

# 43<sup>RD</sup> ANNUAL *MidWinter Meeting*

January 25 - 29, 2020



San Jose McEnery Convention Center

**San Jose**  
CALIFORNIA

A

## **ARO OFFICERS FOR 2019-2020**

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19 Mantua Road  
Mt. Royal, NJ 08061



## Conference Program of the 43<sup>rd</sup> Annual MidWinter Meeting

Welcome to ARO 2020 in San José! This is a transformative year for ARO with our meeting taking place at a new venue and the date being moved to January. The ARO MidWinter Meeting has traditionally met in mid-February, and our destinations have included Florida, New Orleans, Denver, Baltimore, and Southern California. This year, we will be converging on our newest location: **San José, California from January 25-29, 2020**. We are looking forward to experiencing the San José Convention Center and the surrounding downtown area.

This year's meeting yielded 1328 abstract submissions, resulting in nearly 300 oral presentations and 1096 posters. We are very fortunate that Matt Kelley, who has served as ARO President in the past, continues to provide leadership for ARO as the new Chair of the Program Committee. Carolina Abdala and Christopher Shera, the scientific program co-chairs, and all of the members of the Program Committee have organized a fantastic meeting! It feels as if we are embarking on an adventure as we navigate this novel environment to find familiar faces and to make new friends and colleagues. We anticipate that the outstanding science at our MidWinter Meeting will continue to lead the way.

The Presidential Symposium this year focuses on the immune system, the interaction between immunity and the nervous system, the origin and function of myeloid cells, and their contributions to disease. I am thrilled to introduce three scientists from outside of the auditory field: Jessica Williams, Gretchen Diehl, and Bahareh Ajami. We will also hear from three ARO members, Mark Warchol, Andy Griffith, and Barbara Canlon, who have studied inflammation and its contributions to the inner ear. I hope that you will find this work novel and interesting, and another important element of understanding inner ear function and disease.

This year, Lynne Werner receives the Award of Merit, the highest commendation in our society. We look forward to Dan Sanes' narrative of her brilliant career and her seminal contributions to our understanding of how hearing develops in infants and how we measure hearing in our youngest individuals. We will also present the Geraldine Dietz Fox Young Investigator Award at this event. Stay tuned to

receive this announcement in a future communication. Also, we will introduce two new awards for next year: the ARO Pioneer Award in Basic Science and ARO Innovator Award in Clinical Science. These new awards have been developed to recognize researchers who are midcareer and whose body of work has contributed in a significant way to the advancement of hearing and vestibular sciences. The Awards Committee under the leadership of Ruth Anne Eatock, has identified the need to broaden the recognition of exceptional work in our field. These two new prizes will serve to increase the visibility of these important investigators and to recognize them for their remarkable contributions.

**Young Investigators:** be prepared for a full schedule including high impact, thought-provoking research presentations and poster sessions, opportunities to connect with mentors and future collaborators, and many spARO events designed for students, residents, fellows, and postdocs. There are many opportunities for networking, finding your next position, and learning how to succeed in funding your research.

Debara Tucci, Director of the NIDCD, will hold a Town Hall meeting on Sunday afternoon in conjunction with the ARO Business Meeting. At the conclusion of the business meeting, I will hand the gavel to our President-Elect, Ruth Litovsky, and thank our Past-President, Karen Steel, who has helped me tremendously in my role as president. I would like to thank all members of ARO Council and the ARO committees who over the past year have contributed their time and made ARO the superb research society that it is today. I would also like to extend my thanks to all of you who have contributed your science to the program: the quality of your work and your willingness to share it with us is what makes ARO truly special.

See you at ARO in San José!

Keiko Hirose  
*President ARO 2020*

## **Conference Objectives**

At the conclusion of the MidWinter Meeting, participants should be better able to:

- Explain current concepts of the function of normal and diseased states of the ear and other head and neck structures
- Recognize current controversies in research questions in auditory neuroscience and otolaryngology
- Describe key research questions and promising areas of research in otolaryngology and auditory neuroscience

## **Registration**

The 2020 MidWinter Meeting Registration Desk is located in the **Executive Ballroom Foyer** and will be open and staffed during the following hours:

|                       |                    |
|-----------------------|--------------------|
| Friday, January 24    | 4:00 PM - 7:00 PM  |
| Saturday, January 25  | 7:00 AM - 6:00 PM  |
| Sunday, January 26    | 7:00 AM - 6:00 PM  |
| Monday, January 27    | 7:00 AM - 6:00 PM  |
| Tuesday, January 28   | 7:00 AM - 6:00 PM  |
| Wednesday, January 29 | 7:00 AM - 12:00 PM |

## **Admission**

Conference name badges are required for admission to all activities related to the 43<sup>rd</sup> Annual MidWinter Meeting, including the Exhibit Hall and social events.

