Future Meetings

AChemS – XXI
April 14 -18, 1999

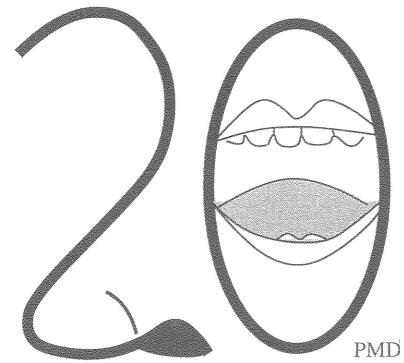
AChemS – XXII
April 26 - 30, 2000

AChemS – XXIII
April 25 - 29, 2001

The Association for Chemoreception Sciences

Program

AChemS



YEARS

Sarasota, Florida
April 22-26, 1998

The Association for Chemoreception Sciences gratefully acknowledges
support from its corporate members:
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The Association is also grateful for the generous support of its corporate sponsors:

Twentieth Annual Givaudan-Roure Lectureship
Givaudan Corporation

Thirteenth Annual Takasago Award for Research in Olfaction
Takasago Corporation

Seventh Annual Moskowitz Jacobs Award for Research in Psychophysics of Taste and Olfaction
Moskowitz Jacobs Incorporated

Fifth Annual Award to Promising Young Researchers in the Field of Gustation
Ajinomoto USA

Support for the AChemS XX Social Event:
Oxford University Press

The Association acknowledges grant support from:
The National Institutes of Deafness and Other Communicative Disorders
National Institutes of Health

GENERAL INFORMATION

1. Registration will be in the Longboat Room on Wednesday evening, 5:00-7:00 P.M., and in the morning during the meeting.

2. All slide sessions will be held in the Sara Desoto Room. All speakers in slide sessions should meet with the session chairperson and give the slides to the projectionist at least 20 minutes prior to the start of the session.

3. All poster sessions will be held in the Hernando Desoto Room. All morning posters should be removed by 3 P.M. and all evening posters should be removed by midnight. Posters should be placed on the board with the number that corresponds to the assigned board in the program book.

4. On Thursday evening, Dr. Maxwell Mozell will present a special lecture on the History of AChemS in honor of the Twentieth Anniversary of AChemS. A social will follow immediately after this lecture.

5. The Clinical Luncheon will take place on Saturday from 1:00-3:00 P.M. in the Florida Room. Tickets are on sale in the Longboat Room.

5. The Industrial Reception will take place on Thursday from 5:30-7:00 P.M. in the Florida Room. Tickets are on sale in the Longboat Room.

6. The Wine Tasting will be held in the Florida Room on Saturday from 5:00-7:00 P.M. Tickets are on sale in the Longboat Room. Admission also includes a bottle of your favorite wine.

7. There will be a van from the hotel to Lido Beach Thursday and Saturday afternoons. The van will leave for the beach from the front of the hotel on a shuttle service between 1:00 and 2:00 P.M. with returning shuttle service from Lido Beach between 4:00 and 5:00 P.M.

8. There will be a van from the hotel to the softball game. The van will leave from the hotel at 2:30 P.M. and return to the hotel at the end of the game.

9. AChemS will sponsor an opening buffet reception on Wednesday from 6:30-8:00 P.M., and a limited number of breakfast pastries will be available each morning beginning at 7:00 A.M.

10. The Hyatt will provide a cash AQuick-Lunch Sandwich Cart@ at the conference center daily at 12:00 P.M. The Prefunction area is reserved for eating your lunch and socializing if you do not care to go outside and wish to meet with other conferees.

Please refer to the program book for listings of Symposia, Special Lectures, and other Special Events.

Wednesday, April 22, 1998

ASSOCIATION FOR CHEMORECEPTION SCIENCES

Twentieth Annual Meeting

12:00 P.M.	**Executive Committee Meeting**
5:00-7:00 P.M.	**Registration** (*Long Boat Room*)
6:00-6:30 P.M.	**Minority Fellows Organizational Meeting** *(Palm Room)* *Organizer: Diego Restrepo*
6:30-8:00 P.M.	**Opening Buffet** (*Gallery*)
8:00-8:30 P.M.	**Welcome, Opening Remarks, and Awards Ceremony** (*Hernando Desoto Room*) *Thomas Scott, Executive Chairperson*
8:30-9:30 P.M.	**Givaudan-Roure Lecture** (*Hernando Desoto Ballroom*) **Dr. Christine Petit** Unité de Génétique des Déficits Sensoriels Institut Pasteur, CNRS, Paris *Chairperson: Gail Burd* "The X chromosome-linked form of Kallmann syndrome: An early developmental defect of the olfactory system"
9:30 P.M.	**Social Reception and Cash Bar** (*Gallery*)
9:40 P.M.	**Organizational Meeting for Students with Travel Awards** (*Hernando Desoto Ballroom*) Organizers: Joel White and Alan Nighorn

Thursday, April 23, 1998

SLIDES

Thursday morning – 8:00 A.M. - 9:30 A.M.

Taste Physiology: From Receptor Cell to Brain
Chairperson: Tim Gilbertson

8:00 #2 Rapid kinetics of receptor cell firing and second messenger formation in response to sucrose. KARA D. FOSTER[1], ANDREW I. SPIELMAN[2], and LINDA M. KENNEDY[1], *Neuroscience Program, Dept. of Biology, Clark University, Worcester, MA 01610 and [2]New York University College of Dentistry, Basic Science Division, New York, NY 10010*, kfoster@clarku.edu

8:15 #3 A novel mechanism for bitter taste is mediated through cGMP. SOPHIA ROSENZWEIG, MAXIMILLIAN DASSO, WENTAO YAN, and ANDREW I. SPIELMAN, *Basic Science Division, New York University College of Dentistry, New York, NY 10010.* andrew.spielman@nyu.edu.

8:30 #4 On the relationship between taste qualities and taste fibers in higher primates. GÖRAN HELLEKANT, VICKTORIA DANILOVA AND THOMAS ROBERTS. *Department of Animal Health and Biomedical Sciences and Wisconsin Regional Primate Center, University of Wisconsin, Madison WI 537 06.* gh@ahabs.wisc.edu

8:45 #5 Effect of miraculin on behavioral and single taste fibers responses in common marmoset, *Callithrix jacchus jacchus*. VICKTORIA DANILOVA, GÖRAN HELLEKANT, ZHEYUAN JIN, *Department of Animal Health and Biomedical Sciences, University of Wisconsin-Madison, Madison, WI 53706,* danilova@ahabs.wisc.edu.

9:00 #6 The role of amiloride-sensitive and -insensitive mechanisms in NaCl- and KCl-evoked responses in the hamster solitary nucleus. STEVEN J. ST. JOHN, JOHN D. BOUGHTER, Jr., and DAVID V. SMITH, *Dept. Anatomy & Neurobiology and Program in Neuroscience, Univ. Maryland School of Medicine, Baltimore, MD 21201.* sstjo001@umaryland.edu.

9:15 #7 Water applied to the human tongue elicits robust cortical activation. DAVID H. ZALD AND JOSÉ V. PARDO, *Cognitive Neuroimaging Unit, VA Medical Center, Minneapolis, MN 55417 and Division of Neuroscience Research, Dept. of Psychiatry, Univ. of Minnesota, Minneapolis, MN 55455.* zald@james.psych.umn.edu

9:30-9:45 A.M. Refreshment Break

9:45-12:00 P.M. **Mosquito Olfaction Symposium**
Organizer: John Hildebrand

Dr. Willem Takken
Laboratory for Entomology, Wageningern Agricultural University, Netherlands
"Differentiation in the behavior of anthropophilic and zoophilic malaria mosquitoes in response to host odors"

Dr. Martin Geier
Department of Entomology, University of California at Riveside
"Olfactory host finding of yellow fever mosquitoes: Exploring the attractive odor blend and the effect of odor plume structure on upwind flights"

Dr. Alan Grant
American Biophysics Corp.
"Electrophysiological investigations of sensory neurons involved in mosquito host-seeking behavior"

Dr. John Carlson
Department of Biology, Yale University
"*Drosophila*, a model system for the study of mosquito olfaction"

Dr. Laurence Zwiebel
Department of Biology, Vanderbilt University
"A molecular characterization of olfaction in the malaria vector mosquito, *Anopheles gambiae s.s.*"

Sponsored by National Institutes of Health (NIDCD)

POSTERS

Thursday Morning - 8:00 A.M. -12:00 P.M.

Structural Studies of the Peripheral Olfactory Pathways
Structural Studies of Central Olfactory Pathways
Human Taste and Oral Chemesthesis

Structural Studies of the Peripheral Olfactory Pathways

#13 P1 Morphological evidence (using lanthanum) for continuity between the hemolymph and sensillar lymph of the olfactory sensilla (aesthetascs) of the blue crab, *Callinectes sapidus*. RICHARD A. GLEESON[1], LORRAINE M. MCDOWELL[2], and HENRY C. ALDRICH[2], *[1]The Whitney Lab., University of Florida, St. Augustine, FL 32086, [2]Department of Microbiology and Cell Science, University of Florida, Gainesville, FL 32611.* FAX:(904) 461-4008.

#14 P2 Structural analysis of the peripheral olfactory organ of *Monodelphis domestica.* JULIA M. COUPER LEO and PETER C. BRUNJES, *Program in Neuroscience, University of Virginia, Charlottesville, Virginia, 22903.* jmc6g@virginia.edu.

#15 P3 OX-42 immunostaining in peripheral and central olfactory structures of goldfish. JEANINE S. STEWART, C. RAMEY HARRIS, and KIMBERLY A. FREEMAN, *Dept. of Psychology, Washington and Lee University, Lexington, VA 24450.* jsstewart@wlu.edu

#16 P4 Distribution of amino acid immunoreactivity in the developing and adult olfactory organ of zebrafish. WILLIAM C. MICHEL, *Dept of Physiology, University of Utah School of Medicine, Salt Lake City, UT 84108.* mike.michel@m.cc.utah.edu.

#17 P5 Olfactory mucosal metabolism and toxicity of the anti-hyperthyroid drug carbimazole in the Long-Evans rat. MARY BETH GENTER, *Department of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH 45267-0576.* gentermb@popmail.uc.edu.

#18 P6 Adverse influence of dexamethasone on anterograde labeling of primary afferents in the olfactory bulb of 3-methylindole-injected rats. IGOR L. KRATSKIN[1], YASUYUKI KIMURA[2], RICHARD L. DOTY[1], *[1]Smell and Taste Center, University of Pennsylvania, Philadelphia, PA 19104 USA, [2]Department of Otolaryngology, Kanazawa University, School of Medicine, Ishikawa 920, Japan.* FAX: (215) 349-5266.

#19 P7 Altered neuronal morphology of the olfactory system in neuronal storage disease. E.E. MORRISON, J.C. DENNIS, S. SINNARAJAH, K. WOLFE, and V. VODAYNOY, *Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University, AL 36849-5518.*

Structural Studies of Central Olfactory Pathways

#20 P8 Synapse distribution on morphologically characterized olfactory interneurons in the terrestrial snail. S. RATTÉ, R. CHASE, *Department of Biology, McGill University, Montréal, Québec, Canada, H3A 1B1.* stefanie@bio1.lan.mcgill.ca

#21 P9 Ultrastructure of the glomerular neuropil and periglomerular zone of the adult salamander olfactory bulb. DIANNE M. ALLEN and KATHRYN A. HAMILTON, *Department of Cellular Biology and Anatomy, Louisiana State University Medical School, Shrevevport, LA 71130-3932.*

#22 P10 Distinct glomerular projection patterns of primary olfactory axons expressing different G-protein α subunits in the mouse olfactory system. *KENNEDY S. WEKESA, and ROBERT R. H. ANHOLT, Department of Zoology, North Carolina State University, Raleigh, NC 27695-7617.* FAX: (919) 515-5327.

#23 P11 The olfactory bulb-olfactory cortex slice. A.C. PUCHE, V. ARONIADOU-ANDERJASKA, AND M.T. SHIPLEY, *Dept. Anatomy & Neurobiology, Program in Neuroscience, University of Maryland School of Medicine, Baltimore, MD 21201.* FAX: 410-706-2512

#24 P12 Combining information across input afferent streams gives rise to hyperacuity in Biological and Artificial Olfactory Systems. TIMOTHY C. PEARCE[a], TODD A. DICKENSON[b], DAVID R. WALT[b], JOHN S. KAUER[a]. *[a]Department of Neuroscience, Tufts University Medical, Boston, MA 02111. [b]Department of Chemistry, Tufts University, Medford, MA 02155.* tpearce@opal.tufts.edu.

#25 P13 Efferent projections of the anterior and posterior divisions of the accessory olfactory bulb in the short-tailed opossum, *Monodelphis domestica.* ALINO MARTÍNEZ-MARCOS, and MIMI HALPERN, *Department of Anatomy and Cell Biology, Health Science Center at Brooklyn, State University of New York, New York, NY 11203.* FAX: (718) 270-3378.

#26 P14 Functional magnetic resonance imaging (fMRI) of the human brain during olfactory stimulation GERD KOBAL[3], BIRGIT KETTENMANN[2,3], MICHAEL ERB[1], WOLFGANG DITTERICH[2], AXEL KLUSMANN[4], UWE KLOSE[1], MARKUS PFISTER[2], WOLFGANG GRODD[1], *[1]Sect. Exp. NMR of the CNS, Dept. of Neuroradiol. and [2]Dept. of Otolaryngology, Univ. Tübingen, [3]Dept. of Exp. and Clin. Pharmacol. and Toxicol., Univ. Erlangen-Nürnberg, [4]Dept. of Neuroradiol., RWTH Aachen, Germany,* FAX+49-9131-856898.

#27 P15 Separate cerebellar components subserve sniffing and smelling. N. SOBEL*[1], V. PRABHAKARAN[1], J.E. DESMOND[2], G.H. GLOVER[3], E.V. SULLIVAN[4,1], J.D.E. GABRIELI[2,1]. *Prog. in Neuroscience[1], Depts. of Psychology[2], Radiology[3], and Psychiatry & Behavioral Sciences[4], Stanford University, Stanford, CA 94305.*

#28 P16 Cytoplasmic shrinkage of Purkinje cells in cerebella of patients with schizophrenia. GREGORY S. SMUTZER[1,2], KHOA D. TRAN[1], and RICHARD L. DOTY[1], *[1]Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, and [2]Institute for Human Gene Therapy, University of Pennsylvania School of Medicine, Philadelphia, PA 19104.* FAX: (215) 349-5266.

Human Taste and Oral Chemesthesis

#29 P17 Possible influence of monosodium glutamate (msg) on gustatory reaction time to saltiness of NaCl, KCl and their mixtures in model systems, M. C. ZAMORA, M. MARTINEZ and M. E. OTERO-LOSADA, *Laboratorio de Investigaciones Sensoriales, CONICET, Fac. de Medicina, UBA, M.T. de Alvear 2202 4° P, CP 1122, Buenos Aires, Argentina,* cz@lis.edu.ar

#30 P18 Chirality of sweetness and sweetness inhibition. RACHEL W. SIERTSEMA, GORDON G. BIRCH[1] and LUCIO MERLINI[2] *[1]Department of Food Science and Technology, P.O. Box 226, University of Reading, Whiteknights, Reading, Berkshire, RG6 6AP UK, and [2]Dipartimento di Scienze Molecolari di Agroalimentari, University of Milano, Via Celoria 2, 20133, Milano, Italy*

#31 P19 Isentropic compressibility as a sensitive indicator of taste. GORDON G. BIRCH and SNEHA A. PARKE *Department of Food Science and Technology, University of Reading, Whiteknights, P.O. Box 226, Reading, RG6 6AP, U.K.* FAX: +44(0) 118 931 0080

#32 P20 Human taste mechanisms for pyranose and furanose sugars. MELANIE A. ARMSTRONG, NUSRAT FEROZ, MARCY L. HENDERSON, YELENA KATSMAN, HARJEET S. PARMAR, LAURA M. SCARSELLA and LINDA M. KENNEDY, *Neuroscience Laboratory, Biology Department, Clark University, Worcester, MA 01610,* lkennedy@clarku.edu.

