works with rodent olfactory system using extracellular (multielectrode array) and intracellular recording techniques. This NIH-funded project focuses on the question of how particular cell types in the bulb participate in temporal and spatial coding in the olfactory system. The laboratory has just completed a move into a new research building on the Emory University campus in Atlanta. For further information contact John Scott at johns@cellbio.emory.edu. <http://bucky.cellbio.emory.edu/Cellbio/>. Emory University is an equal opportunity/affirmative action employer.

Neuroscience (gustation)

The Brandeis Behavioral Neuroscience Laboratory is looking for people interested in studying the neural/behavioral dynamics of rat gustation. Work in the Behavioral Neuroscience Lab will focus on the testing of hypotheses concerning information flow through the neural gustatory system, and on how such activity may be related to perception. Techniques used include chronic multiple electrode recordings from rats that are sampling and learning (taste aversion and operant discrimination conditioning) about tastants, as well as site-specific pharmacology and multivariate analysis. Candidates should bring knowledge of classical and operant conditioning procedures. A reasonable comfort level with statistics, math, surgery and electrophysiology would be useful, but all necessary skills can be learned. The Brandeis environment is unique for its convergence of world-class psychologists, biologists, and physicists, studying human perception and memory, synaptic mechanisms of plasticity, network function, and theoretical neuroscience. Point your browser to <http://www.bio.brandeis.edu/volen/> to learn more about the opportunities there. Contact: Don Katz dbkatz@brandeis.edu 781-736-3268 (office); 781-736-3221 (lab)

Training Program in Chemosensory Neuroscience

The NIDCD-funded Training Program in Chemosensory Neuroscience at the University of Maryland School of Medicine invites applicants for postdoctoral positions. Training faculty have expertise in contemporary molecular approaches, tissue culture, immunocytochemistry, in situ hybridization, quantitative anatomical and functional imaging, electron microscopy, intracellular, patch-clamp and extracellular electrophysiology in both in vivo and in vitro preparations, neuropharmacology, and behavioral methods. Postdoctoral fellows can work with one or more chemosensory investigators. Additional faculty associated with the training program provide a broad range of expertise in molecular and cell biology, cell/organotypic culture, imaging, and neural development. Successful applicants must have a Ph.D. or M.D. in a related biological discipline. Preference is given to candidates who bring new approaches to research in the chemical senses. Applicants must be U.S. citizens or resident aliens. Interested individuals should contact one of the mentors above or Frank L. Margolis Ph.D., Chemosensory Training Program Director, Department of Anatomy and Neurobiology, HSF280, University of Maryland School of Medicine, 685 West Baltimore Street, Baltimore MD 21201, fmargoli@umaryland.edu. <http://neurobiology.umaryland.edu/postdoc.htm>.

Neuroscience (olfaction)

Target ablation induces retrograde degeneration of olfactory receptor neurons leading to their synchronous apoptotic cell death, the recruitment of macrophages, and the proliferation of neural progenitor cells followed by neurogenesis and functional regeneration of the sensory epithelium. The members of our laboratory discovered that the chemokines macrophage inflammatory protein-1 (MIP-1) and monocyte

chemoattractant protein-1 (MCP-1) regulate the recruitment of activated macrophages into the degenerating epithelium (Getchell et al., 2002, *J. Neurosci. Res.*, in press), and that leukemia inhibitory factor (LIF), a macrophage-derived bioactive cytokine, transforms quiescent progenitor cells into mitotically active neuronal precursors through the transient upregulation of the LIF receptor (Nan et al., 2001, *J. Comp Neurol.* 435:60-77; Getchell et al., 2002, *J. Neurosci. Res.* 67:246-254). We have initiated gene discovery experiments using macroarray technology for targeted gene pathway analysis and Affymetrix GeneChip microarray technology for gene expression profiling. Molecular, cellular, and statistical validation methodologies are used to verify the participation of selected genes in the intercellular signaling mechanisms regulating apoptotic cell death, macrophage recruitment, and progenitor cell proliferation and neurogenesis. Intellectually challenging, NIH-supported postdoctoral positions are available. Send your CV to Prof. Tom Getchell, Department of Physiology, 309 Sanders-Brown Center on Aging, University of Kentucky 40536-0230 or e-mail: tgetche@uky.edu

POSTDOC: Chemosensory Neuroscience: Study Medial Amygdala mechanisms that categorize conspecific and heterospecific chemo-sensory input from **VNO** and olfactory system. Experience with **in-vivo electrophysiology** (acute and/or chronic) and **immuno-cytochemistry** essential; Knowledge of brain slice electro-physiology desirable for future projects; Lab management skills helpful. Send CV, names of three references to mmered@neuro.fsu.edu or: Michael Meredith, Program in Neuroscience (4340), Florida State University, Tallahassee FL 32306. Website www.neuro.fsu.edu/faculty/meredith/homepage.htm

