

AChemS
Association for Chemoreception Sciences

ANNUAL

Newsletter

2010

FOSTERING CHEMICAL SENSES RESEARCH AND UNDERSTANDING SMELL AND TASTE IN HEALTH AND DISEASE

MESSAGE FROM THE PRESIDENT

Scott Herness, PhD, *President 2009-2010*



Thirty-two may seem a rather late age to be moving away from home, but it's not so uncommon, I think, in today's world. I know my twenty-eight year old nephew still lives at home, as do many of his friends. It seems these days that leaving the nest at a later age isn't remarkable, and, if that's true, then AChemS is by all standards contemporary. That's nice to know but harder to fathom. AChemS, once just a glimmer in the eye of handful of

scientists, is now a 32 year old organization—our “young” society is now older than many of its members. And we are leaving home. After a seemingly decades-long discussion, we are moving from Sarasota, with whom we grew up side-by-side, just up the road to St. Pete Beach. We've stretched our wings and we're out in the world.

Many of us, myself included, witnessed firsthand our society's development and evolution from its modest inception in a meeting room of the Hyatt which no longer exists. For fun, I looked at the program book from that meeting, held in 1979, typed on an IBM Selectric and likely hand reproduced on a generation-one Xerox copy machine. What a change to AChemS XXXII with free wireless internet in our hotel rooms. It didn't seem so primitive then. I never considered carrying a dozen 2 by 2 slides in my pocket or a packet of colored posterboard in my suitcase antiquarian. But what if change hadn't happened? Can you imagine still hand typing abstracts into those square boxes? Wondering if the “y” of “gustatory” would fit before you hit the border? Remind yourself of that the next time your WORD character count exceeds the 1830 maximum by 3 characters (with spaces). And too, remind yourself of that when our first glitch at the Tradewinds occurs, whatever that may be. St. Pete Beach was as inevitable to our society as memory sticks and PowerPoint were to our presentations.

Yet if outgrowing our old home is a sign of optimism, AChemS is still constrained to operate within the pragmatic confines of the real world. Not unlike a small business (or even a household with small children), our society faces the challenges of the current financial climate. We too have felt the upshot of the market's decline. For the first time, AChemS is running on back-to-back annual budget deficits. On the one hand that's amazing, given our long history of financial prudence, yet on the other it's an old story: Expenses are up and revenues down. Artful whittling by our Finance Committee has reduced the bad number, though a bad number it remains. Fortunately, our society has been practical. AChemS has a long history of being fiscally conservative, of having more in the bank than is typically required for a meeting washed out by a Katrina or consumed by a legendary Floridian sinkhole. Still, rising hotel fees and dwindling interest returns on our investments have caught up with us. Revenue from CDs is down. Revenue from membership fees is down. And questioning the latter, through our membership survey, obtained the predicted results. Reduced lab funding has reduced renewals.

AChemS, once just a glimmer in the eye of handful of scientists, is now a 32 year old organization—our “young” society is now older than many of its members.

So we've economized. For the first time, our mid-year Executive Committee meeting was held by conference call, saving the usual expense of rented facilities at Society for Neuroscience meeting. We've shaved printing costs (though hard-copy program books may not be long for this world). One expense pays for itself, the superb management by L&L. We've also been forced to raise some fees. Abstract fees were increased but student abstract

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PRESIDENT'S REPORT

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fees were deliberately untouched. We raised non-member fees but maintained member fees both in sensitivity to our membership and to increase membership incentive. So, of course it would be nice to have coffee available all day long at the meeting but no one could pay the registration fee for that meeting.

In the end, money fuels only the process of science, but not the insight or enthusiasm of its practitioners. It tempers the speed at which we can work, but not our desire. So too with our society. Our continued growth is dependent not just on membership fees, but, importantly, on membership participation. It's our diligence in supporting our society—continuing to volunteer for committee work (listed on our website), to run for office (I've held several, it ain't bad), to contribute financially (we're tax deductible, a registered 501(c)(3)—that will guarantee our continued success. Along that line, we have a newly formed (and I hope newly energized) Federal Liaison Committee to interact with federal funding agencies; we have a newly formed Public Relations Committee to get our message out; and a diligent Finance Committee. I have every faith in the collective intuition of our members as the governing body of AChemS.

