



ACHEMS XLI

PROGRAM

April 14–17, 2019
Hyatt Regency
Coconut Point
Bonita Springs, FL

Science and technology Always something new



Innovation in flavor and taste solutions is our passion. Our creative teams and scientists not only apply the very latest thinking – we invent it.

We attract, develop and retain, talented, creative professionals who feel proud of the work they do in our company and who are empowered to contribute to a sustainable society.

Givaudan

engage your senses





ACChemS

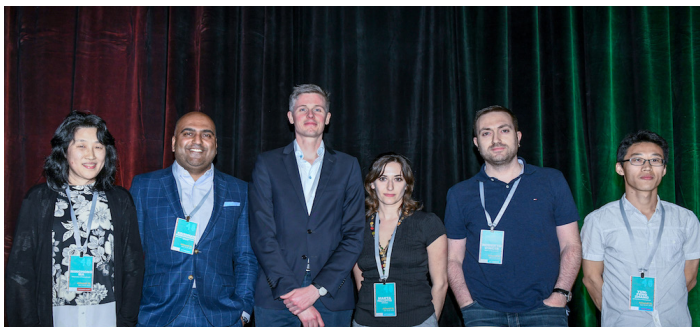
Association for Chemoreception Sciences

ACChemS extends special thanks and appreciation for
grant support from:

**The National Institute on Deafness and
Other Communications Disorders**

and the National Institute on Aging, NIH

**A special thank you to The Polak Foundation, Ghislaine
Polak and the late Ernest Polak for supporting the Polak
Young Investigators Awards, the Polak Postdoctoral Travel
Awards and the ACChemS Student Housing and Travel
Awards.**



2018 Polak Young Investigator Award Recipients

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A SPECIAL THANK YOU TO

Nirupa Chaudhari, Program Chair;

John Boughter, Past Chair,

Jay Gottfried, Incoming Chair

and the 2018-2019 Program Committee

for all of their hard work on this year's program.

GENERAL INFORMATION

REGISTRATION INFORMATION

The Registration Desk is located in the Calusa Foyer and will be open during the following hours:

Saturday	12:00 pm - 6:30 pm
Sunday	7:30 am - 6:30 pm
Monday	7:00 am - 9:00 pm
Tuesday	7:00 am - 9:00 pm
Wednesday	7:00 am - 9:00 pm

WIFI ACCESS

Network Name: @Hyatt_Meeting

Password: achems2019

ONLINE/MOBILE PROGRAM

AChemS attendees may access the online conference program in multiple formats at <http://program.achems.org>.

The AChemS program app may be accessed at <http://mobile.achems.org>. This app provides access to the meeting program including advanced features such as a presenter index and search options.

FAMILY VIEWING ROOM

New to AChemS! This year AChemS will offer a family viewing room (Great Egret) in which attendees with small children may remotely access the live presentations in a family-friendly environment.

CERTIFICATE OF ATTENDANCE

Please visit the Registration Desk to receive a certificate of attendance. If you require any changes, we will be happy to email a custom certificate after the meeting.

MOBILE PHONES

As a courtesy to others, please switch off mobile telephones during all sessions.

DUPLICATION/RECORDING

Photography, audio/taping, video recording, digital taping, or any other form of duplication is strictly prohibited in the sessions and poster areas.

SPEAKER READY ROOM

The speaker ready area will be available to all oral presenters to both preview and edit your presentations if necessary. The speaker ready area is located in Blue Heron located near the Registration Desk.

Speaker Ready Room Hours:

Sunday:	1:00 PM - 6:00 PM
Monday:	8:00 AM - 1:00 PM
Tuesday:	8:00 AM - 1:00 PM
Wednesday:	9:00 AM - 2:00 PM

INSTRUCTIONS TO SYMPOSIA PRESENTERS

All speakers are required to check into the Speaker Ready Room. It is preferable that this is done at least 24 hours before the start of your session to ensure compatibility with the computers being used at the conference, as laptops cannot be used in the meeting rooms. Speakers should arrive at least 15 minutes prior to their session to introduce themselves to the session chair.

INSTRUCTIONS TO POSTER PRESENTERS

All posters should be mounted on the assigned board by 7:30 AM on the assigned day and should be taken down by 11:00 PM (your poster will be up all day).

Authors assigned to a morning poster session are asked to stand by their posters from 8:00 - 10:00 AM, whereas authors assigned to an evening poster session are asked to stand by their posters from 9:00 - 11:00 PM.

INSTRUCTIONS TO DIGITAL POSTER PRESENTERS

Digital Poster Presenters will be able to test their posters at any time in Estero during non-poster sessions.

Please upload your presentation via USB directly into the digital kiosk at the time of your scheduled poster presentation.

VISUAL PROGRAM AT A GLANCE

SUNDAY, APRIL 14		MONDAY, APRIL 15			
PROGRAM	8 am	SATURDAY AND SUNDAY PRE-MEETING SYMPOSIUM: Comparative Approaches to Chemosensory Function <i>Calusa ABC</i>		8 am	
	9 am		SYMPOSIUM: In-Focus: Cracking the Chemosensory Code 8:50 am – 10:50 am <i>Calusa A-C</i>	POSTER SESSION I 8:00 am – 10:00 am <i>Estero Ballroom</i>	9 am
	10 am			CLINICAL SYMPOSIUM 10:00 am – 12:00 pm <i>Calusa F-H</i>	10 am
	11 am		SYMPOSIUM: In-Focus: Cracking the Chemosensory Code 11:00 am – 12:40 pm <i>Calusa A-C</i>		11 am
	Noon		ACHEMS EXECUTIVE COMMITTEE MEETING 12:00 – 4:00 pm <i>Great Egret</i>		Noon
	1 pm			INDUSTRY SYMPOSIUM 1:00 pm – 3:00 pm <i>Calusa F-H</i>	1 pm
	2 pm	SYMPOSIUM: In-Focus: Cracking the Chemosensory Code 1:40 pm – 3:20 pm <i>Calusa A-C</i>			2 pm
	3 pm			NIH Programs for Nutrition & Aging Research 3:30 pm – 4:30 pm <i>Great Egret</i>	3 pm
	4 pm	SYMPOSIUM: In-Focus: Cracking the Chemosensory Code 3:40 pm – 5:00 pm <i>Calusa A-C</i>			4 pm
	5 pm	WELCOME/AWARDS CEREMONY 5:00 pm – 6:00 pm <i>Calusa A-D</i>		5 pm	
	6 pm	GIVAUDAN LECTURE 6:00 pm – 7:00 pm <i>Calusa A-D</i>	Diversity Fellow Dinner 5:30 pm – 6:30 pm <i>Mangroves Patio</i>	6 pm	
	7 pm	WELCOME BANQUET 7:00 pm – 9:00 pm <i>Waterfall Pool Deck</i>	POLAK AWARD PRESENTATIONS 7:00 pm – 9:00 pm <i>Calusa A-D</i>	7 pm	
	8 pm			8 pm	
	9 pm	GRADUATE STUDENT HAPPY HOUR 9:00 pm – 11:00 pm <i>Mangroves Patio</i>	POSTER SESSION II 9:00 pm – 11:00 pm <i>Estero Ballroom</i>	9 pm	
	10 pm			10 pm	

VISUAL PROGRAM AT A GLANCE

TUESDAY, APRIL 16			WEDNESDAY, APRIL 17		
8 am	POSTER SESSION III 8:00 am – 10:00 am <i>Estero Ballroom</i>		POSTER SESSION V 8:00 am – 10:00 am <i>Estero Ballroom</i>		8 am
9 am					9 am
10 am	SYMPOSIUM: Configural Versus Elemental Perception of Chemosensory Complex Stimuli 10:00 am – 12:00 pm <i>Calusa A-C</i>	SYMPOSIUM: Fat Facts: An Update on Fat Perception and its Dietary Consequences 10:00 am – 12:00 pm <i>Calusa F-H</i>	SYMPOSIUM: Hedgehog Signaling Control of Tissue Homeostasis Across Diverse Chemosensory Epithelia 10:00 am – 12:00 pm <i>Calusa A-C</i>	SYMPOSIUM: Chemical Senses: Intero - or Exteroception 10:00 am – 12:00 pm <i>Calusa F-H</i>	10 am
11 am					11 am
Noon					Noon
1 pm	ACHEMS BUSINESS MEETING 1:00 pm – 2:00 pm <i>Calusa A-C</i>		SYMPOSIUM: Modulation and Processing of Appetitive Taste in Insects 1:00 – 3:00 pm <i>Calusa A-C</i>	SYMPOSIUM: Can We Talk About Smells? 1:00 – 3:00 pm <i>Calusa F-H</i>	1 pm
2 pm	THE BARRY DAVIS FUNDING WORKSHOP 2:00 pm – 4:00 pm <i>Calusa A-C</i>	WORKSHOP: Measurement of Human Smell & Taste 2:00 pm – 3:30 pm <i>Great Egret</i>			2 pm
3 pm					
4 pm	AChemS Career Panels/Networking Social 4:00 pm – 6:00 pm <i>Calusa A-C</i>		JOURNAL CLUB Turnover & Renewal of Cells in Taste Buds 3:30 – 5:00 pm <i>Great Egret</i>		4 pm
5 pm					5 pm
6 pm					6 pm
7 pm	SYMPOSIUM President's Symposium: Chemoreception from Receptors to Behaviors 7:00 pm – 9:00 pm <i>Calusa A-D</i>		AWARD LECTURES 7:30 – 9:00 pm <i>Calusa A-C</i>		7 pm
8 pm					8 pm
9 pm	POSTER SESSION IV 9:00 pm – 11:00 pm <i>Estero Ballroom</i>		ACHEMS CLOSING DANCE PARTY 9:00 pm – 12:00 am <i>Mangroves & Belvedere Room</i>		9 pm
10 pm					10 pm

2019 AWARD RECIPIENTS

AWARDS

41st Annual Givaudan Lectureship

Paul Rozin, PhD, University of Pennsylvania

Max Mozell Award for Outstanding Achievement in the Chemical Senses

Barry Green, PhD, Yale University, USA

25th Annual Ajinomoto Award for Young Investigators in Gustation

Marco Tizzano, PhD, Monell Chemical Senses Center

28th Annual Barry Jacobs Memorial Award for Research in Psychophysics of Human Taste and Smell

(formerly Moskowitz Jacobs)

Andreas Keller, PhD, The Rockefeller University, USA

The AChemS Young Investigator Award for Research in Olfaction

Daniel Wesson, PhD, University of Florida, USA

The Don Tucker Memorial Award Recipient (2018 Awardee)

Jennifer Sun, PhD Yale University, USA

Polak Foundation Awards

The Polak Foundation Awards are funded by the Elsje Werner-Polak Memorial Fund in memory of our niece gassed by the Nazis in 1944 at age 7: Ghislaine Polak and the late Ernest Polak.

Polak Young Investigator Award Recipients

Honggoo Chae, Cold Spring Harbor Laboratory

Annika Cichy, Northwestern University

James Howard, Northwestern University

Cordelia Running, Purdue University

Shaina Short, University of Utah

Zhenxing Wu, Ohio State University

Polak Postdoctoral Travel Award Recipients

Claire A. de March, Duke University

Daniel Ramirez-Gordillo, University of Colorado Denver

Cinzia Cecchetto, University of Graz

Yushu Chen, Cold Spring Harbor Laboratory

Lucas A. Stetzlik, University of Florida

2019 AWARD RECIPIENTS

AChemS Travel Fellowships for Diversity Award Recipients

Funded by a generous grant from the National Institute on Deafness and Other Communication Disorders and the National Institute on Aging, NIH.

Camila Barrios-Camacho, Tufts University
Erika Calvo-Ochoa, Western Michigan University
Louis Colling, Florida State University
Yannick Dzowo, University of Colorado
Teresa Findley, University of Oregon
Brigit High, University of Colorado
Kalene Jasso, University of Florida
Samuel Littich, University of Colorado
Andrew Moran, University of Utah
Thomas Myers, Eastern Michigan University

AChemS Student Housing and Travel Award Recipients

Funded by the Polak Foundation: Ghislaine Polak and the late Ernest Polak.