#33 P21 The effects of mono- and di- valent salts on taste profiles of twelve sweeteners. SUSAN S. SCHIFFMAN[1], ELIZABETH A. SATTELY-MILLER[1], BREVICK G. GRAHAM[1], and BARBARA J. BOOTH[2], *[1]Dept. of Psychiatry, Duke University Medical Center, Durham, NC 27710, [2]NutraSweet Kelco Co., Mt. Prospect, IL 60056,* FAX: 919-684-8449.

#34 P22 The effect of number of categories on the estimated bitterness, saltiness, sourness and sweetness of taste mixtures. ILSE A. POLET, JAN H.A. KROEZE, *Psychological Laboratory, Utrecht University, Utrecht, the Netherlands.* FAX: +31-30-2534511.

#35 P23 Quantitative measures of performance from a taste confusion matrix. THOMAS P. HETTINGER[1], JANNEANE F. GENT[1], LAWRENCE E. MARKS[2,3], MARION E. FRANK[1], *[1]UConn Health Center, Farmington, CT 06030, [2]J.B. Pierce Lab., New Haven, CT 06519, [3]Yale University, New Haven, CT 06520.* thetting@neuron.uchc.edu

#36 P24 Experience with a flavor in mother's milk modifies the infant's acceptance of similarly flavored cereal. JULIE A. MENNELLA and GARY K. BEAUCHAMP, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

#37 P25 The relationship between salivary glutamate and sodium levels and taste perception of sodium chloride and monosodium glutamate. MARIA G. BUSCARELLO[1] AND MIRIAM R. LINSCHOTEN[2]. *[1]Dept. of Food Science and Human Nutrition, Colorado State Univ., Fort Collins, CO 80523 and [2]Rocky Mountain Taste and Smell Center, Univ. of Colorado Health Sciences Center, Denver, CO 80262.* FAX: (303) 315-8787.

#38 P26 Prop (6-*n*-propylthiouracil) genetics and trigeminal innervation of fungiform papillae. JORDAN M. PRUTKIN, KATHARINE FAST, LAURIE A. LUCCHINA, LINDA M. BARTOSHUK, *Otolaryngology, Yale University School of Medicine, New Haven, CT 06520-8041.* jordan.prutkin@yale.edu.

#39 P27 Alteration in lingual somatosensation as a result of transection of the chorda tympani nerve (VII). SETH R. SCHWARTZ, TANVEER JANJUA, JOHN KVETON, BARRY G. GREEN, LINDA M. BARTOSHUK. *Otolaryngology, Yale University School of Medicine, New Haven, CT 06520-8041.* schwarsr@Biomed.med.Yale.edu.

#40 P28 Acceptance of salty, sweet and bitter foods across pregnancy. VALERIE B. DUFFY[1], LINDA M. BARTOSHUK[2], RUTH STRIEGEL-MOORE[3], and JUDITH RODIN4, *[1]Univ. of Connecticut, Storrs, CT 06269, [2]Yale Univ. School of Medicine, New Haven, CT 06520, [3]Wesleyan Univ. Middletown, CT 06457, [4]Univ. of Pennsylvania, Philadelphia, PA, 19104,* vduffy@uconnvm.uconn.edu.

#41 P29 6-N-propylthiouracil (PROP) tasters assign higher sweetness ratings to sucrose and high-intensity sweeteners. LAURIE A. LUCCHINA1*, OTIS F. CURTIS, V.2, PETER PUTNAM2, and LINDA M. BARTOSHUK1, *1Department of Surgery, Yale University School of Medicine, New Haven, CT 06520, 2Technical Service, Cultor Food Science, Ardsley, NY 10502.* laurie.lucchina@unilever.com.

#42 P30 Irritant properties of nicotine and piperine: psychophysical evidence for asymmetrical cross-desensitization effects. J.-M. DESSIRIER[1,2], M. O'MAHONY[2] AND E. CARSTENS[1], *[1]Section of Neurobiology, Physiology & Behavior, [2]Department of Food Science & Technology, University of California, Davis, Davis, CA 95616,* jadessirier@ucdavis.edu.

#43 P31 Reduced duration of thermal hyperalgesia from capsaicin in the orofacial region. BARRY G. GREEN[1,2] AND ALBERTO CRUZ[1], *John B. Pierce Laboratory[1] and Section of Otolaryngology, Yale School of Medicine[2], 290 Congress Avenue, New Haven, CT 06519.* FAX: (203) 624-4950.

#44 P32 The immediate alerting effects of hot beverage ingestion: mediated by caffeine or sensory factors? JENNIFER M. ASPEN and PAUL T. QUINLAN, *Cell Biology and Physiology Unit, Unilever Research, Colworth House, Sharnbrook, Bedford, United Kingdom, MK44 1LQ,* Jennifer.Aspen-Brouwer@unilever.com.

#45 P33 Time course of capsaicin burn to repeated application. CAREY D. BALABAN[1], DONALD H. McBURNEY[2], and MINDY STOULIS[3], *[1]Departments of Otolaryngology and Neurobiology, [2,3]Department of Psychology, University of Pittsburgh, Pittsburgh, PA 15213.* cbalaban@vms.cis.pitt.edu

#46 P34 The effect of a reference sample on sweetness ratings in two intensity scaling methods. JEANMARIE DIAMOND, and HARRY T. LAWLESS, *Department of Food Science, Cornell University, Ithaca, NY 14853.* jd44@cornell.edu.

#47 P35 Functionality of taste localization in humans. JEANNINE F. DELWICHE and PAUL A.S. BRESLIN, *Monell Chemical Senses Center, Philadelphia, PA, 19104.* delwiche@monell.org

#48 P36 Taste- and odor-induced facial expressions of young healthy volunteers in solitude and facing a mirror. JACOB E. STEINER and GAD COHEN, *Dept. of Oral Biology, Hebrew Univ. Hadassah School of Dent. Med., P.O.Box 12272, Jerusalem 91120, Israel.*

#49 P37 Sensory correlates of beer ingestion. DOREEN P. HAMEL and RICHARD D. MATTES, *Foods and Nutrition, Purdue University, West Lafayette, IN 47907.* hameld@cfs.purdue.edu.

#50 P38 The effects of preloads on sensory specific satiety and cephalic phase saliva production in humans. SARAH K. VOISARD-KIRKMEYER and RICHARD D. MATTES. *Department of Food and Nutrition, Purdue University, West Lafayette, IN 47907.* sarah_kirkmeyer@b-f.com.

#51 P39 Effects of product information on product perception. JOS MOJET & ADRIAAN P.W. KOLE. *TNO Nutrition and Food Research Institute, Zeist, the Netherlands.* mojet@voeding.tno.nl.

#52 P40 Spatial discrimination of NaSaccharin and NaGlutamate tastes on the different sides of anterior tongue. PAUL A.S. BRESLIN[1], DAVID B.T. MCMAHON[1,2], HIROKI SHIKATA[1,3], AND JEANNINE F. DELWICHE[1], *[1]Monell Chem. Senses Ctr, Phila., PA, 19104, [2]Dept. of Neurosci., Univ. Pitt, Pitt., PA 15260, [3]Japan Tobacco Inc., Yokohama 227, Japan.* breslin@monell.org

Thursday Afternoon

1:00-2:30 P.M. **Open Discussion on Cloning Olfactory Receptor Genes**
(*Sara Desoto Ballroom*)
Organizer: Peter Mombaerts

3:30-5:30 P.M. **Educational Outreach Workshop** (*Sarasota Room*)
Lecture by Ken Kubo, BIOTECH Project, University of Arizona and Discussion with Sarasota Teachers
Organizer: Christine Byrd
Sponsored by the National Institutes of Health (NIDCD)

5:30-7:00 P.M. **Industrial Reception** (*Florida Room*)
Organizer: Grant Dubois

SLIDES

Thursday Evening - 7:00 P.M. - 9:00 P.M.

Human Olfaction
Chairperson: Pam Dalton

7:00 #53 Putative human pheromones function as state "modulators" rather than behavior "releasers". SUMA JACOB, MARTHA MC CLINTOCK, *Committee on Neurobiology, University of Chicago, Chicago, IL 60637.* sj11@midway.uchicago.edu.

7:15 #54 People's reactions to age and gender effects on odors. DENISE CHEN AND JEANNETTE HAVILAND. *Psy. Dept., Rutgers University, Livingston Campus, New Brunswick, NJ 08903.* xdc@eden.rutgers.edu.

7:30 #55 An exploration of verbalizations associated with olfactory and visual stimuli. T. L. WHITE[1,2], S. VAN TOLLER[2]. [1]*Clinical Olfactory Research Center at the SUNY Health Science Center, Syracuse, NY.,* [2]*University of Warwick, Coventry, UK*

7:45 #56 Cognitive development and odor categorization. CHRISTINE JEHL and CLAIRE MURPHY. *Center For Lifespan Human Senses, San Diego State Univ., San Diego, CA 92120.* FAX: (619) 594-3773

8:00 #57 Normative data for olfactory event-related potentials. CLAIRE MURPHY[1, 2, 3], CHARLIE D. MORGAN[1, 2], SPENCER WETTER[1], MARK W. GEISLER[3], JAMES W. COVINGTON[1], DENNARD W. ELLISON[3], AND JOHN M. POLICH[4] [1]*San Diego State University, 6363 Alvarado Ct., Suite 101, San Diego, CA 92120-4913* FAX:619 594-3773, cmurphy@sunstroke.sdsu.edu., [2]*SDSU/UCSD Joint Doctoral Program,* [3]*University of California, School of Medicine, San Diego, CA , 92103,* [4]*The Scripps Research Institute, La Jolla, CA 92037*

8:15 #58 Cerebral processing of olfactory perception and recognition memory in humans. IVANKA SAVIC[1,2], BALAZS GULYAS[1], MARIA LARSSON[3]. [1]*Div. of Human Brain Research, Dept. Neuroscience, and* [2]*Dept. of Neurology,* [3]*Section of Psychology, Stockholm Gerontology Research Center, Dept. of Clinical Neuroscience and Familiy Medicine, Division of Geriatric Medicine, Karolinska Institute, Stockholm, Sweden.*

8:30 #59 The effects of phasic odor administration on continuous performance. DAVID G. ELMES, TYLER S. LORIG, JULIE A. MARKHAM, AND W. KEN THEUS. *Department of Psychology, Washington and Lee University, Lexington, VA 24450.* delmes@wlu.edu

8:45 #60 Theoretical computations of odorant uptake in the human nose. KEYVAN KEYHANI[1], PETER W. SCHERER[2], and MAXWELL M. MOZELL[3], [1]*School of Chemical Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0100,* [2]*Department of Bioengineering, University of Pennsylvania, Philadelphia, PA 19104-6392,* [3]*Department of Physiology, SUNY Health Sciences Center at Syracuse, Syracuse, NY 13210,* keyvan@mucus.seas.upenn.edu.

9:00-9:15 P.M. Refreshment Break

9:15 P.M. **AChemS: The Beginning** (*Sara Desoto Ballroom*)
AChemS XX Celebration Lecture
Dr. Max Mozell
Chair: Thomas Scott

10:00 P.M. **AChemS XX Social** (*Gallery*)
Sponsored by AChemS and Oxford University Press

POSTERS

Thursday Evening -- 7:00 P.M. - 11:00 P.M.

Physiology of Central Olfactory Pathways

Physiology of Central Olfactory Pathways

#61 P1 Differential odor information coding in early and late mitral/tufted cell spiking. K.M. DORRIES AND J.S. KAUER, *Dept. of Neuroscience, Tufts Medical School, Boston, MA 02111*, kdorries@opal.tufts.edu.

#62 P2 Dynamic mapping of odor-elicited response in rat olfactory bulb by functional magnetic resonance imaging. XIAOJIN YANG[1], RENCO RENKEN[2], FAHMEED HYDER[3], MOHAMEED SIDEEK[3], CHARLES A. GREER[3], GORDON M. SHEPHERD[4] and ROBERT G. SHULMAN[3], *[1]Department of Chemistry, [3]Department of MB&B, Sections of [3]Neurosurgery and [4]Neurobiology (School of Medicine), Yale University; [2]Department of Chemistry, University of Groningen, the Netherlands.* yang@mrcbs.med.yale.edu

#63 P3 Olfactory nerve induced long lasting depolarizations in mitral cells of the rat olfactory bulb. GREG C. CARLSON, MATTHEW ENNIS, MICHAEL T. SHIPLEY and ASAF KELLER. *Dept. Anatomy & Neurobiology, Program in Neuroscience, University of Maryland School of Medicine, Baltimore, MD 21201.* gcarlson@umaryland.edu

#64 P4 Current-source density analysis in the rat olfactory bulb: evidence for autoexcitation in the apical dendrites of mitral/tufted cells. V. ARONIADOU-ANDERJASKA, M. ENNIS & M. T. SHIPLEY, *Dept. Anat. & Neurobiol., Univ. Maryland Sch. Med., Baltimore, MD, 21201.* vanderja@umaryland.edu.

#65 P5 Trans-ACPD sensitive metabotropic glutamate receptors reduces glutamatergic transmission from mitral/tufted to granule cells. K.J. CIOMBOR, V. ARONIADOU-ANDERJASKA, M. ENNIS AND M.T. SHIPLEY. *Dept. Anat. & Neurobiol, Prog. Neurosci., Univ. Maryland Sch. Med., Baltimore, MD 21201.* kciombor@umaryland.edu.

#66 P6 Intrinsic activation of NMDA receptors influences main olfactory bulb (MOB) mitral cell excitability. P.M. HEYWARD, M. ENNIS, G.C. CARLSON A. KELLER & M.T. SHIPLEY, *Dept. Anatomy and Neurobiology, Program in Neuroscience, University of Maryland, Baltimore MD 21201.* pheyward@umaryland.edu

#67 P7 Examining the roles of nitric oxide synthase and soluble guanylyl cyclase in the development of the antennae and antennal lobes of *Manduca sexta.* A. NIGHORN, N.J. GIBSON, and J.G. HILDEBRAND, *Arizona Research Laboratories Division of Neurobiology, University of Arizona, Tucson, AZ 85721.* nighorn@manduca.neurobio.arizona.edu

#68 P8 Adult olfactory cyclic nucleotide-gated channel-1 (OCNC-1)-deficient mice display altered biochemistry and morphology in olfactory bulb. [1]HARRIET BAKER, [2]DIANA M. CUMMINGS, [1]LINDA FRANZEN, [3]STEVEN D. MUNGER, [3]RANDALL R. REED, [2]FRANK L. MARGOLIS, *[1]Cornell Univ. Med. Coll. at Burke Med. Res. Inst., White Plains, NY 10605, [2]Univ. Maryland, Baltimore Sch. Med., Baltimore, MD 21201, [3]Howard Hughes Med. Inst., Johns Hopkins Univ., Baltimore, MD.* 21205. habaker@med.cornell.edu

#69 P9 Characterization of patch-clamp properties of mitral and periglomerular cells in the accessory olfactory bulb of the rat, *Rattus norvegicus.* GREGORY V. GOLDMAKHER and ROBERT L. MOSS, *Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX 75235.* goldmakh@utsw.swmed.edu

#70 P10 Single-cell PCR detection of cyclic nucleotide-gated channels in cultured olfactory bulb neurons. P. A. KINGSTON[1], G. M. SHEPHERD[1], C. J. BARNSTABLE[1], and F. ZUFALL[2], [1]*Section of Neurobiology, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510,* and [2]*Anatomy and Neurobiology, University of Maryland, 685 West Baltimore, Baltimore, MD 21201.* kingston@pantheon.yale.edu.

#71 P11 A Ca^{2+}-permeable, Na^{+}-gated cation channel from neurons in the lobster olfactory lobe. ASLBEK B. ZHAINAZAROV[1], BARRY W. ACHE[1,2], *[1]Whitney Lab. and [2]Depts. of Zoology and Neuroscience, Univ. of Florida, St. Augustine, FL 32610.* FAX: (904) 461-4008.

#72 P12 Timing of odor-evoked impulse bursts and oscillatory electrical activity in lateral protocerebral neurons of the crayfish central olfactory pathway. DE FOREST MELLON and JIANHUA CANG, *Dept of Biology, Univ of Virginia, Charlottesville VA 22903.* FAX: (804) 982-5626.