Finally, being elected president of AChemS has been both an astonishment and a privilege for me. My journey with AChemS has been long. From carting poster-boards in a rented Ryder-truck down from their winter farmhouse home on the FSU campus in the early 1980s to delivering the 2010 opening address at the Tradewinds, it's been an honor,

inclusive. I've watched us grow and know that we shouldn't be timid about change (as, for example, with the aphorism: "Change is good. You go first."). It's certain there will be a few damaged items as we unpack in our new home, but we should embrace cracked China as a temporary growing pain, a sign of progress. And some things won't change. AChemS will always be seriously directed towards mentoring its young scientists, we'll continue in our pursuit of excellence in science, and we'll continue to drink beer after the poster sessions somewhere. Always remember: the Boathouse left us; not we the Boathouse. Know that our finances will bounce back. And that no one will have to stay ten miles from the meeting rooms. So we should view our move to St. Pete Beach as a sign of vigor, a child matured enough to leave home at 32. I'm sure of that. I'm just not sure if my nephew will get the hint.



COUNCILOR'S REPORT

Lynnette McCluskey, PhD, *Senior Councilor* and Helen Treloar, PhD, *Junior Councilor*

For many years AChemS has hosted an educational outreach program at the GWIZ Science Museum in Sarasota. This annual event connected AChemS members with hundreds of kids from the Sarasota schools. In recent years, the outreach efforts have been spearheaded by Gina Nelson who organized an entertaining and instructive program for children, teachers, and volunteers.

As we transition to a new location for our annual meeting, we have encountered several challenges in our attempts to reestablish this extremely successful community outreach program in the St. Pete Beach/Tampa area. First, we need to find an appropriate venue for holding the event. Ideally we would like to find a willing partner to volunteer space.

Second, it would be helpful to establish contacts with teachers or administrators in the St. Pete's educational system. We are reaching out to the AChemS community in the hopes of finding someone with contacts who can help facilitate reestablishing this program.

So members, if you have contacts in the St. Pete's school system, have ideas about a facility for the outreach event, or can offer any suggestions toward getting a GWIZ-like outreach event started, we request that you contact Tisha Kehn at tishakehn@lmsi.com. If AChemS continues to hold annual meetings in St. Pete's (beyond the initial two-year commitment) we believe it is important to host an educational outreach event.

REPORT FROM THE CLINICAL RELATIONS COMMITTEE

Claire Murphy, PhD, *Clinical Relations Chair*

Gordon B. Hughes, MD, Program Officer, Clinical Trials, NIDCD will be the speaker at the Clinical Luncheon during the 2010 AChemS Meeting. Dr. Hughes will be speaking about new clinical trial funding opportunities at NIDCD.

The Clinical Luncheon will take place on Saturday, April 24, 2010. Tickets are \$45 and can be purchased onsite at the AChemS registration desk.

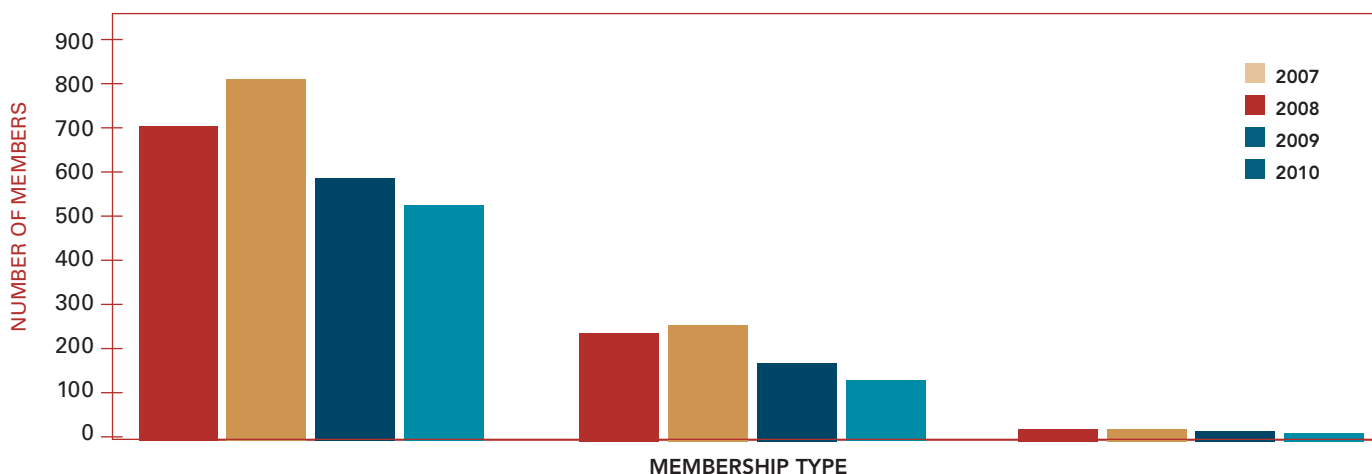
MEMBERSHIP REPORT

Pamela Dalton, PhD, *Membership Chair*

The membership numbers are down from last year, continuing a trend that was only reversed in 2008 when ISOT was held in San Francisco. Particularly disappointing is the reduction in the number of student members, suggesting that fewer will attend the annual meeting this year. A small survey of non-renewing members last year indicated that 'not planning to attend the annual meeting'

was the primary reason for dropping membership. This downturn is likely the result of current economic factors coupled with competing demands from professional associations. To this end, we need to ensure our annual meeting remains an attractive and affordable forum for sharing information and that membership confers benefits at each level.

