Future Meetings

AChemS – XIX
July 7-12, 1997
ISOT, San Diego, CA

AChemS – XX
April 21-25, 1998
Sarasota, FL

ACHEMS - 1996

PROGRAM

THE EIGHTEENTH ANNUAL MEETING

OF THE

ASSOCIATION FOR CHEMORECEPTION

SCIENCES

Hyatt, Sarasota
Florida
April 17 - 21, 1996

The Association for Chemoreception Sciences Gratefully Acknowledges
the Support of Its Corporate Sponsors:

Second Annual Award to Promising Young Researchers
Ajinomoto USA

Sixth Annual Frito-Lay Award for Distinguished Research in Taste
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Sixteenth Annual Givaudan-Roure Lectureship
Givaudan Corporation

Moskowitz Jacobs Award for Research in Psychophysics of Taste & Olfaction
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Ninth Annual Kenji Nakanishi Award for Research in Olfaction
Takasago Corporation

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GENERAL INFORMATION

1. Registration in the Longboat Room, Wednesday evening, 5:00 to 6:30 PM.

2. All slide sessions and symposia will be held in the Sara Desoto Room. All speakers in slide sessions should meet with the session chairperson and give 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 3:00 PM. All evening posters should be removed by midnight. Note: The poster session scheduled for Sunday morning will begin at 8:00 PM.

4. World Precision Instruments (WPI) will have a display throughout the meeting. Please be sure to stop and talk with their representative.

5. The Clinical Luncheon will take place on Thursday at 1:00 PM in the Florida Room.

6. The Society for the Study of Ingestive Behaviors (SSIB) meeting will take place on Thursday at 5:00 PM in the Florida Room.

7. The industry/academia buffet with panel and cash bar will take place Friday at 5:00 PM in the Florida Room. Tickets ($20) are on sale at the conference office in the Longboat Room.

8. The Beer Appreciation Symposium will be held in the Florida Room on Saturday from 5:00 PM to 7:00 PM. A limited number of tickets ($15) will be on sale in the conference office in the Longboat Room.

9. There will be a trolley from the hotel to Lido Beach on Thursday and Friday afternoons. The trolley will leave from the front of the hotel at 1:00 PM and will leave Lido Beach at 4:00 PM to return to the hotel.

10. The Hyatt will provide a cash "quick lunch" sandwich cart in the Prefunction Area of the conference center daily at 12:30 PM. The Prefunction Area is reserved for eating your lunch and socializing if you do not care to go outside and wish to meet other conferees.

Please see the lists of Symposia and Special Events for more information.

Wednesday, April 17, 1996

ASSOCIATION FOR CHEMORECEPTION SCIENCES

Eighteenth Annual Meeting

5:00 – 6:30 pm	Registration
6:00 – 6:30	Minority Student Orientation *(Buccaneer Room)*
6:30 – 8:00	Opening Buffet
8:00 – 8:30	Welcome, Opening Remarks *Judith van Houten, Executive Chairperson*
8:30 – 9:30	**GIVAUDAN-ROURE LECTURE** Dr. Eric I. Knudsen Department of Neurobiology, Stanford University School of Medicine, Stanford, CA 94305-5401 "Mechanisms Underlying Experience-Dependent Changes In The Neural Representation Of Auditory Space In The Barn Owl."
9:30	Social Reception and Cash Bar
9:30	Organizational Meeting for Graduate Students (In: *Desoto Ballroom*, Joel White, Coordinator)

Thursday, April 18, 1996

SLIDES

Thursday Morning – 8:00-11:15

Early Chemosensory Development

Chairperson: Christine Byrd, University of Virginia

8:00 #1* Early Development Of The Olfactory Placode And Subsequent Differentiation Of Olfactory Neurons And GnRH Cells In The Zebrafish. KATHLEEN WHITLOCK and MONTE WESTERFIELD, *Institute of Neuroscience, University of Oregon, Eugene, OR 97403 USA.*

8:15 #2 The Transcription Factors Olf-1 And Pax-6 In Olfactory Development RANDALL R. REED, SONG WANG, KAREN A. SCHRADER and JANINE A. DAVIS, *Department of Molecular Biology and Genetics and Department of Neuroscience, Howard Hughes Medical Institute, Johns Hopkins School of Medicine, Baltimore MD 21205.*

8:30 #3 Implications Of Pax-6 Gene For Olfactory System Development Studied In Small Eye (Sey) Mice. TAMMY L. DELLOVADE, JANE KWAK, DONALD W. PFAFF and MARLENE SCHWANZEL-FUKUDA, *Laboratory of Neurobiology and Behavior, The Rockefeller University, NY, 10021.*

8:45 #4 BDNF Null Mutant Mice Have Disrupted Gustatory Epithelia. BRUCE OAKLEY, CHUNXIAO ZHANG, ANNE LAWTON and DAVID LAU, *Department of Biology, University of Michigan, Ann Arbor, MI 48109.*

9:00 #5 Embryonic Taste Receptors Will Develop In The Absence Of Neural Crest. LINDA A. BARLOW and R. GLENN NORTHCUTT, *Neurobiology Unit, Scripps Inst. of Oceanography and Dept. of Neurosciences, Univ. of California, San Diego, La Jolla CA 92093.*

**Denotes Program index #*

9:15 **Refreshment Break**

Chemosensory Plasticity

Chairperson: Peter Brunjes, University of Virginia

9:30 #6 Alterations In Geniculate Ganglion Protein Synthesis Following Early Postnatal Receptor Damage. PHILLIP S. LASITER, *Neuroscience Research Group, Florida Atlantic University, Boca Raton, FL 33431-0991.*

9:45 #7 Developmental Changes in the Dendritic Architecture of Sodium-Best Neurons in the Rat Nucleus of the Solitary Tract (NST). WILLIAM E. RENEHAN[1], XUEGUO ZHANG[1], ZHIGAO JIN[1], JEFFERY MASSEY[1] and LAURA SCHWEITZER[2], *[1]Henry Ford Hospital, Detroit, MI 48202, [2]University of Louisville, Louisville, KY 40292.*

10:00 #8 The Effects Of Sodium-Free Diet On Gustatory Neural Responses In The Geniculate Ganglion. ANGELA K. SETZER and RALPH NORGREN, *Department of Behavioral Science, College of Medicine, The Penn State University, Hershey, PA 17033.*

10:15 #9 Differential Localization Of Ionotropic Glutamate Receptor Subunits In The Developing Rat Olfactory Bulb. ARTIS A. MONTAGUE and CHARLES A. GREER, *Sections of Neurosurgery & Neurobiology, Yale University School of Medicine, New Haven, CT 06510.*

10:30 #10 Depolarization- And c-AMP-Dependent Induction Of Tyrosine Hydroxylase Expression In Primary Cultures of Mouse, Neonatal Olfactory Bulb. HARRIET BAKER and JONG WHA LEE, *Cornell Univ. Med. Coll. at The Burke Med. Res. Inst., White Plains, NY 10605.*

10:45 #11 Unilateral Naris Occlusion And Calbindin-immunoreactivity In The Developing Rat Olfactory Bulb. BENJAMIN D. PHILPOT, JAE H. LIM and PETER C. BRUNJES, *Department of Psychology, University of Virginia, Charlottesville, VA 22903.*

11:00 #12 Unilateral Olfactory Deprivation Modifies Bi-naral Interactions In Piriform Cortex. D.A. WILSON and R.M. SULLIVAN, *Department of Zoology, University of Oklahoma, Norman, OK 73019.*

11:30-1:00 **Transplantation Workshop**

Organizers: Ed Morrison, Auburn University
Jack Pearl, NIH/NIDCD

Sponsored by the National Institutes of Health (NIDCD)

Growth And Development Of Transplant Olfactory Nerve Cells In The CNS. E.E. MORRISON, *Department of Anatomy and Histology, Auburn University, AL.*

Neural Stem-like Cells: Developmental Lessons With Theraputic Potential. E.Y. SNYDER, *Department of Neurology and Pediatrics, Harvard Medical School, Boston, MA.*

Olfactory Ensheathing Cells: Potential For Glial Cell Transplantation. R.J. DOUCETTE, *Department of Anatomy, University of Sakatchewan College of Medicine, Saskatoon, Saskatchewan Canada.*

Factors Influencing Integration Of Olfactory Bulb Transplants. L.E. WESTRUM, *Department of Neurology Surgery and Biological Structure, University of Washington School of Medicine, Seattle, WA.*

POSTERS

Thursday morning – 8:30-12:30

Animal Behavior
Olfactory and VNO Receptor Structure

Animal Behavior — Posters

#13 P1 Responsiveness Of Coyotes (*Canis latrans*) To Simple Taste Cues. J. RUSSELL MASON and JOHN McCONNELL, *U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control, Denver Wildlife Research Center, Utah State University, Logan, UT 84322-5295.*

#14 P2 Intakes And Patterns Of Ingestion By The Rat For Emulsions Of Sucrose Or NaCl With Corn Oil. KIMBERLY A. PEACOCK and JAMES C. SMITH, *Department of Psychology, The Florida State University, Tallahassee, FL 32306-1051.*

#15 P3 Cypha® (Propionic Acid, 2-(4-Methoxyphenol) Salt) Inhibits The Sweet Taste Of Sucrose In Humans But Not In Rats. ANTHONY SCLAFANI and CATALINA PÉREZ, *Dept. of Psychology, Brooklyn College of CUNY, Brooklyn, New York, 11210.*

#16 P4 A Comparison Of Sucrose And Saccharin Consumption In Mice. JOHN D. BOUGHTER JR[1,2] and JAMES C. SMITH[1], [1]*Program in Neuroscience, Department of Psychology, Florida State University, Tallahassee, FL 32306-1051,* [2]*Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201.*

#17 P5 Influence Of The Sac And dpa Loci Upon Preference Phenotypes For Sodium Saccharin, d-Phenylalanine And The Low-Weight l-Amino Acids Among Inbred Strains Of Mice. CHRISTOPHER G. CAPELESS, *Psychology Department, Florida State University, Tallahassee, FL 32306.*

#18 P6 PTC-Avoidance Polymorphism And Other Bitter-Avoidance Differences Among Mice In Long-Term Preference Tests. DAVID B. HARDER[1], JOHN D. BOUGHTER[1,2] and GLAYDE WHITNEY[1], [1]*Department of Psychology, Florida State University, Tallahassee, FL 32306-1051,* [2]*Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201.*

#19 P7 Behavioral Response Of Rats To Benzyltriethylammonium Chloride (BTAC) Taste And Associated Inositol Trisphosphate (Ip3) Response In Lingual Tissue. CHARLES N. STEWART[1], MARCUS W. THOMSEN[1], KIMBERLY A. WOUDSMA[1], JOSEPH G. BRAND[2,3], GULSHAN SUNAVALA[4], HAJIME NAGAI[5] and ANDREW I. SPIELMAN[4], [1]*Franklin & Marshall College, Lancaster PA 17604,* [2]*Monell Chemical Senses Center, Philadelphia, PA 19104,* [3]*Veterans Affairs Med. Ctr., Philadelphia, PA,* [4]*Basic Science Division, New York Univ. College of Dentistry, New York, NY,* [5]*Lab. Preference Science & Technology, Suntory Research Center, Osaka, Japan.*

#20 P8 Characterization Of Smell Impaired Genes Of *Drosophila melanogaster*. N.H. KULKARNI[1], S.V. NUZHDIN[2], T.F.C. MACKAY[2] and R.R.H. ANHOLT[1], [1]*Dept. of Zoology, N. C. State University, Raleigh, NC 27695,* [2]*Dept. of Genetics, N. C. State University, Raleigh, NC 27695.*

#21 P9 Induced Sensitivity To Androstenone: Behavioral And Biochemical Observations. VERA V. VOZNESSENSKAYA[1,3], ELENA S. CHUCHRAY[2], VALYA M. PARFYONOVA[1], OLES M. POLTORACK[2] and CHARLES J. WYSOCKI[3], *[1]A.N. Severtzov Institute, Acad. Sci., Moscow, Russia, [2]Moscow State Univ., Moscow, Russia, [3]Monell Chemical Senses Center, Phila., PA.*

#22 P10 Olfactory Thresholds In Old Aged Wistar Rats. SIMONE KRÄMER, ELKE WEILER and RAIMUND APFELBACH, *University of Tübingen, Institute of Zoology/Animal Physiology, Auf der Morgenstelle 28, 72076 Tübingen, Germany.*

#23 P11 A Critical Period For Imprinting Of Social Odors In Two Dwarf Hamster Species, *Phodopus sungorus* And *Phodopus campbelli*. NINA YU. VASILIEVA[1], EKATERINE V. PETROVA[1] and RAIMUND APFELBACH[2], *[1]Institute of Evolutionary Animal Morphology and Ecology, Russian Academy of Science, Leninsky pr. 33, Moscow, Russia and [2]Department of Animal Physiology, University of Tübingen, Auf der Morgenstelle 28, 72076 Tübingen, Germany.*

#24 P12 Discrimination Ability Of Squirrel Monkeys For Structurally Related Odorants. MATTHIAS LASKA and DANIELA FREYER, *Department of Medical Psychology, University of Munich Medical School, D-80336 Munich, Germany.*

#25 P13 Rats Discriminate And Prefer The Odors of Ovulating Human Females. ELEANOR E. MIDKIFF and HEIDI L. HARRIMAN, *Department of Psychology,Eastern Illinois University, Charleston, IL 61920.*

#26 P14 Species, Sex, Season, And Individual-Specific Chemosensory Cues In Urine Discriminated By Blind, Subterranean Mole Rats (*S. ehrenbergi*). GIORA HETH and JOSEPHINE TODRANK, *Institute of Evolution, University of Haifa, Haifa 31905, Israel.*

#27 P15 Kin Recognition: Discrimination Of Odors And Functional Responses By Golden Hamsters. JOSEPHINE TODRANK, GIORA HETH and ROBERT E. JOHNSTON, *Department of Psychology, Cornell University, Ithaca, NY 14853.*

#28 P16 Perception Of Scent Over Marks: How Do Hamsters Determine Which Scent Is On Top? ROBERT E. JOHNSTON and ADAM COHEN, *Dept. of Psychology, Cornell University, Ithaca, NY 14853.*

#29 P17 Neural Mechanisms Of Individual Discrimination: Roles Of Vomeronasal Organ, Orbital Cortex, And Medial And Cortical Amygdala. ROBERT E. JOHNSTON and ARAS PETRULIS, *Dept. of Psychology, Cornell University, Ithaca, NY 14853.*

Olfactory and VNO Receptor Structure — Posters

#30 P18 Parallel Development Of Subclasses Of Vomeronasal Receptor Neurons. CHANGPING JIA[1], GEORGI GOLDMAN[2] and MIMI HALPERN[1], *[1]Program in Neural & Behavioral Sci., SUNY Hlth. Sci. Ctr. at Brooklyn, 450 Clarkson Ave., Brooklyn, NY 11203, [2]Midwood High School, Bedford Ave. & Glenwood Rd., Brooklyn, NY 11210.*

#31 P19 Sexual Dimorphism In The Vomeronasal System Of The Gray Short Tailed Opossum, *Monodelphis domestica*. JENNIFER MANSFIELD[1], WEI QUAN[2], CHANGPING JIA[3] and MIMI HALPERN[2,3], *[1]Oberlin College, Oberlin, Ohio 44074 and [3]Department of Anatomy and Cell Biology and [2]Program in Neural and Behavioral Science, Health Science Center at Brooklyn, SUNY, Brooklyn, NY 11203.*

#32 P20 Development And Regeneration Of Chemosensory Neurons In The Rat Vomeronasal Organ. TOSHIYA OSADA[1], ATSUSHI IKAI[1], MASUMI ICHIKAWA[2] and RICHARD M. COSTANZO[3], *[1]Tokyo Institute of Technology, Yokohama, Japan, [2]Tokyo Metropolitan Institute for Neuroscience, Tokyo, Japan, [3]VA Commonwealth University - Medical College of VA, Richmond, VA 23298-0551.*

#33 P21 Olfactory Mucus Enhances Chemosensory Ligand Responses In Vomeronasal Bipolar Neurons. ROBERT L. MOSS and XIN MING SHEN, *Department of Physiology, University of Texas Southwestern Medical Center, Dallas, Texas 75234-9040.*

#34 P22 Luteinizing Hormone-Releasing Hormone (LHRH) Neuronal Migration In Forty-Eight Hour Cultures Of Whole Ten Day Old Embryonic Swiss Mice. MARLENE SCHWANZEL-FUKUDA and TAMMY DELLOVADE, *Rockefeller University, Laboratory of Neurobiology and Behavior, New York, New York 10021.*

#35 P23 A Functional Activity Map Of The Zebrafish Olfactory Organ: A New Method For Activity Dependent Mapping Of Odor Sensitivity Using An Agmatine Specific Antibody. W.C. MICHEL, C.J. BURNS and D.S. DERBIDGE, *Dept of Physiology, University of Utah School of Medicine, Salt Lake City, UT 84108.*

#36 P24 Electrical Responses To Odor Systematically Vary With Position Along The Turbinate Bones In The Rat. JOHN W. SCOTT, *Department of Anatomy and Cell Biology, Emory University School of Medicine, Atlanta, Georgia 30322.*