Raul Alfaro	Aishwarya Kulkarni	Vivek Sagar
Brandon Chelette	Fanny Lecuyer Giguere	Anish Sarkar
Yu-Chieh Chen	Kayla Lemons	Mary Schreck
Lissa Davis	Gary Liu	Karleigh Smith
Alyson Dennis	Jenna Longo	Benjamin Tiano
Annika Dworschak	Justin Losacco	Daan van Nieuwenburg
Renee Hartig	Raena Mina	Aashutosh Vihani
Molly Higgins	Paulina Morquecho Campos	Madison Wierenga
Benoît Jobin	Lisa Ohman-Gault	Shiuan-Tza Wu
Jess Kanak	Allyson Pel	Yuli Wu
Eui Kim	Robert Pellegrino	Fangshu Yao
Norah Koblesky	Sara Petty	Ahmad Zedan
Carina Koepfel	Alexa Pullicin	Xingjian Zhang
Kirill Korshunov	Andrew Riquier	Kevin Zhu



EVENTS & WORKSHOPS

SUNDAY, APRIL 14, 2019

7:00 – 9:00 pm AChemS Welcome Banquet

Waterfall Pool Deck (ticketed event)

Join us for the traditional AChemS Welcome Banquet, the first opportunity to reconnect with colleagues and kick the meeting off right! Cash bar is available. An RSVP was required at time of registration and your ticket is available on your name badge; additional tickets can be purchased at the Registration Desk.

9:00 – 11:00 pm Graduate Student Happy Hour

Mangroves Patio - Cash bar.

A relaxed, casual gathering and opportunity to mingle with other graduate students over a cocktail! The patio of Mangroves will be the exclusive gathering spot for this event.

MONDAY, APRIL 15, 2019

3:30 – 4:30 pm NSF and NIH Programs Relevant to the Chemical Senses

Great Egret

NIH officers present information for PIs in the chemical senses on new initiatives at NIH. Dr. Christopher Lynch invites PIs to learn about the trans-NIH Nutrition Research Task Force that spans across 17 NIH Institutes, Centers and Offices. Priority areas include integrative physiology, ingestive behavior and sensory nutrition. Dr. Coryse Hillaire-Clarke invites PIs to learn about the mission of the National Inst. on Aging, highlighting new funding announcements emphasizing normal aging, Alzheimer's Disease and Related Dementias. PIs looking to add these areas to their chemosensory research will find this talk informative. Dr. Edda Thiels will describe NSF neuroscience programs relevant to AChemS PIs.

TUESDAY, APRIL 16, 2019

2:00 – 3:30 pm Workshop: Measurement of Human Smell and Taste

Great Egret

A hands on workshop demonstrating best clinical and research practices for assessing the sense of smell, taste, trigeminal functioning and nasal airflow in humans.

2:00 – 4:00 pm The Barry Davis Workshop

Calusa A-C

This workshop will include an overview of research, training, and funding opportunities for graduate students, postdoctoral fellows, and early stage investigators. The discussion will provide practical information on how grant applications are processed within NIH/NIDCD, including Institute and study section assignments, the peer review process, Advisory Council activities, pay lines, and the roles of program and review staff.

4:00 – 6:00 pm Career Panels/Networking Social

Calusa A-C / Calusa Foyer

The Mentoring/Networking committee will hold a panel discussion on academic careers as laboratory PIs in different types of institutions, from 4:00 pm - 5:00 pm. Afterwards please join us for food, drink, and a chance to talk with others in your field, in a more casual surrounding. This is a great opportunity for advanced graduate students and postdocs.

WEDNESDAY, APRIL 17, 2019

3:30 – 5:00 pm AChemS Journal Club

Great Egret

Turnover and Renewal of Cells in Taste Buds: from Lloyd M. Beidler's Classic Paper of 1965 to Taste Cell Dynamics Five Decades Later

PROGRAM IN DETAIL

SATURDAY, APRIL 13, 2019

PRE-MEETING	
1:15 pm - 6:10 pm	Calusa A-C
Comparative Approaches to Chemosensory Function	

Chair: *Thomas Bozza*

- 1:15 **Introduction: Chemosensation in Model and Non Model Organisms**
Thomas Bozza. *Northwestern University*
- 1:20 **The Role of Olfactory Receptors in Odor Perception**
Casey Trimmer. *Firmenich*
- 1:45 **Mapping Receptor Expression in the Human Olfactory System**
Jay Gottfried. *University of Pennsylvania*
- 2:10 **Specific Receptors, Circuits, and Outputs for Vomeronasal Ligands**
Takuya Osakada. *University of Tokyo*
- 2:35 **Snowballs or Snowflakes: Transcriptional Heterogeneity in Olfactory Sensory Neurons**
Tatsuya Tsukahara. *Harvard University*
- 3:00 **Single Cell Transcriptomics for Understanding Connectivity in the Taste Periphery**
Nirupa Chaudhari. *University of Miami*
- 3:25 **Rewiring Taste with Semaphorin Signals**
Lindsey MacPherson. *UT San Antonio*
- 3:50 **Coffee Break**
Calusa Foyer
- 4:05 **Mosquito Egg-Laying Stimuli**
Marcus Stensmyr. *Lund University*
- 4:30 **Odorant Receptors Regulate Odorant Receptor Expression in Anopheles Mosquito Olfactory Neurons**
Christopher Potter. *Johns Hopkins University*
- 4:55 **Activation of Planarian Trpa1 by Reactive Oxygen Species Reveals a Common Mechanism for Chemical and Thermal Nociception**
Marco Gallio. *Northwestern University*
- 5:20 **Gene-Editing and Transgenic Tools for Investigating Chemosensory Function in the Clonal Raider Ant**
Tom Hart. *Rockefeller University*
- 5:45 **Evolution of Sensory Perception**
Claude Desplan. *New York University*

SATURDAY

PROGRAM IN DETAIL

SUNDAY, APRIL 14, 2019

PRE-MEETING

8:15 am - 12:20 pm

Calusa A-C

Comparative Approaches to Chemosensory Function

Chairs: Paul Feinstein & Tim Holy

- 8:15 **Introduction: Mechanisms of Odorant Receptor Gene Expression**
- 8:20 **Employing High Probability Gene Choice Enhancer Transgenes to Understand Singular Odorant Receptor Expression**
Raena Mina. Hunter College
- 8:40 **Cooperative Cis-Acting Enhancers Govern the Expression of Trace Amine-Associated Receptors**
Ami Shah. Northwestern University
- 9:00 **Molecular Mechanisms of Class Choice in Olfactory Sensory Neurons**
Junji Hirota. Tokyo Institute of Technology
- 9:20 **Chemoreceptor Gene Cluster-Dependent Stabilization of Fpr Gene Transcription**
Ivan Rodriguez. University of Geneva
- 9:40 **Multi-Chromosomal Compartments as Regulators of Olfactory Receptor Transcription**
Stavros Lomvardas. Columbia University
- 10:00 **Coffee Break**
Calusa Foyer
- 10:15 **Introduction: Emerging Methods in Chemosensory Research**
- 10:20 **Characterizing the Olfaction of Social Behavior with Multiplexed Imaging**
Bogdan Bintu. Harvard University
- 10:45 **Transsynaptic Mapping and Manipulation of Gustatory Circuits in Flies by Trans-Tango**
Gilad Barnea. Brown University
- 11:10 **Probing the Olfactory Code with Light**
Dmitry Rinberg. New York University
- 11:35 **Functional, Three-Dimensional Spatial Transcriptomics in the Mammalian Olfactory Bulb**
Alex Fleischmann. Brown University
- 12:00 **A Molecular Logic of Sensory Coding Revealed by Optical Tagging of Physiologically-Defined Neuronal Types**
Tim Holy. Washington University

SUNDAY

PROGRAM IN DETAIL

SUNDAY, APRIL 14, CONTINUED

MEETING

12:00 pm - 4:00 pm

Great Egret

AChemS Executive Committee Meeting

WELCOME/AWARDS CEREMONY

5:00 pm - 6:00 pm

Calusa A-D

GIVAUDAN LECTURE

6:00 pm - 7:00 pm

Calusa A-D

- 6:00 **The Chemical Senses and Eating: Mouth as Integrator, the Temporal Aesthetics of the Meal, and Reversing Innate Aversions**
Paul Rozin
Department of Psychology, University of Pennsylvania, Philadelphia, PA, USA

Givaudan

WELCOME BANQUET (TICKET REQUIRED)

7:00 pm - 9:00 pm

Pool Deck & Cypress Courtyard

GRADUATE STUDENT HAPPY HOUR

9:00 pm - 11:00 pm

Mangroves Patio



SUNDAY

MONDAY, APRIL 15, 2019

CONTINENTAL BREAKFAST

7:30 am - 9:00 am

Estero Foyer

POSTER SESSION I

8:00 am - 10:00 am

Estero Ballroom

DIGITAL POSTER

- D100 **Creeping on Ants: Developing the PISPY, an Affordable and Flexible Video Recording Platform for Monitoring Animal Behavior.** Marcy J Kittredge, Andrew Hawk, Owen Meng, Matt Lamparter, Thomas Thul, Gregory M Pask
- D101 **Resting State Olfactory Network Functional Connectivity with the Right Hippocampus in Alzheimer's Disease.** Jiaming Lu, Nicole Testa, Rebecca Jordan, Qing Yang, Prasanna Karunanayaka
- D102 **Drawing the Borders of Olfactory Space.** Emily J. Mayhew, Charles J. Arayata, Jonathan Magill, Lindsey L. Snyder, Chung Wen Yu, Joel D. Mainland
- D103 **A Measure of Smell Enables Creation of Olfactory Metamers.** Aharon Ravia, Kobi Snitz, Danielle Honigstein, Maya Finkel, Ofer Perl, Christophe Laudamiel, David Harel, Noam Sobel
- D104 **Ants as Emerging Models to Study Chemosensory Neuroplasticity.** Hua Yan, Shadi Jafari, Danny Reinberg, Claude Desplan

DEVELOPMENT/REGENERATION

- 105 **Social Experience Reprograms Olfactory Receptor Neuron Function Through Chromatin Mediated Changes in Gene Expression.** Bryson Deanhardt, Songhui Zhao, Pelin Volkan
- 106 **Investigating Glial and Axonal Adaptations to Sensory Deprivation in the Olfactory System.** Nicholas M. George, Wendy B. Macklin, Diego Restrepo
- 107 **Defining the Embryo-To-Adult Transition (Eat) in Mouse Taste Bud Development and Regeneration.** Erin J. Golden, Timothy J. Fellin, Linda A. Barlow
- 108 **Astrocytic Response to Neonatal Chorda Tympani Transection Is Larger Compared to Adult Transection.** Andrew J. Riquier, Suzanne I. Sollars
- 109 **Ephrin-A's Guide Embryonic Gustatory and Somatosensory Afferents in Fungiform Papilla Epithelium.** M. William Rochlin, Albert J. George, Alexandria M. Calmes, Marissa K.L. Pilon, Kajol H. Doshi, Jason S. Hwang, Randall W. Treffy
- 110 **Social Experience and Hormone Signaling Collaborate to Modulate *FruM* Expression in the Adult Olfactory System.** Songhui Zhao, Bryson Deanhardt, Pelin Volkan

Poster Numbering Key: The P# listed next to the poster title is the Poster Abstract Number and the Poster Board Number.

D Poster Numbers are Digital Poster Presentations and are located in the dedicated Digital Poster Area of the Poster Hall.

Posters should be mounted by 7:30 am and taken down at 11:00 pm. Posters are on display all day.