ACHEMS MEMBERSHIP 2007-PRESENT



	Regular	Student	Emeritus
2007	712	244	28
2008	817	263	28
2009	594	177	23
2010	532	137	19

SECRETARY'S REPORT

Dana Small, PhD, *Secretary*

Thanks to all members who submitted newsworthy items for posting to the AChemS website. These submissions really help keep the homepage looking up-to-date. If you, or a colleague, receive press coverage we want to know about it. Please let us know by submitting a brief note via the "science and scientists in the news" link.

At this year's business meeting we will be discussing the possibility of creating an AChemS Facebook page. The goal of the page would be to provide members with a place

to network, post news, events, questions and ideas. It is anticipated that the Facebook page could be particularly valuable around the time of the Annual Meeting. For instance, one could search for roommates before the meeting, post notes about favorite restaurants during the meeting, and share photos or discuss findings after the meeting. Please don't forget to come by the business meeting to let us know if you would be in favor of an AChemS Facebook page. The business meeting is open to all members. Stop by to hear opinions and share yours.

CHEMICAL SENSES REPORT

Charles A. Greer, *Publications Committee Chair*, with input from Wolfgang Meyerhof, *Chemical Senses Editor-in-Chief*

Under the leadership of Dr. Wolfgang Meyerhof, Chemical Senses has been making substantive changes in the organization of the editorial board, reviewing policies, and the timeline for submission to decision. Briefly, during the course of the past year Dr. Meyerhof and his board note the following landmarks:

- New editorial system established with responsibilities of 11 executive editors based on expertise and area, not geographical region. Rough subject categories are 'taste molecular' (Meyerhof), 'taste peripheral' (Ninomiya), 'taste central' (Travers), 'food chemistry-related' (Abe), 'olfaction central' (Carleton), 'olfaction molecular' (McClintock, Touhara), 'human psychophysics and sensory studies' (Breslin), 'psychophysical, sensory and behavioural studies in animals' (Spector), 'pheromone action' (Keverne), 'chemosensory systems of insects' (Steinbrecht, Touhara), 'other models' (Steinbrecht, McClintock). This measure facilitates a more standardized review process compared to the previous setting. It is also expected to accelerate submission turnover, increase the quality of published papers, raise attraction of the journal, and increase submission rates.

- In the most current issue, Articles Highlighted section in the journal was implemented and is expected to draw the readers' attention to the current issue of Chemical Senses.
- Regular display of images on the cover related to an article in the current issue.
- Most Chemical Senses articles are published online within 4 weeks after acceptance.
- The journal received a total of over 360,000 full text article downloads in 2009.
- The top downloaded article of 2009 was: Distortion of Olfactory Perception: Diagnosis and Treatment, by Donald Leopold (2002), Volume 27, Issue 7, 611-615, which was downloaded 8,615 times in 2009.

Also of interest, Oxford University Press was kind enough to supply the following statistics. Please note in particular the jump in impact factor from 2007 to 2008 (2009 not yet available), the marked increase in number of submissions through 2009, and the decreased time from submission to decision. It is also notable that the accept ratio has been decreasing, reflecting rigorous review procedures.

YEAR	2007	2008	2009
Impact factor	1.896	3.041	
Original submissions	141	145	194
Avg. time from submission to 1st decision	33.53 days	31.32 days	27.43 days
Avg. time from submission to final decision	106.63 days	81.57 days	69.57 days
Accepted articles	91	73	74
Accept ratio	62.32%	51.77%	46.54%

Please note in particular the jump in impact factor from 2007 to 2008.

PROGRAM CHAIR'S REPORT

Robert F. Margolskee, MD, PhD, Program Chair (rmargolskee@monell.org)

A Prelude to AChemS XXXII

The 32nd Annual AChemS Meeting will be held in a new venue: the TradeWinds Island Grand Resort St. Pete Beach, Florida from April 21 to April 25, 2010. Come join us to enjoy the science, sun and reconnect with colleagues or make new acquaintances. AChemS members submitted over 450 abstracts and proposed more exciting symposia proposals than we could fit into the program. The Program Committee and I worked diligently to put together what we hope will be an engaging and stimulating program. This is a true milestone year for our society: every past regular meeting of AChemS has been held at the Hyatt Sarasota, but we have now outgrown that facility and are ready to strike out into new territory. I hope you are all as excited as I am to be right on the beach (check out the TradeWinds' live beach Web Cam — <http://www.tradewindsresort.com/Web-Cam.aspx>). A sampling of the resorts offerings can be found at <http://www.tradewindsresort.com/>. The Boathouse may be gone but not forgotten — we should all look forward to downing a few pints at St. Pete's Beef O Brady's Bar.