#37 P25 Entry Of Inhaled Xylene And Its Metabolites Into The Olfactory Bulb Of F344 Rats. KEE H. PYON, ALAN R. DAHL and JOHNNYE L. LEWIS. *Inhalation Toxicology Research Institute, Albuquerque, NM 87185.*

#38 P26 Olfactory Mucosal Responses To The Herbicide Alachlor. MARY BETH GENTER[1] and BARABRA A. WETMORE[2], *[1]Dept. of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH 45267-0576, and [2]Dept. of Toxicology, North Carolina State University, Raleigh, NC 27695-7633.*

#39 P27 OMP Immunoreactivity Enhanced In Individual ORNs Following Olfactory Bulbectomy In The Rat. VIRGINIA McM. CARR and ALBERT I. FARBMAN, *Dept. of Neurobiology and Physiology, Northwestern University, Evanston, IL 60208-3520.*

#40 P28 Transplantation Of Olfactory Epithelial Progenitor Cells Into The Methyl Bromide-Lesioned Rat. BRADLEY J. GOLDSTEIN[1], STEVEN L. YOUNGENTOB[2,3], MARLA B. LUSKIN[4] and JAMES E. SCHWOB[1,3], *Departments of [1]Anatomy and Cell Biology, [2]Physiology, [3]Clinical Olfactory Research Center, SUNY Health Science Center, Syracuse, NY 13210; [4]Department of Anatomy and Cell Biology, Emory University School of Medicine, Atlanta, GA 30322.*

#41 P29 Localization Of Tenascin In The Olfactory Organ Of Larval Sea Lamprey, *Petromyzon marinus*. ALIYA U. ZAIDI and BARBARA S. ZIELINSKI, *Department of Biological Sciences, University of Windsor, Windsor, Ontario, Canada, N9B 3P4.*

#42 P30 Development And Growth Of The Olfactory Organ Of Lower Actinopterygian Fish. ECKART ZEISKE[1], ANNE HANSEN[1], PETER BARTSCH[2] and ALEXANDER O. KASUMYAN[3], *[1]Zoological Institute and Zoological Museum, University of Hamburg, D-20146 Hamburg, Germany, [2]Zoological Institute, University of Tübingen, D-72076 Tübingen, Germany, [3]Department of Ichthyology, State University of Moscow, 119899 Moscow, Russia.*

#43 P31 Development Of The Olfactory Epithelium In *Xenopus laevis*. ANNE HANSEN[1], JÖRG STROTMANN[1], JOACHIM FREITAG[1], ECKART ZEISKE[2] and HEINZ BREER[1], *[1]University Stuttgart-Hohenheim, Institute of Zoophysiology, D-70593 Stuttgart, Germany, [2]University Hamburg, Zoological Institute and Zoological Museum, D-20146 Hamburg, Germany.*

#44 P32 Cell-type Specific Representation Of Olfactory Sensory Neurons Onto The Olfactory Bulb Of Channel Catfish. Y. MORITA, P.M. ELLER, B. BÖTTGER, and T.E. FINGER, *Rocky Mountain Taste & Smell Ctr., Denver, CO 80262.*

#45 P33 Expression Of Pax-6 And Neurogenic Genes In The Xenopus Olfactory System During Metamorphosis. JOEL A. ZUPICICH[1], MISCHALA A. GRILL[2], KYE P. EVANS[1], MICHAEL PAPE[1] and GAIL D. BURD[1], *Depts. of [1]Molecular & Cellular Biology and [2]Cell Biology and Anatomy, University of Arizona, Tucson, AZ 85721.*

#46 P34 Laminar Segregation Of Receptor Expressing Sensory Neurons In The Rat Olfactory Epithelium. HEINZ BREER, JÖRG STROTMANN and SIDONIE KONZELMANN, *Institute of Zoophysiology, University Stuttgart-Hohenheim, 70599 Stuttgart, Germany.*

#47 P35 Influence Of Laminin On Neurite Extension From Rat Olfactory Receptor Cells In Vitro. KARL W. KAFITZ and CHARLES A. GREER, *Sections of Neurosurgery and Neurobiology, Yale Univ. Sch. Med., New Haven, CT 06510.*

#48 P36 Expression Of Neural Cell Adhesion Molecule (NCAM) And L1 In Outgrowing Olfactory Axons From The Olfactory Epithelium Slice Culture. WEI-LIN LIU, TANYA D. FOSTER and MICHAEL T. SHIPLEY, *Dept. Anatomy, Univ. of Maryland School of Medicine, Baltimore, MD 21201.*

#49 P37 Light And Ultrastructural Localization Of A Putative Odorant Receptor Protein To Olfactory Cilia. ANNE M. CUNNINGHAM[1], NINA S. LEVY[2], RANDALL R. REED[2] and BERT PH. M. MENCO[3], *[1]Neurobiology Division, The Garvan Institute of Medical Research, 384 Victoria St, Darlinghurst, NSW, 2010, Australia, [2]Department of Molecular Biology and Genetics, The Howard Hughes Medical Institute, The Johns Hopkins Univ. School of Medicine, 725 N. Wolfe St, Baltimore MD 21205, [3]Department of Neurobiology and Physiology, Hogan Hall, Northwestern University, Evanston, IL 60208.*

Thursday Afternoon

1:00-3:00 **Clinical Luncheon** *(Florida Room)*

Organizer: April Mott, University of Connecticut

3:00-7:00 **Executive Committee Meeting** *(State Room)*

Thursday Evening

5:00-7:00 **SSIB Social and Talks** *(Florida Room)*

Organizer: Sandra Frankmann, University of Southern Colorado

Symposium – "Life After The Epiglottis"

Tasting the Net: Central Activation During Conditioned Taste Aversion. TOM HOUPT, *Cornell University Medical College.*

Intestine As Gourmet, Stomach As Gourmand. TERRY POWLEY, *Purdue University.*

Oral And Visceral "Taste" Systems In Food Selection, TONY SCLAFANI, *Brooklyn College.*

7:30-9:30 **Awards Symposium – Presentations** *(Sara Desoto Room)*

Organizer: Albert I. Farbman, Northwestern University

Award Winners – 1995

1995 Don Tucker Memorial Award
Leslie Stone
University of Colorado Health Sciences Center

Takasago Award for Research in Olfaction
Geoffrey Gold
Monell Chemical Senses Center

Frito-Lay Award for Distinguished Research in Taste
Charlotte Mistretta
University of Michigan

Moskowitz Jacobs Inc. Award for Research Excellence in the Psychophysics of Taste and Smell
Corinne Ossebaard
University of Maryland School of Medicine

Ajinomoto Award
David Hill
University of Virginia

9:30 **Refreshment Break**

SLIDES

Thursday Evening – 9:45-11:00

Central Olfactory Systems

Chairperson: Joel White, Tufts University

9:45 #50 Expression Of Multiple Cyclic Nucleotide-Gated Channel Genes In The Rat Olfactory Bulb And Cortex. PAUL A. KINGSTON[1], COLIN J. BARNSTABLE[1,2], GORDON M. SHEPHERD[1,2] and FRANK ZUFALL[2], *[1]Interdepartmental Neuroscience Program, [2]Section of Neurobiology, Yale University School of Medicine, New Haven, CT 06510.*

10:00 #51 Dopamine (D_2) Receptor Activation Blocks Sensory Evoked Excitation Of Rat Mitral Cells In Vitro. LEE A. ZIMMER, KELLY CIOMBOR, STAN PHILLIPS, MATTHEW ENNIS and MICHAEL T. SHIPLEY, *Dept. of Anat., Univ. of Maryland, Baltimore, MD 21201.*

10:15 #52 GABA- and Histaminergic Interneurons Form Two Distinct Inhibitory Pathways In The Lobster Olfactory Lobe. M. WACHOWIAK and B.W. ACHE, *Whitney Laboratory and Dept. Neuroscience, Univ. Florida, St. Augustine, FL, 32086.*

10:30 #53 Rapid Odorant Recognition In An Artificial Chemosensory Device Based On The Olfactory System. J. WHITE[1], T.A. DICKINSON[2], D.R. WALT[2] and J.S. KAUER[1], *[1]Neuroscience Dept., Tufts Medical School, Boston, MA, [2]Chemistry Dept., Tufts Univ., Medford, MA.*

10:45 #54 Differential Effects Of Aluminum On Amino Acid Receptors: A Basis For Olfactory Neuropathology? PAUL Q. TROMBLEY, *Department of Biological Science, Florida State University, Tallahassee, FL. 32306.*

POSTERS

Thursday Evening – 7:00-11:00

Human Psychophysics #1 – Taste & Smell

#55 P1 Human Reactions And Pharmacokinetic Response To Low Levels Of The Gasoline Oxygenate Methyl Tertiary-Butyl Ether (MTBE). W.S. CAIN[1], B.P. LEADERER[2], G.L. GINSBERG[3], L.S. ANDREWS[4], J.E. COMETTO-MUÑIZ[1], J.F. GENT[2], M. BUCK[2], L.G. BERGLUND[2], V. MOHSENIN[2], E. MONAHAN[2] and S. KJAERGAARD[5], *[1]Dept. of Surgery, University of California, San Diego, CA 92093-0957, [2]John B. Pierce Laboratory, Yale University, New Haven, CT 06519, [3]TRC Environmental Corp. Windsor, CT, 06095 [4]ARCO Chemical Co. Newtown Square, PA 19073, [5]University of Århus, Århus, Denmark.*

#56 P2 Human Responses to Propionic Acid Vapor: Respiratory Changes. JAMES C. WALKER[1] and MARTIN KENDAL-REED[2], *[1]R&D, R.J. Reynolds Tobacco Co., Winston Salem, NC 27102, [2]School of Dentistry, University of North Carolina, Chapel Hill, NC 27599.*

#57 P3 Odor Perception And Multiple-Chemical Sensitivity. NANCY L. FIEDLER[1], HOWARD M. KIPEN[1], KATHIE A. KELLY-McNEIL[1] and SUSAN C. KNASKO[2], *[1]UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ 08855, [2]Monell Chemical Senses Center, Philadelphia, PA 19104.*

#58 P4 Androstenone Antagonism. CHARLES J. WYSOCKI and LEIGH ANNE DORSEY, *Monell Chemical Senses Center, Phila., PA.*

#59 P5 Effect Of Human Associated Odours On Dream Content And Sleep Quality. REGINA E. MAIWORM[1], HANNS HATT[2], KIRSTEN DELFS[1], PETRA DANIELS[1], CHRISTIAN REYHER[3] and CHRISTIAN BECKER-CARUS[1], *[1]Department of Psychology I, University of Münster, Fliednerstr. 21, D-48167 Münster, [2]Department of Cell Physiology, Ruhr-Universität Bochum, Universitätsstr. 150, D-447980 Bochum, [3]MPI Biophysikalische Chemie, Postfach 3129, D-37019 Göttingen.*

#60 P6 Male Responses To Their Mates' Body Odors: The "Desire For More" Variable. NAOMIE S. PORAN, *SemioChem, 2720 Kilgore Ave. Raleigh, NC 27607.*

#61 P7 Mammalian Olfactory-Genetic-Neuronal-Hormonal-Behavioral Reciprocity And Human Sexuality. JAMES V. KOHL, *2621 Seashore Drive, Las Vegas, NV 89128.*

#62 P8 Quantitative Comparison Of Female Axillary Secretions As A Function Of The Menstrual Cycle Phase. JOHN T. REILLY[1], BENJAMIN VOWELS[2], JAMES J. LEYDEN[2], STEPHEN SONDHEIMER[2] and GEORGE PRETI[1], *[1]Monell Chemical Senses Center, Philadelphia, PA 19104. [2]School of Medicine, Univ. of Penn., Philadelphia, PA 19104.*

#63 P9 A Comparison Of Olfactory, Tactile And Visual Stimuli As Associated Memory Cues. RACHEL S. HERZ, *Monell Chemical Senses Center, Philadelphia PA, 19107-3308.*

#64 P10 Color-Induced Odor Enhancement: The Role Of Color Intensity And Appropriateness. KATRINA K. MAURER and DEBRA A. ZELLNER, *Department of Psychology, Shippensburg University, Shippensburg, PA 17257.*

#65 P11 Olfactory Interference In Serial Verbal Memory. THERESA WHITE[1,2], DANIEL KURTZ[1] and DAVID HORNUNG[1,3], *[1]Smell and Taste Disorders Clinic of the SUNY Health Science Center, Syracuse, NY 13210, [2]Department of Psychology, University of Warwick, England, [3]Department of Biology, St. Lawrence University, Canton, NY 13617.*

#66 P12 Lateralization Of Odor Recognition. MATS J. OLSSON and WILLIAM S. CAIN, *Dept. of Surgery, Div. of Otolaryngology, University of California, San Diego, CA 92093-0957.*

#67 P13 Effect Of Odor Concentration On The Olfactory Event-Related Potential In Introverts And Extroverts. JAMES W. COVINGTON[1], CHARLIE D. MORGAN[2], MARK W. GEISLER[1,3] and CLAIRE MURPHY[1,3], *[1]San Diego State University, San Diego, CA 92120, [2]SDSU/UCSD Joint Doctoral Program in Psychology, San Diego, CA 92120, [3]University of California School of Medicine, San Diego, CA 92103.*

#68 P14 An Olfactory P300 From A Single Olfactory Stimulus. CHARLIE D. MORGAN[3], JAMES COVINGTON[2], MARK W. GEISLER[1], DENNARD W. ELLISON[1], JOHN POLICH[4] and CLAIRE MURPHY[1,2], *[1]University of California, School of Medicine, San Diego, CA 92103, [2]San Diego State University, CA 92182, [3]SDSU-UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA 92182, [4]The Scripps Research Institute, La Jolla, CA 92037.*

#69 P15 Olfactory Threshold Tuning. TOMAS RADIL[1,2] and CHARLES J. WYSOCKI[2], *[1]Institute of Physiology, Academy of Sciences, Prague, CZ 14220, [2]Monell Chemical Senses Center, Philadelphia, PA 19104.*

#70 P16 Rapid And Accurate Measurement Of Taste And Smell Thresholds Using An Adaptive Maximum-Likelihood Staircase Procedure. MIRIAM R. LINSCHOTEN[1], LEWIS O. HARVEY, JR.[2], PAMELA M. ELLER[1], and BRUCE W. JAFEK[1], *[1]The Rocky Mountain Taste and Smell Center, Denver, CO 80262 and [2]Department of Psychology, University of Colorado, Boulder, CO 80309.*

#71 P17 Magnitude Matching Adds Power To The Labeled Magnitude Scale. DEREK J. SNYDER[1], LAURIE A. LUCCHINA[1], VALERIE B. DUFFY[2] and LINDA M. BARTOSHUK[1], *[1]Department of Surgery, Yale University School of Medicine, New Haven, CT 06520, [2]School of Allied Health Professions, University of Connecticut, Storrs, CT 06269.*

#72 P18 Phantom Tastes/Phantom Smells: Comparisons And Contrasts. B.J. COWART[1,2], I.M. YOUNG[2], R.S. FELDMAN[3], 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; [3]Veteran's Administration Medical Center, Philadelphia, PA 19104.*

#73 P19 Alliesthesia In Pure Tastes, Pure Food Odors, And Taste-Odor Mixtures. LORI A. WHITTEN[1] and H.P. WEINGARTEN[2], *[1]Shepherd College, Shepherdstown, WV 25443, [2]McMaster University, Hamilton, Ontario, Canada L8S 4K1.*

#74 P20 Olfactory And Trigeminal Sensitivity To Nicotine. WAYNE L. SILVER[1], JAMES C. WALKER[2] and MARTIN KENDAL-REED[3], *[1]Department of Biology, Wake Forest University, Winston-Salem, NC 27109, [2]R&D, R.J. Reynolds Tobacco Company, Winston-Salem, NC 27102-1487, and [3]Dental Research Center, University of North Carolina School of Dentistry, Chapel Hill, NC 27599-7450.*

#75 P21 Chemesthetic Sensations In The Mouth And Throat During Irritant Ingestion. HEIKE K. RENTMEISTER-BRYANT and BARRY G. GREEN, *Monell Chemical Senses Center, 3500 Market St., Philadelphia, PA 19104-3308.*

#76 P22 Desensitization To Oral Zingerone Irritation: Effects Of Parameters Of Stimulation. RICHARD J. STEVENSON and JOHN PRESCOTT, *Sensory Research Centre, CSIRO Division of Food Science & Technology, North Ryde, N.S.W. 2113, Australia.*

#77 P23 Sweetness As An Olfactory Quality: Relationship To Tasted Sweetness. JOHN PRESCOTT[1], RICHARD J. STEVENSON[1] and ROBERT A. BOAKES[2], *[1]Sensory Research Centre, CSIRO Division of Food Science & Technology, North Ryde, N.S.W. 2113, Australia, [2]Department of Psychology, University of Sydney, N.S.W. 2006, Australia.*

#78 P24 Multisapophoric Molecules - An Investigation Into The Solution Properties And Taste Of D-Glucono-1,5-Lactone, Glucosamine Hydrochloride And Sodium Saccharin. SNEHA A. PARKE, GORDON G. BIRCH, MATTHEW C. CUTTS, DOUGLAS B. McDOUGALL and DAVID A. STEVENS, *Department of Food Science and Technology, University of Reading, Whiteknights, PO Box 226, Reading, RG6 6AP, United Kingdom.*