#73 P13 Web accessible methods for organizing whole cell neuronal models. JASON S. MIRSKY[1], MICHAEL HINES[2], PRAKASH M. NADKARNI[3], MATTHEW D. HEALY[3], PERRY L. MILLER[3] and GORDON M. SHEPHERD[1], *[1]Section of Neurobiology, [2]Department of Computer Science, [3]Center for Medical Informatics, Yale University School of Medicine, New Haven, CT 06510.* jason.mirsky@yale.edu.

#74 P14 Noise analysis of spatio-temporal information processing in a computer simulation of the olfactory bulb. JOEL WHITE, *Neuroscience Dept., Tufts Med. School, Boston, MA, 02111.* jwhite@opal.tufts.edu.

#75 P15 Responses of single olfactory bulb neurons to structurally similar and diverse amino acid odorants in the channel catfish. WILLIAM T. MAGEE and JOHN CAPRIO, *Department of Biological Sciences, Louisiana State University, Baton Rouge, LA 70803.* FAX: (504) 388-2597

#76 P16 Host-plant odor processing by antennal lobe projection neurons in female *Manduca sexta.* JANE ROCHE KING, THOMAS A. CHRISTENSEN, and JOHN G. HILDEBRAND, *ARLDN, U. of AZ., Tucson, AZ 85721,* jrking@neurobio.ariozona.edu.

#77 P17 Temporal structure of pheromone plumes: simultaneous recordings from electroantennograms and single projection neurons in the antennal lobes of male moths. NEIL J. VICKERS and THOMAS A. CHRISTENSEN, *ARL Division of Neurobiology, University of Arizona, Tucson, AZ 85721.* vickster@neurobio.arizona.edu.

#78 P18 Effects of preovulatory and ovulatory pheromones in goldfish olfactory bulb mitral and ruffed cells. SAMER NASSER, MARION GLOGER, H. PETER ZIPPEL, *Physiol. Inst. der Universität, Humboldtallee 23, 37073 Göttingen, Germany.* FAX: +49-551-395923.

#79 P19 Goldfish olfactory bulb relay neurons respond during epithelial application of a probable alarm pheromone. H. PETER ZIPPEL, SUSANNE WILCKE, *Physiol. Inst. der Universität, Humboldtallee 23, 37073 Göttingen, Germany.* FAX: +49 551-395923.

#80 P20 *In vivo* optical recording of electrically stimulated neuronal activity in the mouse olfactory bulb. TARIK K. ALKASAB, JOHN S. KAUER. *Dept. of Neuroscience, Tufts University School of Medicine, Boston, MA 02111,* talkasab@opal.tufts.edu.

#81 P21 Effect of WGA lectin on odor detection and neuronal processing of odor stimuli in the rat olfactory bulb. ALEXANDRA KIRNER[1], RAIMUND APFELBACH[1], AND ERNEST POLAK[2], [1]*Department of Zoology, University of Tübingen, 72076 Tübingen, Germany,* [2]*Department of Chemistry, University of Warwick, Coventry, UK.* FAX: 01149-7071-294634.

Friday, April 24, 1998

SLIDES

Friday Morning -- 8:00 A.M. -9:15 A.M.

Coding in the Olfactory System
Chairperson: John Kauer

8:00 #82 Olfactory discrimination ability of human subjects for aliphatic alcohols. MATTHIAS LASKA and SABINE TROLP, *Department of Medical Psychology, University of Munich Medical School, D-80336 Munich, Germany.* Laska@imp.med.uni-muenchen.de

8:15 #83 Voltage-sensitive dye recording of odor elicited oscillations in the turtle olfactory bulb. YING-WAN LAM, LAWRENCE B. COHEN, JING FANG, AND MICHAL ZOCHOWSKI, *Dept. of Physiology, Yale University School of Medicine, New Haven, CT 06520.* ywlam@minerva.yale.edu.

8:30 #84 Spatial patterns of c-fos expression in the rat olfactory bulb in response to stimulation with two different odors. TOBIAS KRAUTER, ALEXANDRA KIRNER, AND RAIMUND APFELBACH, *Department of Zoology, University of Tübingen, 72076 Tübingen, Germany.* FAX: 01149-7071-294634.

8:45 #85 Context-dependent odor responses reveal dual GABA-dependent spike codes in single olfactory projection neurons. T.A. CHRISTENSEN, B.R. WALDROP, and J.G. HILDEBRAND, *ARLDN, Univ. Of Arizona, Tucson, AZ 85721.* tc@neurobio.arizona.edu

9:00 #86 Dynamic models of receptor transduction and olfactory coding in the insect antennal lobes. WAYNE M. GETZ, and ANTOINE LUTZ, *Division of Insect Biology, University of California at Berkeley, CA 94720-3112.* getz@nature.berkeleyedu.

9:15-9:45 A.M. **Special Lecture on Olfactory Coding**
Dr. Gilles Laurent
Department of Biology, California Institute of Technology
"Spatio-temporal codes for odors in oscillating neural assemblies"
Chairperson: John Kauer
Sponsored by the National Institutes of Health (NIDCD)

9:45-10:00 A.M. Refreshment Break

SLIDES

Friday morning - 10:00 A.M. -11:45 A.M.

Olfactory Receptor Cells: Functional Aspects
Chairperson: Randy Reed

10:00 #88 Mapping the molecular receptive range of individual olfactory cilia by high-resolution calcium imaging. FRANK ZUFALL[1,3], CHARLES A. GREER[1,2], GORDON M. SHEPHERD[1], TRESE LEINDERS-ZUFALL[1,3], *[1]Section of Neurobiology and [2]Department of Neurosurgery, Yale University, New Haven, CT 06510, [3]Department of Anatomy and Neurobiology, University of Maryland, Baltimore, MD 21201,* fzufa001@umaryland.edu.

10:15 #89 Location of olfactory receptors in olfactory epithelium and bulb correlates with potential odor-discriminating receptor residues. MICHAEL S. SINGER AND GORDON M. SHEPHERD, *Sect. Neurobiology, Yale Univ. School of Medicine, New Haven, CT 06510.* FAX: (203) 785-6990.

10:30 #90 Mechanisms underlying odor response desensitization of olfactory receptor neurons. MINGHONG MA[1], TRESE LEINDERS-ZUFALL[1,2], GORDON M. SHEPHERD[1], FRANK ZUFALL[1,2], *[1]Section of Neurobiology, Yale Univ., New Haven, CT 06510, [2]Department of Anatomy and Neurobiology, Univ. of Maryland, Baltimore, MD 21201.* FAX: (203) 785-6990

10:45 #91 Genetic Dissection of the Chemoresponse Hyperpolarization in *Paramecium.* ROBIN R. PRESTON[1], WADE E. BELL, JUDITH L. VAN HOUTEN, The Allegheny University of the Health Sciences, Philadelphia, PA 19129* and University of Vermont, Department of Biology, Burlington, VT 05405. jvanhout@zoo.uvm.edu.

11:00 #92 The use of human olfactory receptor neurons to study the biochemical basis of bipolar disorder. GEORGE GOMEZ[1], CHANG-GYU HAHN[2], RICHARD JOSSIASEN[2], ETIAN FRIEDMAN[2], LOUIS D. LOWRY[1,3], DIEGO RESTREPO[4] AND NANCY E. RAWSON[1]. *[1]Monell Chemical Senses Center, Philadelphia, PA; [2]Allegheny University of the Health Sciences, Norristown, PA; [3]Thomas Jefferson University, Philadelphia, PA, [4]University of Colorado Health Sciences Center, Denver, CO*

11:15 #93 Cloning of a large number of putative murine olfactory receptors, and functional expression in HEK 293 cells. DIETMAR KRAUTWURST[1], KING-WAI YAU[2], RANDALL R. REED[1], *[1]Dept. of Mol. Biol. & Genetics, [2]Dept. of Neurosci., Howard Hughes Med. Inst., Johns Hopkins Univ. School of Medicine, Baltimore, MD 21205.* FAX: (410) 614-0827.

11:30 #94 Are the olfactory receptors also guidance receptors? PAUL FEINSTEIN, CHEN ZHENG, ANNE VASSALLI AND PETER MOMBAERTS. *The Rockefeller University, 1230 York Avenue, New York, NY 10021.* feinstp@rockvax.rockefeller.edu.

POSTERS

Friday Morning - 8:00 A.M.-12:00 P.M.

Taste in the CNS: Structure and Function
Human Olfaction and Nasal Chemesthesis

Taste in the CNS: Structure and Function

#95 P1 Suppression of taste responses in the nucleus of the solitary tract of the rat by brief pulses of tastants, CHRISTIAN H. LEMON, CHRISTIAN REICH AND PATRICIA M. DI LORENZO, *Department of Psychology, State University of New York at Binghamton, Binghamton, NY 13902-6000.*

#96 P2 Opioid modulation of gustatory responses in the solitary nucleus: Electrophysiological and immunhistochemical evidence. DAVID V. SMITH, CHENG-SHU LI, and BARRY J. DAVIS, *Dept. Anatomy & Neurobiology and Program in Neuroscience, Univ. Maryland School of Medicine, Baltimore, MD 21201.* dvsmith@umaryland.edu.

#97 P3 Short-term synaptic plasticity in the primary gustatory nucleus in goldfish. C.A. SMERASKI[1], T.V. DUNWIDDIE[2], L.H. DIAO[2] AND T.E. FINGER[1], *[1]Department of Cellular and Structural Biology and [2]Department of Pharmacology, University of Colorado Health Sciences Center, Denver, CO 80262,* cynthia.smeraski@uchsc.edu.

#98 P4 Corticofugal modulation of taste responses in the hamster solitary nucleus: Inhibition by GABAergic mechanisms. CHENG-SHU LI and DAVID V. SMITH, *Dept. Anatomy & Neurobiology and Program in Neuroscience, Univ. Maryland School of Medicine, Baltimore, MD 21201.* cli@umaryland.edu.

#99 P5 Intravenous glucose infusions selectively suppress responses of sugar-sensitive taste cells in the rat NST. BARBARA K. GIZA, STUART A. MCCAUGHEY, COURTNEY L. SCOTT, LIN ZHANG, THOMAS R. SCOTT *Department of Psychology and Program in Neuroscience, University of Delaware, Newark, DE 19716.* FAX: 302-831-3645.

#100 P6 Early postnatal changes in the dendritic morphology of salt-sensitive neurons in the rodent nucleus of the solitary tract (NST). YU-ZHI LIU[1], JEFFERY MASSEY[1], LAURA SCHWEITZER[2] AND WILLIAM E. RENEHAN[1], *[1]Division of Gastroenterology, Henry Ford Health System, Detroit, MI and [2]Department of Anatomical Sci. and Neurobiol., University of Louisville School of Medicine.* wrenehan@ix.netcom.com. FAX:313-876-9487.

#101 P7 Immunohistochemical localization of $GABA_A$ receptors in the rostral nucleus of the solitary tract of the adult rat. WENDY L. HECK[1], WILLIAM E. RENEHAN[2], and LAURA SCHWEITZER[1], *[1]Dept. of Anat. Sci. and Neurobiol., University of Louisville School of Medicine, Louisville, KY 40292, [2]Henry Ford Hospital, Detroit, MI 48202,* wlheckz1@ulkyvm.louisville.edu.

#102 P8 Changes in the distribution of GABA in the developing rat rNST. M. BROWN[1], J. PENG[1], W.E. RENEHAN[2]and, L. SCHWEITZER[1] *[1]Univ. of Louisville School of Medicine, Louisville, KY 40292, [2]Henry Ford Hosp., Detroit, MI 48202,* mebrow01@homer.louisville.edu.

#103 P9 Functional properties of neurons of the nucleus of the solitary tract following chorda tympani nerve crush and regeneration. MICHAEL A. BARRY, LAWRENCE D. SAVOY *Dept. BioStructure and Function, School of Dental Medicine, Univ. of Conn. Health Center, Farmington, CT 06030-3705.* barry@neuron.uchc.edu

#104 P10 The central gustatory pathway: Calbindin-D28k immunoreactivity in the gustatory regions of the nucleus of the solitary tract and parabrachial nuclei in the hamster. BARRY J. DAVIS[1] and JOYDEEP SOM[2], *[1]Dept. Anatomy & Neurobiology and Program in Neuroscience, and [2]Div. Otolaryngology: Head & Neck Surgery, Univ. Maryland Sch. Medicine, Baltimore, MD 21201.* bdavis@umaryland.edu.

#105 P11 Double labeling reveals that a subpopulation of rat rostral NST neurons that project to the medial PBN express glutamate immunoreactivity. M.S. KING, J.M. MADDEN and M. KORNBERG, *Biology Dept., Stetson Univ., DeLand, FL 32720.* mking@stetson.edu.

Human Olfaction and Nasal Chemesthesis

#106 P12 Latency to discriminate between binary mixtures: Prediction of discriminability from an odor space. PAUL M. WISE and WILLIAM S. CAIN, *Dept. of Surgery, University of California at San Diego, La Jolla, CA 92039-0957.* FAX: 619-458-9417.

#107 P13 Reduced habituation is achieved with a ten minute inter-stimulus interval in the olfactory event-related potential. SPENCER WETTER[1] AND CLAIRE MURPHY[1,2], *[1]SDSU Department of Psychology, 6363 Alvarado Ct., Ste. 101, San Diego, CA 92120-4913; [2]UCSD Medical Center, San Diego, CA 92103.* FAX:619-594-3773.

#108 P14 Semantic-free sorting of odor qualities as perceived by pemenone-osmic and allosmic subjects. DAVID A. STEVENS[1], ROBERT J. O'CONNELL[1,2], *[1]Dept. of Psychology, Clark University, Worcester, MA 01610, [2] Dept. of Physiology, University of Massachusetts Medical Center,, Worcester, MA 01655.* dstevens@clarku.edu.

#109 P15 Effect of nasal dilators on olfactory function. D.J. SMITH[1,2], D.E. HORNUNG[1,2], D.B. KURTZ[1], T.L. WHITE[1]. *[1]Clinical Olfactory Research Center at the SUNY Health Science Center, Syracuse, NY., [2]St. Lawrence University, Canton, NY.*

#110 P16 Effect of nasal dilators on olfactory processing: Threshold, intensity, hedonics and sniff patterns. BRYAN RAUDENBUSH and ROBERT A. FRANK, *Department of Psychology, University of Cincinnati, Cincinnati, OH 45221*, raudenbc@email.uc.edu.

#111 P17 Odor sensitivity and successful aging. STEVEN NORDIN[1,2], OVE ALMKVIST[3], BIRGITTA BERGLUND[2,4], *[1]Department of Psychology, Umeå University, SE-901 87 Umeå, Sweden, [2]Institute of Environmental Medicine, Karolinska Institute, SE-171 77, Solna, Sweden, [3]Department of Clinical Neuroscience and Family Medicine, Division of Geriatric Medicine, Karolinska Institute, Huddinge University Hospital, SE-141 86 Huddinge, Sweden, [4]Department of Psychology, Stockholm University, SE-106 91 Stockholm, Sweden.* steven.nordin@psy.umu.se.

#112 P18 Influence of estradienol and methoxyestateraene on the assessment of the opposite sex, REGINA E. MAIWORM *Department of Psychology II, University of Münster, Fliednerstr. 21, 48149 Münster*

#113 P19 Behavioral effect of androsta-4,16-dien-3-one (androstadienone). LOUIS MONTI-BLOCH[1,2], BERNARD I. GROSSER[1], CLIVE JENNINGS-WHITE[2] AND DAVID L. BERLINER[2]. *[1]Dept. of Psychiatry, Univ. of Utah Salt Lake City, UT 84108, and [2]Pherin Pharmaceuticals , Menlo Park, CA 94025.*

#114 P20 Effects of *l*-menthol on sensory ratings and breathing parameters in humans. MARTIN KENDAL-REED[1], JAMES C. WALKER[2] & DONALD W. WARREN[1], *University of North Carolina, CB# 7450, Chapel Hill, NC 27599 [1], R&D, R.J. Reynolds Tobacco Co., Winston-Salem, NC 27102 [2].* kendalr@email.unc.edu.