The program this year will include:

Givaudan Lecture

Dr. Robert A. Weinberg will deliver the Givaudan lecture. Dr. Weinberg is Professor of Biology at MIT, as well as a Member of the Whitehead Institute and Director of MIT's Ludwig Center for Cancer Research. Dr. Weinberg and his group have made numerous fundamental discoveries about the molecular mechanisms underlying cancer. He is best known for his discoveries of the first human oncogene and the first tumor suppressor gene. His talk is entitled "Normal and Cancer Stem Cells and the Development of Malignancy."

Specialty Symposia

"Presidential Symposium: Neurotransmitters and Neuromodulators in the Taste Bud" Speakers will provide insights into coding and modulation of information processing in the taste bud.

"Industry Symposium" An exploration of recent key advances in the chemical senses of interest to industry scientists and basic scientists. The speakers will focus on a few recent advances in basic research that have potential applications. The symposium will be followed by a reception with snacks and cash bar.

Symposia

"Genetics of Human Olfaction" The contribution of genetic effects to human olfactory perception in humans is largely unknown. In this symposium the nature of differences in human olfactory perceptions and their associations with underlying genotypes will be explored.

"Cilia, Sensory Dysfunction and Disease" This symposium will feature talks from several investigators both within and outside the olfactory field whose work combines clinical studies with basic science research to investigate the mechanisms of cilia dysfunction to provide us important new information regarding the pathogenesis of diseases of human sensory perception.

"Sensory Integration and Competition" This symposium will touch on neural mechanisms of olfactory-auditory integration in mice, neural mechanisms of olfactory, gustatory, visual, and auditory integration in humans, neural mechanisms for the resolution of conflicts between different sensory modalities, binocular rivalry, and the neuroanatomical integration of olfactory information between the hemispheres.

"Chemoreception in context: interactions with endocrine systems and metabolic state" Recently published work and emerging research efforts suggest that olfactory and taste systems are intimately linked with endocrine systems that regulate or modify energy balance. This symposium addresses the current knowledge of hormonal modulation of chemosensory perception and how disruption of hormonal signaling in the olfactory or taste systems can impact energy homeostasis or nutrient utilization.

"Wiring the olfactory systems" The detection of odorant signals from the environment relies on the formation of accurate stereotypical connections between olfactory sensory neurons located in the olfactory epithelium and second order neurons located in the olfactory bulb. This symposium will examine recent progress in our understanding of the molecular mechanisms that underlie the formation of an accurate glomerular map.

"Transient Dynamics, Metastable States and Temporal Coding in Chemosensory Processing" Our understanding of how neural networks in the brain process chemosensory information is only poorly understood. The symposium brings together theoreticians and experimentalists who have studied networks with the explicit goal of comparing how one or another type of model may apply to different animals and chemosensory systems in the brain.

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PROGRAM CHAIR'S REPORT *continued*

Workshops

(The workshop format is designed to encourage active exchange and discussion beyond that possible with regular symposia):

"NIH Workshop: Funding Opportunities for the New Investigator" Representatives from NIDCD will present information and insights into navigating NIH funding mechanisms. This workshop is directed at new investigators but more established investigators may also find it helpful.

Other planned events include the **Welcome Reception, Opening Awards Ceremony, Annual Business Meeting, the International Flavors and Fragrances Special Lecture, the ChEMA Social, Clinical Luncheon** and, of course, there will be platform presentations along with lots of posters and fine opportunities to discuss the great science going on within AChemS. I hope to see you all at AChemS XXXII. We may be gone from our home away from home in Sarasota but St. Pete Beach looks to be an exciting new home for AChemS!

*AChemS extends thanks to our generous donors:
Peter Brunjes, PhD and Scott Herness, PhD*

AChemS is a 501 (c)(3) non-profit organization and individuals who donate money to AChemS may claim the funds as a charitable donation. Please contact info@achems.org for more information on donating.

ISOT

SPECIAL ISOT OFFER

The New York Academy of Sciences has made a special discount available to members of AChemS, JASTS and ECRO, offering the symposium volume at a 75% discount, which is a price of \$37.50 plus shipping. This fantastic discount will only last through September 2010.