#79 P25 Number Of Fungiform Papillae In Nontasters, Medium Tasters, And Supertasters Of PROP (6-n-propylthiouracil). YUKI HOSAKO-NAITO[1], MARY KATE BOGGIANO[2], VALERIE B. DUFFY[3], DEREK J. SNYDER[4], LAURIE A. LUCCHINA[4], LINDA M. BARTOSHUK[4], *[1]Otorhinolaryngology, Tokyo University, Tokyo, Japan, 113, [2]Hopkins School, New Haven, CT 06515, [3]School of Allied Health Professions, University of Connecticut, Storrs, CT 06269-2101, [4]Section of Otolaryngology, Yale University School of Medicine, New Haven, CT 06520-8041.*

#80 P26 Effects Of 6-n-Propylthiouracil (PROP) Taster Status And Salivary Flow Rate On Suprathreshold Responses To Aluminium Ammonium Sulfate. BUE-YOUNG IMM and HARRY T. LAWLESS, *Department of Food Science, Cornell University, Ithaca, NY 14853.*

#81 P27 Effect Of Gender And Experience On Multidimensional Sorting Of Corn And Potato Chips. LOUISE A. CAMPBELL and HILDEGARDE HEYMANN, *Dept. of Food Science & Human Nutrition, University of Missouri-Columbia, Columbia, MO, 65211.*

#82 P28 Beyond Liking To Intake: Assessing Acceptance By The Pattern Of Drinking Beverages. HOWARD R. MOSKOWITZ, MIKHAIL MEDVINSKY, JASON STEEG and YOLANDA GABRIELLI, *Moskowitz Jacobs Inc., White Plains, NY 10605.*

#83 P29 The Relationship Between The Human Taste Threshold To NaCl And The Duration Of Stimulus Presentation. RITU BAGLA, BRYNNE KLASKY and RICHARD L. DOTY, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA 19104.*

#84 P30 Sodium As A Flavor Potentiator: Selective Suppression Of Tastes. PAUL A.S. BRESLIN and GARY K. BEAUCHAMP, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

#85 P31 Amiloride Effects On Human Taste Quality: Methods Of Magnitude Estimation. CORINNE A. OSSEBAARD[1], ILSE A. POLET[2], and DAVID V. SMITH[1] , *[1]University of Maryland School of Medicine, Baltimore, MD 21201 and [2]University of Utrecht, Heidelberglaan 2, 3584 CS Utrecht, the Netherlands.*

#86 P32 Evidence Of Pore Diffusion In The Temporal Perception Of Sweetness. ANDREW K. SMITH[1], ROGER B. BOULTON[1], GÖRAN HELLEKANT[2] and ANN C. NOBLE[1], *[1]University of California, Davis, CA 95616 and [2]University of Wisconsin, Madison, WI 53706.*

#87 P33 Solution Properties And Sweet Taste Of D And L Sugars. RACHEL W. SIERTSEMA, GORDON G. BIRCH, FEDERICA MONDOVÌ and DAVID A. STEVENS, *Department of Food Science and Technology, The University of Reading, Whiteknights, PO Box 226, Reading, RG6 6AP, UK.*

#88 P34 Evaluation Of The Reliability Of Sweet Ratings By A Trained Panel For Five Sweeteners At Four Concentrations. BARBARA J. BOOTH[1], SUSAN S. SCHIFFMAN[2], ELIZABETH A. SATTELY-MILLER[2], KERNON GIBES[1] and B. THOMAS CARR[3], *[1]NutraSweet Co., Mt. Prospect, IL 60056, [2]Department of Psychiatry, Duke University Medical Center, Durham, NC 27710, [3]Carr Consulting, Wilmette, IL 60091.*

#89 P35 Effects Of Pre-Rinsing With ±-(4-Methoxyphenoxy) propionic Acid (Cypha) On Subsequent Sweetness Intensity Ratings For Fifteen Sweeteners. SUSAN S. SCHIFFMAN[1], ELIZABETH A. SATTELY-MILLER[1], BREVICK G. GRAHAM[1], BARBARA J. BOOTH[2] and KERNON GIBES[2], *[1]Department of Psychiatry, Duke University Medical Center, Durham, NC 27710, [2]NutraSweet Co., Mt. Prospect, IL 60056.*

#90 P36 Synergism Among Tertiary Mixtures Of Fourteen Sweeteners. SUSAN S. SCHIFFMAN[1], ELIZABETH A. SATTELY-MILLER[1], BREVICK G. GRAHAM[1], BARBARA J. BOOTH[2] and KERNON GIBES[2], *[1]Department of Psychiatry, Duke University Medical Center, Durham, NC 27710, [2]NutraSweet Co., Mt. Prospect, IL 60056.*

#91 P37 Habituation To Sweet Foods In Caucasian And African-American Subjects. SUSAN S. SCHIFFMAN[1], BREVICK G. GRAHAM[1], ELIZABETH A. SATTELY-MILLER[1], JAMES J. HEINIS[1], SUSAN E. SWITHERS[2] and WARREN G. HALL[2], *[1]Department of Psychiatry, Duke University Medical Center, Durham, NC 27710, [2]Department of Psychology, Duke University, Durham, NC 27708.*

#92 P38 Cravings: A Cross-Cultural Investigation. SORAYA CENTENO[1], ANA GARRIGA-TRILLO[2], DEBRA ZELLNER[3] and ELIZABETH ROHM[3], *[1]Center for Studies in Behavioral Neuroscience, Concordia University, Montreal, Quebec, Canada H3G 1M8, [2]UNED, Madrid, Spain, [3]Department of Psychology, Shippensburg University, Shippensburg, PA 17257.*

#93 P39 Perceived Creaminess Of High-Fat Milk Products Varies With Genetic Taste Status. VALERIE B. DUFFY[1], ALICE TYM[2], LINDA M. BARTOSHUK[3], LAURIE A. LUCCHINA[3] and DEREK J. SNYDER[3], *[1]School of Allied Health Professions, University of Connecticut, Storrs, CT 06269, [2]Yale University, New Haven, CT 06520, [3]Dept. of Surgery, Yale Univ. School of Medicine, New Haven, CT 06520.*

#94 P40 Effects Of Food Rheology On Food Intake And Energy Balance. KRYSTYNA M. RANKIN and RICHARD D. MATTES, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

Friday, April 19, 1996

SLIDES

Friday Morning – 8:00-12:15

Human Olfactory Psychophysics

Chairperson: Pamela Dalton, Monell Chemical Senses Center

8:00 #95 Trigeminal And Olfactory Activation By R- And S-Nicotine In Humans. NORBERT THÜRAUF[1], MICHAEL KAEGLER[2], RALF DIETZ[1] and GERD KOBAL[1], *[1]Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nürnberg, Erlangen, Germany, [2]Institute of Biological Research, Köln, Germany.*

8:15 #96 The Effects Of Varied Exposure Schedule On The Intensity And Locus Of Sensory Irritation From Acetone. PAMELA DALTON and BARRY G. GREEN, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

8:30 #97 Nasal Localization Thresholds In Normosmics Mirror Nasal Pungency Thresholds In Anosmics, For Homologous Alcohols. J. ENRIQUE COMETTO-MUÑIZ and WILLIAM S. CAIN, *Department of Surgery (Otolaryngology), University of California, San Diego, La Jolla, CA 92093-0957.*

8:45 #98 Human Normosmic And Anosmic Sensory Responses To Propionic Acid Delivered By Precision Olfactometry. MARTIN KENDAL-REED[1] and JAMES C. WALKER[2], *[1]School of Dentistry, University of North Carolina, Chapel Hill, NC 27599 and [2]R&D, R.J. Reynolds Tobacco Co., Winston-Salem, NC 27102.*

9:00 #99 Late (Cognitive) Components Of The Olfactory Event-Related Potential Are More Sensitive To Aging Than Early Components. CLAIRE MURPHY[1,2], CHARLIE D. MORGAN[3], JAMES COVINGTON[1], MARK W. GEISLER[1,2], and JOHN M. POLICH[4], *[1]San Diego State University, San Diego, CA 92182, [2]University of California School of Medicine, San Diego, CA 92103, [3]SDSU/ UCSD Joint Doctoral Program in Psychology, San Diego, CA 92182, [4]The Scripps Research Institute, La Jolla, CA 92037.*

9:15 #100 Evaluation Of Event-Related Synchronous Brain Activity Following Chemosensory Stimulation. TYLER S. LORIG and MEG RANDOL, *Department of Psychology, Washington and Lee University, Lexington, VA 24450.*

9:30 #101 Specific Androstenone-Anosmia In Patients With Impaired Sperm Production. JACOB E. STEINER[1], IRWIN HIRSCH[2], KEITH N. VAN ARSDALEN[3] and CHARLES J.WYSOCKI[4], *[1]Department of Oral Biology, Hebrew University, Hadassah Faculty of Dental Medicine, Jerusalem (Israel), [2]Department of Urology, Th. Jefferson University Medical College, Philadelphia, PA, [3]Department of Urology, Hospital of the University of Pennsylvania, Philadelphia, PA and [4]Monell Chemical Senses Center, Philadelphia, PA.*

9:45 #102 Olfactory Dysfunction In Usher Syndrome. RICHARD L. DOTY and STEPHEN ZRADA, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA 19104.*

10:00 **Refreshment Break**

Human Taste Psychophysics

Chairperson: Paul Breslin, Monell Chemical Senses Center

10:15 #103 Oral Fat Exposure Enhances Post-Prandial Triglyceride Concentration In Humans. RICHARD D. MATTES, *Purdue University, Department of Foods and Nutrition, W. Lafayette, IN 47907.*

10:30 #104 Anion Size And Simple Taste Reaction Times In Humans. JEANNINE F. DELWICHE[1], BRUCE P. HALPERN[1], JOHN A. DESIMONE[2] and MELISSA Y. LEE[1], *[1]Department of Psychology, Cornell University, Ithaca, NY 14853-7601, [2]Department of Physiology, Virginia Commonwealth University, Richmond, VA 23298-0551.*

10:45 #105 Detecting Tastants In The Presence Of Other Tastants: Issues Of Masking And Aging. JOSEPH C. STEVENS, *John B. Pierce Laboratory and Yale University, New Haven, CT 06519.*

11:00 #106 Influence Of Age On Regional Taste Function. HANS KROGER[1], RICHARD L. DOTY[1] and PAUL SHAMAN[1,2], *[1]Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA, 19104, [2]Department of Statistics, The Wharton School, University of Pennsylvania, Philadelphia, PA, 19104.*

11:15 #107 Do Taste-Trigeminal Interactions Play A Role In Oral Pain? LINDA M. BARTOSHUK[1], DONNA CASERIA[2], FRANK CATALANOTTO[3], GITA DABRILA[4], VALERIE B. DUFFY[1,4], LAURIE A. LUCCHINA[1], WOLFFE NADOOLMAN[1], CLARENCE SASAKI[1], DEREK J. SNYDER[1] and JEREMY WOLFE[5], *[1]Otolaryngology, Yale University, New Haven, CT 06520-8041, [2]Food and Nutritional Services, Yale-New Haven Hospital, New Haven, CT 06504, [3]School of Dentistry, University of Florida, Gainesville, FL 32611, [4]School of Allied Health Professions, University of Connecticut, 06269-2101, [5]Center for Clinical Cataract Research, Harvard University, 02115.*

11:30 #108 Genetic Sensitivity To 6-n-Propylthiouracil (Prop) Predicts Hedonic Responses To Bitter But Not To Sweet Tastes. ADAM DREWNOWSKI, SUSAN AHLSTROM HENDERSON, AMY BETH SHORE, NICHOLAS B. DRZAL and ANNE BARRATT-FORNELL, *Human Nutrition Program, School of Public Health, University of Michigan, Ann Arbor, MI 48109-2029.*

11:45 #109 Recovery From Capsaicin Desensitization During Recurrent Stimulation. BARRY G. GREEN, *Monell Chemical Senses Center, 3500 Market St., Philadelphia, PA 19104-3308.*

12:00 #110 Context Effects With The Labeled Magnitude Scale. HARRY T. LAWLESS and JOHN HORNE, *Department of Food Science, Cornell University, Ithaca, NY 14853.*

POSTERS

Friday Morning – 8:30-12:30

Olfactory Receptor Function #1
Taste Receptor Structure

Olfactory Receptor Function #1 — Posters

#111 P1 Pheromone Behavioral Responses In Unusual Male European Corn Borer Hybrid Progeny Not Correlated To Electrophysiological Phenotypes Of Their Pheromone-Specific Antennal Neurons. A.A. COSSÉ[1], M.G. CAMPBELL[2], T.J. GLOVER[2], C.E. LINN, JR.[2], J.L. TODD[1], T.C. BAKER[1] and W.L. ROELOFS[2], *[1]Department of Entomology, Iowa State University, Ames, IA 50011, [2]Department of Entomology, New York State Agricultural Experiment Station, Cornell University, Geneva, NY 14456.*

#112 P2 Responses From Sensilla Basiconica On Mosquito Maxillary Palps To Behaviorally-Important Chemical Cues. ALAN J. GRANT and ROBERT J. O'CONNELL, *Worcester Foundation for Biomedical Research, Shrewsbury, MA 01545.*

#113 P3 Temporal Aspects Of Pheromone-Sensitive Receptor Neuron Responses Are Differentially Affected By Pulsed Stimuli In The Adult Cabbage Looper Moth, *Trichoplusia ni*. ROBERT J. O'CONNELL, ALAN J. GRANT and PAOLA F. BORRONI. *Worcester Foundation for Biomedical Research, Shrewsbury, MA 01545.*

#114 P4 Synergism Of A Cabbage Looper, *Trichoplusia ni* (Hübner), Sex Pheromone Specialist Neuron By Three Host-Plant Compounds: Can Host Plant Volatile Emissions Alter Sex Pheromone Detection And Perception? M.S. MAYER[1] and J. C. DICKENS[2], *[1]USDA, ARS, Insect Attractants and Basic Biology Laboratory, Gainesville, FL 32604, [2]USDA, ARS, Insect Chemical Ecology Laboratory, BARC-West, Beltsville, MD 20705.*

#115 P5 Are Differences In Responses To Mixtures In Spiny Lobsters And Catfish Due To Interspecific Differences In Chemosensory Transduction Or Differences In Experimental Protocols? STUART I. CROMARTY and CHARLES D. DERBY, *Department of Biology, Georgia State University, Atlanta, GA 30302-4010.*

#116 P6 Quality Coding Of Different Blend Ratios Of Binary Mixtures By Olfactory Neurons In The Spiny Lobster. PASCAL STEULLET and CHARLES D. DERBY, *Dept. Biology, Georgia State University, Atlanta, GA 30302-4010.*

#117 P7 Chemoreceptor Cell Responses To Different Stimulus Onsets. CLAIRE BALINT, RAINER VOIGT and JELLE ATEMA, *Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543.*

#118 P8 The Fluid Dynamics Involved In Chemical Signal Transport In The Antennae Of The Sphinx Moth, *Manduca sexta.* ROBB SCHNEIDER and PAUL A. MOORE, *Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403.*

#119 P9 Labeling And Isolation Of Mouse Olfactory Receptor Neurons Projecting To Discrete Regions Of The Olfactory Bulb. THOMAS C. BOZZA and JOHN S. KAUER, *Department of Neuroscience, Tufts University School of Medicine, Boston, MA 02111.*

#120 P10 The Role Of Fas And Fas Ligand In Apoptotic Cell Death Of Adult Rat Olfactory Epithelium. ALEXANDRA COINES and ALBERT I. FARBMAN, *Northwestern University, Evanston, IL 60208.*

#121 P11 The Role Of Growth Factors In Olfactory Cell Proliferation. ALBERT I. FARBMAN, JUDITH A. BUCHHOLZ and KOUROSH SALEHI-ASHTIANI. *Northwestern University, Evanston, IL 60208.*

#122 P12 Computer Modelling And Odorant Random Repertoire Docking In Human Olfactory Receptors. YITZHAK PILPEL[1], MICHAEL SINGER[2], GORDON SHEPHERD[2], YEHUDIT WEISINGER-LEWIN[1] and DORON LANCET[1], *[1]Department of Membrane Research and Biophysics. The Weizmann institute of science, Rehovot, 76100, Israel, [2]Section of Neurobiology, Yale School of Medicine, 333 Ceder Street, New Haven, CT 06510, USA.*

#123 P13 Intrinsic Organization of the Olfactory Bulb Glomerulus. HAHNAH J. KASOWSKI, HANNA KIM and CHARLES A. GREER, *Sections of Neurosurgery & Neurobiology, Yale University School of Medicine, New Haven, CT 06510.*

#124 P14 Biotin-Induced Chemokinesis In Paramecium. WADE E. BELL, WILLIAM KARSTENS and JUDITH L. VAN HOUTEN, *University of Vermont, Department of Biology, Burlington, VT 01504.*

#125 P15 Reduction of Calmodulin mRNA and Protein Correlates Inhibition Of Chemoresponse by Antisense Oligonucleotides. JUDITH L. VAN HOUTEN, W. E. BELL and JUNJI YANO, *University of Vermont, Department of Biology, Burlington, VT 05405, USA.*