#115 P21 Do men and women respond differently to repeated olfactory or intranasal trigeminal stimuli? [1,3]THOMAS HUMMEL, [1]ARIEL SOIFFER, [1,2]OLIVER OPATZ, [1]RICHARD L. DOTY *[1]Smell and Taste Center, University of Pennsylvania Medical School, Philadelphia, USA; [2]University of Erlangen Medical School, Germany; [3]Department of ORL, University of Dresden, Germany.* hummeltc@compuserve.com

#116 P22 Cross-cultural comparison of judgements of odours by Australians and Indonesians. HAE-JIN SONG and GRAHAM A. BELL, *Centre for ChemoSensory Research, The University of New South Wales, Australian Technology Park, Sydney, NSW 1430, Australia.* hj.song@unsw.edu.au.

#117 P23 Gustatory, olfactory and other drivers of preference for 55 samples of Australian food by adult Indonesians of varying age and socio-economic status. GRAHAM A. BELL, HAE-JIN SONG, ALEX LAC, and BEN HE, *Centre for ChemoSensory Research, The University of New South Wales, Sydney, Australia, 1430.* FAX: +61 2 9209 4081.

#118 P24 Can an arousing dose of caffeine potentiate the effectiveness of an odor retrieval cue? RACHEL S. HERZ, *Monell Chemical Senses Center, Philadelphia, PA 19104.* herz@monell.org.

#119 P25 Association among perceived gender frequency and familiarity in odor recall. VICKI HARTWELL[1], RUDY QUINOES[1], ANNA BACON[L,2] AND CLAIRE MURPHY[L,2] *[1]San Diego State University, [2]University of California San Diego, CA 6363 Alvarado Court, St #101, San Diego, CA 92120* FAX: 619-594-3773

#120 P26 The decline in odor recall and recognition memory ability begins as early as the 50s. MARIO F. DULAY[1] and CLAIRE MURPHY[1,2], *[1]Department of Psychology, San Diego State University, San Diego, CA 92120-4913, [2]University of California at San Diego Medical Center, San Diego, CA, 92108.* mdulay@sunstroke.sdsu.edu.

#121 P27 The recollective experience of odor memory: A comparison to visual memory. MATS J. OLSSON, *Department of Psychology, Uppsala University, S-751 42 Uppsala, Sweden.* mats.olsson@psyk.uu.se.

#122 P28 Human psychophysical and neurophysiological measurements on ethanol. R. A. DE WIJK, W. S. CAIN, AND G. PILLA-CAMINHA, *Dept. of Surgery (Otolaryngology), Univ. of California, San Diego, La Jolla, CA 92093-0957.* rdewijk@ucsd.edu.

#123 P29 A mass transport model of human olfactory adaptation. PAMELA DALTON AND PETER W. SCHERER, *Monell Chemical Senses Center, Philadelphia, PA, 19104 and Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, 19104.* dalton@monell.org.

#124 P30 Trigeminal impact of odorants assessed with lateralized stimulation. [1,2]JULIA BERG, [1,3]THOMAS HUMMEL, [1]GRACE HUANG, [1]RICHARD L. DOTY *[1]Smell and Taste Center, University of Pennsylvania Medical School, Philadelphia, USA; [2]University of Erlangen Medical School, Germany; [3]Department of ORL, University of Dresden, Germany.* hummeltc@compuserve.com

#125 P31 Eyeblink classical conditioning to olfactory stimuli. ANNA W. BACON[12,3] and CLAIRE MURPHY[2,3] *[1] SDSU/ UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA 91210, [2] SDSU, Department of Psychology , [3] UCSD, School of Medicine.* FAX: (619)594-3773

#126 P32 The effects of aging on the brain's response to natural gas odor: Diminished sensitivity and slower cognitive processing. MICHAEL D. MADOWITZ, MARK W. GEISLER, *San Diego State Univ. and UCSD, 6363 Alvarado Ct., Suite 101, San Diego, CA 92120-4913.* FAX:(619) 594-3773.

#127 P33 Chemosensory function in patients with temporal lobe epilepsy before and after focus resection BIRGIT KETTENMANN[1,2], PARVANEH MOHAMMADIAN[1], ELISABETH PAULI[2], HERMANN STEFAN[2], GERD KOBAL[1], [1]*Department of Experimental and Clinical Pharmacology and Toxicology and Department of Neurology, Univ. of Erlangen-Nürnberg, 91054 Erlangen, Germany.* FAX: +49-9131-856898

Friday Afternoon

12:00-1:30 P.M. **Minority Fellow Luncheon** (*State Room*)
Organized by: Diego Restrepo

1:30-3:00 P.M. **NIH Grant Review Workshop** (*Sara Desoto Ballroom*)
Chairperson: Jack Pearl, NIDCD
Speakers: Drs. Judith Finkelstein, NIA; Craig Jordon, NIDCD; Laurence Stanford, DRG

3:00-5:00 P.M. **Annual Smell vs Taste Softball Game** (location: TBA)
Organizer: John Caprio

SLIDES

Friday Evening – 7:00 P.M. - 8:15 P.M.

Human Taste Perception
Chairperson: Beverly Cowart

7:00 #128 Genetic sensitivity to 6-*n*-propylthiouracil (PROP) and sensory responses to sugar and fat mixtures. ADAM DREWNOWSKI, SUSAN AHLSTROM HENDERSON, ANNE BARRATT-FORNELL and CLAYTON HANN. *Human Nutrition Program, The University of Michigan, Ann Arbor, MI 48109.*

7:15 #129 Experience-induced increases in sensitivity for glucose in human glucose-hypogeusics or for fructose in fructose-hypogeusics. SHACHAR EYLAM and LINDA M. KENNEDY, *Neuroscience Program, Biology Department, Clark University, Worcester, MA 01610.* seylam@vax.clarku.edu

7:30 #130 A molecular model for multicomponent mixtures: Evidence for the existence of a transducer explains why fructose is sweeter than glucose in humans. DANIEL M. ENNIS, *The Institute for Perception, 300 Arboretum Place Suite 430, Richmond, VA 23236.* FAX: (804)-272-8943.

7:45 #131 Familiarity modulates neophobia's effects on the sensory evaluation of foods. BRYAN RAUDENBUSH and ROBERT A. FRANK, *Department of Psychology, University of Cincinnati, Cincinnati, OH 45221.* raudenbc@email.uc.edu.

8:00 #132 Liminal, "ageusic" taste. TOMAS RADIL[1,2], MARCIA PELCHAT[2], CHARLES J. WYSOCKI[2], [1] *Institute of Physiology, Czech Academy of Sciences, Prague, CZ, 14220,* [2]*Monell Chemical Senses Center, Philadelphia, PA, 19104.* FAX: 215-898-2084.

8:15-8:45 P.M. **Special Lecture on Human Taste Psychophysics**
Dr. Linda Bartoshuk
Department of Surgery, Yale University
"From sweets to hot peppers: Genetic variation in taste and oral pain"
Chairperson: Beverly Cowart

8:45-9:00 P.M. Refreshment Break

SLIDES

Friday Evening -- 9:00 P.M. - 10:30 P.M.

Chemical Communication
Chairperson: Brian Smith

9:00 #134 Evidence for different olfactory foraging strategies in Antarctic seabirds. GABRIELLE A. NEVITT and KEITH REID, *Section of Neurobiology, Physiology and Behavior, Univ. of California, Davis, CA 95616 and the British Antarctic Survey, High Cross, Madingley Road, Cambridge, CB3 OET, UK.* FAX: 530-752-5582.

9:15 #135 Odor plume tracking by the living fossil, *Nautilus pompilius.* JENNIFER A. BASIL[1], ROGER T. HANLON[2] ,SARAH I. SHEIKH[3], AND JELLE ATEMA[1], *[1]Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA, 02543, [2]Marine Resources Center, Marine Biological Laboratory, Woods Hole, MA 02543, [3]Department of Biological Sciences, University of Edinburgh, Edinburgh, UK.* basil@bio.bu.edu.

9:30 #136 Far Field Chemo-orientation in the American Lobster (*Homarus americanus)*: A Role for Micro-Mechanosensation? FRANK W. GRASSO[1], PAUL F. BEGLANE[2], JENNIFER A. BASIL[1] AND JELLE ATEMA[1] [1]*Boston University Marine Program, MBL, Woods Hole, MA 02543* [2]Department of Biology, Suffolk University, Boston, MA 02114

9:45 #137 Hormonal control of response to and secretion of a newt sex pheromone, sodefrin. SAKAE KIKUYAMA[1], FUMIYO TOYODA[2], TAKEO IWATA[1] AND KAZUTOSHI YAMAMOTO[1], *[1]Dept. Biology, Schl. Educ, Waseda Univ., Tokyo 169-50, and [2]Dept. Physiol., Nara Med. Univ., Kashihara 634, Japan.* FAX: 81-(3)-3207-9694.

10:00 #138 The chemosignals causing puberty acceleration in the house mouse: natural stimuli and their structural analogs. MILOS V. NOVOTNY, WEIDONG MA, LUKAS ZIDEK, *Department of Chemistry, Indiana University, Bloomington, Indiana 47405.* FAX: (812)855-8300.

10:15 #139 Initial characterizations of secreted proteins from Asian elephants that bind the sex pheromone, (Z)-7-dodecenyl acetate. L. E. L. RASMUSSEN[1], J. LAZAR[2], D. GREENWOOD[3], L. FENG[2], G. PRESTWICH[2], *[1]Dept. of Chemistry, Oregon Graduate Institute, Beaverton, OR 97006, [2]Dept. of Medicinal Chemistry, University of Utah, Salt Lake City, Utah, [3]Horticulture & Food Research Institute of New Zealand, New Zealand.*

POSTERS

Friday Evening - 7:00 P.M. - 11:00 P.M.

Life and Death in Taste Buds
Development and Plasticity of Central Olfactory Pathways
Vomeronasal, Nervus Terminalis and Trigeminal Systems: PNS Mechanisms

Life and Death in Taste Buds

#140 P1 Peptidergic nerve fibers and synaptic vesicle protein-containing nerve fibers in the rat tongue epithelium and taste buds: Are they the same fibers? Complex results. GINA M. NELSON, *Depts of Pathology and Anatomy and Cell Biology, Univ. of Iowa Hospitals and Clinics, Iowa City, IA 52242.* gina-m-nelson@uiowa.edu

#141 P2 Immunohistochemical analysis of synaptic proteins: (syntaxin, synaptobrevin, synaptic protein, and synaptotagmin) in rat taste buds. MICHAEL E. ROCK, RUIBIAO YANG, HILDEGARD H. CROWLEY and JOHN C. KINNAMON, *Department of Biological Sciences, University of Denver, Denver, CO 80208.* merock@du.edu

#142 P3 Immunocytochemical characterization of SNAP-25 in rat taste buds. RUIBIAO YANG, HILDEGARD H. CROWLEY, MICHAEL E. ROCK and JOHN C. KINNAMON, Department of Biological Sciences, University of Denver, Denver, CO 80208. ryang@du.edu

#143 P4 A highly sensitive method for *in situ* hybridization using tyramide-amplification permits cellular resolution of less abundant mRNAs in taste buds. HUI YANG, STEPHEN D. ROPER and NIRUPA CHAUDHARI, Department of Physiology and Biophysics, University of Miami School of Medicine, Miami, FL 33136. nchaudha@newssun.med.miami.edu.

#144 P5 Rat taste cells express two distinct forms of mRNA for the metabotropic glutamate receptor, mGluR4. ALEXEI FEDOROV and NIRUPA CHAUDHARI, *Department of Physiology and Biophysics, University of Miami School of Medicine, Miami, FL 33136,* nchaudha@newssun.med.miami.edu.

#145 P6 Serotonin-concentrating Taste Cells lack Serotonin-associated Synthetic Enzymes and Transporters. BÄRBEL BÖTTGER and THOMAS E.FINGER, *Rocky Mountain Taste & Smell Ctr. and Dept. Cellular & Structural Biology, Univ. Colorado Health Sci. Ctr., Denver CO 80262. Barbel.Bottger@UCH,SC.edu.*

#146 P7 Immunocytochemical Analysis of Serotonin Biosynthesis in Taste Cells. MEGAN E. LITSTER[1,3], LESLIE M. STONE[1,3], THOMAS E. FINGER[2,3], AND SUE C.KINNAMON[1,3], [1] *Department of Anatomy and Neurobiology, Colorado State University, Ft. Collins, CO 80523,* [2] *Department of Cell and Structural Biology, University of Colorado Health Sciences, Denver, CO 80262,* [3] *The Rocky Mountain Taste and Smell Center, Denver, CO 80262*

#147 P8 Cellular expression of α-gustducin and the A blood group antigen in rat fungiform taste buds cross-reinnervated by the IXth nerve. JOYDEEP SOM[1], JOHN D. BOUGHTER, Jr.[2], STEVEN J. ST. JOHN[2], CHENGSI YU[2], ROBERT C. CHRISTY[2], and DAVID V. SMITH[2], [1]*Div. Otolaryngology Head & Neck Surgery,* [2]*Dept. Anatomy & Neurobiology and Program in Neuroscience, Univ. Maryland School of Medicine, Baltimore, MD 21201.* dvsmith@umaryland.edu.

#148 P9 Distribution of taste buds in the zebrafish, *Brachiodanio rerio.* YUKO OHKUBO, NORIKO AKIKUSA, KATSUTO SUZUKI, MITSURU TSUJI, TAKAYUKI MARUI, Dept. Oral Physiol., Ohu Univ. Sch. Dent., Koriyama, Japan 963. FAX: +81-249-33-7372

#149 P10 Taste bud development in the zebrafish, *Danio rerio.* ANNE HANSEN[1], KLAUS REUTTER[2], AND ECKART ZEISKE[1], [1]*Zoological Institute and Zoological Museum, University of Hamburg.* FAX: +49-40-4123-3937, D-20146 *Hamburg, Germany,* [2]*Anatomical Institute, University of Tuebingen, D-72074 Tuebingen, Germany.*

#150 P11 Dual embryonic origins for vertebrate taste receptors: implications for taste bud patterning. LINDA A. BARLOW. *Dept. of Biological Sciences, Univ. of Denver, Denver CO 80208.* lbarlow@du.edu.

#151 P12 Expression of *Sonic hedgehog* and *Patched* in taste papillae during late mouse development. JOSHUA M. HALL[1,2], KARL ANDERSON[2], JOAN E. HOOPER[2], THOMAS E. FINGER[2], [1]*Medical Scientist Training Program,* [2]*Rocky Mountain Taste & Smell Center, and Department of Cellular and Structural Biology, University of Colorado Health Sciences Center, Denver, CO 80262.* halljosh@york.uchsc.edu

#152 P13 The differentiation of a subpopulation of fungiform taste buds is independent of innervation in NT5 ko mice. JOSEPH-PASCAL MBIENE[1] and LUIS F. PARADA[2] [1]*Department of Biomedical Sciences - Baylor College of Dentistry- a member of Texas A&M University System, Dallas TX 75266,* [2]*Center for Developmental Biology - The University of Texas Southwestern Medical Center at Dallas, Dallas TX 75235.*

#153 P14 p53, Bax, and Nedd-2 are sequential components of the taste cell death pathway in mice. BRUCE OAKLEY and QUN ZENG, *Dept of Biology, Univ. of Michigan, Ann Arbor, MI 48109.* FAX: (734) 647-0884.

Development and Plasticity of Central Olfactory Pathways

#154 P15 The distribution of cell proliferation in the nasal cavity, olfactory epithelium and brain of the larval sea lamprey. HONG N. HUA, BARBARA S. ZIELINSKI, *Dept. of Biological Sciences, Univ. of Windsor, Windsor, Ont. Canada N9B 3P4.* FAX: (519) 971-3609.

#155 P16 Olfactory-bulb deafferentation in the adult zebrafish, *Danio rerio.* CHRISTINE A. BYRD and STEVEN RAY, *Department of Biological Sciences, Western Michigan University, Kalamazoo, MI 49008.* christine.byrd@wmich.edu.