Faculty Positions

Behavioral Neuroscience

The Department of Psychology at the University of Florida invites applications for a full-time tenure-accruing faculty position in behavioral neuroscience, rank open. Applicants who have expertise in behavioral testing of chemosensory function are especially encouraged to apply. The position is part of an exciting joint initiative between the Department of Psychology, the University of Florida Center for Smell and Taste, and the McKnight Brain Institute to develop a focus of excellence in sensory testing of animal models. Applicants will be expected to establish an independent program of extramurally funded research, supervise and mentor graduate students, and participate in graduate and undergraduate teaching. The successful applicant will join the active, diverse neuroscience community on campus. Application deadline is December 6, 2002. Please include a statement of research and teaching interests, curriculum vitae, up to 5 reprints, and 3 letters of recommendation. Send materials to: Dr. Alan C. Spector, Behavioral Neuroscience Search Committee Chair, Department of Psychology, 114 Psychology Building, Gainesville, FL, 32611-2250. The University of Florida is an EOE/AA employer. For more information see <http://www.psych.ufl.edu/>.

Cellular/Molecular Biology of Excitable Cells

Applications are invited for a tenure-track position in the Department of Biology in the broad area of Cellular/

Molecular Biology of Excitable Cells, to augment the research in the department in this area. Successful candidates will have experience with molecular or cellular techniques, research interests in excitable cells, and teaching interests in physiology and development. Candidates taking a multi-disciplinary approach and who exploit modern technologies to investigate molecular mechanisms of biological function will be strongly considered. All applicants are expected to 1) hold a Ph.D. degree and have two or more years of postdoctoral experience; 2) develop a competitively funded program; and 3) teach undergraduate and graduate level courses. Applicants should forward a current curriculum vitae and brief descriptions of their research AND teaching interests, and should solicit three letters of reference to be sent to: Dr. Judith Van Houten, Chair, Department of Biology, University of Vermont, 120A Marsh Life Science Building, Burlington, VT 05405-0086. Review of applicants will begin on Nov. 1, 2002. We especially encourage women, disabled and minority candidates to apply. The University of Vermont is an affirmative action/equal opportunity employer.

Neuroscience

The Department of Anatomy & Neurobiology at the University of Tennessee Health Science Center is seeking qualified applicants to fill **three** tenure-track positions at the ASSISTANT, ASSOCIATE or FULL PROFESSOR level. Candidates must have a Ph.D., M.D., or equivalent, relevant postdoctoral experience and an active research program in neuroscience with a high potential for external funding. Preference will be given to candidates whose research most closely fits with the existing strengths of the Department in systems neuroscience, developmental neurobiology and neurogenetics. Faculty members participate in the teaching of professional students and in graduate courses in their areas of expertise. Rank and salary will be commensurate with qualifications. The Department is the center of a well-established, multidisciplinary neuroscience program with a highly interactive, productive group of neuroscientists. Please submit a CV, a brief statement of research and teaching experience, and names of three references to: Chair, Faculty Search Committee, Dept. Anatomy & Neurobiology, Univ. Tennessee Health Science Ctr., 855 Monroe Ave., Suite 515, Memphis, TN 38163. Review of application will begin in November 2002 and continue until the positions are filled. The University of Tennessee is an EEO/AA/Title VI/Title IX, Section 504/ADA/ADEA Employer. email: dvsmith@utmem.edu http://an.utmem.edu/main/faculty/Smith_cv.html

Insect Neurobiology

The Arizona Research Laboratories - Division of Neurobiology, an interdisciplinary research and teaching unit in the University of Arizona devoted to behavioral, cellular, developmental, molecular, and systems neurobiology using insects as experimental models, invites applications for a tenure-track Assistant Professorship. See Website: <http://www.neurobio.arizona.edu/arldn/>. We expect to fill this position in 2003. While all areas of insect neurobiology are open to consideration, the fields of neuroethology, neurochemistry, neuropharmacology, and systems neurophysiology -- and particularly molecular and genetic

studies of neural function in *Drosophila* -- have priority in this search. The successful candidate will be expected to conduct independent, externally funded, and productive research; teach undergraduate and graduate classes; supervise research trainees; and provide service to the Division and the University. Candidates must have a Ph.D. or equivalent degree, postdoctoral experience demonstrating commitment to and success in research, and teaching experience. Review of applications will begin on 15 October 2002 and continue until the position is filled. Send c.v., list of publications, reprints of key papers, and a statement of research and teaching accomplishments and future plans, and arrange for at least 3 letters of recommendation to be sent, to: Faculty Search Committee, ARL Division of Neurobiology, University of Arizona, PO Box 210077, Tucson AZ 85721-0077, USA (email: search@neurobio.arizona.edu). The University of Arizona is an EEO/AA employer M/W/D/V.

Neuroscience

The Department of Psychology at the Florida State University seeks to fill both a tenure-track ASSISTANT PROFESSOR position **and** a tenured ASSOCIATE or FULL PROFESSOR position in neuroscience. Applicants in all areas of neuroscience are encouraged to apply. Preference will be given to candidates with expertise that amplifies or complements our existing strengths in development and neuroplasticity, hormones and behavior, and sensory and regulatory processes. Candidates are expected to lead a cutting edge research program and demonstrate a commitment to teaching. Send curriculum vitae, a statement of research and teaching interests, and the names of three references to: Neuroscience Search Committee, Department of Psychology, Florida State University, Tallahassee, FL 32306-1270. Review of applications will begin on 15 November 2002. For information on the Program, see: <http://www.neuro.fsu.edu>. Florida State University is an Equal Opportunity/Affirmative Action employer, committed to diversity in hiring, and a Public Records Agency.