#126 P16 The Effects Of Exposure To Exogenous Amino Acids On The Cellular Physiology Of Cultured Zooxanthellae (*Symbiodinium microadriaticum*). C. BESTER[1,2], F. LIPSCHULTZ[2], R. REAM[2] and H. TRAPIDO-ROSENTHAL[1], *[1]Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403, 2Bermuda Biological Station for Research, St. George's, GE01, Bermuda.*

#127 P17 Na^+-gated Cation Channel From Lobster Olfactory Receptor Cells. ASLBEK B. ZHAINAZAROV and BARRY W. ACHE, *Whitney Laboratory and Depts. Zoology & Neuroscience, University of Florida, St. Augustine, FL 32086.*

#128 P18 Characterization Of Chloride Channels In Olfactory Nerve Axon Membranes Of The Garfish, *Lepisosteus platostomus.* GEORGE R. KRACKE[1], JAMES O. BULLOCK[2] and ROBIN K. SHAON[1], *[1]Department of Anesthesiology and Perioperative Medicine, University of Missouri, Columbia, MO 65212, [2]Cancer Research Center, Columbia, MO 65201.*

#129 P19 Olfactory Receptor Spike Activity Reflects Weak Ion Regulation. ROBERT C. GESTELAND, *University of Cincinnati, Cincinnati, OH 45267-0521.*

#130 P20 Maintenance Of An Appropriate Extracellular Ionic/Osmotic Environment Is Vital To Sustaining Dendrite Function In Olfactory Receptor Cells. RICHARD A. GLEESON[1], MICHELE WHEATLY[2], LORRAINE M. MCDOWELL[3], CARL L. REIBER[4] and HENRY C. ALDRICH[3], *[1]The Whitney Lab., University of Florida, St. Augustine, FL 32086, [2]Dept. of Biological Sciences, Wright State University, Dayton, OH 45435, [3]Dept. of Microbiology and Cell Science, University of Florida, Gainesville, FL 32611, [4]Dept. of Biological Sciences, University of Nevada, Las Vegas, NV 89154.*

#131 P21 Inositol 1,4,5-Trisphosphate Receptor Expression In Rat Olfactory Tissue Indicates A Primary Role In Calcium-Mediated Secretion. GREGORY SMUTZER[1], JOHN ZIMMERMAN[2], CHANG-GYU HAHN[1], DELTA RUSCHEINSKY[1], AMARIS RODRIGUEZ[1] and STEVEN ARNOLD[1,3], *Department of [1]Psychiatry, [2]Biology, and [3]Neurology, University of Pennsylvania, Philadelphia, PA 19104.*

#132 P22 The Role Of Protein Kinase A And C In Adaptation Of Human Olfactory Receptor Neurons To Odor Stimuli. GEORGE GOMEZ and DIEGO RESTREPO, *Monell Chemical Senses Center, 3500 Market ST., Philadelphia, PA 19104.*

#133 P23 Squid Olfactory Receptor Neurons Respond To Betaine In A Dose Dependent Manner Via A Second Messenger Mediated Chloride Conductance. JONATHAN P. DANACEAU and MARY T. LUCERO, *Department of Physiology, University of Utah School of Medicine, Salt Lake City, UT 84108.*

#134 P24 The Effect Of Concanavalin A On The Odor Perception Of The Living Rat. A. KIRNER[1], R. APFELBACH[1], E. WEILER[1] and E. POLAK[~], *[1]University of Tübingen, Dept. of Zoology/Animal Physiology, Auf der Morgenstelle 28, 72076 Tübingen, Germany, [~]Olfaction Research Group, Dept. of Chemistry, University of Warwick, U.K.*

#135 P25 Role Of IP_3-Sensitive Calcium Stores In Salamander Olfactory Receptor Neurons. CHARLES A. GREER, MARK N. RAND, TRESE LEINDERS-ZUFALL, GORDON M. SHEPHERD and FRANK ZUFALL, *Sections of Neurobiology and Neurosurgery, Yale University School of Medicine, New Haven, CT 06510.*

#136 P26 Cyclic Nucleotide-Induced Calcium Transients In Individual Cilia And Dendrites Of Salamander Olfactory Receptor Cells. TRESE LEINDERS-ZUFALL, MARK N. RAND, GORDON M. SHEPHERD, CHARLES A. GREER and FRANK ZUFALL, *Sections of Neurobiology and Neurosurgery, Yale University School of Medicine, New Haven, CT 06510.*

#137 P27 Regulation Of Second Messenger Signaling In Olfactory Neurons. HEINZ BREER, INGRID BOEKHOFF, CHRISTINE KRONER and MARCUS SCHANDAR, *Institute of Zoophysiology, University Stuttgart-Hohenheim, 70599 Stuttgart, Germany.*

#138 P28 An Algorithm for the Construction of Idealized Current Traces: Analysis of $InsP_3$-Induced Single Channel Openings In Rat Olfactory Neurons. D. RESTREPO[1,2], M.M. ZVIMAN[1], F.W. LISCHKA[1] and J.H. TEETER[1,2]. *[1]Monell Chemical Senses Center and [2]Department of Physiology, University of Pennsylvania, Philadelphia, PA 19104.*

#139 P29 Evidence For Distinct Receptors And Transduction Pathways For Amino Acid And Bile Acid Stimuli In The Zebrafish Olfactory System. W.C. MICHEL, D.S. DERBIDGE, N.S. CHEN and D.K. IKEDA, *Dept of Physiology, University of Utah School of Medicine, Salt Lake City, UT 84108.*

Taste Receptor Structure — Posters

#140 P30 Differential Localization Of Carbonic Anhydrase Isozymes In Taste Buds. BÄRBEL BÖTTGER[1], THOMAS E. FINGER[1] and BRUCE BRYANT[2], *[1]Univ. Colo. Med. Sch., Denver CO 80262; [2]Monell Chem. Senses Ctr., Philadelphia, PA 19104.*

#141 P31 Serotonin-Immunoreactive Taste Cells Are Related By Cell Lineage, But May Derive From Multiple Progenitors. LESLIE M. STONE[1], THOMAS E. FINGER[1], PATRICK P.L. TAM[2] and SEONG-SENG TAN[3], *[1]Cellular and Structural Biology, University of Colorado Health Sciences Center, Denver, CO 80262, [2]Children's Medical Research Institute, Wentworthville, NSW., Australia, [3]Anatomy and Cell Biology, University of Melbourne, Melbourne, Australia.*

#142 P32 Immunological Analysis Of $G_{\alpha 14}$ In Taste Cells Of The Rat. SHOJI TABATA, HILDEGARD H. CROWLEY and JOHN C. KINNAMON, *Department of Biological Sciences, University of Denver, Denver, CO 80208 and the Rocky Mountain Taste and Smell Center, Denver, CO 80262.*

#143 P33 Purification And Characterization Of A Taste Specific Phosphodiesterase From Bovine Taste Tissues. DING MING and ROBERT F. MARGOLSKEE, *Department of Physiology and Biophysics, The Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, NY 10029-6574.*

#144 P34 The Role Of Chondroitin Sulfate Proteoglycans In The In Vitro Morphogenesis Of Circumvallate Papillae. J. MORRIS-WIMAN, E. BASCO, R. SEGO and L. BRINKLEY, *University of Florida, Gainesville, FL 32610.*

#145 P35 Dark And Light Cells Are Two Distinct Cell Types In Rat Vallate Taste Buds: Light Cells Express The Lewis[b] Antigen. DAVID W. PUMPLIN, CHENGSI YU and DAVID V. SMITH, *Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201-1559.*

#146 P36 Ultrastructure Of The Taste Buds In The Spotted Gar, *Lepisosteus oculatus* (Holostei). KLAUS REUTTER[1] and MARTIN WITT[2], *[1]Department of Anatomy, University of Tübingen, 72074 Tübingen, and [2]Department of Anatomy, Technical University, 01307 Dresden, Germany.*

#147 P37 Ultrastructure And Morphology Of Putative Chemosensory Hairs On The Chelae Of The Crayfish, *Orconectes virilus* And *Orconectes propinqus*. JENNIFER L. BORASH[1], TROY A. KELLER[2] and PAUL A. MOORE[1], *[1]Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403, 2Department of Natural Sciences, University of Michigan, Ann Arbor, MI, 48109.*

#148 P38 Correlative Light And Electron Microscopic Analyses Of Circumvallate Taste Buds In Monkeys. JENNIFER J. GARZA, HILDEGARD H. CROWLEY and JOHN C. KINNAMON, *Department of Biological Sciences, University of Denver, Denver, CO 80208 and the Rocky Mountain Taste and Smell Center, Denver, CO 80262.*

#149 P39 Neurite Outgrowth From Sensory Ganglia Into Embryonic Rat Tongue In A Co-Culture System. C.M. MISTRETTA[1] and D.K. MACCALLUM[2], *[1]School of Dentistry and [2]Medical School, University of Michigan, Ann Arbor, MI 48109.*

#150 P40 Disappearance Of Fungiform Papillae And Taste Pores In Rats With Unilateral Chorda Tympani Section At 10 Days Postnatal. SUZANNE I. SOLLARS, MARSHALL G. SHULER and DAVID L. HILL, *Department of Psychology, Univ. Virginia, Charlottesville, VA 22903.*

#151 P41 Calcitonin Gene-Related Peptide Immunoreactivity In Sensory-Denervated Taste Papillae Of The Hamster. M.C. WHITEHEAD[1], D. GANCHROW[2], J.R. GANCHROW[3], B. YAO[1], *[1]UCSD, La Jolla, CA; [2]Tel Aviv Univ., [3]Hebrew Univ., Israel.*

#152 P42 Cytokeratin Immunoreactivity In Taste Buds Of Sodium-Restricted And Control Rats After Denervation. LYNNETTE M. PHILLIPS and DAVID L. HILL, *Department of Psychology, University of Virginia, Charlottesville, VA 22903.*

#153 P43 Phagocytes In The Taste Buds Of Rat Circumvallate Papillae After Denervation. YUKO SUZUKI and MASAKO TAKEDA, *Department of Oral Anatomy, School of Dentistry, Health Sciences University of Hokkaido, Ishikari-Tobetsu Japan, 061-02.*

#154 P44 Ultrastructural Analysis Of Circumvallate And Fungiform Taste Buds From Cross-Reinnervated Rats. HEIDI B. LINNEN, TERRI A. SHERMAN-CROSBY and JOHN C. KINNAMON, *Department of Biological Sciences, University of Denver, Denver CO 80208 and the Rocky Mountain Taste and Smell Center, Denver, CO 80262.*

#155 P45 Reinnervation Of Taste Buds Following Unilateral Chorda Tympani Nerve Cut At Adulthood: Effects Of Na^+ Restriction During Reinnervation. MARSHALL G. SHULER, ROBIN F. KRIMM and DAVID L. HILL, *Univ. Virginia, Charlottesville, VA.*

#156 P46 Anterior Gustatory Papillae And Human Taste Perception. INGLIS MILLER, JR., *Department of Neurobiology and Anatomy, Wake Forest University, Winston-Salem, NC 27157.*

Friday Afternoon

12:30-2:30 **Minority Student Luncheon** *(Palm Room)*

Organizer: Diego Restrepo, Monell Chemical Senses Center

1:00-2:30 **NIH grants Workshop** *(Florida Room)*

Organizer: Jane Hu, NIH

5:00-7:00 **Industry Panel & Buffet** *(Florida Room)*

Organizer: Anna Marin, International Flavor & Fragrance

SLIDES

Friday Evening – 7:30 p.m. - 11:00 p.m.

7:30-9:45 **Workshop/Symposium — Sponsored by The National Institutes of Health (NIDCD)**

Vomeronasal Organ Function

Organizer: Michael Meredith, Florida State University

#157 Introductory Remarks: Vomeronasal Organ Function. MICHAEL MEREDITH, *Neuroscience Program, Florida State University, Tallahassee, FL 32306*

#158 Candidate Pheromone Receptor Genes. CATHERINE DULAC and RICHARD AXEL, *Howard Hughes medical Institute, College of Physicians and Surgeons, Columbia University, NY 10032.*

#159 Heterogeneity In The Vomeronasal System. MIMI HALPERN, *SUNY Health Sci. Center, 450 Clarkson Ave. Box M5, Brooklyn NY 11203.*

#160 Chemosensory Ligand Evokes An Outward Current Secondary To A Decrease In Inward Current And In Net Membrane Conductance In Vomeronasal Bipolar Neurons. ROBERT L. MOSS, *Department of Physiology, University of Texas SW Medical Center, Dallas, TX 75235-9040.*

#161 Vomeronasal/Accessory Olfactory System And Pheromonal Recognition. E.B. KEVERNE, *Sub-Department of Animal Behaviour, University of Cambridge, Madingley, Cambridge, CB3 8AA, England.*

9:45 **Refreshment Break**

Friday Evening – 10:00-11:00

Vomeronasal Organ and Olfactory Organization

Chairperson: David Holtzman, Oberlin College

10:00 #162 Characterization Of Transduction Enzymes And G Proteins In Microvillar Membrane Preparations From Mammalian Vomeronasal Organ. R.R.H. ANHOLT[1], M.A. CARLSON[1], Y.L. KWOK[1], M. OPPERMANN[2], K.S. WEKESA[1], R.J. LEFKOWITZ[2] and J.G. VANDENBERGH[1], *[1]Dept. of Zoology, North Carolina State Univ., Raleigh, NC 27695, [2]Howard Hughes Medical Institute, Duke Univ. Med. Ctr., Durham,NC 27710.*

10:15 #163 Age-Related Changes In Neuronal Precursor Cell Dynamics In The Vomeronasal Epithelium Of Garter Snakes. DAVID A. HOLTZMAN, CATHERINE L. CLARKE and LINDA LEIMBACH, *Neuroscience Program, Oberlin College, Oberlin, OH 44074.*

10:30 #164 Continuous Neurogenesis In The Central Olfactory Pathway Of Adult Shore Crabs. MANFRED SCHMIDT, *Institut für Biologie, TU Berlin, 10587 Berlin, Germany.*

10:45 #165 Dopamine Modulates Odor Responses In Rat Olfactory Receptor Neurons. MARY LUCERO, DAVID PIPER, JONATHAN DANACEAU and AMIE SQUIRES, *Department of Physiology, University of Utah School of Medicine, Salt Lake City, UT 84108.*

POSTERS

Friday Evening – 7:00-11:00

Taste-Odor Behavior
Taste Receptor Function

Taste-Odor Behavior — Posters

#166 P1 Cardiovascular Responses During Taste-Mediated Licking In Rats. ROBERT J. CONTRERAS, ROSS HENDERSON and HOLLY S. HARRELL, *Florida State University, Program in Neuroscience, Department of Psychology, Tallahassee, Fl., 32306-1051.*

#167 P2 Differential Effects Of Cholecystokinin And Bombesin On Water Intake Of Water Deprived Rats. S.P. FRANKMANN, J. HENNINGER, and M.J. KRUSE, *Dept. of Psychology, U. of Southern Colorado, Pueblo, CO 81001.*

#168 P3 The Anatomical Levels At Which Lysine Is Recognized In Rats Given A Lysine-Deficient Diet. KUNIO TORII[1,2], TAKASHI KONDOH[2], YUZO NINOMIYA[3], AKIRA NIIJIMA[4], EIICHI TABUCHI[5] and TAKETOSHI ONO[5], *[1]Torii Nutrient-stasis Project, ERATO, R&D Corp. of Japan, Yokohama 221, [2]Ajinomoto Co., Inc., Central Res. Lab., Kawasaki, 210, [3]Dept. Oral Physiology, Dental School, Asahi Univ., Gifu 501-02, [4]Niigata Univ., School of Medicine, Niigata 951, and [5]Dept. Physiology, Faculty of Medicine, Toyama Med. and Pharmaceu. Univ., Toyama, 930-01, Japan.*

#169 P4 Lesions Of The Parabrachial Nuclei Disrupt Learned Preferences For A Flavor Paired With NaCl. PATRICIA SUE GRIGSON, HAN LI and RALPH NORGREN, *Department of Behavioral Science, College of Medicine, Penn State University, Hershey, PA 17033.*

#170 P5 The Primacy Of Taste In Aversion Learning: Was Garcia Right? BURTON M. SLOTNICK[1], FRED WESTBROOK[2] and FRANCES M.C. DARLING[1], *[1]Department of Psychology, The American University, Washington, DC 20016 and [2]Department of Psychology, University of New South Wales, Sydney 2052 NSW.*

#171 P6 Sweetener Similarity In Hamsters As Determined By Generalization Of Conditioned Taste Aversions. BRUCE I. MACKINNON[1], MARION E. FRANK[1] and BRADLEY G. REHNBERG[2]. *[1]Dept. BioStructure & Function, Dental Medicine, University of Conn. Health Center, Farmington, CT. 06030, [2]Dept. Biological Science, York College, York, PA. 17405.*

#172 P7 The Effects Of Gustatory Nerve Transection On Conditioned Sugar Discrimination In The Rat. ALAN C. SPECTOR, STACY MARKISON, STEVEN J. ST. JOHN, LISA SELVIG and MIRCEA GARCEA, *Department of Psychology, University of Florida, Gainesville, FL 32611.*

#173 P8 Chorda Tympani Nerve Transection And Partial Desalivation Differentially Disrupt Two-Lever Salt Discrimination Performance In Rats. S.J. ST. JOHN, S. MARKISON, N. GUAGLIARDO, T.D. HACKENBERG and A.C. SPECTOR, *Dept. of Psychology, Univ. of Fla., Gainesville, FL 32611.*