To obtain the discount, follow the link below and add the volume to your shopping cart. Once you provide name and shipping info, you will have the opportunity to apply the discount to your order prior to entering purchase information. The discount code for Olfaction & Taste has been set up globally for this promotion. The code is **ISOTX**. This code provides a 75% discount on the retail price. Alternatively, customers may contact Wiley's customer service department directly: Telephone: (877) 762-2974 (Americas); +44 (0) 1243 843291 (Europe); 65 6460 4280 (Asia). In order to obtain the volume tax exempt in the USA, it is necessary to phone rather than using this link. <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1573317381.html>

Save the dates

AChemS XXXIII Annual Meeting

April 13-17, 2011

Tradewinds Island Grand
St. Pete Beach, Florida



XVI International Symposium on Olfaction and Taste

June 24-29, 2012

Stockholm, Sweden



2009 ACHEMS

Award Recipients



Max Mozell Award for Outstanding Achievement in the Chemical Senses

The Max Mozell Award for Outstanding Achievement in the Chemical Senses is intended to recognize the accomplishments of a senior scientist working in the chemical senses. The research record should provide evidence of excellence and contributions that have a major impact on research in the chemical senses.



The 2009 Recipient of the Max Mozell Award was Dr. Charles Greer of the Yale University School of Medicine.

Dr. Greer writes:

The interests in my laboratory center around two primary issues related to the organization of the olfactory system and odor processing. First, the specificity with which olfactory sensory neuron axons target, or coalesce, in specific glomeruli in the olfactory bulb. Beginning with embryos ~E8.5, we are seeking insight into the mechanisms that may result in early perturbations of axon coalescence, and those mechanisms that later contribute to the remodeling of axon terminal fields to produce the high fidelity specificity seen in the adult. Second, we study the synaptic organization of the olfactory bulb, both the primary afferent synapses and the local circuit synapses.

Of particular interest have been the reciprocal dendrodendritic local circuit synapses. We have shown that these synaptic circuits are capable of profound plasticity; due to ongoing neurogenesis both olfactory sensory neurons and olfactory bulb interneuron synaptic circuits undergo continuing turnover. Recently, we showed that the formation of the synaptic specializations involving newly generated neurons in the olfactory bulb follows a very stereotyped pattern and that new neurons “listen before they talk.” The future sees the lab continuing with these and related problems, both during early development when the circuits are established, as well as during aging when we believe the circuits may become disordered.

Acknowledgements

Gordon Shepherd recruited me to the chemical senses as a postdoc. I am forever grateful for his support and continuing guidance. Later, Stuart Firestein joined Gordon as a postdoc; he is a valued friend that has taught me much about science and creative thinking. Also from the Shepherd lab, Frank Zufall, Trese Leinders-Zufall, and Wei Chen are good friends and collaborators. In my lab I have had outstanding students and postdocs. I can only cite a few; among the doctoral students, Brian Lipscomb, Mike Akins and Mary Whitman all set high standards for the lab. Among the postdocs, Helen Treloar was a pivotal influence and continues as a valued colleague. Currently, Diego Rodriguez-Gil, Fumiaki Imamura, Lorena Rela, Marion Richard and Arie Mobley are exceptional postdocs that are opening new horizons through their efforts. My current doctoral student, Alexandra Miller, challenges me daily to think about science in new ways. I am profoundly grateful to them all. I am fortunate to have collaborations based on shared grants with my friends Stuart Firestein, Peter Mombaerts, Linda Buck, and recently Don Wilson. The time spent in discussion and debate as we prepared those applications was a rare and exhilarating experience. I am deeply grateful to NIH-NIDCD for ongoing support of my research, and recently support from the NIA. I would be remiss if I did not thank my wife, Sandra. She has always placed the highest priority on my work and has been my unflinching champion. Perhaps her picture should be here rather than mine.

Ajinomoto Award for Young Investigators In Gustation

The Ajinomoto Award for Young Investigators in Gustation, made possible by the generous support of The Ajinomoto Corp., is awarded annually to an outstanding junior scientist who is an emerging leader in the field of gustation. The research record should provide evidence of excellence and contributions that have had or are likely to have a major impact on research in the field of gustation.



The recipient of the 2009 Ajinomoto Award was Dr. Alan Carleton of the University of Geneva.

Dr. Carleton writes:

How neural networks encode sensory information into the brain and how to relate behavior to neuronal activities are key questions in neuroscience. Understanding the neural codes underlying brain function will be of great importance for future implementation of brain-machine interfaces.