DISCRIMINATION

- 111 **Evidence for Primacy Coding in Human Olfaction.** Terry Acree, Chloé Albietz, Dmitry Rinberg
- 112 **Psychometric Functions in Odor Detection.** E. Leslie Cameron, Richard L. Doty
- 113 **Sensitivity to Subtle Changes in Wine Odor.** Michelle Heatherly, Robert Pellegrino, Curtis Luckett
- 114 **The Sweet Taste of Acarbose and Maltotriose: Relative Detection and Underlying Mechanism.** Alexa J Pullcin, Michael H Penner, Juyun Lim
- 115 **Human Olfactory Discrimination of Genetic Variation in *Cannabis* Strains.** Anna Schwabe, Mitchell McGlaughlin, Avery N. Gilbert
- 116 **Profiling the Dynamic Perception Interaction of Simplified Lemonade using Temporal Dominance of Sensations (TDS) and Temporal Check-All-That-Apply (TCATA).** Anna Z. Wu, Rachel W. Lee, Bénédicte Le Calvé, Isabelle Cayeux

DYSGEUSIA

- 117 **Characterizing Cisplatin-Induced Dysgeusia in a Mouse Model.** Carlos L. Green, Sara C.M. Leijon, Amanda F. Neves, Stephen D. Roper
- 118 **Dysgeusia, Hypogeusia and Hypergeusia Among Us Adults Aged ≥ 40 Years: The National Health and Nutrition Examination Survey (Nhanes), 2011-2014.** Howard J. Hoffman, Linda M. Bartoshuk, Katalin G. Losonczy, Shristi Rawal, John E. Hayes, Chuan-Ming Li, Valerie B. Duffy
- 119 **Bitter Painful Post-Traumatic Trigeminal Neuropathy.** Salomé Mascarell, Adeline Braud, Wisam Dieb, Nathan Moreau, Yves Boucher
- 120 **Successful Treatment of Burning Mouth Syndrome with and Without Geographic Tongue and Its Effect on Taste.** Nan Su, Crystal Dewan, Cindy Liu, Renee Poon, Mark Darling, Miriam Grushka
- 121 **Characterizing Potency and Growth Properties of Sox2-Positive Taste Epithelial Cells using Lingual Organoid Culture.** Benjamin N Tiano, Erin J Golden, Linda A Barlow

HEDONICS

- 122 **Adding Vanillin to Ethanol Alters Liking but not Perceived Burn.** Jessica M. Gaby, Allison N. Baker, John E. Hayes
- 123 **Response to Pleasant and Unpleasant Odors in Patients with Major Depressive Disorder.** Theresa Herrmann, Carina Köppel, Jennifer Linn, Ilona Croy, Thomas Hummel
- 124 **Influence of Different (Multi)Sensory Cues on Saliva Secretion and Composition.** Paulina Morquecho Campos, Joleen Boland, Marieke Alblas, Floris Bikker, Kamran Nazmi, Marja L Laine, Sanne Boesveldt
- 125 **Cross-Modal Association Between Hand-Feel Touch and Taste Cues.** Han-Seok Seo, Ragita Pramudya

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NASAL/RESPIRATORY EPITHELIUM

- 126 **Bitter and Sweet Taste Perception Are Reflective of Chronic Rhinosinusitis.** Noam A. Cohen, Ivy W. Maina, Lauren R. Colquitt, Cailu Lin, Cowart J. Beverly, Danielle R. Reed
- 127 **Does Exposure to Continuous Indoor Fragrance Result in an Acute Impact on Health?** Cristina Jaén, Christina Hickey, Natalie Slickers, Benjamin Smith, Pamela Dalton
- 128 **Molecular Markers, Distribution, and Innervation Pattern of Nasal Solitary Chemosensory Cells.** Eric D Larson, Vijay R Ramakrishnan
- 129 **Electrophysiological Assessment of Sensory Irritation Induced by Flavors in Electronic Cigarette Liquids in the Mouse Nasal Respiratory Epithelium.** Fenge Ni, Tatsuya Ogura, Weihong Lin
- 130 **Sniff Inhalation with Pursed Lip Exhalation on Reflex Cough: a Randomized, Pretest-Posttest, Control-Group Study.** Carolyn K. Novaleski, Joel D. Mainland, Karen Wheeler Hegland, Paul M. Wise, Pamela H. Dalton
- 131 **Impact of Solitary Chemosensory Cells and Trpm5 on Murine Airway and Intestinal Microbiota.** Vijay R. Ramakrishnan, Jennifer M. Kofonow, Thad Vickery, Eric D. Larson, Catherine B. Anderson, Daniel N. Frank
- 132 **Differences in the Microbiota of the Olfactory and Respiratory Epithelia.** Melissa Singletary, Henri Alexandre Giblot Ducray, Ludmila Globa, Oleg Pustovvyy, Edward E. Morrison, Vitaly Vodyanoy, Iryna Sorokulova
- 133 **Camsap3 Hypomorphs Exhibit Abnormal Mucin Clearance and Olfactory Dysfunction.** Jing Zheng, Alan M. Robinson, Satoe Takahashi, Robert C. Kern

OBESITY

- 134 **Sensory and Survey Designation of Sweet Liking Contribute to Diet Quality, Adiposity and Blood Pressure Relationships in Adults.** Bruce E. Blanchard, Brittany A. Larsen, Jeanne M. McCaffery, Valerie B. Duffy
- 135 **Isocaloric Pair-Feeding with a Fatty Diet Prevents Weight Gain But Not Disruption of Olfactory Anatomy.** Brandon Chelette, Debra Fadool
- 136 **Chemical Ablation of Olfactory Sensory Neurons Causes Anosmia, Neuronal Cell Death, and Systemic Metabolic Changes.** *Destinee N. Gatlin, Henal N. Sutaria,* Nimmi D. Patel, Abigail Perkins, Brandon M. Chelette, Ashley M. Loeven, Debra A. Fadool
- 137 **The Mechanisms of the Enhancement of Energy Metabolism by Amg517, a Trpv1 Antagonist in Mice.** Jun Hai, Fuminori Kawabata, Yuko Kawabata, Shotaro Nishimura, Shoji Tabata
- 138 **A Pilot Study on the Effects of Metabolic Surgeries on Flavor Perception 2-5 Years Post-Surgery.** Katie Nance, Charmi Patel, Blair Rowitz, M. Yanina Pepino
- 139 **Effects of Gastric Vagotomy on Taste Responses in the Nucleus of the Solitary Tract in Awake Freely Licking Rats.** Flynn P. O'Connell, Michael S. Weiss, Andras Hajnal, Krzysztof Czaja, Patricia M. Di Lorenzo



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- 140 **Salt and Spice and Everything Rice: Taste-Odor-Trigeminal Interactions in a Rice Matrix.** Molly R. Spencer, Pamela H. Dalton

OLFACTORY DYSFUNCTION

- 141 **Olfactory Identification and Sensitivity in Wolfram Syndrome.** Raul Alfaro, Tasha Doty, Anagha Narayanan, Tamara Hershey, M.Yanina Pepino
- 142 **Comparisons of Three Different Methods to Assess Trigeminal Sensitivity.** *Benoît Jobin*, Cecilia Tremblay, Fanny Lecuyer Giguère, Johannes Frasnelli 
- 143 **Evaluation and Evolution of the Olfactory Dysfunctions within 24 Hours After a Mild Traumatic Brain Injury (Mild TBI).** *Fanny Lecuyer Giguere*, Andreas Frasnelli, Elaine de Guise, Johannes Frasnelli 
- 144 **The Effect of Olfactory Training on Olfactory and Cognitive Function After Traumatic Brain Injury in Children.** Valentin Schriever, Katharina Schwabe, Janine Gellrich
- 145 **The Impacts of Aging and Military Service on Olfactory and Taste Function.** Melissa H W Wong, Alexa J Pullicin, Juyun Lim

SOCIAL BEHAVIOR

- 146 **Higher Level of Expression of Transcripts Involved in Inflammation and Immunity in TRPM5-GFP Olfactory Sensory Neurons.** Brooke D Baxter, Eric Larson, Vijay Ramakrishnan, Kenneth Jones, Paul Feinstein, Joel D Mainland, Diego Restrepo
- 147 **Social Odor Context Enhances Encoding and Recognition of Faces.** Cinzia Cecchetto, Florian Ph.S Fischmeister, Sarah Gorkiewicz, Deepika Bagga, Valentina Parma, Veronika Schoepf
- 148 **Effect of Environmental Estrogens on Crayfish Aggressive Behavior.** Paige westra, Jake Radke, Jenne M. Westberry, Kurt R. Illig
- 149 **The Role of Accessory Olfactory Bulb External Granule Cells in Chemosensory Information Processing.** Xingjian Zhang, Julian Meeks

TASTE PREFERENCE

- 150 **Collection Method Alters Observed Concentration of Salivary Proteins Important to Oral Sensation.** Lissa Davis, Cordelia Running
- 151 **Person-To-Person Differences in the Liking and Saltiness of 256 MM Sodium Chloride Are Due in Part to Genetics.** Cailu Lin, Lauren Colquitt, Danielle Reed
- 152 **Saccharin Supplementation Induces Glucose Intolerance Conditional on Sweet Chemoreceptor Sensing.** Joan Serrano, Rebecca Hoyd, Daniel Spakowicz, George A. Kyriazis

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PROGRAM IN DETAIL

MONDAY, CONTINUED

SYMPOSIUM	
8:50 am - 12:40 pm	Calusa A-C
In-Focus: Cracking the Chemosensory Code	

Organizers: Matt Wachowiak and Pat Dilorenzo

8:50 **Introduction**

9:00 **Olfactory Search Strategy in Freely-Moving Mice**

Matt Smear. *University of Oregon*

9:20 **Neural Coding for Olfactory Navigation: an Information-Theoretic Viewpoint**

Jonathan Victor. *Brain and Mind Research Institute, Weill Cornell Medical College*

9:40 **Algorithms and Circuits for Olfactory Navigation in *Drosophila***

Katherine Nagel. *Neuroscience Institute, NYU School of Medicine*

10:00 **The Navigational Nose: Proposing an Olfactory Function for the Human External Pyramid**

Lucia Jacobs. *University of California, Berkeley*

10:20 **Observing and Quantifying Odor Valence in the Mouse**

Lisa Stowers. *Scripps Research*

10:40 **Coffee Break**

Calusa Foyer

11:00 **The Logic of Taste: Is It Really So Logical?**

Stephen Roper. *Miller School of Medicine, University of Miami*

11:20 **Anatomical Underpinnings of Broadly and Narrowly Tuned Taste Neurons**

Robin Krimm. *University of Louisville School of Medicine*

11:40 **Mapping Olfaction Through Transcriptome Profiling**

Hiro Matsunami. *Duke University*

12:00 **New Strategies for Understanding Glomerular Odor Maps**

Matt Wachowiak. *University of Utah*

12:20 **Building Systematic Representations for Odor Space in Cortex**

Bob Datta. *Harvard Medical School*

Sponsored By:



PROGRAM IN DETAIL

MONDAY, CONTINUED

SYMPOSIUM	
10:00 am - 12:00 pm	Calusa F-H
Clinical Symposium: Plasticity in the Olfactory System - The Clinical Perspective	

Chairs: Thomas Hummel and Sanne Boesveldt

- 10:00 **Plasticity in Peripheral Olfactory Function**
Eric Holbrook. *Mass Eye and Ear/Harvard Medical School*
- 10:24 **Role of Olfactory Basal Cells in Development of Anosmia Treatments**
Brad Goldstein. *University of Miami*
- 10:48 **Olfactory Bulb Changes in Parkinson's Disease**
Maurice Curtis. *The University of Auckland*
- 11:12 **Decreasing and Increasing Olfactory Function: Central Nervous Changes**
Katie Whitcroft. *University of Dresden*
- 11:36 **Spontaneous Recovery of Olfactory Function and Olfactory Training**
Antje Welge-Luessen. *University Hospital Basel, ENT Department*

MEETING	
12:40 pm - 1:40 pm	Pine
Chemical Senses Editorial Board Meeting	

SYMPOSIUM	
1:00 pm - 3:00 pm	Calusa F-H
Industry Symposium: Contribution of Oral and Nasal Chemethesis to Taste, Aroma and Flavor Perception - From Basic Mechanisms To Applications	

Chair: Beverly Tepper

- 1:00 **Introduction**
Beverly Tepper. *Rutgers University*
- 1:05 **Chemistry, Sensory Attributes, and Health Benefits of Polyphenols in Nuts and Berries**
Bradley Bolling. *University of Wisconsin-Madison*
- 1:30 **Astringency Perception - Salivary Protein Mechanisms and Genetic Variation**
Neeta Yousaf. *Rutgers University Department of Food Science*
- 1:55 **Olfactory-Trigeminal Interactions: From the Nose to the Brain**
Johannes Frasnelli. *UQTR*
- 2:20 **From Pungency to Pain: Sensing Touch, Taste, and Temperature in the Mouth**
Stephen Roper. *Miller School of Medicine, University of Miami*
- 2:45 **Taste's Great and Good for You - Challenges to Developing Healthy Products for Today's Consumers**
Kyle Shadix. *PepsiCo*