#174 P9 Unconditioned Licking of Quinine Is Increased By Glossopharyngeal Nerve Transection In Rats Without Presurgical Stimulus Exposure. STACY MARKISON, STEVEN J. ST. JOHN and ALAN C. SPECTOR, *Department of Psychology, Univeristy of Florida, Gainesville, FL 32611.*

#175 P10 Role Of Peripheral Taste Receptors In The Taste-Rejection Of Bitter Stimuli By Manduca Caterpillars. JOHN I. GLENDINNING, *University of Arizona, Tucson, AZ 85721.*

#176 P11 Associative Olfactory Learning In Moths. ELKE HARTLIEB, *Max Planck Institut für Verhaltensphysiologie, D 82319 Seewiesen, Germany.*

#177 P12 Olfactory Activation Of An Antennular Grooming Behavior In The Spiny Lobster, *Panurilus argus*, Is Tuned Narrowly To *l*-Glutamate. JOHN BARBATO, MICHAEL KALINA and PETER C. DANIEL, *Department of Biology, Hofstra University, Hempstead, NY 11550.*

#178 P13 Coordination Of Chemosensory Orientation In The Starfish *Asterias forbesi*. JONATHAN H. DALE, *Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543.*

#179 P14 Stimulants Of Fish Feeding Behavior In Tissues Of Marine Organisms. WILLIAM E.S. CARR[1], JAMES C. NETHERTON III[1], RICHARD A. GLEESON[1] and CHARLES D. DERBY[2], *[1]The Whitney Laboratory, University of Florida, St. Augustine, FL 32086, and [2]Department of Biology, Georgia State University, Atlanta, GA 30302-4010.*

#180 P15 Catfish Perceive Binary Mixtures Of L-amino Acids As Their More Stimulatory Components. TINE VALENTINCIC[1,2], ALES KOCE[1], JASNA KRALJ[1], MATJAZ STENOVEC[1] and JOHN CAPRIO[2], *[1]Department of Biology, University of Ljubljana, Ljubljana, Slovenia and [2]Department of Zoology & Physiology, LSU, Baton Rouge.*

Taste Receptor Function — Posters

#181 P16 Purification Of An Arginine Taste Receptor From The Channel Catfish. W. GROSVENOR[1], A.I. SPIELMAN[1,2], A.I. FEIGIN[1], D.L. KALINOSKI[1], T.E. FINGER[3,4], M. WOOD[4], C. DELLACORTE[1], I. ANDREINI[1], J.H. TEETER[1,5] and J.G. BRAND[1,5,6], *[1]Monell Chem. Senses Ctr, Phila.,PA, [2]NYU College of Dentistry, NY, NY, [3]The Rocky Mountain Taste & Smell Ctr. Denver, CO, [4]Dept. of Cellular and Structural Biology, UCHSC, Denver, CO, [5]UPENN, Phila, PA, [6]VA Med. Ctr. Phila, PA.*

#182 P17 Citrate Selectively Enhances Glossopharyngeal, But Not Facial Taste Responses To *l*-Proline In The Channel Catfish. C. DAVIS and J. CAPRIO, *Department of Zoology & Physiology, Louisiana State University, Baton Rouge, LA. 70803.*

#183 P18 Measurement Of Intracellular pH (pH_i) In Isolated Rat Circumvallate Papillae Taste Receptor Cells (TRCs). VIJAY LYALL[1], GEORGE M. FELDMAN[1,2], GERARD L. HECK[1] and JOHN A. DESIMONE[1], *[1]Departments of Physiology and [2]Medicine, Virginia Commonwealth University, Richmond, VA 23298-0551 and [2]McGuire Veterans Affairs Medical Center, Richmond, VA 23249.*

#184 P19 Responses To Monosodium Glutamate And Amiloride Occur In Single Rat Fungiform Taste Cells. WEIHONG LIN, TATSUYA OGURA and SUE C. KINNAMON, *Colorado State Univ., Fort Collins, CO 80523 and The Rocky Mountain Taste and Smell Center, Denver, CO 80262.*

#185 P20 The MU chamber: A New Method to Record Electrophysiological Responses of Taste Receptor Cells to Gustatory Stimuli. W. TODD MONROE[1], DAVID V. SMITH[2] and TIMOTHY A. GILBERTSON[1]. *[1]Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA 70808-4124 and [2]Department of Anatomy, University of Maryland School of Medicine, Baltimore MD 21201-1559.*

#186 P21 Regulation Of Amiloride-Sensitive Sodium Channels By Extracellular Sodium Ions: Sodium Self-Inhibition. TIMOTHY A. GILBERTSON and HUAI ZHANG, *Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA 70808-4124.*

#187 P22 Characterization Of Sodium Transport In Fungiform-, Foliate- And Vallate-Containing Epithelia From Hamster And Rat. HUAI ZHANG[1], DONNA M. GILBERTSON[2], W. TODD MONROE[1] and TIMOTHY A. GILBERTSON[1], *[1]Pennington Biomedical Research Center and the [2]Department of Psychology, Louisiana State University, Baton Rouge, LA 70808-4124.*

#188 P23 Physicochemical Studies Of Na^+ And H^+ Sensing In The Hamster Anterior Tongue. ROBERT E. STEWART, GERARD L. HECK and JOHN A. DESIMONE, *Department of Physiology, Virginia Commonwealth University, Richmond, VA 23298.*

#189 P24 Chorda Tympani Responses Under Lingual Voltage Clamp: Implications For NH_4-Salts Taste Transduction. MAMOUN KLOUB, GERARD HECK and JOHN DESIMONE, *Department of Physiology, Virginia Commonwealth University, Richmond, Virginia 23298-0551.*

#190 P25 Dose-Response Analysis Of The Amiloride-Sensitive Component Of Taste Nerve Responses To Sodium And Nonsodium Salts In Rats. ROBERT F. LUNDY, JR., DAVID PITTMAN and ROBERT J. CONTRERAS, *Dept. of Psychol., Program in Neuroscience, Florida State Univ., Tallahassee, FL. 32306-1051.*

#191 P26 Capsaicin Suppresses Responses Of Rat Chorda Tympani Nerve Fibers to NaCl. KAZUMI OSADA[1], MICHIO KOMAI[1], HITOSHI SUZUKI[2], BRUCE P. BRYANT[3], ATSUKO GOTOH[1], KENJI TSUNODA[1] and YUJI FURUKAWA[1], *[1]Laboratory of Nutrition, Faculty of Agriculture, Tohoku University, Sendai 981, Japan, [2]Ishinomaki-Senshu University, Isinomaki 986, Japan, [3]Monell Chemical Senses Center, Philadelphia, PA 19104.*

#192 P27 Capsaicin And Protons Activate Cultured Trigeminal Neurons Through Different But Possibly Overlapping Mechanisms. XUE-SONG ZHANG and BRUCE BRYANT, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

#193 P28 Responses To Alcohol In Lingual Proper Fibers Of *Macaca mulatta*. GÖRAN HELLEKANT, VICKTORIA DANILOVA and THOMAS ROBERTS, *Wisconsin Regional Primate Center and Department of Animal Health and Biomedical Sciences, University of Wisconsin, Madison, WI 53706.*

#194 P29 Nicotinic Acetylcholine And Capsaicin Receptors In Rat Trigeminal Ganglia. L. LIU[1], C.J.H. KEIGER[2] and S.A. SIMON[1], *[1]Department of Neurobiology, Duke University, Durham, NC 27710 and [2]UNC Craniofacial Center, School of Dentistry, University of North Carolina, Chapel Hill, NC 27599.*

#195 P30 Mixture Suppression Of Single Fiber Hamster Chorda Tympani Responses To Sucrose By Quinine. B.K. FORMAKER, B.I. MACKINNON, T.P. HETTINGER and M.E. FRANK, *Department of BioStructure and Function, University of Connecticut Health Center, Dental Medicine, Farmington, CT 06030.*

#196 P31 Characterization Of The Sweetness-suppressing Effect Of Polypeptide Gurmarin And ent-Gurmarin. KEIICHI TONOSAKI[1], MASAFUMI OTA[2], KOUSEI MIWA[3], TSUTOMU FUKUWATARI[4] and YASUO ARIYOSHI[2], *[1]Department of Veterinary Physiology, Faculty of Agriculture, Gifu University, Gifu 501-11, Japan, [2]Central Research Laboratories, Ajinomoto Co., Inc., Kawasaki 210, Japan, [3]Department of Pediatric Dentistry, School of Dentistry, Asahi University, Gifu, 501-02, Japan, [4]Department of Food Science and Technology, Faculty of Agriculture, Kyoto University, Kyoto 606, Japan.*

#197 P32 Gustducin Knock-Out Mice Exhibit Reduced Bitter Taste Sensitivity As Evidenced By Glossopharyngeal Responses And Conditioned Taste Aversion. KIMBERLEY S. GANNON[1], YUZO NINOMIYA[2], GWENDOLYN T. WONG[1] and ROBERT F. MARGOLSKEE[1], *[1]Department of Physiology and Biophysics, Mount Sinai School of Medicine, New York, NY 10029, [2]Department of Oral Physiology, Asahi University School of Dentistry, Gifu, Japan.*

#198 P33 Neural Responses To Bitter Compounds. MATTHEW W. DAHL[1], ROBERT ERICKSON[1,2] and S.A. SIMON[1], *Departments of [1]Neurobiology and [2]Psychology, Duke University, Durham, NC 27710.*

#199 P34 Taste Responses From The Chorda Tympani Nerves In Young And Old SHR-SP Rats. MICHIO KOMAI[1], KAZUMI OSADA[1], HITOSKI ZUZUKI[2], MICKIKO ITOH[1], BRUCE P. BRYANT[3] and YUJI FURUKAWA[1], *[1]Laboratory of Nutrition, Faculty of Agriculture, Tohoku University, Sendai 981, Japan, [2]Ishinomaki-Senshu University, Isinomaki 986, Japan, [3]Monell Chemical Senses Center, Philadelphia, PA 19104-3308.*

#200 P35 Neurotrophins In The Tongue And Its Taste Buds; mRNA Expression Pattern, Bioactivity And Appearance In BDNF And NT3 Null-Mutated Mice, C.A. NOSRAT[1], A. KYLBERG[2], S. LINDSKOG[1], T. EBENDAL[2], P. ERNFORS[1], L. OLSON[1], *[2]Dept. of Developmental Neuroscience, Bio-medical Center, Uppsala University, Uppsala, Sweden and [1]Dept. of Neuroscience, Karolinska Institute, S-171 77 Stockholm, Sweden.*

#201 P36 Immunocytochemical Localization Of c-fos And Nitric Oxide Synthetase To von Ebner's Gland But Not To Posterior Taste Cells In Rat Tongue. SCOTT HERNESS, *Indiana University School of Medicine, Muncie, IN 47306.*

Meeting at a Glance

TIME	WEDNESDAY	THURSDAY		FRIDAY		SATURDAY		SUNDAY		TIME
		7:30 - 9:00 Continental Breakfast								
		SLIDES	POSTERS	SLIDES	POSTERS	SLIDES	POSTERS	SLIDES	POSTERS	
8:00		Early Chemosensory Development		Human Olfactory Psychophysics		Olfactory Receptor Function		Taste Gene Mapping		8:00
8:15			Animal Behavior		Olfactory Receptor Function # 1		Human Psychophysics # 2 Taste and Smell		Olfactory Receptor Function # 2	8:15
8:30										8:30
8:45		Break						Break		8:45
9:00										9:00
9:15		Chemosensory Plasticity						Chemical Ecology		9:15
9:30										9:30
9:45			Olfactory and Vomeronasal Receptor Structure							9:45
10:00				Break						10:00
10:15					Taste Receptor Structure	Break				10:15
10:30				Human Taste Psychophysics		Taste Receptor Function	Central Taste Organization			10:30
10:45										10:45
11:00										11:00
11:15		Break								11:15
11:30		Transplantation Workshop (Ed Morrison and Jack Pearl) *Sara Desoto Room*								11:30
11:45										11:45
12:00						BUSINESS MEETING *Sara Desoto Room*				12:00
12:15										12:15
12:30										12:30
12:45				NIH Grants Workshop (Jane Hu) *Florida Room*						12:45
1:00		Clinical Lunch (April Mott) *Florida Room*								1:00
1:15										1:15
1:30										1:30
1:45										1:45
2:00										2:00
2:15										2:15
2:30										2:30
2:45										2:45
3:00						1st Annual Taste vs. Smell Softball Game				3:00
3:15		*Executive Committee Meeting* *State Room (3:00-7:00)*								3:15
3:30										3:30
3:45										3:45
4:00										4:00
4:15										4:15
4:30										4:30
4:45										4:45
5:00										5:00
5:15	Registration *Longboat Room*	Society for the Study of Ingestive Behaviors Social and Talks (Sandra Frankmann) *Florida Room*		Industry Panel (Anna Marin) *Florida Room*		Beer Appreciation Symposium *Florida Room*				5:15
5:30										5:30
5:45										5:45
6:00				Industry Buffet						6:00
6:15										6:15
6:30	Opening Buffet									6:30
6:45										6:45
7:00										7:00
7:15										7:15
7:30		Awards Symposium *Sara Desoto Room*		Vomeronasal Organ Function Symposium (Michael Meredith) *Sara Desoto Room*		The Amiloride-Sensitive Sodium Channel -- Past, Present & Future Symposium (John DeSimone) *Sara Desoto Room*				7:30
7:45					Taste - Odor Behavior				Central Olfactory Systems	7:45
8:00	Opening and Awards Presentation									8:00
8:15			Human Psychophysics # 1 Taste and Smell							8:15
8:30	Givaudan-Roure Lecture: Eric Knudsen *Desoto Ballroom*									8:30
8:45										8:45
9:00					Taste Receptor Function				Chemical Ecology	9:00
9:15										9:15
9:30	Graduate Student Meeting *Desoto Ballroom*	Break		Break		Break				9:30
9:45		Central Olfactory Systems		Vomeronasal and Olfactory Organization		Amiloride-Sensitive Sodium Channel				9:45
10:00										10:00
10:15	Social									10:15
10:30										10:30
10:45										10:45
11:00										11:00

#202 P37 Localization Of Cholecystokinin Mrna To Lingual Epithelium In Rat Tongue. BARNEY CRUM, TIFFANIE LAMAR and SCOTT HERNESS, *Indiana University School of Medicine, Muncie, IN 47306.*

SLIDES

Saturday Morning – 8:00-12:00

Olfactory Receptor Function

Chairperson: Diego Restrepo, Monell Chemical Senses Center

8:00 #203 Adenovirus-mediated Gene Transfer In Olfactory Neurons. HAIQING ZHAO[1], JOJI OTAKI[2] and STUART FIRESTEIN[2], *[1]Interdepartmental Neuroscience Program, Yale University, New Haven, CT 06510, [2]Department of Biological Sciences, Columbia University, New York, NY 10027.*

8:15 #204 Nitric Oxide Gates Subunit 2 Of Cyclic Nucleotide-Gated Channels Cloned From Rat Olfactory Receptor Neurons. MARIE-CHRISTINE BROILLET and STUART FIRESTEIN, *Department of Biological Sciences, Columbia University, New York, NY 10027.*

8:30 #205 Reduced Level Of Nos Correlates With Defects In Olfactory Response And Adaptation In anosmic, A *Drosophila* Mutant. DEBASISH RAHA, MARC FREEMAN and JOHN CARLSON, *Department of Biology, Yale University, New Haven, CT 06520-8103.*

8:45 #206 Adaptation In Olfactory Receptor Neurons Of The Moth, *Manduca sexta.* MONIKA STENGL, *Department of Zoology, University of Regensburg, 93040 Regensburg, Germany.*

9:00 #207 Amplification Properties Of Amphibian Olfactory Receptor Currents. STEVEN J. KLEENE, *Department of Cell Biology, Neurobiology, and Anatomy, University of Cincinnati, Cincinnati, OH 45267-0521.*

9:15 #208 A Cyclic Nucleotide-Gated Chloride Conductance In Olfactory Receptor Neurons. RONA J. DELAY[1], ADRIENNE E. DUBIN[2] and VINCENT E. DIONNE[1], *[1]Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543 and [2]Department of Pharmacology, University of California San Diego, La Jolla, CA 92093.*

9:30 #209 Odorant-Modulated K^+ Conductances In Rat Olfactory Neurons. FRITZ W. LISCHKA[1], JOHN H. TEETER[1,2] and DIEGO RESTREPO[1,2], *[1]Monell Chemical Senses Center, Philadelphia, PA 19104 and [2]Department of Physiology, University of Pennsylvania, Philadelphia, PA 19104.*

9:45 #210 Modulation By Cyclic cGMP Of The Odor Sensitivity Of Vertebrate Olfactory Receptor Neurons. TRESE LEINDERS-ZUFALL, GORDON M. SHEPHERD and FRANK ZUFALL, *Section of Neurobiology, Yale University School of Medicine, New Haven, CT 06510.*

10:00 #211 Long-lasting Adaptation Of The Odor Response Of Olfactory Receptor Neurons Depends On The CO/cGMP Second Messenger System. FRANK ZUFALL and TRESE LEINDERS-ZUFALL, *Section of Neurobiology, Yale University School of Medicine, New Haven, CT 06510.*