In the laboratory, we study the mechanisms controlling sensory perception and how different senses may interact together. We would like to precise how sensory stimuli are coded by brain networks and how these representations may be influenced by experience and across different sensory modalities. In order to address these general questions, we study chemical senses as model sensory systems. Indeed, olfactory and gustatory systems are central to the behavior of rodents, are highly plastic and largely modulated by neuromodulatory brain centers. Furthermore they are probably the senses most naturally interacting together in behaving animals especially during feeding behavior.

We use a multidisciplinary approach combining *in vitro* and *in vivo* electrophysiology (patch clamp, multi-unit), *in vitro* and *in vivo* functional imaging (calcium, voltage-sensitive dyes imaging, intrinsic and synaptophluorin imaging), 2-photon microscopy, lentivirus gene transfer and behaviour.

Acknowledgements

I would like to thank the Ajinomoto Corporation and the Awards Committee for this honor. The accomplishments of our lab on gustatory cortex organization and plasticity depended primarily on the work of a talented and hard working PhD student, Riccardo Accolla. I would like to thank him but also Brice Bathellier. I would like to thank Sidney Simon (Duke University) for the great discussions and comments he gave us in the last years on taste physiology and beyond...

Finally, I would like to thank the following institutions and foundations for their financial support: the Brain Mind Institute — Ecole Polytechnique Fédérale de Lausanne, the University of Geneva, the Swiss National Foundation, the Leenaards Foundation and the Network of European Neuroscience Institutes from the European Union (ENI-net).



AChemS Young Investigator Award for Research in Olfaction

The AChemS Young Investigator Award for Research in Olfaction is awarded annually to an outstanding junior scientist who is an emerging leader in the field of olfaction. The research record should provide evidence of excellence and contributions that have had or are likely to have a major impact on research in the field of olfaction.



The recipient of the 2009 AChemS Young Investigator Award was Dr. Nathaniel Urban of Carnegie Mellon University.

Dr. Urban writes:

The brain is both a biological organ and a computational device. Implementing computation in biological hardware poses enormous challenges, yet in many task domains, including in sensory processing, our brains (and even the simpler brains of mice and flies) are unrivaled by any device ever created. The goal of my lab is to understand how the properties of neurons and circuits contribute to the computations performed by the olfactory system. The approach that we take integrates detailed analysis of the biophysical and physiological properties of neurons and circuits with computational modeling. Currently we are focused on understanding how dendrodendritic inhibitory

circuits in the main and accessory olfactory bulbs regulate the spatial and temporal properties of mitral cell activity. In order to understand the computations performed by neurons and networks, we use electrophysiological and optical approaches to measure and control the activity of populations of olfactory system neurons. We have described the role of correlated inputs to populations of mitral cells in dynamically regulating the functional connectivity of olfactory bulb networks. These changes in functional connectivity allow olfactory bulb circuits to implement a novel algorithm for non-spatial contrast enhancement. In other work we have described a novel mechanism (called stochastic synchrony) for generating high frequency synchronous oscillations in populations of olfactory bulb mitral cells. We are interested in how the oscillatory synchrony of mitral cells influences the recruitment of neurons in olfactory cortex.

Acknowledgements

I would like to thank the Awards Committee for this honor. I would like to thank many people who have contributed to the success that I have had. I have been very fortunate to have been trained by some tremendous mentors and to have attracted some very talented students and postdocs to my lab. My training in neuroscience and physiology began in the lab of Dr. German Barrionuevo at the University of Pittsburgh and continued under Professor Bert Sakmann at the Max-Planck Institute for Medical Research in Heidelberg, Germany. Both of these scientists shared with me their appreciation for the rigors of physiology and the satisfaction of working hard on difficult experiments. Coming into the field of chemical senses I have benefitted from many conversations and discussions with senior colleagues in the field including Mike Shipley, Gordon Shepherd, Gilles Laurent and John Scott. The work in my lab has been pushed forward by many talented and hard working students and postdocs who have come to my lab, especially Roberto Fernández Galán, Jason Castro, Vikrant Kapoor and Armen Arevian. Finally, I would like to acknowledge AChemS and its members, which has supported me and many scientists in the field, and the NIDCD, whose support for our work has had a great impact on the field of chemical senses and on my own work.

International Flavors and Fragrances Award for Outstanding Research on The Molecular Basis of Taste

The IFF Award for outstanding research on "Molecular Systems of Taste" is made possible by the generous support of International Flavors and Fragrances Inc, and is awarded for critical advances of long-lasting impact, in the understanding of the molecular basis of taste.



The recipient of the 2009 International Flavors and Fragrance Award was Dr. Keiko Abe of the University of Tokyo.