PROGRAM IN DETAIL

MONDAY, APRIL 15, 2019

SYMPOSIUM

1:40 pm - 5:00 pm

Calusa A-C

In-Focus: Cracking the Chemosensory Code

Organizers: Matt Wachowiak and Pat Dilozeno

- 1:40 **The Role of the Olfactory Bulb in Human Odor Perception**
Johan Lundstrom. *Monell Chemical Senses Center*
- 2:00 **Coordinates for Representing Natural Odors**
Tanya Sharpee. *Salk Institute*
- 2:20 **Encoding of Naturalistic Odor Stimuli in the Fly Brain**
Elizabeth Hong. *California Institute of Technology*
- 2:40 **Sensory Representation in the Drosophila Brain**
Sophie Caron. *University of Utah*
- 3:00 **The Neural Code for Food In The Nucleus of the Solitary Tract**
Pat Di Lorenzo. *Binghamton University*
- 3:20 **Coffee Break**
Calusa Foyer
- 3:40 **Synaptic Integration of BLA and VPMPC Inputs in the Gustatory Cortex**
Arianna Maffei. *Stony BROOK University*
- 4:00 **Taste Quality Representations in Human EEG Predict Taste-Related Behavior**
Kathrin Ohla. *Research Center Jülich*
- 4:20 **Sucrose Intensity Coding and Decision-Making in Rat Gustatory Cortices**
Ranier Gutierrez. *Cinvestav*
- 4:40 **The Role of Taste Activity in Shaping the Morphology of Central Gustatory Circuits**
David Hill. *University of Virginia*

WORKSHOP

3:30 pm - 4:30 pm

Great Egret

NSF and NIH Programs Relevant to the Chemical Senses

DINNER

5:30 pm - 6:30 pm

Mangroves Patio

Travel Fellowships for Diversity Award Recipients Dinner

MONDAY

PROGRAM IN DETAIL

MONDAY, CONTINUED

AWARD LECTURES	
7:00 pm - 9:00 pm	Calusa A-D
Polak Award Presentations	

Chair: Jay Gottfried

- 7:00 **Taste of Time - A Porous Medium Model for Human Tongue Surface to Investigate Temporal Profile of Gustatory Perception**
Zhenxing Wu, Kai Zhao. *The Ohio State University*
- 7:20 **Comparison of Odorant Intensity-Response Functions of Olfactory Bulb Inputs, Outputs, and Interneurons using *In Vivo* Two-Photon Imaging.**
Shaina M. Short, Matt Wachowiak. *University of Utah*
- 7:40 **Diet and Dietary Context Influence Expression of Salivary Proteins That May Modulate Oral Sensation**
Cordelia Running, Ciera Crawford. *Purdue University*
- 8:00 **Targeted Stimulation of Human Orbitofrontal Networks Disrupts Odor Reward-Guided Behavior**
James D. Howard, Rachel Reynolds, Devyn E. Smith, Joel L. Voss, Geoffrey Schoenbaum, Thorsten Kahnt. *Northwestern University*
- 8:20 **Genetic Depletion of Class I Odorant Receptors Impairs Behavioral Responses to Organic Acids**
Annika Cichy, Ami Shah, Adam Dewan, Rodrigo Pacifico, Sarah Kaye, Thomas Bozza. *Northwestern University*
- 8:40 **Two Parallel Pathways for Olfactory Processing in the Mammalian Brain**
Honggoo Chae, Arkarup Banerjee, Dinu F. Albeanu. *Cold Spring Harbor Laboratory*

MONDAY



MONDAY, CONTINUED

POSTER SESSION II

9:00 pm - 11:00 pm

Estero Ballroom

DIGITAL POSTER

- D200 **Olfaction Dominates Visual Perception: Behavioral and Cortical Effects.** Jonas Olofsson, Thomas Hörberg, Ingrid Ekström, Camilla Sandøy, Maria Larsson
- D201 **Inia: Scripts for Exploring Localized Genomic Regions in the 1000 Genomes Project.** Vicente A Ramirez, Michael Wallace, Stephen Wooding
- D202 **Chemesthesis and TRP Channels in the Wolf Spider, *Tigrosa Georgicola*.** Cecil J. Saunders, Hayden M. Graser, Nandan J. Patel, Glen S. Marrs, Erik C. Johnson
- D203 **Taste Cell Turnover Regulates Taste Nerve Fiber Complexity.** Zachary D. Whiddon, Robin F. Krimm
- D204 **Functional Properties and Synaptic Connections of Dopamine D3 Receptor-Expressing Neurons in the Ventral Striatum.** Yun-Feng Zhang, Janardhan P Bhattarai, Julia Mohrhardt, David Fleck, Wenqin Luo, Johannes Stegmaier, Marc Spehr, Minghong Ma

BUDS AND CELLS

- 205 **Sex Differences in Taste Anatomy and Psychophysics: an Update.** Linda M. Bartoshuk, Valerie B. Duffy, Howard J. Hoffman, Derek J. Snyder, Jennifer J. Stamps
- 206 **Lipopolysaccharide-Induced Inflammatory Cytokine Expression in Taste Organoids.** Shan Feng, Leyitha Achoute, Robert F. Margolskee, Peihua Jiang, Hong Wang
- 207 **Kokumi Taste Perception of the Domestic Cat (*Felis Catus*).** Anni Laffitte, Matthew Gibbs, Carlos Hernandez de Alvaro, Marcel Winnig, Timo Vennegheerts, Boris Klebansky, Richard Fine, Scott McGrane
- 208 **Cyclophosphamide-Induced TnfA Expression in the Taste Buds: Cytoprotective Effect of Amifostine.** Anish Sarkar, David Allyn, Rona Delay, Eugene Delay

CHEMESTHESIS

- 209 **Response Properties of Orosensory Neuron Types in the Mouse Trigeminal Ganglion.** Thomas A Myers, Joseph M Breza
- 210 **The Transient Receptor Potential (TRP) Ankyrin 1 (TRPA1) Ion Channel Contributes to Oral Sensory Avoidance of Weak Menthol Solutions in Mice.** Jordan E Norris, Christian H Lemon
- 211 **Comparative Perceptual Properties of the Trpa1 Ligand Oleocanthol and the Trpv1 Ligand Capsaicin in the Pharyngeal Area.** Catherine Peyrot des Gachons, Emilie Lescoat, Louise Slade, Gary K. Beauchamp

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- 212 **Chemesthetic Responses to Allyl Isothiocyanate in *Eisenia Hortensis*.** Mackenzie A Schley, Thomas A Myers, Cecil J Saunders, Wayne L Silver, Joseph M Breza
- 213 **Evidence for TRP Channels in the Earthworm, *Eisenia Hortensis*.** Karleigh A. Smith, Eileen Reed, Glen B. McKinney, Sophie A. Gonzalez, Patrick M. DeZego, Emily P. Adams, Cecil J. Saunders, Wayne L. Silver
- 214 **Water Should Not Feel Like Slime: Sensory Acceptability of Chemesthetic Beverages for Managing Swallowing Disorders.** *Madison Wierenga*, Ciera Crawford, Cordelia Running



COGNITION

- 215 **Odor Modulation of Threat: fMRI-Measured Amygdala Reactivity in Combat Veterans.** Bernadette Cortese, Aicko Schumann, David Houghton, Thomas Uhde
- 216 **Odor Detection Latency and Its Relationship with Attributes of Liking, Pleasantness and Familiarity.** Anshul Jain, Krystyna Rankin, Lalit Damodaran
- 217 **Internarial Intensity Difference Serves as a Subconscious Stereo Cue in Human Olfaction.** Yuli Wu, Kepu Chen, Tao Zhang, Wen Zhou
- 218 **Computation of Unilateral Odor Intensity Weights Airflow in the Other Nostril.** Fangshu Yao, Wen Zhou

DEVELOPMENT/REGENERATION

- 219 **IL-1 Receptor Signaling Promotes the Recovery of Taste Function After Chorda Tympani Nerve Injury.** Lianying He, Guangkuo Dong, Lynnette P. McCluskey
- 220 **P75NTR Fails to Co-Localize with Neuronal Markers in the Glomerular Layer of the Mouse Olfactory Bulb.** Rebecca McSorley, Tom Mast
- 221 **Reorganization of Gustatory Inputs Into the Nst Induced in Adult Rats by the Hedgehog Pathway Inhibitor, Sonidegib.** Chengsan Sun, Archana Kumari, Charlotte Mistretta, David Hill
- 222 **Microglia Play an Important Role in the Pruning of Primary Gustatory Afferent Terminal Fields in the Mouse NST.** Chengsan Sun, Fanzhen Kong, David L. Hill
- 223 **Molecular Characterization of Olfactory Neuroblastoma**
Matthew Zunitch, Yaw Tachie-Baffour, James Schwob, Eric Holbrook

NEURAL PATHWAYS

- 224 **Impact of Constitutive I_A and Gabaergic Inhibition on Solitary Nucleus Output using Optogenetics and Dynamic Clamp.** Zhixiong Chen, Cameron Conte, Trevor Haas, Andrew Harley, Alison Boxwell, David Terman, Susan Travers, Joseph Travers
- 225 **Gastric Bypass Alters Glutamate Levels and Release to Oral Sucrose in the Rostral NTS of the Rat.** Andras Hajnal, Elise Orellana, Patricia M. Di Lorenzo, Krzysztof Czaja
- 226 **Responses to Left- and Right-Sided Olfactory Stimuli: an Investigation Based on Psychophysical and Electrophysiological Data.** Thomas Hummel, Susann Fraesdorf

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- 227 **Effects of Manipulating the Activity of Amygdala Somatostatin-Expressing Neurons During Concentration-Dependent Licking of Sucrose and Quinine Solutions.** Robert F Lundy
- 228 **Gustatory Activity in the Rat Parabrachial Nucleus Following Neonatal Chorda Tympani Transection.** Louis J. Martin, Suzanne I. Sollars
- 229 **Optogenetic Excitation of Lateral Hypothalamic Input to the Nucleus of the Solitary Tract Modulates Non-Taste Neurons and Licking Behavior in the Awake Rat.** Joshua D Sammons, Caroline E Bass, Jonathan D Victor, Patricia M Di Lorenzo

OLFACTORY BULB

- 230 **Is the Sexual Dimorphism of the Olfactory Bulb the Same in Different Mink Races (*Neovison Vison Var. Spec.*)?** Willi Bennegger, Elke Weiler
- 231 **Recovery and Morphological Remodeling of the Zebrafish Olfactory Bulb Following a Focal Excitotoxic Lesion.** Erika Calvo-Ochoa, Christine A. Byrd-Jacobs
- 232 **Restoring the Sense of Smell: the Development of an Olfactory Implant System.** Daniel H Coelho, Richard M Costanzo
- 233 **Target Specific Functions of Epl Interneurons in Olfactory Circuits.** Gary Liu, Emmanoil Froudarakis, Jay Patel, Mikhail Kochukov, Brandon Pekarek, Patrick Hunt, Mayuri Patel, Kevin Ung, Annie Fu, Juyeong Jo, Hyun-Kyoung Lee, Andreas S. Tolias, Benjamin R. Arenkiel
- 234 **Olfactory Bulb Atrophy in H&Y Stage-1 Parkinson's Disease.** Jianli Wang, Rachel S Stanford, Lauren Spreen, Thyagarajan Subramanian, Qing X Yang