10:15 **Refreshment Break**

Taste Receptor Function

Chairperson: M. Scott Herness, Indiana University

10:30 #212 Rapid Alternate Measurement Of Membrane Potential And Intracellular Calcium In Cell Ensembles. M.M. ZVIMAN[1], Y. HAYASHI, J.G. BRAND[1,2,3], J.H. TEETER[1,2] and D. RESTREPO[1,2]. *[1]Monell Chemical Senses Center, [2]Department of Physiology, University of Pennsylvania, and [3]Veterans Affairs Medical Center, Philadelphia, PA 19104.*

10:45 #213 Responses Of Mudpuppy Taste Receptor Cells To Denatonium: $[Ca^{2+}]i$, Ionic Current And Feeding Behavior. TATSUYA OGURA[1], ANDREW G. BOWERMAN[1], ALAN MACKAY-SIM[2] and SUE C. KINNAMON[1], *Dept. of Anatomy and Neurobiol., Colorado State Univ., Fort Collins, CO 80523, The Rocky Mountain Taste and Smell Center, Denver, CO 80262 and [2]Faculty of Sci. and Tech., Griffith Univ., Brisbane, QLD 4111, Australia.*

11:00 #214 Taste Cell Specific Transcriptional Regulation Of The α-Gustducin Gene In Transgenic Mice. GWENDOLYN T. WONG, LUIS RUIZ-AVILA and ROBERT F. MARGOLSKEE, *Department of Physiology and Biophysics, Mount Sinai School of Medicine, New York, New York 10029.*

11:15 #215 N and H Chorda Tympani Fibers Utilize Separate Taste Transduction Mechanisms. THOMAS P. HETTINGER, BRADLEY K. FORMAKER, BRUCE I. MACKINNON and MARION E. FRANK, *Dept. BioStructure & Function, Dental Med., UConn Health Center, Farmington, CT 06030.*

11:30 #216 Responses To Alcohol In Chorda Tympani Taste Fibers Of *Macaca mulatta.* VICKTORIA DANILOVA[1], GÖRAN HELLEKANT[1], YUZO NINOMIYA[1] and ZHENGYU GUAN[1], *[1]Department of Animal Health and Biomedical Sciences, University of Wisconsin-Madison, Madison, WI 53706, [2] Asahi University, Gifu, Japan.*

11:45 #217 Responses To Alcohol In Glossopharyngeal Taste Fibers Of *Macaca mulatta.* ZHENGYU GUAN, GÖRAN HELLEKANT, VICKTORIA DANILOVA and THOMAS ROBERTS, *Department of Animal Health and Biomedical Sciences, University of Wisconsin-Madison, Madison, WI 53706.*

POSTERS

Saturday Morning – 8:30-12:30

Human Psychophysics #2 – Taste & Smell
Central Taste Organization

Human Psychophysics #2 — Posters

#218 P1 Developmental Changes In The Acceptance Of Protein Hydrolysate Formula And Its Relation To Mothers' Feeding Habits. JULIE A. MENNELLA and GARY K. BEAUCHAMP, *Monell Chemical Senses Center, Philadelphia, PA 19104-3308.*

#219 P2 Sweet Taste In Women With Gestational Diabetes. ANNIE C. SELDNER and BEVERLY J. TEPPER, *Department of Food Science, Rutgers University, New Brunswick, NJ 08903.*

#220 P3 Taste Sensitivity And Preference In The Frail, Institutionalized Elderly. MARCIA LEVIN PELCHAT and DENISE BURKHARDT-KULPA, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

#221 P4 Sensitivity To The Basic Tastes: The Effects Of Age. JOS MOJET, HAN HEIDEMA and ELLY CHRIST, *Unilever Research Laboratory, Vlaardingen, The Netherlands, 3133 AT.*

#222 P5 Spatial Taste Loss Associated With Aging. LAURIE A. LUCCHINA[1], VALERIE B. DUFFY[2], DEREK J. SNYDER[1], CONSTANCE M. CAPACCHIONE[3], ANN M. FERRIS[3] and LINDA M. BARTOSHUK[1], *[1]Department of Surgery, Yale University School of Medicine, New Haven, CT 06520, [2]School of Allied Health, University of Connecticut, Storrs, CT 06269, and [3]Department of Nutritional Sciences, University of Connecticut, Storrs, CT 06269.*

#223 P6 Suprathreshold Taste Response And Its Relation To Identification. LAWRENCE E. MARKS[1,2], LAURA ARMSTRONG[1], JANNEANE F. GENT[1] and MARION E. FRANK[3], *[1]John B. Pierce Laboratory, New Haven, CT 06519, [2]Department of Epidemiology and Public Health and Department of Psychology, Yale University, New Haven, CT 06510, [3]Department of BioStructure and Function, University of Connecticut Health Center, Farmington, CT 06030.*

#224 P7 A Test For Regional Evaluation Of Taste Function. HANS KROGER, CORINNE B. ALEXANDER, RICHARD L. DOTY, DANIEL A. DEEMS and R. GREGG SETTLE, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA, 19104.*

#225 P8 Toward Development Of A Discrimination-Based, Multiple-Choice Test Of Odor Identification With Real-World Items. W.S. CAIN, K.A. DYER, J.M. SCANLON, H. PHAM and K. PUNG, *Dept. of Surgery, University of California, San Diego, CA 92093-0957.*

#226 P9 Cross-Cultural Differences In Scaling Olfactory Stimuli. ANA GARRIGA-TRILLO and F. GONZÁLEZ-REPRESA, *Department of Psychology, UNED, Madrid, Spain 28040.*

#227 P10 Clinical Assessment Of Olfactory Function Using The Cross-Cultural Smell Identification Test (CC-SIT) In The District Of Nagoya, Japan. TOSHI MATSUDA[1], HIROKO KONDO[1], SHUNKICHI BABA[1] and RICHARD L. DOTY[2], *[1]Department of Otorhinolaryngology, Nagoya City University Medical School, Nagoya 467, Japan, [2]Smell and Taste Center, University of Pennsylvania, Philadelphia, PA 19104-4283.*

#228 P11 An Investigation Into The Effect Of Odour On Product Evaluation In "Virtual" Environments. P. CASTLE and S. VAN TOLLER, *Warwick Olfaction Research Group, Dept of Psychology, University of Warwick, UK.*

#229 P12 "Sniffin' Sticks": New ways to test olfactory performance. T. HUMMEL, B. SEKINGER AND G. KÖBAL, *Dept. of Exp. & Clin. Pharmacol. & Toxicol., Univ. of Erlangen-Nürnberg, Krankenhausstr. 9, 91054 Erlangen, Germany.*

#230 P13 Odor Identification In Normally Developing Children And Adolescents. CHRISTINE JEHL and CLAIRE MURPHY, *San Diego State University, CA 92182.*

#231 P14 Orthonasal And Retronasal Olfactory Perception In Middle-Aged And Young Females. GITA M. DABRILA and VALERIE B. DUFFY, *School of Allied Health Professions, University of Connecticut, 06269.*

#232 P15 Effects Of Aging On Olfactory Event-Related Potentials In Middle-Aged Adults. DENNARD W. ELLISON[1,2], CHARLIE MORGAN[3] and CLAIRE MURPHY[1,2], *[1]University of California, School of Medicine, [2]San Diego, San Diego State University, [3]SDSU-UCSD Joint Doctoral Program Clinical Psycology.*

#233 P16 Neuropsychological Performance and Cognitive Olfactory Event Related Potentials in the Young and Elderly. MARK W. GEISLER[1,2], JAMES COVINGTON[2], CHARLIE D. MORGAN[3] and CLAIRE MURPHY[1,2], *[1]University of California School of Medicine, San Diego, CA 92103, [2]San Diego State University, San Diego, CA 92120, [3]SDSU/UCSD Joint Doctoral Program in Psychology, San Diego, CA 92120.*

#234 P17 Characterization Of Odors From Swine Operations. SUSAN S. SCHIFFMAN and MARK S. SUGGS, *Department of Psychiatry, Duke University, Durham, NC 27710.*

#235 P18 Relative Odorant Identification In The Evaluation of Hyposmia. DANIEL B. KURTZ[1], DAVID E. HORNUNG[1,3], PRECHA EMKO[2] and THERESA L.WHITE[1], *Departments of [1]Physiology and [2]Otolaryngology, SUNY Health Science Center, Syracuse, NY 13210, [3]Biology Department, St. Lawrence University, Canton NY 13617.*

#236 P19 Progressive Decline In Olfactory Sensitivity In Older Adults With Down's Syndrome. RANI NIJJAR[1], MELISSA SLIGER[1], RACHEL LIPSETT[1], CARRIE TALESFORE[1] and CLAIRE MURPHY[1,2], *[1]Department of Psychology, San Diego State University, San Diego, CA 92182, [2]University of California San Diego Medical Center, San Diego, CA 92161.*

#237 P20 Odor Learning And Memory In Patients With Alzheimer's Disease. JILL L. RAZANI[1], DIANE M. WILSON[2], LETICIA ACOSTA[2], STEVEN NORDIN[3] and CLAIRE MURPHY[2,3], *[1]SDSU-UCSD Joint Doctoral Program in Clinical Program, San Diego, CA 92182, [2]Department of Psychology, San Diego State University, San Diego, CA 92182, [3]UCSD Medical Center, San Diego, CA 92161.*

#238 P21 Sensitivity And Specificity For An Odor Fluency Test In Huntington's Disease. ANNA W. BACON[1], CLAIRE MURPHY[2,3] and JANE PAULSEN[4,5], *[1]SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA 92120, [2]San Diego State University, San Diego, CA 92120, [3]University of California School of Medicine, San Diego, CA 92103, [4]San Diego Department of Veterans Affairs Medical Center, San Diego, CA 92161, [5]Department of Psychiatry, School of Medicine, University of California, San Diego, CA 92161.*

#239 P22 Olfactory Dysfunction In Head Trauma Patients Presenting To A Smell And Taste Center. LYNDA PHAM, ALLYSON KRESHAK, W. WILLIAM LEE and RICHARD L. DOTY, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania Medical Center, Philadelphia, PA, 19104.*

#240 P23 Clinical Management of Olfactory Complaints In The Late 19th Century DONALD LEOPOLD, *Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins, Baltimore MD 21224.*

Central Taste Organization — Posters

#241 P24 A Quantitative Study Of Rat Petrosal Ganglion Neurons Innervating The Posterior Tongue. XIANGHUI CAO and ROBERT M. BRADLEY, *Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078.*

#242 P25 The Time Course Of Transganglionic Degeneration In The Nucleus Of The Solitary Tract Following Taste Nerve Transection In The Rat. M.B. VOGT, C. YU and D.V. SMITH, *Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201.*

#243 P26 Alternative Mechanism For Taste Compensation Following Chorda Tympani Anesthetization. M.E. DINKINS and S.P. TRAVERS, *Oral Biology, College of Dentistry, Ohio State University, Columbus, Ohio, 43210.*

#244 P27 NTS Neurons Of Developmentally Sodium Restricted Rats Show Abnormal Dendritic Lengths Before Adulthood. A. KURT THAW, BEN R. WALKER and DAVID L. HILL, *University of Virginia, Charlottesville, VA 22903.*

#245 P28 Short-term Synaptic Plasticity In Gustatory Nucleus Of The Solitary Tract Induced By High Frequency Stimulation. GINTAUTAS GRABAUSKAS and ROBERT M. BRADLEY, *Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078.*

#246 P29 Influence Of GABA On Acutely Isolated Neurons From The Gustatory Zone Of The Rat Nucleus Of The Solitary Tract. JUNHUI DU and ROBERT M. BRADLEY, *Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078.*

#247 P30 Investigation Of Two Potassium Currents In Neurons Of The Rostral Nucleus Of The Solitary Tract. GERIT MUßNIG and ROBERT M. BRADLEY, *Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078.*

#248 P31 Mutual Inhibition Between Sucrose and Quinine Or Denatonium In Cells Of The Hamster Solitary Nucleus. CHENG-SHU LI and DAVID V. SMITH, *Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201-1559.*

#249 P32 Effects Of Portal Infusion Of Hypotonic- And Hypertonic Solutions On Neuronal Activity In The Rat Dorsal Motor Nucleus Of The Vagus. MOTOI KOBASHI and AKIRA ADACHI, *Department of Physiology, Okayama University Dental School, Okayama 700, JAPAN.*

#250 P33 Dopaminergic Neurons In The Gustatory Zone Of The Nucleus Of The Solitary Tract In The Hamster Receive Direct Synaptic Inputs Via The Chorda Tympani. BARRY J. DAVIS and DONALD YARBROUGH, *Department of Cell Biology, University of Alabama at Birmingham, Birmingham, AL 35294.*

#251 P34 Functional Connectivity In The Nucleus Of The Solitary Tract Of The Rat. MARTIN D. KAWAMOTO, CHRISTIAN H. LEMON and PATRICIA M. DI LORENZO, *Department of Psychology, State University of New York at Binghamton, Binghamton, NY 13902-6000.*

#252 P35 Electrophysiological Findings In The Primary Gustatory Nucleus Of The Goldfish: Response To Glutamate Antagonists In The Vagal Lobe. C.A. SMERASKI[1], T.V. DUNWIDDIE[2], L.H. DIAU[2], C.F. LAMB[1] 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.*

#253 P36 Gustatory Reflex Systems In The Brainstem: From Primary Sensory Nucleus To Pharyngeal Motor Complex. THOMAS E. FINGER and MALCOLM R. WOOD, *Dept. Cell. & Struct. Biology, Univ. Colorado Medical School, Denver, CO 80262.*

#254 P37 Distribution Of C-fos Immunoreactivity In The Rat Brain Following Stimulation Of The Laryngeal Opening With Chemical Stimuli. R.D. SWEAZEY[1], J.A. COOK[1] and M.N. UPTON[2], *[1]Dept. of Anatomy, Indiana Univ. Sch. of Med., Ft. Wayne, IN 46805, [2]Dept. of Psychology, Indiana Univ., Bloomington, IN 47405.*

#255 P38 A Subset Of NST Neurons That Express Gustatory-Elicited Fos Project To PBN. HECHENG HU and SUSAN TRAVERS, *Section of Oral Biology, College of Dentistry, Ohio State University, Columbus, OH 43210.*

#256 P39 The Projection From The rNST To The mPBN In Rat Is Bilateral As Demonstrated By A Retrograde And Anterograde Tract Tracing Study. JUSTIN B. WILLIAMS, SEAN J. WELCH and MICHAEL S. KING, *Biology Department, Stetson University, DeLand FL 32720.*

#257 P40 Intranuclear Processing Of Gustatory Information In The Parabrachial Nucleus Of The Pons. C.H. LEMON, M.D. KAWAMOTO and P.M. DI LORENZO, *Department of Psychology, Binghamton University, Binghamton, New York, 13902-6000.*

#258 P41 Descending Projections From The Gustatory Responsive Parabrachial Nucleus To The Medullary Reticular Formation In The Rat. HAMID KARIMNAMAZI, SUSAN P. TRAVERS and JOSEPH B. TRAVERS, *Dept. of Oral Biology, Ohio State University, Columbus, Ohio 43210.*

#259 P42 Amygdala Lesions Attenuate c-Fos Induction In The Nucleus Of The Solitary Tract After Conditioned Taste Aversion Expression. T.A. HOUPT, R.A. BERLIN and G.P. SMITH, *E.W. Bourne Behavioral Research Laboratory, Department of Psychiatry, Cornell University Medical College, White Plains, NY 10605.*

#260 P43 Separate Populations Of Amygdala Neurons Express Taste-Elicited C-Fos And Project To The Parabrachial Nucleus. C.B. HALSELL, M.E. BERKMAN, H.C. HU and S.P. TRAVERS, *Section of Oral Biology, College of Dentistry, The Ohio State Univ.,Columbus, OH 43210.*

#261 P44 Nitric Oxide Synthase (NOS) In The Insular Cortex Of The Syrian Golden Hamster. R.G. WEHBY[1], J.A. LONDON[1,2] and G. E. BURGER[2], *[1]Center for Neurological Sciences, University of Connecticut Health Center, and [2]Department of BioStructure and Function, University of Connecticut School of Dental Medicine, Farmington, CT 06030.*

#262 P45 Taste Perception In Patients With Damage To The Anterior Insular Cortex. THOMAS C. PRITCHARD[1,2], DAVID A. MACALUSO, STEVEN OPPENHEIMER[4] and PAUL J. ESLINGER[2,3], *Departments of [1]Neuroscience & Anatomy, [2]Behavioral Science, and [3]Medicine, The Pennsylvania State University, Hershey, PA 17033 and [4]Department of Neurology, The Johns Hopkins Hospital, Baltimore, MD 21205.*

#263 P46 A Survey Of Neurotransmitters In The Gustatory Cortex Of The Syrian Golden Hamster. J.A. LONDON[1,2], R.G. WEHBY[1] and G.E. BURGER[2]. *Center for Neurological Sciences, University of Connecticut Health Center[1] and Department of BioStructure and Function, University of Connecticut School of Dental Medicine[2], Farmington, CT 06030.*

#264 P47 Suppression Of Primary Taste And Secondary Taste And Smell Cortices During Flavour Processing In The Human. DANA SMALL[1], MARILYN JONES-GOTMAN[1], ROBERT ZATORRE[1], MICHAEL PETRIDES[1] and ALAN EVANS[2], *[1]Department of Neurology and Neurosurgery, McGill University, Montreal, Quebec H3A 2B4, [2]McConnell Brain Imaging Centre, Montreal Neurological Institute, Montreal, Quebec H3A 2B4.*

#265 P48 Human Cortical Taste Areas Studied With fMRI. B. CERF[1], A. FAURION[1], P. MAC LEOD[1], P.-F. VAN DE MOORTELE[2] and D. LEBIHAN[2], *[1]Laboratoire de Neurobiologie Sensorielle, C.N.R.S. / E.P.H.E., 91305 Massy, France, [2]Service Hospitalier Frédéric Joliot, CEA, 91304 Orsay, France.*

Saturday Afternoon

12:00-1:45 **AChemS Business Meeting** *(Sara Desoto Room)*

Featuring: Dr. James Snow, Director of NIH NIDCD
Dr. Judy Finkelstein, Program Director, Sensory/Motor Disorders of Aging, NIA
Dr. Christopher Platt, Program Director, Sensory Systems, NSF

3:00-4:30 **Softball Game** *(Some Field Somewhere)*

Saturday Evening

5:00-7:00 **Beer Appreciation Symposium** *(Florida Room)*

Organizer: John C. Kinnamon, University of Denver

SLIDES

Saturday Evening – 7:30 p.m. - 11:00 p.m.