#156 P17 Pax-6 expression in the olfactory bulb of *Xenopus laevis* following olfactory nerve lesions. LESLIE GEE and GAIL D. BURD, *Department of Molecular and Cellular Biology, University of Arizona Tucson, AZ 85721.* FAX: (520) 621-3709

#157 P18 How does a mammalian olfactory glomerulus form? HELEN TRELOAR, ANGELA PURCELL and CHARLES GREER, *Dept. Neurosurgery, Yale University School of Medicine, New Haven, CT 06510,* Helen.Treloar@yale.edu

#158 P19 Localization of Nurr-1 and NGFI-B in the adult mouse olfactory bulb. NIAN LIU, LINDA FRANZEN, HARRIET BAKER, *Cornell Univ. Med. Coll. at the Burke Med. Res. Inst., White Plains, NY 10605.* habaker@med.cornell.edu.

#159 P20 Reduced immunoreactivity of low affinity receptors for nerve growth factors, $p75^{NGFR}$, in the olfactory bulbs of aged rats. KHOA D. TRAN[1], GREGORY S. SMUTZER[1,2], IGOR L. KRATSKIN[1], LLOYD HASTINGS[1], and RICHARD L. DOTY[1], *[1]Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, [2]Institute for Human Gene Therapy, University of Pennsylvania School of Medicine, Philadelphia, PA 19104.* FAX: (215) 349-5266.

Vomeronasal, Nervus Terminalis and Trigeminal Systems: Peripheral Mechanisms

#160 P21 Estrogen increases GnRH content in nervus terminalis of *Xenopus laevis.* CELESTE R. WIRSIG-WIECHMANN[1] and CHARLOTTE E. LEE[2], *[1]Department of Anatomical Sciences, University of Oklahoma Health Sciences Center, Oklahoma City, OK 73104 and [2]Division of Endocrinology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA 02215.* celeste-wirsig@ouhsc.edu.

#161 P22 Cloning of a gene encoding adenylate cyclase from vomeronasal organ of garter snakes. WEIMIN LIU*, DALTON WANG*, JINMING LIU#, PING CHEN* AND MIMI HALPERN# *Departments of Biochemistry* and Neuronal and Behavioral Science#, SUNY Health Science Center at Brookly, Brooklyn, New York 11203.* FAX: (718)270-3316

#162 P23 Chemosignal Transduction in the Vomeronasal Organ of Garter Snakes: Chemoattractant-receptor-mediated Phosphorylation of p35 and p20. JINMING LIU#, PING CHEN*, DALTON WANG* AND MIMI HALPERN# *Departments of Biochemistry* and Neuronal and Behavioral Science#, SUNY Health Science Center at Brooklyn, Brooklyn, New York 11203.* FAX: (718)270-3316

#163 P24 G protein-mediated protein phosphorylation in mouse vomeronasal organ. ANWU ZHOU, ROBERT L. MOSS, *Dept. of Physiology, Univ. of Texas Southwestern Medical Center, Dallas, TX 75235.* FAX: (214)648-8685.

#164 P25 Basal firing patterns of vomeronasal receptor neurons in the female mouse. CAROL A. DUDLEY, KYLE B. WOMACK, ROBERT L. MOSS, *Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX 75235.* cdudle@mednet.swmed.edu.

#165 P26 Expression of nitric oxide synthase, protein inhibitor of neuronal nitric oxide synthase, and guanylyl cyclase in rat vomeronasal organ. TAUFIQUL HUQUE[1], LINDA WYSOCKI[1], CHARLES J. WYSOCKI[1], JOSEPH G. BRAND[1,2] and SCOTT A. MACKLER[3], *[1]Monell Chemical Senses Center, Philadelphia, PA 19104, [2]Dept. of Biochemistry, School of Dental Medicine, U. of Pennsylvania and VAMC, Philadelphia, PA 19104, [3]Dept. of Medicine, U. of Pennsylvania, Philadelphia, PA 19104.* huque@monell.org.

#166 P27 Induction of c-fos gene expression by 17β-estradiol in mouse vomeronasal organ. JUN GUO, ROBERT L. MOSS, *Dept. of Physiology, Univ. of Texas Southwestern Medical Center, Dallas, TX 75235.* FAX: (214)648-8685.

#167 P28 Proliferation density in the rat vomeronasal organ during postnatal development. ELKE WEILER, MARY A. MCCULLOCH AND ALBERT I. FARBMAN. *Northwestern University, Dept. of Neurobiology & Physiology, Evanston, IL 60208-3520, USA.* afarbman@nwu.edu

#168 P29 Lectin histochemistry in the regenerating vomeronasal epithelium. JUNKO YOSHIDA-MATSUOKA[1], RICHARD M. COSTANZO[2]. MASUMI ICHIKAWA [1], *[1]Department of Anatomy and Embryology, Tokyo Metropolitan Institute for Neuroscience, Fuchu, Tokyo 183, Japan, [2]Department of Physiology Virginia Commonwealth University, Richmond, VA 23298-0551.* jun@tmin.acjp

#169 P30 Interactions between lectin and sugar on the vomeronasal epithelium measured with the atomic force microscope. TOSHIYA OSADA[1], SHINICHIRO TAKEZAWA[1], ARIMICHI ITOH[1], HIDEO ARAKAWA[1], MASUMI ICHIKAWA[2], SAKAE KIKUYAMA[3], AND ATSUSHI IKAI[1], *[1]Department of Biological Sciences, Tokyo Institute of Technology, Yokohama, Japan, [2]Anatomy and Embryology, Tokyo Metropolitan Institute for Neuroscience,Tokyo,Japan. [3]Departmen of Biology, School of Education, Waseda University.* tosada@bio.titech.ac.jp

#170 P31 The effects of nicotine receptor blockers on trigeminal nerve responses to nicotine. HESSAMEDIN ALIMOHAMMADI, WAYNE L. SILVER, *Department of Biology, Wake Forest University, Winston-Salem, NC 27109.* FAX: (336) 758-6008.

#171 P32 Discrimination of R- and S-nicotine by the trigeminal nerve. B. RENNER[1], F. MEINDORFNER[1], M. KAEGLER[2], N. THUERAUF[3], A. BAROCKA[3] AND G. KOBAL[1], *[1] Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nuremberg, D-91054 Erlangen, Germany, [2] Institute for Biological Research, D-51149 Cologne, Germany, [3] Department of Psychiatry, University of Erlangen-Nuremberg, D-91054 Erlangen, Germany.* FAX: +49 9131/85 6898.

#172 P33 Isolation and neurophysiological characterization of a sensory irritant compound from *Zanthoxylum*. IGOR MEZINE and BRUCE BRYANT. *Monell Chemical Senses Center, Philadelphia, PA 19104.* FAX: (215) 898-2084.

#173 P34 Responses of CO_2-sensitive trigeminal primary afferents of the nasal cavity recorded from the gasserian ganglion in the rat. N. THUERAUF[2], B. RENNER[1], A. Barocka[2] and G. KOBAL[1], *[1]Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nürnberg, Erlangen, Germany, 91054, [2]Department of Psychiatry, University of Erlangen-Nürnberg, Erlangen, Germany, 91054.* snthuerauf@aol.com.

#174 P35 Role of biotin-binding proteins in *Paramecium* chemoresponse. WADE E. BELL and JUDITH L. VAN HOUTEN, *Dept. of Biology, Univ. of Vermont, Burlington, VT 05405. wbell@zoo.uvm.edu.*

#175 P36 Calmodulin binding domain of the calcium pump: role in chemoresponse in paramecium. JUNJI YANO, VILLA RAKOCHY, JUDITH L. VAN HOUTEN, Department of Biology, University of Vermont, Burlington, VT 05405, jyano@zoo.uvm.edu.

Saturday, April 25, 1998

SLIDES

Saturday Morning – 8:00 A.M. - 9:00 A.M.

Factors in PNS Development and Plasticity
Chairperson: Linda Barlow

8:00 #176 Neurotrophin effects on neurite extension from cultured explants of embryonic rat geniculate, petrosal and trigeminal ganglia. C. M. MISTRETTA[1], Z. XU[1] and D. K. MACCALLUM[2], *School of Dentistry[1] and Medical School[2], University of Michigan, Ann Arbor, MI 48109.* chmist@c.imap.itd.umich.edu.

8:15 #177 Early molecular events in gustatory papilla development are independent of nerve fibers. CHRISTOPHER A. NOSRAT, DON K. MACCALLUM, CHARLOTTE M. MISTRETTA. *Department of Neuroscience, Karolinska Institute, S-171 77, Stockholm, Sweden and Schools of Medicine and Dentistry, University of Michigan, Ann Arbor, MI 48109.*

8:30 #178 The temporal-spatial developmental pattern of olfactory neurogenesis is influenced by the ecdysteroid hormones during metamorphosis in the moth *Manduca sexta*. R. G. VOGT[1], and M.-D. FRANCO[1,2], *[1]Dept. Biological Sciences, Univ. of South Carolina, Columbia, SC 29208, [2]Dept. Molec. Cell Biology, Univ. of Arizona, Tucson AZ 85721.*

8:45 #179 Patterns of expression of the GDNF receptor complex support different signalling mechanisms in the olfactory neuroepithelium and bulb. MICHAEL E. BUCKLAND AND ANNE M. CUNNINGHAM. *Neurobiology Program, Garvan Institute of Medical Research, St Vincent's Hospital, Darlinghurst, NSW 2010, AUSTRALIA.* FAX: 61 2 92958281.

9:00-9:15 A.M. Refreshment Break

PROGRAM-AT-A-GLANCE

TIME	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		SUNDAY		TIME
8:00			**Slides:** Chair: T. Gilbertson Taste Physiology: From Receptor Cell to Brain	**Posters:** Structural Studies of the Peripheral Olfactory Pathways	**Slides:** Chair: J. Kauer Coding in the Olfactory System	**Posters:** Taste in the CNS	**Slides:** Chair: L. Barlow Factors in PNS Dev. and Plasticity	**Posters:** Clinical Taste, Olfacation, and Chemesthesis	**Slides:** Chair: V. Carr Plasticity in the Olfactory Epitheilium	**Posters:** Chemical Communication	8:00
8:30											8:30
9:00					**Olfactory Coding** Dr. G. Laurent		**Developmental Mechanisms Symposium** Chair: L. Tolbert				9:00
9:30									**Slides:** Chair: K. Hamilton Physiol. of Central Olfactory Pathways	Gustatory Behavior and Psychophysics	9:30
10:00			**Mosquito Olfaction Symp.** Chair: J. G. Hildebrand	Structural Studies of Central Olfactory Pathways	**Slides:** Chair: R. Reed Olfactory Receptor Cells: Functional Aspects	Human Olfaction and Nasal Chemesthesis					10:00
10:30				Human Taste and Oral Chemesthesis							10:30
11:00											11:00
11:30							**AChemS Annual Business Mtg.** Chair: T. Scott, Exec. Chairperson *(Ballroom)*				11:30
12:00	**Executive Committee Meeting**				**Minority Fellow Luncheon** Org: D. Restrepo *(State Room)*						12:00
12:30											12:30
1:00			**Open Discussion on Cloning Olfactory Receptor Genes** Org: P. Mombaerts *(Ballroom)*				**Clinical Luncheon** Org: Daniel Kurtz *(Florida Room)*				1:00
1:30					NIH Grant Review Workshop Org: J. Pearl, NIDCD *(Ballroom)*						1:30
2:00											2:00
2:30											2:30
3:00											3:00
3:30			**Educational Outreach Workshop** Org: C. Byrd *(Sarasota Room)*		**Annual Smell v.s Taste Softball Game** Org: J. Caprio		**Panel Disc. on Careers in the Chemical Senses** Org: M. Meredith *(Sarasota Room)*				3:30
4:00											4:00
4:30											4:30
5:00	**Registration** *(Long Boat Room)*						**Wine Tasting** Org; C. Greer & J. Kinnamon *(Florida Room)*				5:00
5:30			**Industrial Reception** Org: G. Dubois *(Florida Room)*								5:30
6:00		**Minority Fellows** *(Palm Room)*									6:00
6:30		**Opening Buffet** *(Gallery)*									6:30
7:00			**Slides:** Chair: P. Dalton Human Olfaction	**Posters:** Physiology of Central Olfactory Pathways	**Slides:** Chair: B. Cowart Human Taste Perception	**Posters:** Life and Death in Taste Buds Development and Plasticity of Central Olfactory Pathways Vomeronasal, Nervus Terminalis, and Trigeminal Systems: PNS Mechanisms	**AChemS Awards Symposium** Chair: C. Greer	**Posters:** Olfactory System: Peripheral Mechanisms			7:00
7:30					**Human Taste Psychophysics** Dr. L. Bartoshuk						7:30
8:00	**Welcome & Awards** - T. Scott, Ex. Chair										8:00
8:30	**Givaudan-Roure Lecture Dr. C. Petit**										8:30
9:00			**AChemS: The Beginning** Dr. M. Mozell		**Slides:** Chair: B. Smith Chemical Communication		**Slides:** Chair: B. Green Human Chemesthesis				9:00
9:30	**Social Reception** *(Gallery)*	**Org. Mtg.: Stud. w/Travel Awards** *(Ballroom)*									9:30
10:00			**AChemS XX Social** *(Gallery)*								10:00
10:30											10:30

9:15-11:30 A.M.. **Developmental Mechanisms Symposium**
Organizers: Gail Burd and Leslie Tolbert
Chairperson: Leslie Tolbert

Dr. Connie Cepko
Department of Genetics, Harvard Medical School
"Extrinsic and intrinsic cues that affect the development of vertebrate photoreceptors"

Dr. Scott Fraser
Biological Imaging Center, California Institute of Technology
"Animating developmental neuroanatomy"

Dr. Piali Sengupta
Department of Biology, Brandeis University
"Development and function of the olfactory system in *C. elegans*"

Discussants: Monica Vetter and Christopher Nosrat
Sponsored by the National Institutes of Health (NIDCD)

POSTERS

Saturday Morning -- 8:00 A.M. - 11:30 A.M.

Clinical Taste, Olfaction, and Chemesthesis
Taste: Peripheral Mechanisms

Clinical Taste, Olfaction and Chemesthesis

#183 P1 Gustatory function following third molar extraction. D.M. SHAFER[1], M.E. FISCHER[2], J.F. GENT[3], M.E. FRANK[3], *Depts. of [1]Oral Maxillofacial Surgery, [2]Orthodontics and [3]BioStructure and Function, UConn Health Center, Farmington, CT 06030.* dshafer@nso.uchc.edu.

#184 P2 Sweet taste and dietary intake in normal pregnancy and pregnancy complicated by Gestational Diabetes Mellitus (GDM). BEVERLY J. TEPPER[1], ANNIE C. SELDNER[1], LONE C. STEINMANN[1], LOUIS B. AMOROSA[2], *Dept. of Food Science, Rutgers University, New Brunswick, NJ 08901 and Dept. of Medicine, Robert Wood Johnson University Hospital, New Brunswick, NJ 08903.* tepper@taste-test.rutgers.edu.

#185 P3 Gustatory function in patients complaining of oral burning. B.K. FORMAKER, J.F. GENT, & M.E. FRANK, *Dept. of BioStructure & Function, The Univ. of Conn. Health Center, Farmington, CT 06030.* brad@neuron.uchc.edu

#186 P4 Human salt-sensitivity: Diagnosis by sensory indices. RICHARD D. MATTES, *Department of Foods and Nutrition, Purdue University, W. Lafayette, IN 47907.* mattesr@cfs.purdue.edu.

#187 P5 A new easy, portable test for the screening of gustatory function: „Tasties". G. AHNE[1], A. ERRAS[1], T. HUMMEL[2], AND G. KOBAL[1], *[1] Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nuremberg, D-91054 Erlangen, Germany, [2]Department of Otorhinolaryngology, University of Dresden, D-01307 Dresden, Germany.* FAX: +49 9131/85 6898.

#188 P6 Gustatory event-related potentials in healthy controls and patients with hypogeusia or ageusia. [1,2]ALEXANDRA GENOW, [1,3]Thomas Hummel, [1]HANS KROGER, [1]RITU BAGLA, [1]DOUGLAS C. BIGELOW *[1]Smell & Taste, University of Pennsylvania, Philadelphia, USA; [2]University of Erlangen Medical School, Germany; [3]Dept. of ORL, University of Dresden, Germany.* hummeltc@compuserve.com

#189 P7 Effect of medications used by HIV-infected patients on the sense of taste. SUSAN S. SCHIFFMAN, MARK S. SUGGS, JENNIFER ZERVAKIS, ALISON E. HEALD. *Departments of Psychiatry and Medicine. Duke University Medical School. Durham, NC 27710.* FAX: (919) 684-8449.