OLFACTORY DYSFUNCTION

- 235 **Reversible Unilateral Anosmia Postictally in a Patient with Frontotemporal Lobe Epilepsy.** Patrick Doerig, Stephan Rueegg, Antje Welge-Luessen
- 236 **Top-Down Olfactory Processing in Subjects with Olfactory Loss.** Akshita Joshi, Pengfei Han, Thomas Hummel
- 237 **An Italian Population-Based Study of the Prevalence of Olfactory Impairment.** Carla Masala, Annachiara Cavazzana, Eugenio Aprea, Monica Borgogno, Elena Cantone, Andrea Ciofalo, Serena Drago, Flavia Gasperi, Alberto Macchi, Leonardo Menghi, Valentina Parma, Maria Piochi, Raffaella Piras, Benedetta Pasquariello, Luisa Torri, Thomas Hummel
- 238 **Presence of Undetected Olfactory Loss in the General Population - Based on a Large Sample of 9139 Subjects.** Anna Oleszkiewicz, Ilona Croy, Valentin Schriever, Antje Haehner, Thomas Hummel
- 239 **Olfactory Cilia Defects From a Single Point Mutation In *Bbs1* Result in Impaired Odor Detection and Perception In a Bardet-Biedl Syndrome Mouse Model.** Chao Xie*, Julia Habib*, Cedric Uyttingco, Kirill Ukhanov, Lian Zhang, Val Sheffield, Jeffrey Martens

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OLFACTORY RECEPTOR NEURONS

- 240 **Deciphering the Responses of Skin-Penetrating Nematodes to Carbon Dioxide.** Navonil Banerjee, Spencer Gang, Elissa Hallem
- 241 **Expression of the G Protein Coupled Odorant Receptors.** Claire A de March, Kentaro Ikegami, Maira H Nagai, Soumadwip Ghosh, Matthew Do, Ruchira Sharma, Elise S Bruguera, Yueyang Eric Lu, Yosuke Fukutani, Nagarajan Vaidehi, Masafumi Yohda, Hiroaki Matsunami
- 242 **Identifying Key Olfactory Receptors in Odor Perception using Machine Learning.** Marissa L. Kamarck, Casey M. Trimmer, Andreas Keller, Lindsey L. Snyder, Nicolle R. Murphy, Leslie B. Vossahl, Joel D. Mainland
- 243 **Small, Portable System for Recording Olfactory-Evoked Potentials.** David W Smith, Mark A Hanus, William D Woolf, Andreas Keil
- 244 **Optopharmacology of Odorants: Photoactivatable Ligands for Chemosensory Research.** Kirill Ukhonov, Sangram Gore, Cyril Herbivo, Naem Asad, Yuriy Bobkov, Jeffrey R Martens, Timothy R Dore
- 245 **Antiviral Function of Type I and Type III Interferons in the Olfactory Epithelium and Olfactory Bulb.** Ahmad Zedan, Ashley D. Winters, Ashley Takeshita, Shuangyan Wang, Qizhi Gong

 AChemS Undergrad
Award Finalist

TASTE TRANSDUCTION

- 246 **Trpm4 Selectively Interacts with L-Type Voltage Gated Calcium Channels (VGCCS) in Type III Taste Receptor Cells.** Debarghya Dutta Banik, Kathryn F. Medler
- 247 **Common Bitter Stimuli Show Differences in Their Temporal Profiles Before and After Swallowing.** Molly J. Higgins, John E. Hayes
- 248 **Molecular Elements of the Osmotic Taste Cell Response.** Angela S. Mohrman, Timothy A. Gilbertson
- 249 **Overproduction of Type III Cells in SKN1A Knockout Mice Does Not Change the Number of Geniculate Ganglion Neurons Expressing the Serotonin Receptor 5-HT3A.** Aurelie Vandenbeuch, Eric Larson, Sue Kinnamon
- 250 **Bitter Taste Receptor T2R7 and Umami Taste Receptor Subunit T1R1 Are Expressed Largely in Vimentin-Negative Taste Bud Cells of Chickens.** Yuta Yoshida, Zhonghou Wang, Kayvan F. Tehrani, Emily G. Pendleton, Ryota Tanaka, Luke J. Mortensen, Shotaro Nishimura, Shoji Tabata, Hong-Xiang Liu, Fuminori Kawabata

 Don Tucker
Award Finalist

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TUESDAY, APRIL 16, 2019

CONTINENTAL BREAKFAST

7:30 am - 9:00 am

Estero Foyer

POSTER SESSION III

8:00 am - 10:00 am

Estero Ballroom

DIGITAL POSTER

- D300 **A Tastier Mouth: New Taste Structure in the Oral Cavity.** Grace E. Beck, Quan T. Nguyen, Marco Tizzano
- D301 **Glomerular Signals During Unrestrained Olfactory Search in Mice.** Teresa Findley, Ian Jackson, Morgan Brown, Blake Holcomb, Nelly Nouboussi, Roman Shusterman, Jared Acosta-King, David Wyrick, Bishara Korkor, Yashar Ahmadian, Matt Smear
- D302 **Mapping Chemoreceptors in the Human Olfactory System.** Lulu Korsak, Sarah Kwon, Olga Lacki, Sarah Kaye, Thomas Bozza, Jay Gottfried
- D303 **Taste Neurons Vary in Degree of Converging Input From Taste Receptor Cells.** Lisa Ohman-Gault, Tao Huang, Zachary Whiddon, Robin F. Krimm
- D304 **Real-Time Measurement of Olfactory Information using Head-Mounted Sensors During Odor-Guided Navigation.** Mohammad F Tariq, Aliena Lowell, Suzanne M Lewis, David Perkel, David Gire

BUDS AND CELLS

- 305 **Distribution of Chorda Tympani Nerve Fibers in the Fungiform Papilla That Respond to Lingual Touch and Cold Stimuli Demonstrated with Hedgehog Pathway Inhibitor Sonidegib Drug Treatment.** Archana Kumari, Libo Li, Christopher R Donnelly, Brian A Pierchala, Robert M. Bradley, Charlotte M. Mistretta
- 306 **Sox2 in the Oral Epithelial Stem Cells Is Necessary for the Differentiation to Taste Bud Cells.** Makoto Ohmoto, Ichiro Matsumoto
- 307 **Advillin Genetically Identifies a Subset of Taste Neurons and Type II Receptor Cells.** Jennifer Xu, Robin F. Krimm
- 308 **A Small Subset of Type III Taste Cells Show Both Atypical Mitochondria and Conventional Synapses Onto Nerve Processes in Mouse Circumvallate Taste Buds.** Ruibiao Yang, Robert S. Lasher, Ernesto Salcedo, Courtney E. Wilson, Thomas E. Finger

COGNITION

- 309 **Studying the Neuronal Substrates of Internal Models via a Novel Closed-Loop Olfactory Task for Mice.** Priyanka Gupta, Marie Dussauze, Uri Livneh, Dinu F Albeanu

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- 310 **Neural Basis of Olfactory and Trigeminal Interaction.** Lu Jiaming, Krish Sathian, Qing Yang, Prasanna Karunanayaka
- 311 **High Familiarity and Intensity Accelerate Odor Detection.** Tatsu Kobayakawa, Hiroko Mochizuki-Kawai, Takefumi Kobayashi, Naomi Gotow
- 312 **The Effect of Presentation Route on Olfaction Perception.** Robert Pellegrino, Jonas Olofsson, Thomas Hörberg, Curtis Luckett
- 313 **Emotional Contagion Based on Intensity of Anxiety and Expertise of Recipients: a Case of Dental Professionals.** Preet B. Singh, Amin Homayouni, Carl W. Glad, Malene Rusten, Morten Rykke, Valentina Parma

CORTEX

- 314 **Anticipation Induces a Phase Shift of Low Frequency Oscillations in Human Piriform Cortex .** Ghazaleh Arabkheradmand, Guangyu Zhou, Heidi Jiang, Jay A Gottfried, Joshua Rosenow, Jessica Templar, Gregory Lane, Christina Zelano
- 315 **Interoceptive Accuracy and Its Relation to Insular Activity Following Olfactory Stimulation.** *Carina Köppel*, Paul Ruser, Hagen Kitzler, Thomas Hummel, Ilona Croy
- 316 **Portable Odorant Generation and Physiological Recording System to Measure Cortical Olfactory Event-Related Potentials using Quantitative Electroencephalography.** David W Smith, Mark A Hanus, W David Woolf, Andreas Keil
- 317 **Functionally Distinct Populations of Gc Neurons Represent Different Properties of Odor-Taste Mixtures.** Sanaya K. Stocke, Chad L. Samuelsen
- 318 **Functional Pathways of Human Primary Olfactory Cortex.** Guangyu Zhou, Greg Lane, Christina Zelano

DEVELOPMENT/REGENERATION

- 319 **Proteasomal Regulation of Δ NP63 in the Horizontal Basal Cells of the Olfactory Epithelium.** Camila M. Barrios-Camacho, Jesse Peterson, Brian Lin, James E. Schwob
- 320 **The Polycomb Group Protein Cbx8 Is Required for Adult Olfactory Neurogenesis.** Rhea Choi, Stefania Goncalves, Bradley J. Goldstein
- 321 **The Early Events of Horizontal Basal Cell Activation Following Injury.** Jonathan D. Louie, Daniel B. Herrick, Nikolai Schnittke, James E. Schwob
- 322 **Strategies for Single-Molecule Tracking of Sonic Hedgehog Delivery to the Regenerative Niche in Adult Taste Buds.** Wan-Jin Lu, Ankit Baghel, Philip A. Beachy
- 323 **Single Cell Transcriptomics Reveals Rare, Quiescent Gbcs within the Olfactory Epithelium.** Matthew J. Zunitch, James E. Schwob

NEURAL PATHWAYS

- 324 **Prefrontal Cortex Projections to the Olfactory Tubercle.** Hillary L. Cansler, Estelle E. in 't Zandt, Daniel W. Wesson
- 325 **Morphological Classification of Taste Fibers in the Mouse Tongue.** Tao Huang, Robin Krimm



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- 326 **The Role of the Medial and Central Subdivisions of the Human Amygdala in Olfaction.** Torben Noto, Guangyu Zhou, Greg Lane, Christina Zelano
- 327 **Activation of GC-D-Positive Necklace Glomeruli Following Olfactory Exposure to Uroguanylin.** Dimitri Salzman, Arthur D. Zimmerman, Maria G. Rodriguez, Steven D. Munger
- 328 **Analysis of Lhx5-Driven Gfp Expression in Zebrafish Suggests Early Evolution of Accessory and Main Olfactory-Like Telencephalic Pathways in Fish.** Claudia Tudor, Lydia Waner, Thomas Mueller
- 329 **Modulatory Effects of Serotonergic Input From the Dorsal Raphe Nuclei on the Pyramidal Neurons of the Anterior Piriform Cortex.** Xiaojie Wang, Dejuan Wang, Han Du, Jinshan Xu, Siqi Jing, Fan Jia, Anan Li

OLFACTORY BULB

- 330 **Using CRISPR Gene Editing to Investigate the Role of the Olfactory Bulb in Metabolism.** Louis J Colling, Debra A Fadool
- 331 **Regional Differences in Mitral Cell Development in Mouse Olfactory Bulb.** Fumiaki Imamura, Uyen Nguyen
- 332 **Cell Identity, Membrane Properties, and Spiking Profile of Rat Olfactory Bulb Dopamine Neurons.** Kirill S. Korshunov, Laura J. Blakemore, Richard Bertram, Paul Q. Trombley
- 333 **Aon Top-Down Projections Modulate Olfactory Processing.** Renata Medinaceli Quintela, Lutz Wallhorn, Jennifer Bauer, Daniela Brunert, Markus Rothermel

OLFACTORY CODING

- 334 **Widespread Odorant Receptor Antagonism Observed in the Peripheral Olfactory System.** Jessica H. Brann, Barry J. Evans, Daniel A. Raps, Benjamin C. Smith, Matthew E. Rogers
- 335 **Component Qualities of Stimuli with Double Odors.** Lauren Dulieu, Marion E Frank, Thomas P Hettinger
- 336 **Odorants in the Environment Are Naturally Sparse.** Thomas P Hettinger, Marion E Frank
- 337 **Tuning of Ensemble Responses in the Human Olfactory Cortex to Features of Odors.** Vivek Sagar, Thorsten Kahnt

OLFACTORY RECEPTOR NEURONS

- 338 **The Molecular and Cellular Basis of Olfactory Response to Tsetse Fly Attractants.** J. Sebastian Chahda, Neeraj Soni, Jennifer S. Sun, Shima A.M. Ebrahim, Brian L. Weiss, John R. Carlson
- 339 **Interacting Ig Superfamily Proteins Organize Axon Terminals of Olfactory Receptor Neurons Regulated by Olfactory Receptors in Drosophila.** Qichen Duan, Yetong Huang, Scott Barish, Pelin C. Volkan
- 340 **Odorant Receptors Regulate Odorant Receptor Expression in Anopheles Mosquito Olfactory Neurons.** Sarah Maguire, Loyal Goff, Christopher Potter