Neurobiology (Research-Track Faculty and Postdoctoral)

A position is available immediately for cellular and/or molecular neurophysiologists to study pheromone transduction and chemosensory processing in mammalian olfactory and vomeronasal system (see *Nature* 405: 792, 2000; *Science* 294:2172, 2001; *PNAS* 99:6376, 2002; *Nature* 419:70, 2002). Preference will be given to applicants interested in the function of second messenger-regulated cation channels (TRP channels) or in the identification of novel ligands for G-protein coupled receptors. Applicants with electrophysiological experience are preferred; expertise in confocal microscopy, calcium imaging and/or molecular biological techniques would be a great asset. Applicants must have a Ph.D. or M.D. Highly competitive salary/fringe benefits. Opportunity to interact with neuroscientists in the Neuroscience Program (<http://neuroscience.umaryland.edu/>). Send CV and names of 3 references to: Dr. Frank Zufall, Dept. Anatomy & Neurobiology, University of Maryland School of Medicine, 685 W. Baltimore St., Baltimore, MD 21201. E-mail: fzufa001@umaryland.edu. U. Maryland is an AA/EEO/ADA employer.

BREAKDOWN OF EXPENDITURES for 2002			
TOTAL EXPENSES			\$213,408.08
Membership expenses			\$45,024.11
President	Communications, NS & AChemS lunch, Awards, Office Supplies	\$1,000	\$1,113.03
President Elect	Awards plaques, Office Supplies	\$550	\$648.72
Past President		\$50	\$0
Secretary		\$50	\$0
Membership		\$50	\$0
Treasurer	Charge Card Fees, Communications, Office Supplies, Accountant, Misc. Bank Fees	\$5,850	\$6,388.54
Public Relations	Communications, Office Supplies	\$200	\$299.00
P.A. Membership Office Expense	Fall Newsletter Print and Mail, Spring Newsletter Electronic Mail, New Member Postage, Office Supplies, Communications, Dues Notice, Computer Backup Tape	\$7,300	\$4,574.82
P.A. Travel to Winter AChemS Meeting		\$2,000	\$0
AChemS support of ECRO travel		\$2,000	\$2,000
AChemS contribution to ISOT		\$4,000	\$1,500
Conference expenses Total			\$170,383.97
1/2 P.A. Management fee		\$29,000	\$28,500
P.A. Expenses	Printing & Mailing Program & Abstract, Postage Supplies, Poster Board Transport, Rentals, Registration & on-site helpers, Photographers, Conference Computer	\$14,400	\$11,534.90
Hotel Bill	Food \$85.00 x 615, Audio-Visual, Hotel Gratuity, Food Minority Lunch, Food, Educational Outreach, Food and AV for Clinical and Industrial Functions	\$74,200	\$65,253.48
P.A. Travel and on-site hotel		\$2,250	\$1,988.00
Program Chair	Office expenses, Conference fees for Government guests, Special Programs Allocation, Symposium funds from NIH grant, Note this includes travel, hotel, per diem (\$21/day), and registration fee (\$110), Scholar One Abstracting Service	\$27,150	\$34,633.84
Councilors	Student Travel Awards (10,000 + committee expenses (\$100))	\$12,100	\$9,970.74
AChemS Achievement Award		\$1,000	\$1,000.00
Tucker Award		\$500	\$500.00
Minority Student/Clinical Fellow Organizer	Office supplies/Communications, Science Ad, Minority Student Travel, Clinical Fellow Travel- includes travel, hotel, per diem (\$21/day), and registration fee (\$110: regular, \$75: student)	\$12,169	\$7,478.01
Page Charges/Chemical Senses	Oxford University Press (OUP)	\$4,680	\$7,525

AChemS Budget					
BUDGET PLANNING for 2002-2003					
2001-2002 Actual Income			2002-2003 Estimated Income		
Membership			Membership		
Regular	566 x \$45	\$25,470	Regular	545 x \$45	\$24,525
Student	152 x \$25	\$3,800	Student	120 x \$25	\$3,000
Corporate		\$2,500	Corporate		\$2,500
<i>Total Membership</i>		\$31,770	<i>Total Estimated Membership</i>		\$30,025
Conference			Conference		
All fees		\$122,375.00	All fees		\$122,500
Corporate Donations		\$15,959.00	Corporate Donations		\$10,000
<i>Total Conference</i>		\$128,334.00	<i>Total Estimated Conference</i>		\$132,500
Abstract fee		\$14,400.00	Abstract Fee	375 x \$40	\$15,000
Grant		\$26,228.73	Grant		\$44,597.00
Interest		\$7,534.91	Interest		\$5,500
Total of all Funds 2001		\$218,267.64	Total of all Funds (estimated from 2002)		\$227,622

Note: Money received from Chemical Senses subscriptions is not included since it will be sent to OUP in December