#190 P8 The anterior temporal lobe and gustatory processing in humans. DANA SMALL, MARILYN JONES-GOTMAN, ROBERT ZATORRE, and MICHAEL PETRIDES, *Montreal Neurological Institute, McGill University, Montreal, Quebec H3A 2B4.* FAX: 514-398-1388.

#191 P9 Odor identification as a function of retrieval support in normal aging and early Alzheimer's disease. MARIA LARSSON[1,2], HELÉNE SEMB[3], BENGT WINBLAD[1,2], KAARINA AMBERLA[2], AND LARS-OLOF WAHLUND[2] *[1] Section of Psychology, Stockholm Gerontology Research Center, and [2] Department of Clinical Neuroscience and Family Medicine, Division of Geriatric Medicine, Karolinska Institute, [3] Psychiatric Department, Danderyd Hospital, Sweden.* maria.larsson@cnsf.ki.se.

Saturday, April 25, 1998

#260 P33 Concentration tuning derived from intracellular gain and spare receptor capacity distributions among olfactory sensory neurons: a theoretical study. THOMAS A. CLELAND[1], CHRISTIANE LINSTER[2], JOHN S. KAUER[1], *[1]Department of Neuroscience, Tufts University, Boston, MA 02111, [2]Department of Psychology, Harvard University, Cambridge, MA 02138.* tcleland@emerald.tufts.edu.

#261 P34 Neural coding of complex odorant mixtures: inhibitory receptor binding events contribute to mixture suppression in olfactory receptor neurons of spiny lobsters. STUART I. CROMARTY, CHARLES D. DERBY. *Dept. of Biology, Georgia State University, Atlanta, GA 30303.* cderby@gsu.edu.

#262 P35 Numerical modeling of odorant uptake in the rat nasal cavity. GEOFFREY C. YANG[1], PETER W. SCHERER[1], JAMES E. SCHWOB[3], and MAXWELL M. MOZELL[2], *[1]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA 19104, [2]Department of Physiology and [3]Department of Anatomy and Cell Biology, SUNY Health Science Center, Syracuse, NY 13210.* FAX: (215)573-2071.

#263 P36 A portable artificial nose based on olfactory principles. JOHN S. KAUER, JOEL WHITE. *Department of Neuroscience. Tufts University School of Medicine. Boston, MA 02111.* jkauer@opal.tufts.edu

#264 P37 Use of an electronic nose to evaluate methods for odor remediation. SUSAN S. SCHIFFMAN[1] AND H. TROY NAGLE[2], *[1]Department of Psychiatry, Duke University Medical School. Durham, NC 27710 and [2]Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC 27695-7911.* FAX: (919) 684-8449.

#265 P38 Insulin supports olfactory neuron survival *in vitro* and may be produced in the nasal mucosa. JACQUELYN. K. MCENTIRE, and SARAH. K. PIXLEY, *Dept. of Cell Biol., Neurobiol, and Anat., Univ. of Cincinnati, Cincinnati, OH 45229*, mcentijk@email.uc.edu.

#266 P39 Insulin-sensitivity of the olfactory system. NANCY E. RAWSON and PATRICIA M. ULRICH. *Monell Chemical Senses Center, Philadelphia PA 19104-3308.* rawson@monell.org.

#267 P40 Decreased olfactory ability in chronic rhinosinusitis is related to aspects of mucosal disease. DONALD A. LEOPOLD[1], FRANCISCO S.N. SAMPAIO[2], BIRGITTA E. MOYLAN[2], DAVID PROUD[2], ALKIS TOGIAS[2], *[1]Dept. of Otolaryngology-Head and Neck Surgery and [2]Division of Clinical Immunology, Johns Hopkins Univ., Baltimore MD 21287.* FAX: 410-955-0035.

#192 P10 Relationship between subjective and objective indices of nasal irritant sensitivity among seasonal allergic rhinitic and non-rhinitic subjects. DENNIS SHUSTERMAN, MARY ALICE MURPHY, AND JOHN BALMES, *University of California, San Francisco, CA 94143*, dennis@itsa.ucsf.edu.

#193 P11 The natural history of smell dysfunctions secondary to upper respiratory infection (URI). B.J. COWART[1,2], I.M. YOUNG[2], E.K. VARGA[1] AND L.D. LOWRY[2], *[1]Monell Chemical Senses Center, Philadelphia, PA 19104; [2]Department of Otolaryngology—Head & Neck Surgery, Thomas Jefferson University, Philadelphia, PA 19107.* cowart@monell.org.

#194 P12 Olfactory function and allergic rhinitis. A. J. APTER[1], J. F. GENT[2], M. E. FRANK[2], *Departments of [1]Medicine and [2]BioStructure and Function, UConn Health Center, Farmington, CT 06030.* apter@nso.uchc.edu.

#195 P13 Multiple olfactory measures in *SCHIZOPHRENIA*. CLAUDIA RUPP[1], JOSEF ILMBERGER[2], HARALD OBERBAUER[1], ARNOLD SCHOLZ[3], CAROLINE WANKO[1] and HARTMANN HINTERHUBER[1], *[1]Department of Psychiatry, Univ.-Clinics of Innsbruck, Innsbruck, Austria, [2]Clinic for Physical Medicine, Klinikum Großhadern, Ludwig-Maximilians University of Munich, Munich, Germany, [3]Department of Otorhinolaryngology, Univ.-Clinics of Innsbruck, Innsbruck, Austria,* claudia.rupp@uibk.ac.at.

#196 P14 Autobiographical memory in patients with right hemisphere damage: Olfactory and verbal probes. PAUL J. MOBERG[1,2], RICHARD N. MAHR[1], STEVEN E.. ARNOLD[1], HENRY RIORDAN[1], RICHARD L. DOTY[2], *[1]Department of Psychiatry, Univ. of Pennsylvania, Philadelphia, PA 19104, [2]Department of Otorhinolaryngology: Head and Neck Surgery, Univ. of Pennsylvania, Philadelphia, PA 19104.* FAX: (215) 662-7903.

#197 P15 Olfactory symptom and test analysis in chronic rhinosinusitis patients. CHAN RHYOO, BIRGITTA E. MOYLAN, DONALD A. LEOPOLD, *Dept. of Otolaryngology-Head and Neck Surgery, Johns Hopkins Univ., Baltimore MD 21287.* FAX: 410-550-2064.

#198 P16 Clinical application of the Alcohol Sniff Test in HIV+ and HIV- patients with nasal sinus disease. CHRISTINA R. SCHLOTFELDT[1], MARK W. GEISLER[2], TERENCE M. DAVIDSON[2], AND CLAIRE MURPHY[1,2], *[1]Psych. Dept., San Diego State Univ., CA 92120, [2]Head and Neck Surgery, Univ. of California Medical Center, San Diego, CA 92103.* FAX: (619) 594-3773

#199 P17 The relationship between the alcohol sniff test and sensory olfactory event-related potentials: validation of a psychophysical test. CHRISTINA B. MIDDLETON[1], MARK W. GEISLER[2], TERENCE M. DAVIDSON[2], AND CLAIRE MURPHY[1,2], *[1]Psych. Dept., San Diego State Univ., CA 92120, [2]Head and Neck Surgery, Univ. of California Medical Center, San Diego, CA 92103.* FAX: (619) 594-3773

#200 P18 Rapid screening of olfactory function in Down's Syndrome. CANDI L. FREED[1], ANDREA M. DALVE-ENDRES[1], TERENCE M. DAVIDSON[2], and CLAIRE MURPHY[1,2],*[1]Department of Psychology, San Diego State University, 6363 Alvarado Ct., Suite 101, San Diego, CA 92120-4913.* FAX:(619)594-3773, *[2]University of California San Diego Medical Center, San Diego, CA 92103.*

#201 P19 Law students defeat the UPSIT: dissimulated olfactory dysfunction . ALAN R. HIRSCH[1], JASON GRUSS[2], *[1]Smell & Taste Treatment and Research Foundation, Chicago, IL 60611, [2]University of Michigan, Ann Arbor, MI.* FAX: (312) 649-0458.

#202 P20 What a tangled web we weave: malingering, anosmia, and the odorant confusion matrix. D.B. KURTZ, D.E. HORNUNG, T.L. WHITE, E.B. BELKNAP. *Clinical Olfactory Research Center at the SUNY Health Science Center, Syracuse, NY.*

Taste: Peripheral Mechanisms

#203 P21 Fluorescence imaging of membrane vesicle recycling as a probe for stimulus activation of taste receptor cells *in situ*. M. MUZ ZVIMAN[1] AND JOHN H. TEETER[1,2]. *[1]Monell Chemical Senses Center, 3500 Market St., Philadelphia, PA 19104 ,[2]University of Pennsylvania, Philadelphia, PA 19104.* FAX: (215) 898-2084.

#204 P22 ATP-mediated suppression of outward potassium current carried by a novel voltage-gated potassium channel expressed in taste buds of channel catfish, *Ictalurus punctatus*. JOHN H. TEETER[1,2], RALPH B. PUCHALSKI[1,3] *[1]Monell Chemical Senses Center, Philadelphia, PA 19104; [2]Department of Physiology, [3]Department of Pharmacology, School of Medicine, University of Pennsylvania, Philadelphia, PA 19104.* FAX: 215-898-2084.

#205 P23 Inhibition of K^+ channels by fatty acids may represent a common mechanism for the chemoreception of fat in both pre- and post-ingestive targets. I. KIM, L. LIU AND T.A. GILBERTSON. *Pennington Biomedical Research Center, LSU, Baton Rouge, LA 70808-4124.* kimi@mhs.pbrc.edu.

#206 P24 Identification of a Shaker Kv1.5-like K^+ channel in taste cells: The primary target for fatty acid inhibition. L. LIU[1], I. KIM[1], S. HU[2], S. WANG[2], H. ZHANG[1] AND T.A. GILBERTSON[1]. *[1]Pennington Biomedical Research Center, LSU, Baton Rouge, LA 70808-4124 and [2]Novartis Pharmaceutical Corp., Summit, NJ 07901-1398.* liul@mhs.pbrc.edu.

#207 P25 Isolation and biophysical characterization of an ion channel taste receptor for l-arginine from channel catfish. W. GROSVENOR[1]; YU. A. KAULIN[1]; A.I. SPIELMAN[1,2]; D.L. KALINOSKI[1]; J.H. TEETER[1,3] and J.G. BRAND[1,3,4]. *[1]Monell Chem. Senses Ctr, Phila., PA; [2]NYU College of Dentistry, NY, NY; [3]U of PA, Phila. PA; [4]VA Med. Ctr., Phila. PA.* brand@monell.org

#208 P26 Is PKA involved in sweet taste transduction? BRIAN VARKEVISSER AND SUE C. KINNAMON, *Dept. of Anatomy & Neurobiology, Colorado State Univ., Ft. Collins, CO 80523 and Rocky Mountain Taste and Smell Center, Univ. of Colorado Health Sciences Center, Denver, CO 80262,* sckinna@lamar.colostate.edu

#209 P27 Bitter transduction of dextromethorphan: modulation by cAMP and membrane excitability. TATSUYA OGURA[1,3], SANDRA L. NELSON[2], and SUE C. KINNAMON [1,3], [1]Department of Anatomy and *Neurobiology, Colorado State University, Fort Collins, CO 80523, [2]Health Care Research Center, The Procter & Gamble Company, Mason, OH 45040, [3]The Rocky Mountain Taste and Smell Center, Denver, CO* 80262. tocura@lamar.colostate.edu.

#210 P28 Blocking the bitter taste of pharmaceuticals. RICHARD A. MCGREGOR[1], STEPHEN A. GRAVINA[1], and LUIS RUIZ-AVILA[2], *[1]Linguagen Corp., 100 Delawanna Ave, Clifton, NJ 07015, [2]Almirall Prodesfarma Cardener 64, Barcelona, Spain.* FAX: 973-591-5145.

#211 P29 Gustducin/transducin activation assay: an *in vitro* analytical method to detect bitter tastants. DING MING[1], LUIS RUIZ-AVILA [2] and ROBERT F. MARGOLSKEE[3], *[1]R&D, Pepsi Cola Company, 100 Stevens Ave., Valhalla, NY 10595 and [2] Almirall Prodesfarma Cardener 64, Barcelona, Spain and [3] Howard Hughes Medical Institute, Department of Physiology and Biophysics, The Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029, USA,* dming@pepsi.com

#212 P30 Responses of the hamster chorda tympani nerve to caffeine/sucrose mixtures. BRUCE I. MACKINNON, BRADLEY K. FORMAKER, THOMAS P. HETTINGER & MARION E. FRANK. *Dept. of BioStructure and Function, University of Connecticut Health Center, Farmington, CT 06030.* bmackinn@neuron.uchc.edu.

#213 P31 Effect of lysine on afferent activity of the hepatic branch of the vagus nerve in normal and lysine deficient rat. TORU MIMURA[1], AKIRA NIIJIMA[2], and KUNIO TORII[1], *[1]Basic Research Laboratory, Ajinomoto Co., Inc., Kawasaki, Japan 210.* FAX:+81-44-244-9617, *[2]Department of Physiology, Niigata University, Niigata, Japan 951.*

#214 P32 Conditioned taste aversions to a corn oil and sucrose emulsion in rats with parabrachial nucleus lesions. PATRICK L. SMITH[1], PATRICIA SUE GRIGSON[2], RALPH NORGREN[2] & JAMES C. SMITH[1], *Department of Psychology, The Florida State University, Tallahassee, FL[1] and Dept. of Behavioral Sciences, College of Medicine, Penn State University, Hershey, PA[2]* FAX: (850)644-7739.

#215 P33 Methylxanthines differ in their ability to desensitize a bitter-sensitive taste receptor cell through prolonged dietary exposure. JOHN I. GLENDINNING and SONYA ENSSLEN, *Department of Biological Science, Barnard College, Columbia University, New York, NY 10027* FAX: (212) 854-7491.

#216 P34 Electrophysiological evidence for cross-talk between two transduction pathways within a bitter-sensitive taste receptor cell. CAROLINE R. TADROS and JOHN I. GLENDINNING, *Department of Biological Science, Barnard College, Columbia University, New York, NY 10027* FAX: (212) 854-7491.

#217 P35 The effect of impermeant anions on Na^+ chemoreception and water transport by the toad skin. S. D. HILLYARD, K. VS. HOFF AND P. A. SULLIVAN. *Dept Biology, University of Nevada, Las Vegas, NV 89154.* hillyard @ccmail.nevada.edu.

#218 P36 Changes in apical sodium channel number and efficiency contribute to Na^+ taste response development in rat. S.J. HENDRICKS[1], R.E. STEWART[1,2], G.L. HECK[3], J.A. DeSIMONE[3], D.L. HILL[1], *[1]Dept. of Psychology, Univ. of Virginia, Charlottesville, VA 22903, [2]Dept. of Psychology, Washington and Lee Univ., Lexington, VA 24450, [3]Dept. of Physiology, Med. Coll. of Virginia/Virginia Commonwealth Univ., Richmond, VA 23298.* FAX: (804) 982-4785.

#219 P37 Greater superficial petrosal responses and terminal field morphology are not altered by developmental sodium restriction in rats. SUZANNE I. SOLLARS and DAVID L. HILL, *Department of Psychology, Univ. of Virginia, Charlottesville, VA 22903,* sis2n@virginia.edu.

#220 P38 The influence of perinatal NaCl intake on chorda tympani responses to NaCl, KCl, and Q-HCl with and without amiloride in rats. DAVID W. PITTMAN AND ROBERT J. CONTRERAS, *Program in Neuroscience, Department of Psychology, The Florida State University, Tallahassee, FL 32306-1270,* pittman@psy.fsu.edu.

#221 P39 The cellular basis of osmotic effects on the chorda tympani response of rats to salt stimuli. VIJAY LYALL[1]. JANET K. TAYLOR[1], GERARD L. HECK[1], GEORGE M. FELDMAN[1,2], JOHN A. DeSIMONE[1], *[1]Department of Physiology, Virginia Commonwealth University, Richmond, VA 23298-0551, [2]McGuire Veteran's Affairs Medical Center, 1201 Broad Rock Road, Richmond, VA 23249.* FAX: (804) 828-7382.