 Don Tucker
Award Finalist

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- 341 **Amplification of *Drosophila* Olfactory Responses by a Calcium-Gated Deg/Enac Channel.** Renny Ng, Secilia Salem, Shiuan-Tze Wu, Meilin Wu, Hui-Hao Lin, Andrew Shepherd, William Joiner, Jing Wang, Chih-Ying Su
- 342 **Starvation Differentially Modulates GABA Signaling in Olfactory Receptor Neurons.** Eryn Slankster, Dominique Baria, Roshni Jain, Seth Odell, Dennis Mathew
- 343 **Valence Opponency in Olfactory Processing.** Shiuan-Tze Wu, Jen-Yung Chen, Dhruv Grover, Ralph Greenspan, Chih-Ying Su

TASTE PREFERENCE

- 344 **Weighing Taste and Smell in Flavor Preference.** Victoria Elliott, Joost Maier
- 345 **The Role of Saliva in Caffeine Preference.** Kristen E. Kay, Ann-Marie Torregrossa, Jennifer L. Temple
- 346 **Impact of Taste and Smell Problems on Diet Quality: the National Health and Nutrition Examination Survey (NHANES), 2011-2014.** Chuan-Ming Li, Howard J. Hoffman, Shristi Rawal, Ashima K. Kant, Barry I. Graubard, John E Hayes, Valerie B. Duffy
- 347 **Do Mice Prefer Caffeinated or Caffeine-Free Sugar Drinks?** Anthony Sclafani, Austin Vural

TASTE TRANSDUCTION

- 348 **Strategy for Recombinant Expression of Soluble Functional N-Terminal Domain of Human Sweet Taste Receptor Produced in *Escherichia Coli*.** Christine Belloir, Nicolas Poirier, Lucie Moitrier, Fabrice Neiers, Loïc Briand
- 349 **Interactions of Estrogen and Trpm5 Channels in Fat Taste.** Naima/s Dahir, Yan Liu, Fangjun Lin, Timothy/A Gilbertson
- 350 **Sweet Taste Detection, Preference and Manipulation in Tree Shrews (*Scandentia, Tupaia Belangeri*).** Erin E Maher, Naini Shiswawala, Anila Tynan, Heywood Petry, Alev Erisir
- 351 **Fructose Signal Transduction in Cultured Human Fungiform Taste Papillae (HBO) Cells.** M. Hakan Ozdener, Evangeline Adjei-Danquah, Robert F. Margolskee
- 352 **Modulatory Effect of Arginyl Dipeptides on the Frequency of NaCl Elicited Responses in Cultured Human Fungiform Taste Papillae (HBO) Cells** Jiao-Jiao Xu, Andrew I. Spielman, Hau Y. Chung, M. Hakan Ozdener

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PROGRAM IN DETAIL

TUESDAY, CONTINUED

COFFEE BREAK	
9:00 am - 10:00 am	Estero Foyer
EVENT	
9:00 am - 12:00 pm	Offsite -IMAG
Outreach Event	
SYMPOSIUM	
10:00 am - 12:00 pm	Calusa F-H
Fat Facts: An Update on Fat Perception and its Dietary Consequences	

Chair: Sanne Boesveldt

- 10:00 **Introduction**
Sanne Boesveldt, *Wageningen University*
- 10:10 **History and Physiology of Fat Taste Perception. What We Know and Don't Know**
Nada Abumrad, *Washington University*
- 10:40 **Why Am I (Not) Sensitive to Fat Taste? Do Adiposity and Diet Play a Role?**
Robin M. Tucker, *Michigan State University*
- 11:00 **From Genes to Neurons: How Flies Get Fat**
Tania Reis, *University of Colorado*
- 11:30 **The Brain as a Fat Sensor? Neuronal Correlates of Nutritional Fat Intake**
Sabine Frank-Podlech, *University of Tübingen*

SYMPOSIUM	
10:00 am - 12:00 pm	Calusa A-C
Configural Versus Elemental Perception of Chemosensory Complex Stimuli	

Chairs: Gerard Coureaud, Donald Wilson

- 10:00 **Introduction**
Donald Wilson, *NYU School of Medicine*
- 10:10 **The Role of Multisensory Overlap for Configural Processing of Food Flavor in Humans: Behavioral Markers and Neural Correlates**
Janina Seubert, *Karolinska Institute*
- 10:40 **A Competitive Binding Model Predicts the Response of Mammalian Olfactory Receptors to Mixtures**
Vijay Singh, *University of Pennsylvania*
- 11:00 **From Neuron to Behavior: Response of Parasitic Wasps to Mixtures of Plant-Associated Odors**
Tolulope Morawo, *Auburn University*
- 11:30 **Configural Perception of Odor Mixtures: Functional Early in Life, Convergent Between Species**
Gerard Coureaud¹, Donald A. Wilson² ¹CNRS - *Lyon Neuroscience Research Center*, ²*NYU School of Medicine*

PROGRAM IN DETAIL

TUESDAY, CONTINUED

MEETING	
1:00 pm - 2:00 pm	Calusa A-C
AChemS Business Meeting	

Get involved! Join us for reports from the society leadership on the state of the association
All members are welcome and encouraged to attend.

WORKSHOP	
2:00 pm - 3:30 pm	Great Egret
Hands-On Workshop - Measurement of Human Smell and Taste	

Organizers: *Sanne Boesveldt and Thomas Hummel*

Thomas Hummel. *Technische University*

Katherine Whitcroft. *University of London*

Kathrin Ohla. *Institute of Neuroscience and Medicine (Inm-3) Research Center*

Johannes Frasnelli. *The University of Quebec at Trois - Rivières*

WORKSHOP	
2:00 pm - 4:00 pm	Calusa A-C
The Barry Davis Workshop: Funding Opportunities for the New Investigator	

CAREER PANELS/NETWORKING SOCIAL	
4:00 pm - 6:00 pm	Calusa A-C / Foyer

PRESIDENT'S SYMPOSIUM	
7:00 pm - 9:00 pm	Calusa A-D
Chemoreception from Receptors to Behaviors	

Chair: *Minghong Ma*

- 7:00 **Blood Sweat and Tears: Human Social Chemosignaling in Health and Disease**
Noam Sobel. *Weizmann Institute of Science*
- 7:30 **How We Taste: Otop1 and the Mechanism of Sour Transduction**
Emily Liman. *University of Southern California*
- 8:00 **Systems for Encoding Odor Valence and Motivating Approach Behaviors**
Daniel Wesson. *University of Florida*
- 8:30 **Building a Mosquito Sensory System to Hunt Humans**
Leslie Vosshall. *The Rockefeller University*

TUESDAY

PROGRAM IN DETAIL

TUESDAY, CONTINUED

POSTER SESSION IV

9:00 pm - 11:00 pm

Estero Ballroom

DIGITAL POSTER

- D400 **Continuous Tracking of Memory Formation Recording of Gustatory Cortex Neuronal Ensemble Activity Following Conditioned Taste Aversion in Freely Behaving Rats.** Elor Arieli, Nadia Younis, Daniel Udi, Anan Moran
- D401 **Quantification and Characterization of Taste Cells in Mouse Circumvallate Taste Buds.** Yannick K Dzowo, Ruibiao Yang, Robert S Lasher, Thomas E Finger
- D402 **Next Generation Neural Interfaces for Biophotonic Medicine.** Samuel Littich
- D403 **Odorant Interactions with Model Membrane Systems.** Troy W Lowry, Debra A Fadool, Steven Lenhert
- D404 **Interpretation of the Spatial-Temporal Structure of Turbulent Chemical Plumes for Odor Tracking.** Brenden Michaelis, Yuriy Bobkov, Jose Principe, Barry Ache, Il Park, Tom Matthews, Matthew Reidenbach

BUDS & CELLS

- 405 **Cell Non-Autonomous Requirement of P75 in the Development of Geniculate Chemosensory Neurons.** Christopher R. Donnelly, Tao Tang, Amol Shah, Robert M. Bradley, Charlotte M. Mistretta, Brian A. Pierchala
- 406 **Exposure to IL-13 Increases Number of Solitary Chemosensory Cell Markers in Primary Nasal Epithelial Air-Liquid Interface Cultures.** Shivani Pathak, Eric Larson, Catherine Anderson, Vijay Ramakrishnan
- 407 **Innervation of Taste Buds by Transcriptomically Distinct Gustatory Neurons of the Geniculate Ganglion.** Judith Rosales Rivas, Gennady Dvoryanchikov, Nirupa Chaudhari
- 408 **Receptive Field Size and Somatosensory Responses of Rat Lingual Nerve/Trigeminal Ganglion Neurons Innervating Fungiform Papillae.** Hajime Sato, Archana Kumari, Charlotte M. Mistretta, Robert M. Bradley
- 409 **Both Form and Function of Type I Taste Cells Suggest a Role in Taste Signal Transmission and/or Modulation.** Courtney E Wilson, Eric D Larson, Catherine B Anderson, Aurelie Vandenbeuch, Ruibiao Yang, Thomas E Finger, Sue C Kinnamon

CORTEX

- 410 **Unilateral Odor Delivery Evokes Sustained Neural Oscillations in Ipsilateral Piriform Cortex in Humans.** G. Nazli Dikeciligil, Nisha Sanghani, Sandhitsu R. Das, Joel M. Stein, Han-Chiao Isaac Chen, Timothy H. Lucas, Kathryn Davis, Jay A. Gottfried

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- 411 **Separating Respiration, Trigeminal and Olfactory Effects At the Cortical Level.** Florian Fischmeister, Christina Kumpitsch, Cinzia Cecchetto, Christine Moissl-Eichinger, Veronika Schöpf
- 412 **The Influence of A-Synuclein Seeding in the Olfactory Bulb on Olfactory Functional Connectivity.** Aishwarya S. Kulkarni, Heather B. Denson, Gabriela Mercado Guerra, Maria del mar Cortijo, Jennifer A. Steiner, Patrik Brundin, Daniel W. Wesson
- 413 **Respiration Induces Phase Synchronization of Olfactory-Hippocampal Networks in Humans.** Gregory Lane, Guangyu Zhou, Stephan Schuele, Joshua Rosenow, Christina Zelano
- 414 **Neural Dynamics in the Developing Piriform Cortex of Awake Rats.** Zihao Zhang, D. Chad Collins, Joost X. Maier

HEDONICS

- 415 **Roux-En-Y Gastric Bypass Surgery Influences Intake and Preference of Glucose Solutions with No Effects on Concentration-Dependent Licking in Brief Access Tests in Female Rats.** Kellie M. Hyde, Marco Bueter, Carel W. le Roux, Alan C. Spector
- 416 **Interaction of Taste and Smell on Perception of Sweetness in Honey Bees.** Allyson V. Pel, Stephanie R. Hathaway, Susan E. Fahrbach
- 417 **Role of the Carbonate Ion in the Enhanced Avoidance of Sodium and Potassium Salts in Rats.** Steven J. St. John
- 418 **Odor Valence Encoding Among Dopamine Receptor Expressing Medium Spiny Neurons.** Lucas A. Stetzk, Daniel W. Wesson

LEARNING & MEMORY

- 419 **The Influence of Expertise on the Multisensory Imagery of Wine.** Ilja Croijmans, Laura J. Speed, Artin Arshamian, Asifa Majid
- 420 **OFC Inactivation Disrupts Economic Choice Behavior Following Devaluation of an Appetitive Stimulus.** Matthew P Gardner, Jessica C Conroy, Davied Sanchez, Geoffrey Schoenbaum
- 421 **Flavor Experience Induces Plastic Changes in Piriform Cortical Coding of Odor Valence.** Joost Maier, Ellen Walker
- 422 **Rats Fail to Discriminate Between Quinine and Other Bitter Taste Stimuli.** Laura Martin, Kristen Kay, Kimberly James, Ann-Marie Torregrossa
- 423 **Is Camkii-A Important for Olfactory Learning and Working Memory?** Daniel Ramirez-Gordillo, K. Ulrich Bayer, Amber Olson, Diego Restrepo
- 424 **Sodium, But Not Potassium, Blocks Bitterness in Simple Model Chicken Broths.** Paul M Wise, Shashwat Damani, Paul AS Bresline