7:30 - 9:30 **Workshop/Symposium — Sponsored by The National Institutes of Health (NIDCD)**

The Amiloride-Sensitive Sodium Channel — Past, Present & Future

Organizer: John DeSimone, Medical College of Virginia

#266 The Amiloride-Sensitive Sodium Channel in Taste Reception. JOHN A. DESIMONE, *Department of Physiology, Virginia Commonwealth University, Richmond, VA 23298-0551.*

#267 A Novel Way of Regulating the Activity of Epithelial Sodium Channels. CECILIA M. CANESSA, *Department of Cellular and Molecular Physiology Yale School of Medicine, 333 Cedar Street, New Haven CT, 06520-8026.*

#268 Structure and Function of Amiloride-Sensitive Na^+ Channels. I.I. ISMAILOV, B.K. BERDIEV, M.S. AWAYDA, C.M. FULLER and D.J. BENOS, *Department of Physiology and Biophysics, University of Alabama-Birmingham, Birmingham, AL 35294-0005.*

#269 Role of Amiloride-sensitive Sodium Channels in Salt Taste: Transduction, Modulation and Regulation. TIMOTHY A. GILBERTSON, *Pennington Biomedical Research Center, LSU, Baton Rouge, LA 70808-4124.*

9:30 **Refreshment Break**

Saturday Evening – 10:00-11:00

Amiloride-Sensitive Sodium Channel

Chairperson: Sue Kinnamon, Colorado State University

9:45 #270 Putative Salt Taste Receptors In The Toad Skin. TAKATOSHI NAGAI[1], HIROMICHI KOYAMA[2] and STANLEY D. HILLYARD[3], *[1]Department of Physiology, Teikyo University School of Medicine, Tokyo 173, [2]College of Nursing, Yokohama City University, Yokohama 236, Japan and [3]Department of Biological Sciences, University of Nevada, Las Vegas, Nevada 89154, USA.*

10:00 #271 A Behavioral Assay Of The Amiloride Concentration-Response Curve With Respect To Salt Taste In The Rat. A.C. SPECTOR, N. GUAGLIARDO and S.J. ST. JOHN, *Department of Psychology, University of Florida, Gainesville, FL 32611.*

10:15 #272 Amiloride And Judgements Of NaCl Taste: No Effects On Tracked Taste Intensity. B.P. HALPERN[1,2], J.S. MELTZER[1], M.Y. LEE[1] and R.B. DARLINGTON[1], *[1]Department of Psychology and [2]Section of Neurobiology & Behavior, Cornell University, Ithaca NY 14853-7601.*

10:30 #273 Effect Of Amiloride On Suprathreshold NaCl, LiCl And KCl In Humans. KAPIL ANAND and JOHN ZUNIGA, *Department of Oral and Maxillofacial Surgery, University of North Carolina, Chapel Hill, North Carolina, 27599-7450.*

10:45 #274 The Perception Of Saltiness Is Eliminated By Adaptation To NaCl But Not By Amiloride Treatment. DAVID V. SMITH and CORINNE A. OSSEBAARD, *Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201-1559.*

POSTERS

Saturday Evening – 7:00-11:00

Central Olfactory Systems
Chemical Ecology

Central Olfactory Systems — Posters

#275 P1 Immunocytochemistry Of Taurine In The Frog, Rat, And Human Olfactory Bulb. IGOR KRATSKIN and XIAOSONG YU, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-4283.*

#276 P2 Different Parts Of The Diagonal Band Nucleus Project To Different Layers Of The Olfactory Bulb In The Rat. IGOR KRATSKIN and XIAOSONG YU, *Smell and Taste Center, Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-4283.*

#277 P3 Efferent Projections Of The Main And Accessory Olfactory Bulbs In The Snake *Thamnophis sirtalis*. ENRIQUE LANUZA and MIMI HALPERN, *Department of Anatomy and Cell Biology, Health Science Center at Brooklyn, SUNY, Brooklyn, NY 11203.*

#278 P4 Morphological Analysis Of A Putative NO/cGMP Signalling Pathway In The Crayfish Olfactory Lobe. KJELL U.I. JOHANSSON and DEFOREST MELLON JR, *Department of Biology, University of Virginia, Charlottesville, VA 22903.*

#279 P5 Response Profiles Of Crayfish Olfactory Projection Neurons To Odorant Stimuli. DE F. MELLON and V. ALONES, *Department of Biology, Gilmer Hall, University of Virginia, Charlottesville, VA 22903.*

#280 P6 Information Processing In The Olfactory Bulb Of Goldfish (*Carassius auratus*). JÖRG RABBA and HANS PETER ZIPPEL, *Physiologisches Institut der Universität, Humboldtallee 23, 37073 Göttingen, Germany.*

#281 P7 Comparing The Functional And Anatomical Features Of Odorant-Defined Glomeruli In Two Closely-Related Insect Species. NEIL J. VICKERS and THOMAS A. CHRISTENSEN, *Arizona Research Labs Division of Neurobiology, University of Arizona, Tucson, AZ 85721.*

#282 P8 Alterations In Physical Conditions And Their Effect Upon Pheromone Plume Structure As Measured By A Male Moth Electroantennogram. NEIL J. VICKERS[1] and THOMAS C. BAKER[2], *[1]ARL Division of Neurobiology, University of Arizona, Tucson, AZ 85721 and [2]Department of Entomology, Iowa State University, Ames, IA 50011.*

#283 P9 Pheromone - Evoked Potentials And Oscillations In The Antennal Lobes Of The Sphinx Moth, *Manduca sexta*. THOMAS HEINBOCKEL, PETER KLOPPENBURG and JOHN G. HILDEBRAND, *ARL Div. of Neurobiol., Univ. of Arizona, Tucson, AZ 85721.*

#284 P10 Field Potential Oscillations In Amphibian Olfactory Bulb And Epithelium. KATHLEEN M. DORRIES and JOHN S. KAUER, *Department of Neuroscience, Tufts University School of Medicine, Boston, MA 02111.*

#285 P11 Olfactory Receptors: Molecular Basis For A Functional Map In The Olfactory Bulb. MICHAEL S. SINGER[1], GORDON M. SHEPHERD[1], THOMAS E. HUGHES[2] and CHARLES A. GREER[3], *[1]Section of Neurobiology, [2]Department of Ophthalmology and Visual Science, and [3]Section of Neurosurgery, Yale University School of Medicine, New Haven, CT 06510.*

#286 P12 High-Frequency Olfactory Nerve (ON) Stimulation Induces NMDA Receptor-Independent Long-Term Potentiation (LTP) In The Glomerular Layer (GL) In Vitro. V. ARONIADOU-ANDERJASKA, M. ENNIS and M.T. SHIPLEY, *Dept. Anatomy, Univ. of Maryland School of Medicine, Baltimore, MD 21201.*

#287 P13 Ca^{2+} Transients In Salamander Mitral/Tufted (M/T) Cells: Characteristic And Properties. A.R. CINELLI and R. FAROOQUI, *Dept.Anat.& Cell Biol., SUNY Brooklyn, NY 11203.*

#288 P14 Membrane Properties And Excitatory Synaptic Transmission By Mitral Cells In Slices Of Rat Olfactory Bulb. WEI CHEN and GORDON M. SHEPHERD, *Section of Neurobiology, Yale University School of Medicine, 333 Cedar Street, C303 SHM, New Haven, CT 06520-8001.*

#289 P15 Olfactory Event-Related Potentials In Alzheimer's Disease. W. JAMES EVANS[1], LIYING CUI[2] and STEVEN G. POTKIN[3], *[1]Florence Neurological Clinic, Florence, SC 29506, [2]Department of Neurology, Peking Union Medical College, Beijing, 100730, [3]Department of Psychiatry, University of California, Irvine, CA 92668.*

#290 P16 Blocking In Binary Odorant Mixtures: Does The Peripheral Olfactory System Act As A Filter In Processing Sensory Information? BRIAN H. SMITH[1] and CHRISTIANE LINSTER[2], *[1]Department of Entomology, 1735 Neil Ave., Ohio State University, Columbus, OH 43210-1220, [2]Department of Psychology, Harvard University, Cambridge, MA 02138.*

#291 P17 Video Images Of Dye Coupling In The Salamander Olfactory Bulb. K.A. HAMILTON and R.E. MALONEY, JR., *Department of Cellular Biology and Anatomy, Louisiana State University Medical School, Shreveport, LA 71130-3932.*

#292 P18 Feedback Regulation Of Neuromodulation In A Model Of Olfactory Bulb Reduces Overlap In The Neural Representation Of Olfactory Stimuli. CHRISTIANE LINSTER and MICHEAL E. HASSELMO, *Dept. of Psychology and Program for Neuroscience, Harvard University, 33, Kirkland St., Cambridge, MA 02138.*

#293 P19 Salamander Olfactory Bulb Responses to a Set of Nine Odorant Stimuli. J. WHITE, N. FREEDNER and J.S. KAUER, *Neuroscience Dept., Tufts Medical School, Boston, MA.*

#294 P20 Localization Of Olfactory Brain Areas Using Magnetic Source Imaging. BIRGIT KETTENMANN, GERD KOBAL and HERMAN STEFAN[1], *Department of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nuremberg, 91054 Erlangen, [1]Department of Neurology, University of Erlangen-Nuremberg, 91054 Erlangen.*

#295 P21 In Vitro Magnetic Resonance Microimaging Permits Improved Visualization Of Structural Organization Of The Rat Olfactory Bulb. SAIED AGAHI, ESMAIL MEISAMI and PAUL C. LAUTERBUR, *Dept. of Molecular & Integrative Physiology & Biomedical Magnetic Resonance Laboratory, Univ. Illinois, Urbana, IL 61801.*

#296 P22 Cell Number And The Formation Of Ectopic Glomeruli. EDWARD E. MORRISON[1], JOHN C. DENNIS[1], KAREN WOLFE[1] and PASQUALI P.C. GRAZIADEI[2], *[1]Department of Anatomy and Histology, College of Veterinary Medicine, Auburn University, AL 36849 and [2]Department of Biological Sciences, Florida State University, Tallahassee, FL 32306.*

#297 P23 Immunohistochemical Changes In The Anterior Olfactory Nucleus Of The Developing Rat. ANNE M. ARMSTRONG and PETER C. BRUNJES, *Dept. Psychol., Univ. of Virginia, Charlottesville VA 22903.*

#298 P24 Cell Proliferation In The Olfactory System Of The Adult Zebrafish. CHRISTINE A. BYRD and PETER C. BRUNJES, *Department of Psychology, University of Virginia, Charlottesville, VA 22903.*

#299 P25 Evidence That Developing Olfactory Axons Are Attracted To Their Targets. LYNNE A. OLAND, WENDY M. POTT, MARK R. HIGGINS, PATRICIA M. BAUMANN and LESLIE P. TOLBERT, *ARL Division of Neurobiology, University of Arizona, Tucson, AZ 85721.*

#300 P26 The Thy-1 Allelic Marking System Shows Reciprocal Fiber Penetration and Host-to-Donor Neuron Migration In Mice With Olfactory Bulb Transplants. K.R. HENDRICKS[1], R.C. WILSON[2], J.N. KOTT[1] and L.E. WESTRUM[1,2,3], *Depts. of [1]Neuro. Surg., [2]Biol. Struct. and [3]Psych., U. of WA, Seattle, WA 98195.*

#301 P27 Effect Of Selective Deafferentation On Metamorphic Changes In The Primary Olfactory Projection Of *Xenopus laevis*. JOHN O. REISS and GAIL D. BURD, *Department of Molecular and Cellular Biology, University of Arizona, Tucson, AZ 85721.*

#302 P28 Unilateral Naris Closure And RNA Expression In The Rat Olfactory Bulb. BRIAN K. FISKE and PETER C. BRUNJES, *Program in Neuroscience, Univ. Virginia, Charlottesville, VA 22903.*

#303 P29 The Effects Of Varying Duration Of Naris Occlusion On Olfactory Bulb Laminar Volume. DIANA M. CUMMINGS and PETER C. BRUNJES, *Neuroscience Program, University of Virginia, Charlottesville, VA 22903.*

#304 P30 Odor Identification Changes After Recovery From Nerve Transection. KAREN K. YEE and RICHARD M. COSTANZO, *Department of Physiology, VA Commonwealth University, Medical College of VA, Richmond, VA 23298-0551.*

#305 P31 Effect Of Partial Deantennation In The Early Development Of Honey Bees (*Apis mellifera*) On Their Adult Antennal Lobe Anatomy And Ability to Discriminate Odors. ROBERT S. THORN and BRIAN H. SMITH, *Department of Entomology, The Ohio State University, Columbus, OH 43210.*

#306 P32 Olfactory Bulb Development In The Postnatal Mouse Is Altered By Postnatal Exposure To Retinoic Acid. JAMES E. CRANDALL, URSULA DRÄGER, CURTIS K. DEUTSCH, GERALD A. SCHWARTING and MIYUKI YAMAMOTO, *Developmental Neurobiology, Shriver Center, Waltham, MA 02154 and Department of Neurology, Massachusetts General Hospital, Boston, MA 02115.*

#307 P33 Immunocytochemical Comparison Of The Localization Of NGF And NGF-receptor (p75) In Olfactory Bulbs Of Developing Normal And Hypothyroid Rats. TIMOTHY J. SENDERA and ESSIE MEISAMI, *Department of Molecular & Integrative Physiology, Univ. of Illinois, Urbana, IL 61801.*

Chemical Ecology — Posters

#308 P34 Barnacle Larvae Of *Balanus amphitrite* (Darwin) Specifically Bind The Settlement Inducer Mimic Bradykinin. MARION McCLARY, JR. and DAN RITTSCHOFF, *Department of Zoology, Duke University Marine Laboratory, Beaufort, NC 28516.*

#309 P35 The Role Of Chemical Signals In The Foraging Behavior Of The Sea Star *Asterias forbesi*. DEBORAH M.E. LEPPER, *Department of Biological Sciences, Bowling Green State University, Bowling Green, Ohio 43402.*

#310 P36 Spawning Male Goldfish Release A Steroidal Odorant Which Functions As A Potent Pheromonal Odorant With Inhibitory Actions On Conspecifics. PETER W. SORENSEN[1], ALEXANDER P. SCOTT[2], WEIMING LI[3] and PETER MANIAK[1], *[1]Dept. Fisheries & Wildlife, Univ. of Minnesota, St. Paul, MN, [2]Fisheries Laboratory, M.A.F.F., Lowestoft, United Kingdom, and [3]Monell Chemical Senses Center, Philadelphia, PA 19104.*

#311 P37 Chemosensory Cues Are Required For Attraction Of Predators To Salmon Eggs In Iliamna Lake, Alaska. ANDREW H. DITTMAN and CHRISTOPHER J. FOOTE, *School of Fisheries, University of Washington, Seattle, WA 98195.*

#312 P38 One And Two Point Estimates Of Chemical Information Content In A Turbulant Odor Plume: What The American Lobster (*Homarus americanus*) Can And Cannot Use To Locate A Source. FRANK GRASSO, JENNIFER BASIL and JELLE ATEMA, *Boston University Marine Program, Woods Hole, MA 02543.*

#313 P39 Olfactory Sampling In Lobsters: Chemical Dynamics During Flicking And Recovery In The Maine And Spiny Lobster. PAUL A. MOORE[1], BARB BEST[2], ROBB SCHNEIDER[1], LYDELL GORSKI[3] and MIMI A.R. KOEHL[3], *[1]Dept. of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403, [2]Dept. of Biology, Colby College, Waterville, ME 04901, [3]Dept. of Integrative Biology, University of California at Berkeley, Berkeley, CA 94720-3140.*

#314 P40 Self-metered Oral Doses Of Trigeminal Irritants Do Not Promote Conditioned Odor Avoidance In Starlings. LARRY CLARK, *USDA, National Wildlife Research Center, 1716 Heath Parkway, Fort Collins, CO 80524.*