#222 P40 Taste responses in geniculate ganglion neurons that innervate lingual receptors in rats. ROBERT F. LUNDY, JR. and ROBERT J. CONTRERAS, *Department of Psychology, Florida State University, Tallahassee, Fl 32306-1270.* lundy@psy.fsu.edu

#223 P41 Intrinsic membrane properties of neurons in the rat petrosal ganglion innervating the posterior tongue. TOMOSHIGE KOGA, and ROBERT M. BRADLEY. *School of Dentistry, Univ. Michigan, Ann Arbor, MI 48109-1078.* FAX: (734) 764-7406.

Saturday Afternoon

11:45-1:00 P.M. **AChemS Annual Business Meeting** (*Sara Desoto Ballroom*)
Chairperson: Thomas Scott, Executive Chairperson

Address on the status of NIDCD
Dr. James Battey, Director of NIDCD

1:00-3:00 P.M. **Clinical Luncheon** (*Florida Room*)
Organized by: Daniel Kurtz
Speakers: Drs. Barry Green and William Cain
"Clinical Aspects of Trigeminal Chemoreception"

3:30-5:00 P.M. **Panel Discussion on Careers in the Chemical Senses**
(*Sara Desoto Ballroom*)
Organized by: Michael Meredith

5:00-7:00 P.M. **Wine Tasting** (*Florida Room*)
Organized by: Charles Greer and Jack Kinnamon

Saturday Evening

7:00-9:00 P.M. **AChemS Awards Symposium**
Chairperson: Charles Greer
Speakers will be the winners of the:
Takasago Award
Moskowitz Jacobs Inc. Award
Ajinomoto Award
AChemS XX Award

9:00-9:15 P.M. Refreshment Break

SLIDES

Saturday Evening – 9:15 P.M. - 10:30 P.M.

Human Chemesthesis
Chairperson: Barry Green

9:15 #224 The generalizability of capsaicin sensitization and desensitization. JOHN PRESCOTT, *Sensory Science Research Centre, University of Otago, Dunedin, New Zealand.* john.prescott@stonebow.otago.ac.nz.

9:30 #225 Human response to capsaicin in oil and water based carriers. HARRY LAWLESS, CAROLINE HARTONO AND SUSANA HERNANDEZ, *Department of Food Science, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, NY 14853.* htl1@cornell.edu.

9:45 #226 Right-hemisphere preponderance of responses to painful CO_2 stimulation of the human nasal mucosa. BIRGIT KETTENMANN[2], KARIN PORTIN[1], VEIKKO JOUSMÄKI[1], GERD KOBAL[2], RIITTA HARI[1], [1]*Brain Research Unit, Low Temperature Lab., Helsinki Univ. of Technology, 02150 Espoo, Finland and* [2]*Dept. of Experim. and Clinic. Pharmacology and Toxicology, Univ. of Erlangen-Nürnberg, 91054 Erlangen, Germany.* FAX: +49-9131-856898.

10:00 #227 Olfactory and trigeminal detection of 1-butanol and 2-heptanone singly and in binary mixtures. J. ENRIQUE COMETTO-MUÑIZ[1], WILLIAM S. CAIN[1], MICHAEL H. ABRAHAM[2], and RACHEL KUMARSINGH[2], [1]*Department of Surgery (Otolaryngology), University of California, San Diego, La Jolla, CA 92093-0957,* [2]*Department of Chemistry, University College London, London WC1H OAJ, UK.* ecometto@ucsd.edu.

10:15 #228 Quality coding of intranasal irritation. CHARLES J. WYSOCKI and ANDREA RIBIER, *Monell Chemical Senses Center, Philadelphia, PA, 19104.* wysocki@monell.org.

POSTERS

Saturday Evening – 7:00 P.M. - 11:00 P.M.

Olfactory System: Peripheral Mechanisms

Olfactory System: Peripheral Mechanisms

#229 P1 Glutamate and betaine activate opposing conductances in individual squid olfactory receptor neurons. JONATHAN P. DANACEAU AND MARY T. LUCERO, *Department of Physiology, University of Utah, Salt Lake City, UT 84108.* jonathan.danaceau@m.cc.utah.edu.

#230 P2 Dopamine D_2 receptors mediate the dopaminergic modulation of the hyperpolarization-activated current, I_h, in rat olfactory receptor neurons. GRICELLY VARGAS and MARY T. LUCERO, *Department of Physiology, University of Utah, Salt Lake City, UT 84108.* Gricelly.Vargas@m.cc.utah.edu.

#231 P3 Amino acids elicit increases and decreases in intracellular calcium in *Necturus* olfactory receptor neurons. RONA J. DELAY[1], TATSUYA OGURA[2], VINCENT E. DIONNE[3] [1]*Department of Cell & Structural Biology, University of Colorado Health Science Center, Denver, CO 80262.* [2]*Department of Anatomy & Neurobiology, Colorado State University, Ft. Collins, CO 80523 and* [3]*Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543*

#232 P4 Odorants suppress a delayed rectifier conductance in rat olfactory neurons. FRITZ W. LISCHKA[1], JOHN H. TEETER[1,2] and DIEGO RESTREPO[3], *[1]Monell Chemical Senses Center, [2]Department of Physiology, University of Pennsylvania, Philadelphia, PA 19104 and [3]Department of Cellular and Structural Biology, University of Colorado Health Sciences Center, Denver, CO 80262.* lischka@monell.org.

#233 P5 Patch-clamp recordings from identified chemosensory neurons of the nematode *Caenorhabditis elegans*. T. NICKELL 1 , R.Y.K. PUN 2 , and S.J. KLEENE 1 , *1Department of Cell Biology, Neurobiology, and Anatomy, 2 Department of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH 45267.* tom@syrano.acb.uc.edu.

#234 P6 A GABA-induced chloride current in the soma of lobster olfactory receptor neurons. RICHARD E. DOOLIN[1,2], RAINER HOEGG[1], ASLBEK B. ZHAINAZAROV[1], BARRY W. ACHE[1,2,3], *[1]Whitney Lab., and Depts. of [2]Neuroscience and [3]Zoology, Univ. of Florida, St. Augustine, FL 32086.* FAX: (904) 461-4008.

#235 P7 Calcium regulation of second messenger signaling in lobster olfactory receptor neurons. GERHARD REICH[1], INGRID BOEKHOFF[2], HEINZ BREER[2], BARRY ACHE[1,3]. *[1]Whitney Laboratory and [3]Depts. Zoology and Neuroscience, Univ. Florida, St. Augustine, FL 32086 USA, and [2]Inst. Zoophysiology, Univ. Stuttgart-Hohenheim, 7000 Stuttgart 70, FRG.* FAX: (904) 461-4008.

#236 P8 Properties of cyclic-nucleotide-gated currents and odor responses in salamander olfactory receptor neurons after olfactory nerve transection. TRESE LEINDERS-ZUFALL[1], W. KARL KAFITZ[2], CHARLES A. GREER[2], *[1]Department of Anatomy and Neurobiology, University of Maryland, Baltimore, MD 21201, [2]Department of Neurosurgery, Yale University, New Haven, CT 06510*, tlein001@umaryland.edu.

#237 P9 Detection of KCl responses in cultured rat olfactory receptor neurons using a voltage sensitive dye assay. NANCY L. KOSTER and SARAH K. PIXLEY, *Dept. of Cell Biology, Neurobiology, and Anatomy, Univ. of Cincinnati, Cincinnati, OH 45267.* nancy.koster@uc.edu.

#238 P10 Functional imaging of mamalian olfactory receptor neurons *in vitro*. E. LANCASTER, A.C. PUCHE, M. PYRSKI, F.L. MARGOLIS, F. ZUFALL, M.T. SHIPLEY, A. KELLER. *Dept. Anatomy & Neurobiology, Program in Neuroscience, University of Maryland School of Medicine, Baltimore, MD 21201.* elancast@umaryland.edu.

#239 P11 Membrane-permeant cyclic nucleotides and a nitric oxide donor activate potassium efflux in olfactory nerve axons of the garfish, *Lepisosteus platostomus*. GEORGE R. KRACKE, ELLA D. SPEICHINGER, JUSTIN S. OGDEN, ROBIN K. SHAON, *Dept. Of Anesthesiology, University Of Missouri, Columbia, MO 65212.* hckracg@muccmail.missouri.edu

#240 P12 Single-cell cDNA RDA: identifying differences in gene expression between two individual lobster olfactory neurons. ALEXANDER A. GIMELBRANT, SANDRA J. KUHLMAN, TIMOTHY S. MCCLINTOCK, *Department of Physiology, University of Kentucky Medical Center, Lexington, KY 40536. aagime0@pop.uky.edu.*

#241 P13 Single cell analysis of odorant receptor gene expression in olfactory receptor neurons. KATHRYN F. MEDLER, HANG N. TRAN, RICHARD C. BRUCH, *Department of Biological Sciences, Louisiana State University, Baton Rouge, LA 70803.* kmedler@unix1.sncc.lsu.edu.

#242 P14 Topographical analysis of odorant receptor expression in channel catfish olfactory epithelium. MICHELE L. SCHAEFER, KARL ANDERSON, THOMAS E. FINGER, DIEGO RESTREPO, *Neuroscience Training Program,, Dept. of Cell and Structural Biology, Univ. of Colorado HSC, Denver, CO 80262.*

#243 P15 Spatial organization of olfactory receptor neurons on the antenna of the cabbage looper moth, *Trichoplusia ni.* ALAN J. GRANT[1,2,3] and ROBERT J. O'CONNELL[1,3]. *[1]Worcester Foundation for Biomedical Research, Shrewsbury, MA 01545, [2]American Biophysics Corporation, East Greenwich, RI 02818, [3]University of Massachusetts Medical School, Worcester, MA 01655.* ajgrant@edgenet.net.

#244 P16 Distribution of responses to aromatic compounds in the rat olfactory epithelium. JOHN W. SCOTT and TRACY BRIERLEY. *Department of Cell Biology, Emory University, Atlanta, Georgia 30322.* Johns@cellbio.emory.edu.

#245 P17 Differences in odor response of open vs. intact rat olfactory epithelial preparations. PAMELA E. SCOTT-JOHNSON[1,2], DAPHNE BLAKLEY[1], and JOHN W. SCOTT[1]. *Department of Cell Biology, Emory University, Atlanta, Georgia 30322[1] and Department of Psychology, Spelman College, Atlanta, Georgia 30314[2].* FAX: (404)215-7863.

#246 P18 Patterns of olfactory receptor neuron projections are similar during development and after recovery from peripheral deafferentation. DIANA M. CUMMINGS, and FRANK L. MARGOLIS, *Dept. of Anat. and Neurobiol., Univ. of Maryland School of Medicine, Baltimore, MD 21201.* FAX: (410) 706-2512.

#247 P19 Transplantation of olfactory epithelium containing genetically labeled olfactory receptor subtype, P2 neurons. ERIC H. HOLBROOK and RICHARD M. COSTANZO, *Department of Physiology, Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, Virginia 23298-0551.*

#248 P20 Glial cells may be involved in axonal sorting in the developing olfactory system of *Manduca sexta.* LYNNE A. OLAND, MARK R. HIGGINS, LESLIE P. TOLBERT, *ARL Division of Neurobiology, Univ. of Arizona, Tucson, AZ 85721.* FAX:(520) 621-8282.

#249 P21 A novel family of ancient vertebrate odorant receptors in the lamprey *Lampetra fluviatilis.* LAURENCE DRYER[1], ANNA BERGHARD[2], [1] *Department of Biology and Biochemistry, University of Houston, Houston, TX, 77204-5513,* [2]*Department of Cell and Molecular Biology, Umeå University, Umeå, Sweden, S-901 87, LDryer@bayou.uh.edu.*

#250 P22 Chemoreception in fossilized trilobites:II. Molecular Biology of Development and Transduction. N-A. DERTHAL, S.C. KUMIN, J.C. KUMIN, R.SAN DIEGO, R.PIPIENS, T.PINKY, W.PLATINUM, and L. FLINTSTONE.

#250 P23 Sequencing of olfactory receptor pseudogenes in the tiger salamander, *Ambystoma tigrinum*, and laminar analysis of mRNA expression within the olfactory epithelium by *in situ* hybridization. *JAMES E. MARCHAND*, JOHN S. KAUER**, Anesthesia Research* and Neuroscience**, Tufts University School of Medicine, Boston, MA 02111.* FAX: (617) 636-6738.

#251 P24 Olfactory specific genes in *Xenopus laevis.* MARIO MEZLER, PATRICIA RÖSSLER, SIDONIE KONZELMANN, JÖRG FLEISCHER, JOACHIM FREITAG, HEINZ BREER *University Stuttgart-Hohenheim, Institute of Physiology, 70593 Stuttgart, Germany.* FAX:(711) 459-3726.

#252 P25 Expression odorant binding proteins and olfactory receptors. HEINZ BREER, JÜRGEN KRIEGER, HANS KIEFER*, JOHANNES NOE, Dietrich Löbel, *University Stuttgart-Hohenheim, Inst. Physiology,, *Inst. Microbiology, 70593 Stuttgart, Germany.* FAX: (711) 459-3726

#253 P26 Characterization of the expression pattern of the newly identified odorant receptor gene OR-Z6. M. M. PYRSKI, Z. XU [1], S. MOUSSAVI [1], E. WALTERS [2], F. L. MARGOLIS [1], *Dept. Anat. & Neurobiol., Sch. Med., UMAB, Baltimore, MD21201*[1], *Dept. Biochem. & Mol. Biol., Med. Coll., Howard University, Washington, DC20059*[2]. mpyrski@umaryland.edu.

#254 P27 Making the connection from odor molecule to olfactory receptor: A Bioinformatics approach. EMMANOUIL SKOUFOS [1,2], PRAKASH M. NAKARDI[1], PERRY L. MILLER[1] and GORDON M. SHEPHERD[2]. [1]*Center for Medical Informatics and* [2]*Section of Neurobiology, Yale University School of Medicine New Haven, CT 06520 USA.* FAX: (203) 785-6990

#255 P28 Molecular cloning of a g-protein coupled receptor kinase from american lobster olfactory organ. FUQIANG XU, AND TIMOTHY S. MCCLINTOCK, *Department of Physiology, University of Kentucky College of Medicine, Lexington, Kentucky, 40536.* FAX: 606-323-1070

#256 P29 Identification and characterization of a novel tissue-specific transcriptional activating element in the olfactory mucosa-predominant cytochrome P450 *CYP2A3* gene. XINXIN DING[1,2], JIANHUA ZHANG[1], [1]*Wadsworth Center, New York State Department of Health,* [2]*School of Public Health, State University of New York at Albany, NY 12201.* xding@wadsworth.org.

#257 P30 Induction of stress proteins in olfactory epithelial supporting cells by odorants. VIRGINIA MCM. CARR and A.I. FARBMAN, *Dept. of Neurobiology and Physiology, Northwestern University, Evanston, IL 60208-3520.* FAX: (847) 491-2867.

#258 P31 Expression of retinoic acid receptor mRNA isoforms in rat olfactory mucosa after bulbectomy. DAVID B. CONLEY, ALAN M. ROBINSON, ROBERT C. KERN, DIMITRI Z. PITOVSKI, *Department of Otolaryngology, Northwestern University Medical School, Chicago, IL 60611.* FAX: 312-503-1616.

#259 P32 Conduction velocity of olfactory receptor neurons in the omp-null mutant mouse. EDWIN R. GRIFF[1], FRANK L. MARGOLIS[2], MATTHEW ENNIS[2] & MICHAEL T. SHIPLEY[2], [1]*Dept. Biological Sciences, Univ. Cincinnati;* [2]*Dept. Anat. & Neurobiol., Univ. Maryland Sch. Med.* Edwin.Griff@UC.EDU.

Sunday, April 26, 1997

SLIDES

Sunday Morning – 8:00 A.M. - 9:30 A.M.