NEURAL PATHWAYS

- 425 **Mice Can Condition Cephalic-Phase Insulin Release to the Taste of Maltodextrin, But Not Saccharin or Sucrose.** Alyson Dennis, Lillian R. Brouwer, Anthony Sclafani, John I. Glendinning



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- 426 **Single-Unit Responses to the Intraoral Delivery of Chemosensory Stimuli in the Mediodorsal Thalamus.** Kelly E. Fredericksen, Kelsey A. McQueen, Chad L. Samuelsen
- 427 **Olfactory and Gustatory Integration at the Earliest Stage of Sensory Processing in the *Drosophila* Larva Brain.** Jess Kanwal, James Truman, Ben de Bivort, Aravi Samuel
- 428 **Detecting Taste and Temperature in the Geniculate Ganglion.** Sara C.M. Leijon, Guennadi Dvoryanchikov, Lauren C. Baker, Nirupa Chaudhari, Stephen D. Roper
- 429 **Oral Somatosensory Coding Relevant to Flavor by Mouse Trigeminothalamic Tract Neurons.** Jinrong Li, Christian Lemon
- 430 **State-Dependent Olfactory Information Processing.** Mary R Schreck, Liuqing Zhuang, Andrew H Moberly, Kate A White, Daniel W Wesson, Minghong Ma

OLFACTORY BULB

- 431 **The Logic of Olfactory Bulb Outputs Revealed by High-Throughput Single-Neuron Projection Mapping using Sequencing.** Yushu Chen, Xiaoyin Chen, Justus M. Kebschull, Alexei Koulakov, Anthony M. Zador, Dinu F. Albeanu
- 432 **Role of the Ciliary Enriched G-Protein Coupled Receptor, MCHRI, in Olfactory Signaling.** Kalene R Jasso, Jordan M Ross, Heather Kulaga, Max L Fletcher, Randall R Reed, Jeremy C McIntyre
- 433 **Significant Delay Between Nasal Thermocouple Respiratory Measurements and the Strongly Coherent Olfactory Bulb Respiratory Rhythm.** Leslie M Kay
- 434 **Trpm5-Expressing Microvillous Cell-Dependent Regional Adaptive Plasticity in the Mouse Olfactory Epithelium and Bulb During Environmental Chemical Challenge.** Kayla Lemons, Weihong Lin
- 435 **The Role of the Olfactory Bulb Sniff Rhythm in Sensory Cognition.** Andrew Sheriff, Vivian S Nguyen, Leslie M Kay

OLFACTORY DYSFUNCTION

- 436 **Bulbotomy Blunts But Does Not Eliminate Concentration-Dependent Preference for Sucrose and Maltrin in Long-Term Intake Tests in C57Bl/6J and T1R2+T1R3 Knockout Mice.** Ginger D. Blonde, Chizuko Inui-Yamamoto, Lauren Mariotti, Matias Campora, Alan C. Spector
- 437 **Olfactory Bulbotomy Blunts Concentration-Dependent Responsiveness to Intralipid, Sucrose and NA-Saccharin, but not to Quinine Hydrochloride and Citric Acid in a Brief Access Licking Test in Mice.** Chizuko Inui-Yamamoto, Fabienne Schmid, Ginger D. Blonde, Tadashi Inui, Alan C. Spector
- 438 **Potential for Cell-Based Therapy to Treat Hyposmia in a Mouse Model.** Sarah Kurtenbach, Garrett M. Goss, Stefania Goncalves, Nirupa Chaudhari, Bradley J. Goldstein
- 439 **Recovery From Anosmia Reduced Glomerular Dopamine Independent of Foraging Success.** Khaleel I. Quasem, Brad R. Savard, Thomas G. Mast

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OLFACTORY RECEPTOR NEURONS

- 440 **Paving a Path Towards Single Olfactory Receptor Activation using Synthetic Aptamers.** Shani Agron, Shireen Fseisy, Itai Rusinek, Gil Loewenthal, Ido Bachelet, Noam Sobel
- 441 **Aversive Learning Increases Neurotransmitter Release From Primary Olfactory Sensory Neurons.** Janardhan P. Bhattarai, Andrew H. Moberly, Wenqin Luo, Minghong Ma
- 442 **Coding Spatiotemporal Characteristics of Odor Signals.** Yuriy Bobkov, Il Park, Brenden Michaelis, Thomas Matthews, Matthew Reidenbach, Jose Principe, Barry Ache
- 443 **Olfactory Sensory Neuron Maturation in the Young Adult.** Teresa Liberia, Diego J. Rodriguez-Gil, Charles A. Greer
- 444 **Decoding the Ant Sniffer: Functional Characterization of Odorant Receptors in Harpegnathos Saltator.** Jenna Longo, Kendall Ham, Bri Pomonis, Gregory Pask



SOCIAL BEHAVIOR

- 445 **Importance of Olfaction in Children and Adolescents - Development and Implementation of a Questionnaire.** Annika Dworschak, Luca Parisato, Valentin A. Schriever
- 446 **PLC Variants Define a Potential, Global Sensory Modulation System in the Vomeronasal Organ.** Norah Koblesky, Leon Fodouljian, Ivan Rodriguez, Lisa Stowers
- 447 **Expression Analysis of a Novel Putative Pheromone Receptor Ancv1R in Mice.** Hiro Kondo, Hikoyu Suzuki, Hidefumi Nishida, Ryota Yoda, Tetsuo Iwata, Takayuki Enomoto, Junji Hirota, Masato Nikaido
- 448 **The Signaling Power of Olfaction: Effect of Hexanal on Trust.** Daan van Nieuwenburg, Jasper H.B. de Groot, Monique A.M. Smeets
- 449 **Olfactory Experience with Semiochemicals Influences Sex-Specific Olfactory Receptor Expression.** Aashutosh Vihani, Hiroaki Matsunami
- 450 **Orthonasal and Retronasal Olfactory Function in Patients With Olfactory Loss: Relation to Quality of Life.** Yunpeng Zang, Anna Oleszkiewicz, Antje Haehner, Dahae Park, Thomas Hummel



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WEDNESDAY, APRIL 17, 2019

CONTINENTAL BREAKFAST

7:30 am - 9:00 am

Estero Foyer

POSTER SESSION V

8:00 am - 10:00 am

Estero Ballroom

DIGITAL POSTER

D500 **Chemosensory Receptors of *Cydia Pomonella* (Lepidoptera: Tortricidae).**

Alberto Maria Cattaneo, Yuriy V. Bobkov, Francisco Gonzalez, Stephen F. Garczynski, Peter Witzgall, William B. Walker III

D501 **Fear, Fright, Flight: Can Human Body Odors Convey Emotion Intensity?**

Jasper H.B. de Groot, Peter A. Kirk, Jay A. Gottfried

D502 **Associative Olfactory Fear Learning Alters Spatiotemporal Coding of Olfactory Bulb Output Cells.** *Jordan M. Ross*, Max L. Fletcher Don Tucker Award FinalistD503 **Conformational Sensing by the Mouse Olfactory Receptor Olfr2.** Kevin Ryan, Min Ting LiuD504 **Awake, *In-Vivo* Imaging of Experience-Induced Changes of Taste Representation in Mouse Gustatory Cortex.** *Stephanie M Staszko*, John D Boughter, Max L Fletcher Don Tucker Award Finalist

BUDS & CELLS

505 **Feeding Control Via Multimodal Taste Integration in Pharyngeal Neurons in Adult *Drosophila*.** *Yu-Chieh D. Chen*, Ryan M. Joseph, Anupama A. Dahanukar Don Tucker Award Finalist506 **Neurexin Isoforms May Coordinate Innervation of Mouse Taste Bud Cells.** Gennady Dvoryanchikov, Damian Hernandez, Nirupa Chaudhari507 **Feline Taste Cell Lines: a Promising Tool for Palatability Investigation in Cats.** Christiane Gras, Emilie A. Leclerc, Isabelle Guiller, Michael Krohn, Aurelie de Ratuld508 **The Innervation of Taste Buds Differs Between Humans, Tree Shrews, and Mice.** Brigit High, Courtney E. Wilson, Ruibiao Yang, Mei Li, Thomas E. Finger509 **Exploring Food Texture Sensation in *Drosophila*.** John Mack, Tingwei Mi, Yali Zhang510 **Sweet Taste Detection and Preference in Children Vs. Adults.** Sara Petty, Clara Salame, Julie A. Mennella, M. Yanina Pepino

CORTEX

511 **Spatio-Temporal Patterns of Activity in the Gustatory Cortex of Mice Engaged in a Cue-Taste Paradigm.** Ke Chen, Joshua F. Kogan, Alfredo Fontanini**Poster Numbering Key:** The P# listed next to the poster title is the Poster Abstract Number and the Poster Board Number.**D Poster Numbers** are Digital Poster Presentations and are located in the dedicated Digital Poster Area of the Poster Hall.

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- 512 **Sodium Restriction Alters Behavioral and Cortical Responses to Intra-Oral Infusion of NaCl in Conscious Rats.** Alisa M. Goldstein, Christopher A. Guerra, Michael S. King
- 513 **Comprehensive Modeling Analysis of the Role of Cortical Projections to Olfactory Bulb.** Christiane Linster, Leslie Kay
- 514 **Is Eating Disinhibition Associated with Altered Functional Connectivity of the Primary Gustatory Cortex with Secondary Gustatory Cortex, Reward or Memory Regions in Metabolic Syndrome?** Claire Murphy, Ekarin E. Pongpipat, Aaron Jacobson
- 515 **Odor Mixture Representation in Cortical Feedback Projections to the Olfactory Bulb.** Joseph D. Zak, Venkatesh N. Murthy

LEARNING & MEMORY

- 516 **Induction Phenomenon After Single and Brief Odor Learning in the Newborn Rabbit.** Patricia Duchamp-Viret, Jiasmine Boyer, Marie Vericel, Florian Lavilla, Gerard Coureaud
- 517 **Posterior Piriform Cortical Modulation of Odor Fear Memory.** Brett S. East, Donald A. Wilson
- 518 **Memory Mechanisms at Multiple Levels of Biological Organization.** David Levitan, Chenghao Li, Jian-You Lin, Joseph Wachutka, Sacha B. Nelson, Donald B. Katz
- 519 **State-Dependent Coding: L1CL-Induced State Suppresses Gustatory Cortex Processing.** *Bradly T Stone*, Donald B Katz



- 520 **Heterogeneity in Ventral Striatal Encoding of Chemosensory-Driven Reinforcement.** Katherine N Wright, Daniel W Wesson

OLFACTORY BULB

- 521 **Role of Adult-Born Versus Pre-existing Neurons in Olfactory Perception in a Complex Olfactory Environment in Mice.** Jeremy Forest, Laura Chalençon, Maellie Midroit, Claire Terrier, Isabelle Caillé, Joelle Sacquet, Claire Benetollo, Killian Martin, Marion Richard, Anne Didier, Nathalie Mandairon
- 522 **Odor Identification in the Presence of Novel Backgrounds.** Yan Li, Tianyu She, Asiyah Rahman, Asim Ahmed, Jason Wu, Daniel Mogel, Gonzalo Otazu



- 523 **Diversity in Glutamatergic Input Dynamics Drives Heterogeneous Response Patterns in Olfactory Bulb Mitral and Tufted Cells in Vivo.** *Andrew K. Moran*, Tom P. Eiting, Matt Wachowiak
- 524 **Defining the Functions of Olfactory Bulb Processing Via Comparison of Input and Output: Adaptation.** Douglas A Storage, Lawrence B Cohen

OLFACTORY CODING

- 525 **The "Hard Problem" of Olfaction: Odor Identification From Strongly Occluded Sensory Inputs in a Neuromorphic Olfactory Bulb Circuit.** Nabil Imam, Thomas A. Cleland