#315 P41 Uneven Distribution Of PCBs In The Olfactory Bulb And Brain. AXEL ENGELHART[1], RAIMUND APFELBACH[1] and PETER BEHNISCH[2], *University of Tübingen, [1]Department of Animal Physiology, [2]Institute of Organic Chemistry, Auf der Morgenstelle 28[1]/16[2], 72076 Tübingen, Germany.*

#316 P42 Identification And Bioactivity Of An Estrous Pheromone Of Asian Elephants, *Elephas maximus*: An Unexpected Result. L.E.L. RASMUSSEN[1], T.D. LEE[2], W.L. ROELOFS[3] and G.D. DAVES[4], *[1]Oregon Graduate Institute, Portland, OR 97291, [2]Beckman Research Institute of the City of Hope, Duarte, CA 91010, [3]Department of Entomology, Cornell University, Geneva, NY 14456, [4]Rensselaer Polytechnic Institute, Troy, NY 12180.*

#317 P43 A Human Axillary Odor Is Carried By Apoliprotein D. GEORGE PRETI[1,2], CHENHUI ZENG[3], ANDREW I. SPIELMAN[4], BENJAMIN R. VOWELS[2], JAMES J. LEYDEN[2] and KLAUS BIEMANN[3], *[1]Monell Chemical Senses Ctr., 3500 Market St., Phila., PA 19104; [2]Dept. of Dermatology, Univ. of Pennsylvania; [3]New York Univ., College of Dentistry, NY, NY; [4]Dept. of Chemistry, Massachusetts Inst. of Technology.*

SLIDES

Sunday Morning – 8:00-10:30

Taste Gene Mapping

Chairperson: David Blizard, Pennsylvania State University

8:00 #318 Genetics Of Sucrose Intake In The Mouse. A.A. BACHMANOV[1], D.R. REED[2], Y. NINOMIYA[3], M. INOUE[3], M.G.TORDOFF[1], R.A.PRICE[2] and G.K. BEAUCHAMP[1], *[1]Monell Chemical Senses Center, Philadelphia, PA, 19104, [2]University of Pennsylvania, Philadelphia, PA, 19104, [3]Asahi University, Japan.*

8:15 #319 Chorda Tympani Responses To Bitters In Inbred And Congenic Mice. JOHN D. BOUGHTER JR[1,2], GLAYDE WHITNEY[1] and ROBERT J. CONTRERAS[1], *[1]Program in Neuroscience, Department of Psychology, Florida State University, Tallahassee, FL 32306-1051, [2]Department of Anatomy, University of Maryland School of Medicine, Baltimore, MD 21201.*

8:30 #320 Relationship Between Chorda Tympani Response And Taste Preference In Inbred Strains Of Mice. MARION E. FRANK[1] and DAVID A. BLIZARD[2]. *[1]Dept. BioStructure & Function, Dental Medicine, UConn Health Center, Farmington, CT 06030 and [2]Center for Developmental and Health Genetics, Penn. State Univ., University Park, PA 16802.*

8:45 #321 Gene-Mapping Of Sweet And Bitter Tastants In Mus musculus. DAVID A. BLIZARD[1], ERIC P. GUDAS[1] and MARION E. FRANK[2], *[1]Center for Developmental and Health Genetics, Pennsylvania State University, University Park, PA 16802, [2]Dept Biostructure and Function, University of Connecticut Health Center, Farmington, CT 06030.*

9:00 **Refreshment Break**

Chemical Ecology

Chairperson: John Glendinning, Arizona State University

9:15 #322 Possible Involvement of Arginine and Nitric Oxide In The Chemical Mediation Of Symbiotic Relationships Between Photosynthetic Dinoflagellate Algae and Anthozoans. HENRY G. TRAPIDO-ROSENTHAL[1], HOLLY A. HOLDER[1], LISA R. FRASER-SMITH[1] and ZOË BILLINGURST[1,2], *[1]Bermuda Biological Station for Research, Bermuda, and [2]University of York, UK.*

9:30 #323 Chemotaxis Links The Marine Microbial Loop To Atmospheric Sulfur Production. RICHARD K. ZIMMER-FAUST[1], MARK P. DE SOUZA[2] and DUANE C. YOCH[2], *[1]Department of Biology, University of California, Los Angeles, CA 90095-1606, and [2]Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.*

9:45 #324 Olfactory Sensitivity And Behavioral Reactions Of Lake Char To Bile Acids Released By Conspecifics. CHUNBO ZHANG[1], SCOTT B. BROWN[2] and TOSHIAKI J. HARA[1,2], *[1]Department of Zoology, University of Manitoba, and [2]Freshwater Institute, 501 University Crescent, Winnipeg, MB, R3T 2N6 Canada.*

10:00 #325 Explorations Of Pure Chemotaxis With Robo-lobster. JELLE ATEMA, THOMAS CONSI, FRANK GRASSO and DAVID MOUNTAIN, *Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543.*

10:15 #326 Olfactory Sensitivities Of Foraging Procellariid Seabirds In The Aleutian Islands. G.A. NEVITT[1] and G.L. HUNT[2],*[1]Division of Neurobiology, Physiology and Behavior, UC Davis, Davis, CA 95616 and [2]Division of Ecology and Evolutionary Biology, UC Irvine, Irvine, CA 92717.*

POSTERS

Sunday Morning – 8:00-11:00

Olfactory Receptor Function #2

Olfactory Receptor Function #2 — Posters

#327 P1 Cloning Of A Gene Encoding Chemoattractive Protein From Earthworm Secretion. WEIMIN LIU[1], DALTON WANG[1], PING CHEN[1] and MIMI HALPERN[2], *[1]Departments of Biochemistry and [2]Cells and Anatomy, SUNY Health Science Center at Brooklynn, New York 11203.*

#328 P2 Cloning Of Olfactory Receptor Genes From The Mudpuppy, *Necturus maculosus*. QIAO ZHOU[1], GREGORY HINKLE[2], MITCHELL L. SOGIN[2], and VINCENT E. DIONNE[1], *[1]Boston University Marine Program, and [2]Program in Molecular Evolution, Marine Biological Laboratory, Woods Hole, MA 02543.*

#329 P3 cDNA Cloning And Heterologous Expression Of Mouse CYP2G1. ZICHUN HUA[1,2] and XINXIN DING[1], *[1]Laboratory of Human Toxicology & Molecular Epidemiology, Division of Environmental Disease Prevention, Wadsworth Center, New York State Department of Health, Albany, NY 12201, USA, [2]Department of Biochemistry, Nanjing University, Nanjing 210093, P. R.China.*

#330 P4 Identification And Partial Characterization Of Putative Taurine Receptor Proteins From The Olfactory Organ Of The Spiny Lobster. DAE-YONG SUNG, W.W. WALTHALL and CHARLES DERBY, *Dept. of Biology, Georgia State University, Atlanta, GA.*

#331 P5 Molecular Cloning of Two Guanine Nucleotide Binding Proteins from American Lobster Olfactory Organ. FUQIANG XU, JORGE QUINTERO, ANNE M. GRESS and TIMOTHY S. MCCLINTOCK, *Department of Physiology and Biophysics, University of Kentucky School of Medicine, Lexington, Kentucky, 40536.*

#332 P6 Cloning And Molecular Characterization Of Two Components Of The IP_3 Pathway From Lobster Olfactory Organ. S.D. MUNGER[1,2], N.C. RUST[2], B.W. ACHE[1,2,3] and R.M. GREENBERG[1], *[1]Whitney Laboratory and Depts. of [2]Neuroscience and [3]Zoology, Univ. of Florida, St. Augustine, FL 32086.*

#333 P7 Expression Of Genes Encoding Transduction Proteins In Catfish Olfactory Rosettes. RICHARD BRUCH, KATHRYN MEDLER, JOHN HAMLIN and LISA HAMLIN, *Department of Zoology & Physiology, Louisiana State University, Baton Rouge, LA 70803.*

#334 P8 Birth And Death Of Olfactory Receptor Genes: Lessons From Large Scale DNA Sequencing In The Human Olfactory Sub-Genome. DORON LANCET[1], SANDY CLIFTON[2], BRUCE ROE[2], EDNA BEN-ASHER[1] and GUSTAVO GLUSMAN[1], *[1]Department of Membrane Research and Biophysics, The Weizmann Institute of Science, Rehovot 76100, Israel, [2]Department of Chemistry and Biochemistry, University of Oklahoma, Oklahoma 73019, USA*

#335 P9 Topographic Patterns Of Odorant Receptor Gene Expression In The Olfactory Epithelium Of The Salamander, *Ambystoma tigrinum*. JAMES E. MARCHAND[1], ALEXANDER JESURUM[1], DONA M. CHIKARAISHI[2] and JOHN S. KAUER[1], *[1]Tufts University School of Medicine, Boston, MA 02111, [2]Duke University, Durham, North Carolina.*

#336 P10 Olfactory Cell Cultures, Bulb Tissue And Mucosal Tissue Contain mRNA For The Long And Short Forms Of The D2 Dopamine Receptor. NANCY L. KOSTER[1], NEIL M. RICHTAND[1,2] and SARAH K. PIXLEY[1], *[1]Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati, College of Medicine, Cincinnati, Ohio 45267-0521, [2]Department of Psychiatry, University of Cincinnati, College of Medicine, Cincinnati, Ohio 45267-0559.*

#337 P11 EOGs Recorded From The Frog Olfactory Epithelium After Stimulation With R- And S-Nicotine. NORBERT THÜRAUF[1], MICHAEL KAEGLER[2], BERTOLD RENNER[1] and GERD KOBAL[1], *[1]Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nürnberg, Erlangen, Germany, [2]Institute of Biological Research, Köln, Germany.*

#338 P12 Messenger RNAs Encoding Neuronal Nicotinic Receptor Subunits Are Expressed In The Rat Nasal Respiratory And Olfactory Epithelia. C. JANE H. KEIGER[1], JAMES C. WALKER[2], MEROUANE BENCHERIF[2], PAT LIPPIELLO[2] and GARY M. HELLMANN[2], *[1]UNC Craniofacial Center, School of Dentistry, Chapel Hill, NC 27599 and [2]R. J. Reynolds Tobacco Company, Research & Development , Winston-Salem, NC 27102.*

#339 P13 Colocalization Of cAMP Chemoreceptor And Ca-ATPase In Paramecium. JUNJI YANO, JOAN P. STABILA and JUDITH L. VAN HOUTEN, *University of Vermont, Department of Biology, Burlington, VT 05405, USA.*

#340 P14 Genetically Determined Body Odors in Mice. ALAN G. SINGER, GARY K. BEAUCHAMP and KUNIO YAMAZAKI, *Monell Chemical Senses Center, Philadelphia, PA 19104.*

#341 P15 OBP-1: A Drosophila Odorant-Binding Protein Specifically Required For Avoidance Of High Concentrations Of Ethanol. ALAN REPP and DEAN P. SMITH, *Department of Pharmacology, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd., Dallas, TX 75235-9111.*

#342 P16 Induction Of Polymeric Immunoglobulin Receptor mRNA In The Olfactory Mucosa Of Virus-Infected Rats. M.L. GETCHELL[1,2], A. KULKARNI-NARLA[3], C.N. RAMSEY[3] and N.S. RAMA KRISHNA[1], *[1]Dept. of Surgery, Div. of Otolaryngology, [2]Sanders-Brown Center on Aging, [3]Dept. of Physiology, University of Kentucky, Lexington, KY 40536.*

#343 P17 RT-PCR And In Situ RT-PCR Analysis Of EGF Receptor Expression In The Olfactory Mucosa Of Mice. N.S. RAMA KRISHNA[1], SUSAN S. LITTLE[2] and THOMAS V. GETCHELL[1,2,3], *[1]Department of Surgery, Division of Otolaryngology, [2]Department of Physiology, and [3]Sanders-Brown Center on Aging, University of Kentucky College of Medicine, Lexington, KY 40536.*

#344 P18 An IP_3 Receptor Partial cDNA From Rat Olfactory Organ. C. DELLACORTE, L. JOHNSON, R. DOTSON and D.L.KALINOSKI, *Monell Chemical Senses Center, 3500 market Street, Philadelphia, PA 10104.*

#345 P19 Fos Expression In Olfactory Cell Cultures Exposed To Odorants. GWEN D. FERNANDEZ-FEWELL, ROBERT C. GESTELAND and SARAH K. PIXLEY, *Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati, College of Medicine, Cincinnati, Ohio 45267-0521.*

#346 P20 Mitral Cell Loss Increases Turnover Of Olfactory Receptor Cells. ELKE WEILER and ALBERT I. FARBMAN, *Department of Neurobiology & Physiology, Northwestern University, Evanston, IL 60208, USA.*

#347 P21 Role Of Amyloid Precursor Protein mRNA Isoforms In Neuronal Differentiation: Olfactory Receptor Neurons As An In Vivo Model. NIKHAT ZAIDI and BARBARA TALAMO, *Department of Neuroscience, Tufts Medical School, Boston, MA 02111.*

#348 P22 Ontogeny Of Specialized Regions In The Main Olfactory System Of Xenopus: An NADPH-Diaphorase Histochemical Study. B. VENUS, *Graduate College "Functions And Dynamics Of Neuronal Networks", University of Göttingen, 37075 Göttingen, Germany.*

#349 P23 The Endogenous Lectin, Galectin-1, Utilizes Unique Laminin Isoforms And ß-Lactosamine-Containing Glycolipids for Axon Guidance Of Olfactory Neurons. GARY SCHWARTING, ERIC RAABE and JAMES CRANDALL, *The Shriver Center, Waltham MA 02154 and Program in Neuroscience, Harvard Medical School, Boston, MA 02115.*

#350 P24 Olfactory Receptor Neurons Do Not Require Contact With The Olfactory Bulb To Develop Normal Chemical Responsiveness. H.P. ZIPPEL[1,2], A. HANSEN[3] and J. CAPRIO[1], *[1]Dept. of Zoology & Physiology, LSU, [2] Physiology Inst., University of Gottingen, Germany [3] Zoological Inst., University of Hamburg, Germany.*

#351 P25 Human Olfactory Receptor Neurons And Their Central Targets In The Bulb Differentially Express BDNF And Its Receptor Trk B. THOMAS V. GETCHELL[1,2,3], MARILYN L. GETCHELL[2,3] and N.S. RAMA KRISHNA[2], *[1]Dept.of Physiology, [2]Dept. of Surgery, Div. of Otolaryngology, and [3]Sanders-Brown Center on Aging, University of Kentucky College of Medicine, Lexington, KY 40536.*

#352 P26 Novel Characteristics Of Human Olfactory Neurons. N.E. RAWSON[1], G. GOMEZ[1], J.G. BRAND[1,3,4] L.D. LOWRY[1,2], E.A. PRIBITKIN[2] and D. RESTREPO[1,4], *[1]Monell Chemical Senses Center, [2]Thomas Jefferson University, [3]Veterans Affairs Medical Center, Philadelphia, PA, and [4]Dept. Physiology, University of Pennsylvania, Philadelphhia PA.*

#353 P27 Evidence That Adenylyl Cyclase Mediates Excitatory Odorant Responses To Both "Cyclic AMP" and "IP_3" Odorants. TAKAAKI SATO[1,2], ROGER A. JOHNSON[3] and GEOFFREY H. GOLD[1]. *[1]Monell Chem. Senses Ctr., Phila., PA, [2]Electro-tech. Lab., Amagasaki, Japan, [3]Dept. Physiol. & Biophys., SUNY Stony Brook, NY.*

#354 P28 Effects Of Insulin-Like Growth Factor-I And Insulin On Numbers Of OMP+ Olfactory Receptor Neurons In Culture. S. CRAIG BILLIEU[1], PAULA C. LOOS[1], STEVE D. CHERNAUSEK[2] and SARAH K. PIXLEY[1], *[1]Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati, Cincinnati, OH 45267-0521 and [2]Department of Pediatrics, University of Cincinnati, OH 45229.*

#355 P29 Development Of Peripheral Olfactory Innervation In Hatchling Lobsters. LYNDA FARLEY, *Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543.*

#356 P30 Gonadotropin Releasing Hormone Modulates Outward Currents In Olfactory Receptor Neurons From Mudpuppies, *Necturus maculosus*. HEATHER L. EISTHEN, RONA J. DELAY and VINCENT E. DIONNE, *Boston University Marine Program, Marine Biological Laboratory, Woods Hole, MA 02543.*

#357 P31 Entry Of Aluminum Into The CNS From Inhaled Soluble Particles. JOHNNYE L. LEWIS, DEAN KRACKO and EDWARD B. BARR, *Inhalation Toxicology Research Institute, Albuquerque, NM 87185.*

#358 P32 Chemosignal Transduction In Vomeronasal Organ Of Garter Snake: Ca2+-Dependent Regulation Of Vomeronasal Adenylate Cyclase. DALTON WANG[1], PING CHEN[1], WEIMIN LIU[1] and MIMI HALPERN[2], *Departments of Biochemistry[1] and Anatomy and Cells Biology[2], SUNY Health Science Center at Brooklyn, Brooklyn, New York 11203.*

#359 P33 The Role Of Perireceptor Events For Odor Reception. GUNDE ZIEGELBERGER, *Max Planck Institut für Verhaltensphysiologie, D-82319 Seewiesen, Germany.*

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