Plasticity in the Olfactory Epithelium
Chairperson: Virginia Carr

8:00 #268 When regeneration fails: Methyl bromide lesions and the replacement of olfactory epithelium by respiratory epithelium. JAMES E. SCHWOB, STEVEN L. YOUNGENTOB, *Departments of Anatomy and Cell Biology and of Physiology and the Clinical Olfactory Research Center, SUNY Health Science Center, Syracuse, NY 13210.* schwobj@vax.cs.hscsyr.edu

8:15 #269 Olfactory pathology in chronic rhinosinusitus. ROBERT C. KERN[1], DAVID B. CONLEY[1], KAREN J. FONG[1], G. KENNETH HAINES[2], *Departments of Otolaryngology[1] and Pathology[2], Northwestern University Medical School, Chicago, IL 60611.* FAX: 312-503-1616.

8:30 #270 A molecular basis of cell death in olfactory epithelium. ALBERT I. FARBMAN, JUDITH A. BUCHHOLZ, ALEXANDRA COINES, DEBRA SPEERT. *Department of Neurobiology & Physiology, Northwestern University., Evanston, IL. 60208 USA.* afarbman@nwu.edu.

8:45 #271 OMP gene deletion causes an elevation in behavioral threshold sensitivity. S.L. YOUNGENTOB[1] and F.L. Margolis[2], *[1]Dept. of Physiology, SUNY Health Science Center, Syracuse , NY 13210, and Dept. of Anatomy & Neurobiology, Univ. of Maryland School of Medicine, Baltimore, MD 21201.* youngens@vax.cs.hscsyr.edu.

9:00 #272 Na, K –ATPase subunit isoform expression in olfactory mucosa under the influence of corticosteroids. KAREN J. FONG, ROBERT C. KERN, DIMITRI Z. PITOVSKI, *Department of Otolaryngology-Head and Neck Surgery, Northwestern University Medical School, Chicago, IL 60611.* dz-pitovski@nwu.edu.

9:15 #273 Androgenic regulation of gene expression in primary and second-order chemosensory neurons? M.L. GETCHELL[1,2], R. MARCINEK[1], T.V. GETCHELL[1,2,3], *[1] Div. of Otolaryngology, Dept. of Surgery; [2]Sanders-Brown Center on Aging, [3] Dept. of Physiology, Univ. of Kentucky College of Medicine, Lexington, KY 40536,* mgetchell@aging.coa.uky.edu.

9:30-9:45 A.M. Refreshment Break

SLIDES

Sunday Morning – 9:45 A.M. - 10:45 A.M.

Physiology of Central Olfactory Pathways
Chairperson: Kathy Hamilton

9:45 #274 Activation of olfactory dendrodendritic reciprocal synapses through NMDA receptors and its dependence on action potential propagation in the mitral cell secondary dendrites. WEI R. CHEN and GORDON M. SHEPHERD, *Section of Neurobiology, Yale University School of Medicine, 333 Cedar Street, C303 SHM, New Haven, CT 06510.* chen@spine.med.yale.edu.

10:00 #275 Dendritic Depolarization in Mitral/Tufted Cells (MTs): Voltage Sensitive Dye Recording Evidence from Single Neurons. A. R. CINELLI. Z. XIANG. *Dept. Anat. & Cell Biol., SUNY Brooklyn, NY 11203.*

10:15 #276 Mechanisms underlying dendrodendritic inhibition in slices of the rat olfactory bulb. JEFFRY S. ISAACSON and BEN W. STROWBRIDGE, *Dept. of Physiology & Biophysics, University of Washington, Seattle, WA 98195.* isaacson@u.washington.edu.

10:30 #277 Initial characterization of a dopamine-activated current in the soma of olfactory projection neurons of the spiny lobster. MANFRED SCHMIDT[1,2] and BARRY W. ACHE[2,3]., *[1] Zool. Institut, Univ. Hamburg, 20146 Hamburg, Germany, [2] Whitney Lab., [3] Depts. of Zool. and Neuroscience, Univ. of Florida, St. Augustine, FL 32086, USA*

POSTERS

Sunday Morning – 8:00 A.M. - 11:00 A.M.

Chemical Communication
Gustatory Behavior and Psychophysics

Chemical Communication

#278 P1 Orientation behavior in variable habitats: How do changes in substrate effect information in odor plumes and animal behavior? PAUL A. MOORE, JENNIFER GRILLS, and ROBB W. S. SCHNEIDER, *Laboratory for Sensory Ecology, Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403.* pmoore@bgnet.bgsu.edu

#279 P2 Antennal postures of the male Sphinx Moth, *Manduca sexta*, change during upwind flight in pheromone plumes with different spatial structures. ROBB W. S.SCHNEIDER, and MARK A. WILLIS, *ARL Div. of Neurobiology, Univ. of Arizona, Tucson, AZ 85721.* rwss@neurobio.arizona.edu.

#280 P3 Testing a new model for olfactory imprinting in Coho salmon (*Oncorhynchus kisutch*). JASON WATTERS, DIONNE WRIGHTS, GABRIELLE NEVITT, *Neurobiology, Physiology and Behavior, University of California, Davis, CA 95616.* FAX: 530-752-5582

#281 P4 Behavioral and biochemical effects of altering the structure of a compound that induces settlement of the barnacle *Balanus amphitrite* (Darwin). MARION MCCLARY, JR.[1], SUSAN CONOVA[2], DAN RITTSCHOF[2], [1]*Department of Biology, Georgia State University, Atlanta, GA, 30302,* [2]*Department of Zoology, Duke University Marine Laboratory, Beaufort, NC, 28516.* FAX: 404-651-2509.

#282 P5 Development of behavior: size-specific prey responses to predator odors. TROY A. KELLER and PAUL A. MOORE, *Laboratory for Sensory Ecology, Department of Biological Science, Bowling Green State University, Bowling Green, OH 43403.* FAX: (419)-732-2024

#283 P6 Characterization of the nature of information between chemical signal sources in the crayfish, *Procambarus clarkii*. REBECCA A. ZULANDT and PAUL A. MOORE, *Laboratory for Sensory Ecology, Department of Biology, Bowling Green State University, Bowling Green, OH 43403,* beckyzu@bgnet.bgsu.edu.

#284 P7 Symbiotic algae of the genus symbiodinium possess receptors for taurine, an amino acid that exhibits'host factor'activity. HENRY TRAPIDO-ROSENTHAL[1], PAOLA VALLEJO[1,2], LYNNE WHITEHEAD[3], ANGELA DOUGLAS[3], [1]*Bermuda Biological Station for Research, Ferry Reach GE-01, Bermuda,* [2] *Department of Zoology, University of Wisconsin, Madison, WI 53706, USA,* [3]*Department of Biology, University of York, York Y01 5YW, UK.* hank@bbsr.edu.

#285 P8 Structure-activity studies of bird repellents: carbocyclic and heterocyclic compounds. LARRY CLARK[1] and EVGENY ARONOV[2], [1]*USDA, National Wildlife Research Center, 1716 Heath Parkway, Fort Collins, CO 80524,* [2]*Schering-Plough Research Institute, K-15 B211/2800 2015 Galloping Hill Rd., Kenilworth, NJ 07033,* nwrc.clark@worldnet.att.net

#286 P9 Mate choice in the red swamp crayfish, *Procambarus clarkii*: Role of visual and chemical signals as sources of information. LISA M. SHAUVER and PAUL A. MOORE, *Laboratory for Sensory Ecology, Department of Biology, Bowling Green State University, Bowling Green, Ohio 43403,* shauver@bgnet.bgsu.edu

#287 P10 Chemical signaling in the rat: new compounds and biological effects. WEIDONG MA, MILOS V. NOVOTNY, JEFF SCHANK, JEFF ALBERTS, *Departments of Chemistry and Psychology, Indiana University, Bloomington, IN 47405.* FAX: (812) 855-8300.

#288 P11 Characterization of urinary pheromones in moose, *Alces alces gigas*. CHRIS L. WHITTLE, THOMAS CLAUSEN, LAWRENCE K. DUFFY, and R.TERRY BOWYER, *Department of Biology and Wildlife, University of Alaska Fairbanks, Fairbanks, AK 99775.* ftclw@aurora.alaska.edu

#289 P12 Antireductionism: the case of the Harderian gland. SUSAN J. REHOREK [1], WILLEM J. HILLENIUS [2], [1] *Department of Anatomy, Nycom, Long Island, Ny, 11568,* [2] *Department of Biology, College of Charleston, Charleston, SC, 29424-0001.* srehorek@iris.nyit.edu.

#290 P13 Endocrine modulation of inter-male aggression pheromones in house mice. HEATHER N. KINGSLEY[1], JOHN J. LEPRI[1], WENBIAO CHEN[2] and ROGER D. CONE[2] , *[1]Department of Biology, UNC-Greensboro, Greensboro, NC 27402-6174, [2]Vollum Institute, Oregon Health Sciences University, Portland, OR 97201.* hnkingsl@uncg.edu.

#291 P14 17β-estradiol mitigates olfactory dysfunction induced by 3-methylindole. RICHARD L. DOTY & H-J. DHONG, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA USA and Department of Otolayrngology, Samsung Medical Center, Seoul, Korea.*

#292 P15 Source of MHC-determined odorants. KUNIO YAMAZAKI* GARY K. BEAUCHAMP* ALAN G. SINGER* JUDITH BARD† EDWARD A. BOYSE† *Monell Chemical Senses Center, 3500 Market Street , Philadelphia, PA 19104. FAX: 215-898-2084; † Department of Microbiology and Immunology, University of Arizona, Tucson, AZ.* FAX: 602-626-2862.

#293 P16 Sexually-dimorphic sensitivity to the odorant androstenone (AND) in genetically inbred strains of mice that are sensitive or insensitive to (AND). VERA V. VOZNESSENSKAYA[1,2], NATALIA YU. FEOKTISTOVA[1] and CHARLES J. WYSOCKI[2], *[1]A.N. Severtzov Institute of Ecology and Evolution, Moscow, Russia, 117071, [2]Monell Chemical Senses Center, Philadelphia, PA, 19104.* vera@voznes.msk.ru.

#294 P17 Canine olfactory detection signatures for explosive material. MARC WILLIAMS, MATTHEW CICORIA, MEREDITH JONES, TERESA BOUSSOM, JAN JACKSON, L. PAUL WAGGONER, & JAMES M. JOHNSTON. *Institute for Biological Detection Systems, Auburn University, AL 36849-5532.* willijm@vetmed.auburn.edu

#295 P18 Generalization between n-aliphatic aldehydes in the rat. CHRISTIANE LINSTER, MICHAEL E. HASSELMO *Dept. of Psychology, Harvard University, Cambridge, MA 02138* linster@berg.harvard.edu.

#296 P19 Generalization and discrimination of binary odorant mixtures and components in the rat. CHRISTIANE LINSTER[1], BRIAN H. SMITH[2], MICHAEL E. HASSELMO[1] *[1]Department of Psychology, 33 Kirkland St., Cambridge, MA 02138, [2]Department of Entomology, The Ohio State University, Columbus, OH 43210* linster@berg.harvard.edu

#297 P20 GABA- and nitric oxide-mediated modulation in the honey bee (*Apis mellifera*) brain differentially affect olfactory discrimination. BRIAN H. SMITH, KRISTI BUXTON, JAY S. HOSLER, *Department of Entomology, The Ohio State University, Columbus, OH 43210.* smith.210@osu.edu

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#298 P21 Behavioral analyses of amino acid taste perception in the honey bee *(Apis mellifera)* and in the fruit fly *(Drosophila melanogaster).* BRIAN H. SMITH, YOUNG SOO KIM, *Department of Entomology, The Ohio State University, Columbus, OH 43210.* smith.210@osu.edu

#299 P22 Discrimination of multimixtures by catfish is based on the most stimulatory component in the mixture. TINE VALENTINČIČ, PIKA MIKLAVC, AND KSENJA BABIČ. *Department Of Biology, University of Ljubljana, Vecna pot 111, 1000 Ljubljana, Slovenia.* tine.valentincic@uni-lj.si

#300 P23 Comparison of olfaction and taste behavioral responses to free amino acids in two cyprinid fishes. ALEXANDER O. KASUMYAN, EUGENY A. MARUSOV, AMAL M.H.MORSY, EKATERINA V. NIKOLAEVA, *Department of Ichthyology, Faculty of Biology, Moscow State University, Moscow, 119899, Russia.* kasumyan@1.ichtyol.bio.msu.ru

#301 P24 Behavioral responses of fingerlings of brown trout, *Salmo trutta,* to food odors and some free amino acids. EUGENY A. MARUSOV, *Department of Ichthyology, Faculty of Biology, Moscow State University, Moscow, 119899, Russia.* kasumyan@1.ichtyol.bio.msu.ru

#302 P25 Comparison of MSG and L-aspartic acid using conditioned taste aversion in rats. JENNIFER R. STAPLETON[1], STEPHEN D. ROPER[2], and EUGENE R. DELAY[1], *[1]Dept. of Psychology, Regis Univ., Denver, CO 80221, [2]Dept. of Physiology & Biophysics, Miami Univ., Miami, FL 33101.* FAX: (303)964-5480.

#303 P26 Dietary salt levels influence the ingestive patterns of female rats during pregnancy and lactation. DEREK J. SNYDER, ROBERT J. CONTRERAS, DONNA L. WONG, AND JAMES C. SMITH, *Program in Neuroscience, Department of Psychology, The Florida State University, Tallahassee, FL 32306-1270,* dsnyder@psy.fsu.edu.

#304 P27 The effect of CCK-8 on taste responses in the adult Sprague-Dawley rat. A.KURT THAW. *E.W.Bourne Behavioral Research Laboratory, Cornell University Medical College, White Plains, NY, 10605.* akthaw@aol.com.

#305 P28 Non-equivalence of calcium and sodium chloride to sodium deficient Rattus norvegicus. CHARLES N. STEWART, *Department of Psychology, Franklin and Marshall College, Lancaster, PA 17604-3003.* c_stewart@acad.fandm.edu.

#306 P29 Marker-assisted selection of a high saccharin-preferring 129.B6-*Sac* congenic mouse strain. G.K. BEAUCHAMP[1,2], A.A. BACHMANOV[1], D.R. REED[2], M. INOUE[3], Y. NINOMIYA[4], M.G. TORDOFF[1], and R.A. PRICE[2], [1]*Monell Chemical Senses Center, Philadelphia, PA, 19104,* [2]*University of Pennsylvania, Philadelphia, PA, 19104,* [3]*Tokyo University of Pharmacy and Life Science, Japan,* [4]*Asahi University, Japan.* FAX: (215) 898-2084.

#307 P30 Lysine-deficient rats drink significantly more lysine than controls in a two-amino-acid choice test by increasing number of ingestive bouts. STACY MARKISON [1], BARBARA L. THOMPSON [2], JAMES C. SMITH [2], AND ALAN C. SPECTOR [1], *Department of Psychology, University of Florida, Gainesville, FL 32611* [1] *and Department of Psychology, Florida State University, Tallahassee, FL 32306* [2].

#308 P31 Effects of perinatal dietary NaCl exposure and amiloride on NaCl detection threshold in Sprague-Dawley rats. LAURA C. GERAN and ALAN C. SPECTOR, *Department of Psychology, University of Florida, Gainesville, FL 32611*, geran@psych.ufl.edu.

#309 P32 Perinatal dietary NaCl exposure does not influence NaCl concentration-lick functions in water-restricted adult rats as measured during brief access trials. BRIAN C. SAUER, and ALAN C. SPECTOR, *Department of Psychology, Univ. of Florida, Gainesville, Fl 32611.*

#310 P33 Circadian variations in blood pressure and heart rate in rats raised on low, mid, and high dietary salt levels. DONNA L. WONG, JESSICA J. WILSON, ROSS HENDERSON, ROBERT J. CONTRERAS, *Program in Neuroscience, Department of Psychology, Florida State University, Tallahassee, Florida 32306-1270.* dlwong@psy.fsu.edu.

#311 P34 LiCl induced taste aversions show that fat is the salient taste feature of corn oil and sucrose emulsions. JAMES C. SMITH, VICTORIA MALESZEWSKI, BRIAN MCCLAIN *Department of Psychology, The Florida State University, Tallahassee, FL 32306-105 1.* FAX: (850) 644-7739.