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- 526 **Imaging During Odor-Guided Behavior with a Novel, Wide Field-Of-View Miniature Fluorescence Microscope.** Daniel P. Leman, Ichun A. Chen, William W. Yen, Lewis N. Perkins, William A. Liberti III, Kivilcim Kilic, Alberto Cruz-Martin, Timothy J. Gardner, Timothy M. Otchy, Ian G. Davison
- 527 **Decoding Olfactory Stimulus Strength From Olfactory Bulb LFP Oscillations.** Justin T. Losacco, Diego Restrepo
- 528 **Specific Antagonism Is Prominent in Odorant Receptor-Based Combinatorial Coding.** Patrick Pfister, Barry J. Evans, Casey Trimmer, Randy Arroyave, Mushhood Sheikh, Matthew E. Rogers

OLFACTORY DYSFUNCTION

- 529 **Altered Dynamics of Glucocorticoid Receptor - Chaperone Complexes in Neuroepithelial Cells of Patients with Depression.** Karin Borgmann-Winter, Sarah Jefferson, John O'Reardon, Nancy Rawson, Olivier Berton, Chang-Gyu Hahn
- 530 **Methimazole-Induced Injury Alters Levels of Expression of Engulfment Proteins.** Rudy T. Chapman, Diego J. Rodriguez-Gil
- 531 **The Neuroplastic Effect of Olfactory Training to the Recovery of Olfactory System in Mouse Model.** Boo-Young Kim, Sang-uk Lee
- 532 **Olfactory Function After Mild Traumatic Brain Injury in Children - A Longitudinal Study**
Theresa Thieme, Valentin Schriever
- 533 **Alzheimer's Disease & Olfaction: Preliminary Results Towards an Early Diagnosis.** Rayane Zahal, Dominique Petit, Nadia Gosselin, Julie Carrier, Johannes Frasnelli

OLFACTORY RECEPTOR NEURONS

- 534 **Concentration Change Processing in the Mouse Olfactory Bulb.** Morgan Brown, Philip Parker, Avinash Bala, Richard Taylor, Roma Shusterman, Matt Smear
- 535 **Daspei Imaging: in Search of Earthworm Chemoreceptors using a Live Cell Dye.** Eui Y Kim, Eileen M Reed, Glen S Marrs, Cecil J Saunders, Wayne L Silver
- 536 **Loss of Arl13B in Olfactory Sensory Neurons Leads to Age Related Olfactory Impairment.** Jordan C. Moretta, Warren W. Green, Kirill Ukhonov, Julia C. Habif, Chao Xie, Lian Zhang, Cedric R. Uyttingco, Jeffrey R. Martens
- 537 **Olfactory Activity Selectively Regulates the Neurogenesis of a Subset of Olfactory Sensory Neurons.** Stephen W. Santoro, Carl J. van der Linden, Kelci R. Germann, Pooja Gupta, Ashraful I. Bhuiya
- 538 **Single Cell Transcriptome Analysis of Olfactory Sensory Neurons.** Delia Tomoiaga, Raena Mina, Eugene Lempert, Christopher E Mason, Paul Feinstein
- 539 **Targeted Transcriptomics of Olfactory Receptors for High-Throughput Mapping of Olfactory Bulb Glomeruli.** Kevin Zhu, Justin Silverman, Shawn Burton, Matt Wachowiak, Hiroaki Matsunami

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SOCIAL BEHAVIOR

- 540 **Analytical Identification of Stress Odors From Human Breath.** Christopher Maute, Pamela H. Dalton, Jason Eades, Wesley Haskins, George Preti
- 541 **Behavioral and Neurophysiological Mechanisms Underlying Responses to Olfactory Volatility in Autism.** Valentina Parma, Michele Furlan, David N Top, Kevin Stephenson, Mikle South
- 542 **Body Odor Disgust Sensitivity is Associated with Prejudice Towards a Fictive Group of Immigrants.** Marta Zakrzewska, Jonas Olofsson, Torun Lindholm, Anna Blomkvist, Marco Tulio Liuzza
- 543 **The Gc-D/Necklace Olfactory Subsystem Promotes the Acquisition of Odor Preferences Independent of Consummatory Behavior.** *Arthur D. Zimmerman*, Steven D. Mungar



TASTE TRANSDUCTION

- 544 **Ghrelin Alters Fatty Acid Signaling in Taste Cells.** Ashley N. Calder, Naima S. Dahir, Tian Yu, Timothy A. Gilbertson
- 545 **Characterization of Drosophila Delta Glutathione Transferases Involved in Isothiocyanate Detoxification and Perception.** Elodie Gonis, Stéphane Fraichard, Evelyne Chavanne, Jean-François Ferveur, Loïc Briand, Fabrice Neiers
- 546 **Tmc6: a Novel Salt Taste Receptor in Mice.** Takami Maekawa, Koki Kamiya, Tooru Takahashi, Kentaro Kaji, Yukio Tezuka, Toshihisa Osaki, Shoji Takeuchi, Takashi Kondoh
- 547 **An Interruption of Umami Peptide to the Salicin Binding to T2R16 Bitter Taste Receptor Can Be Enhanced by IMP.** MeeRa Rhyu, Yiseul Kim, Minji Woo



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PROGRAM IN DETAIL

WEDNESDAY, CONTINUED

COFFEE BREAK	
9:00 am - 10:00 am	Estero Foyer

SYMPOSIUM	
10:00 pm - 12:00 pm	Calusa F-H
Chemical Senses: Intero- or Exteroception?	

Chair: Maria Veldhuizen

- 10:00 **Chemical Senses: Intero- or Exteroception? Introduction**
Maria Veldhuizen. *Yale University*
- 10:10 **Mapping Gustatory and Interoceptive Responses in the Primate Brain. Insights into the Insular Cortex**
Renee Hartig. *Dresden University of Technology*
- 10:30 **Integration of Gustatory and Interoceptive Processing in the Human Insula**
Jason Avery. *National Institute for Mental Health*
- 11:00 **The Impact of Odor Perception on Interoceptive Awareness**
Kathrin Kollndorfer. *Medical University of Vienna*
- 11:30 **Cortical and Subcortical Representations of Interoceptive Inputs from Microbial Populations in the Gut**
Esposti Federico. *San Raffaele University Hospital*

SYMPOSIUM	
10:00 pm - 12:00 pm	Calusa A-C
Hedgehog Signaling Control Of Tissue Homeostasis Across Diverse Chemosensory Epithelia	

Chairs: Benjamin Allen and Charlotte Mistretta

- 10:00 **Introduction**
Benjamin Allen. *University of Michigan*
- 10:10 **Hedgehog Signalling in Taste Receptor Cells and Other Chemosensory Epithelia**
Robert Margolskee. *Monell Chemical Senses Center*
- 10:40 **Lingual Epithelium, Hedgehog Signaling, and Taste Organ Homeostasis and Sensory Function**
Archana Kumari, Charlotte Mistretta. *University of Michigan*
- 11:10 **Investigating the Role of Gli Proteins During Regeneration of Olfactory Epithelia**
Anna Shirazyan. *University of Michigan*
- 11:30 **Role of Hedgehog in the Maintenance of Resident Stem Cell Niche in the Adult Lung**
Tien Peng. *University of California, San Francisco, CA, United States*
- 11:55 **Summary**
Benjamin Allen. *University of Michigan*

WEDNESDAY

PROGRAM IN DETAIL

WEDNESDAY, CONTINUED

SYMPOSIUM	
1:00 pm - 3:00 pm	Calusa F-H
Can We Talk About Smells?	

Chairs: Valentina Parma and Jonas Olofsson

- 1:00 **Introduction**
Valentina Parma. *ISPA*
- 1:10 **Mechanisms of Odor Identification Examined with Neuro-Cognitive Methods**
Jonas Olofsson. *Stockholm University*
- 1:40 **Is Odor Language Embodied?**
Laura Speed. *The University of York*
- 2:00 **Why Smell Words Do Not Come Easily? Pathways to Olfactory Lexicon**
Francesca Franzon. *International School for Advanced Studies (SISSA)*
- 2:30 **How Language and Cognition Shape Olfaction**
Theresa White. *Le Moyne College*

SYMPOSIUM	
1:00 pm - 3:00 pm	Calusa A-C
Modulation and Processing of Appetitive Taste in Insects	

Chair: Hubert Amrein

- 1:00 **Introduction**
Hubert Amrein. *Texas A&M University*
- 1:10 **The Fat Tastes Different: the Perception and Discrimination of Fatty Acids in *Drosophila***
Pavel Masek¹, Yuanyuan Li¹, Alex Keen², John Tauber², Elizabeth Brown², Jake Gordon¹. ¹Binghamton University, ²FAU
- 1:40 **The Taste of RNA in Insects**
Ji-Eun Ahn¹, Dushyant Mishra², Christopher Jagge¹, Chika Miyamoto¹, Hubert Amrein¹
¹Texas A&M University Health Science Center, ²University of Connecticut
- 2:00 **Reshaping of Sweet Taste Sensation and Feeding by a High Sugar Diet**
Monica Dus, Christina May, Anoumid Vaziri. *University of Michigan*
- 2:30 **Circuit Dissection of Taste Processing in *Drosophila***
Kristin Scott¹, Gabriella Sterne^{1,2}, Barry Dickson². ¹University of California Berkeley, ²Janelia Research Campus

PROGRAM IN DETAIL

WEDNESDAY, CONTINUED

COFFEE BREAK	
3:00 pm - 3:30 pm	Calusa Foyer

SYMPOSIUM	
3:30 pm - 5:00 pm	Great Egret
AChemS Journal Club: Turnover and Renewal of Cells in Taste Buds	

- 3:30 **Brief Introduction to AChemS Journal Clubs (From the History Committee)**
Charlotte Mistretta. *University of Michigan MI*
- 3:35 **Informal Introduction to the Beidler Laboratory and Principal Scientific Contributions From LM Beidler**
Robert Bradley. *University of Michigan MI*
- 3:50 **The Classic Paper: Beidler LM and RL Smallman, Renewal of Cells within Taste Buds, *Journal of Cell Biology* 27:263-272, 1965**
Zachary Whiddon. *Student in Anatomical Sciences and Neurobiology, with Robin Krimm, University of Louisville KY*
- 4:10 **To the Present: Commentary and Comments: New Data on Taste Cell Dynamics**
Linda Barlow. *University of Colorado CO*
- 4:30 **Reminiscences and Comments**
The Beidler Laboratory: Comments from the Audience
Hosts: Steven St. John, Robert Bradley

AWARD LECTURES	
7:30 pm - 9:00 pm	Calusa A-D

Chair: Matt Wachowiak

- 7:30 **Barry Jacobs Memorial Award**
Andreas Keller. *The Rockefeller University*
- 8:00 **Ajinomoto Award for Young Investigators**
Marco Tizzano. *Monell Chemical Senses Center*
- 8:30 **Max Mozell Award**
Barry Green. *Yale University*

CLOSING DANCE PARTY	
9:00 pm - 12:00 am	Mangroves & Belvedere Room

ANNUAL MEETING EXHIBITORS

EXHIBIT HOURS

Monday, April 15
8 – 10:00 am

Tuesday, April 16
8 – 10:00 am

Wednesday, April 17
8 – 10:00 am



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AGENDA

Tuesday, April 16, 2019

1:00 – 2:00 pm | Calusa Ballroom A-C | Hyatt Coconut Point

1. Call to Order – Minghong Ma, PhD, President
2. Report from the President – Minghong Ma, PhD
3. Report from the Elections Committee – Thomas Finger, PhD, Chair
 - a) 2019 Election Results
 - President-Elect
 - Program Chair-Elect
 - Junior Councilor
 - b) Thank You to Outgoing Officers
 - Daniel Wesson, PhD, Senior Councilor
 - Steven Munger, PhD, Senior Advisor
 - Nirupa Chaudhari, PhD, Program Chair
4. Report from the Treasurer – Christian Lemon, PhD
5. Report from the Secretary – Theresa White, PhD
6. Report from the Program Committee Chair – Nirupa Chaudhari, PhD
7. Report from the Membership Chair – Alfredo Fontanini, PhD
8. Report from the Councilors – Daniel Wesson, PhD
9. Other Committee Reports – Minghong Ma, PhD
10. Welcome to the New President and Passing of Gavel – Minghong Ma, PhD
11. Old Business
 - New Business
12. Adjourn



JUNE 20-24, 2020

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