Dr. Abe writes:

My academic career started in Food Chemistry Laboratory (headed by Professor Soichi Arai) which had been paying its special attention to sweet, bitter and umami compounds in foods. Transferring to the present lab for Biological Functions Research in 1992, I made my research focus on the molecular logic of taste chemoreception and signal transduction. Initially, our work had humble beginnings, but it traced a unique path of development to elucidate a series of responsible molecular entities. The use of medaka, the Japan-intrinsic experimental fish, as well as mammals was effective in revealing that vertebrates may have a common molecular mechanism of taste signaling following food intake. Very recently, we found a mainstay of taste signal pathways; the finding is contributing to verifying the validity of the "labeled line theory" at molecular and cellular basis. In the meantime, we used X-ray crystallography, molecular dynamics simulation and sophisticated genomics to characterize an enigmatic sweet protein "neoculin" having a taste-modifying activity to convert sourness to stronger sweetness and its interaction with the human sweet taste receptor. In this case as well, the molecular logic of taste signaling we revealed (above) held good. Our study is thus growing up to a level of food chemical biology which should be referred to as "new food chemistry".

Acknowledgements

It is my great pleasure to win the IFF award for our studies on taste molecular biology and new food chemistry. I am indebted to International Flavors and Fragrances as well as to the Awards Committee. All the outcomes of studies are fruits produced with the aid of my collaborators, university staff, researchers, students and graduates in the Biological Functions Laboratory, Department of Applied Biological Chemistry, and the Endowed Chair of Functional Food Genomics in the same Department at The University of Tokyo. Outcomes have also been provided by a great many collaborators in other universities, industries, and government ministries. I should express my sincere thanks to all of those who were and are involved in the collaboration. Finally, my special thanks are given to Professor Soichi Arai, Tokyo University of Agriculture, who suggested the theme of taste and has encouraged me throughout my studies.



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

Made possible by the generous support of Moskowitz Jacobs Inc., is awarded annually to an outstanding junior scientist in the field of psychophysics of human taste or olfaction. The research record should provide evidence of excellence and the promise to emerge as a leader in the field.



The recipient of the 2009 Moskowitz Jacobs award was Dr. Johan Lundström of the Monell Chemical Senses Center.

Dr. Lundström writes:

Research in our laboratory focuses on the reciprocal relationship between human psychology and the neuronal processing of odorous stimuli. In particular, we are concerned with the processing of social chemosignals, signals that act along the hazy borders between biology, perception, and cognition. Our natural body odor contains a plethora of chemicals capable of transmitting various social and biological signals, including those governing kin recognition, mother-infant attachment, as well as indicative of disease state, among others. Several different lines of ongoing research explore how the human brain processes these complex signals and how this affects our everyday behavior. Lately, we have also begun investigating the neuronal basis of multimodal processing using our chemical senses, a natural multimodal sensation, as a springboard. Our work incorporates a wide range of methods, including psychophysical and cognitive tests in healthy individuals, functional brain imaging (functional magnetic resonance imaging, positron emission tomography, EEG), and structural brain imaging and morphometry.

Acknowledgments

First and foremost, I wish to thank the people in my lab for their dedication, hard work, and ability to put up with my bad jokes: Sanne Boesveldt, Jessica Albrecht, Amy Gordon, Eva Alden, and Gron Gurka. I have also had the great fortune to learn about several techniques and methods from outstanding former supervisors, and now good collaborators, Mats Olsson, Marilyn Jones-Gotman, Robert Zatorre, and Thomas Hummel. Special thanks need also be extended to the fantastic community at the Monell Chemical Senses Center where the collaborative spirit, in conjunction with the multi-faceted faculty profile, is a never-ending source of new ideas, projects, and good times. Additionally, I would like to thank AChemS and its members; my decision to pursue a career in chemosensory research was strongly influenced by experiences from my first AChemS meeting and the unaffected interactions with AChemS members that I enjoyed there. Finally, I am grateful to the NIDCD for supporting the research conducted in my lab.



AChemS Distinguished Service Award

This award, conferred on an occasional basis, recognizes individuals with a record of outstanding service to the chemical senses research community.



The recipient of the 2009 AChemS Distinguished Service Award was Dr. Barry Davis, Director of the Taste and Smell Program at the National Institute of Deafness and Other Communication Disorder.

Dr. Barry Davis serves as the Director of the Taste and Smell Program within the National Institute on Deafness and other Communication Disorders (NIDCD). In this position, he serves as an important liaison between the chemical senses community and the National Institutes of Health. During his ten-year service with NIDCD, Dr. Davis has demonstrated keen interest in the advancement of our scientific interests. His active participation in the AChemS meetings, leading workshops and advising individuals, is but one tangible confirmation of his involvement with the chemical senses community. He has been an active advocate for the support of our research endeavors, working to support both individual investigators as well as our society. He has participated on our behalf in NIH-wide initiatives and helped to accrete our resources within the NIH. He has demonstrated strong interest in support of junior investigators, whose nurturing has always been a mainstay of our society. Overall, Dr. Davis is an example of an outstanding scientific administrator, intimately engaged in promoting our interests and affairs within the NIH.

Dr. Davis received his B.S. in 1968 from Miami University in Oxford, Ohio and his Ph.D. in 1975 from the University of Rochester Medical School in Rochester, NY. He subsequently held faculty positions at the University of Alabama at Birmingham followed by the University of Maryland at Baltimore. During this time Dr. Davis investigated the gustatory areas in the brainstem of rodents and his research was continuously funded by NIH support. In 1999, Dr. Davis became the Director of the Taste and Smell Program at the NIDCD.

Don Tucker Memorial Award

The Don Tucker Memorial Award is made to a graduate student member of AChemS who makes an outstanding presentation at the Annual AChemS Meeting.



The recipient of the 2009 Don Tucker Memorial Award was Kristal Tucker (no relation) of Florida State University.

Polak Young Investigator Awards

The purpose of this award is to encourage and recognize innovative research at the Annual Meeting by young investigators. The Polak awards are funded by the IIsje Werner-Polak Memorial Fund in memory of their niece, Ghislaine Polak gassed by the Nazis in 1944 at the age of 7 and the late Ernest Polak.



The recipients of the 2009 Polak Young Investigator Awards were:

- Wen Li, *University of Wisconsin-Madison*
- Nathalie Mandairon, *Lyon University*
- Ivan Manzini, *University of Göttingen*
- Koichi Matsumara, *Monell Chemical Senses Center*
- Arie Mobley, *Yale University*
- SharifTaha, *University of Utah School of Medicine*
- Maria Veldhuizen, *John B. Pierce Laboratory and Yale University School of Medicine*

The 2009 Minority Travel Fellowship Awardees were

- Juan Aggio, *Georgia State University*
- C. Shawn Dotson, *University of Maryland School of Medicine*
- Wombura Fobbs, *John B. Pierce Laboratory and Yale University School of Medicine*
- Kristina Gonzalez, *Clark University*
- Ernesto Salcedo, *University of Colorado Denver*
- Nhat-Tuan Tran, *University of Colorado Denver*
- Robert Utsman, *University of Minnesota*

2009 Logo Contest Award Winner



Maria Veldhuizen, *John B. Pierce Laboratory and Yale University School of Medicine*



2009 Annual Meeting

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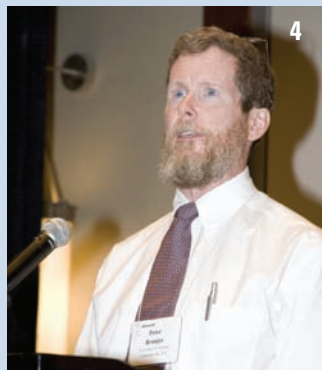
- 1 Carla Shatz, 2009 Givaudan Lecturer
- 2 Pam Dalton, Patricia Bulsing and Maria Velhuizen
- 3 Awards Ceremony
- 4 Peter Brunjes, AChemS President 2009
- 5 Brad Alcorn, Elizabeth Harvey and Linda Barlow
- 6 Diego Restrepo
- 7 Diego & Group: Hessamedin Alimohammadi, Cecil Saunders, Paige Roe and Vanessa Carmean



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- 8 Don Wilson
- 9 Paul Feinstein, Arie Mobley, Charles Greer and Ivan Rodriguez
- 10 Julie Menella, Yanina Pepino and group
- 11 John Caprio and Barry Davis
- 12 Jennifer Spehr and Katharina Klasen



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- 13 Tom Finger, Shanshan Zhou, Kennedy Wekesa and Robert Anholt
- 14 Wambura Fobbs and Tim Shepard
- 15 Christopher Hawkes and Dick Doty
- 16 Yoav Gilad and Chuck Wysocki

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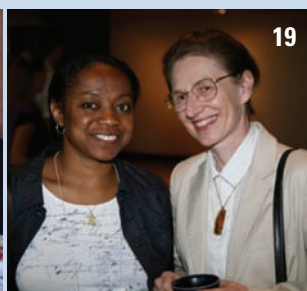
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- 17 Hao-Seok Seo, Hadas Lapid and friend
- 18 Monique Smeets, Krystyna Rankin and friend
- 19 Annick Faurion and friend
- 20 Hanns Hatt, Samsudeen Ponissery Saidu and Judy Van Houten
- 21 Kai Zhao, Daniel Wesson and Shree Hari Gautam



Attendees Enjoying the Opening Night