*Smoking and photography are not permitted  
in the meeting rooms or poster hall*

## **Program and Abstract Books**

A limited supply of the abstracts in USB format will be available for purchase at the ARO MidWinter Meeting Registration Desk for \$20 US Dollars. Electronic copies of the books are also available online at [www.aro.org](http://www.aro.org).

## **Mobile App**

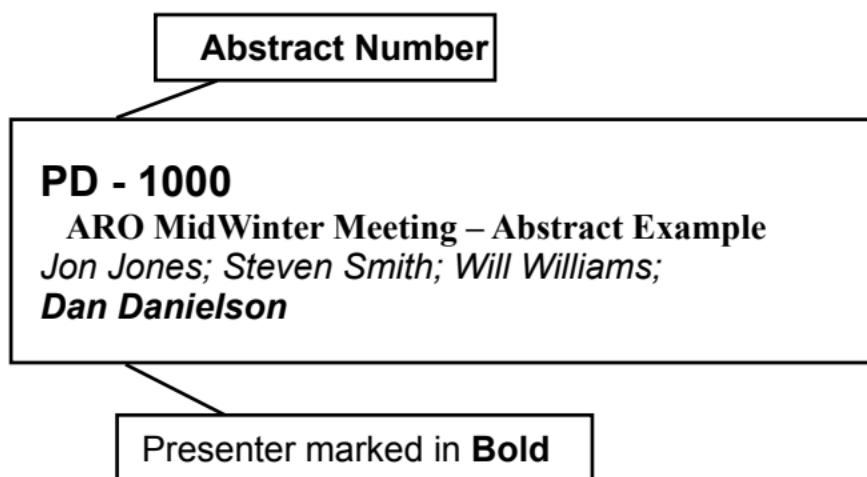
Be sure to download our mobile app to enhance your experience at the 2020 ARO MidWinter Meeting! You'll be able to plan your day by performing detailed abstract searches and can also view the schedule, browse exhibitors, sponsors, maps and general show info. *You must create an account in order to view abstracts/save talks to your itinerary.*

The app is compatible with iPhones, iPads, iPod Touches and Android devices. Download the "eventScribe" app

on the App Store/Google Play and search “ARO MWM”. Be sure to select the 2020 ARO MWM to access this year’s app. You can also access the same information via our website version of the app through any browser on any device!

## Program Organization

Poster presenters will be available at their posters during the 1:00 PM-2:00 PM period on their presentation date. In addition, authors may note other times that they will be available at their poster. Each presentation on the following pages has been formatted in the following example:



### Presentation legend:

**SYMP** = Symposium Presentation

**PD** = Podium Presentation

**PS** = Poster Presentation

## Speaker Ready Room

The 2020 Program Committee is committed to providing attendees cutting edge technology and coordinated presentations at the MidWinter Meeting. To be fully prepared for your session, each presenter is requested to visit the Speaker Ready Room at least 24 hours prior to your presentation. The Speaker Ready Room is located in Room 213 and will be open the following days and times:

### Location: Room 213

|                       |                    |
|-----------------------|--------------------|
| Friday, January 24    | 4:00 PM - 7:00 PM  |
| Saturday, January 25  | 7:00 AM - 6:00 PM  |
| Sunday, January 26    | 7:00 AM - 6:00 PM  |
| Monday, January 27    | 7:00 AM - 6:00 PM  |
| Tuesday, January 28   | 7:00 AM - 6:00 PM  |
| Wednesday, January 29 | 7:00 AM - 10:00 AM |

## **Mobile Devices**

As a courtesy to the speakers and your fellow attendees, please switch your mobile device(s) to silent while attending the sessions.

## **Recording Policy**

ARO does not permit audio or photographic recording of any research data presented at the meeting.

## **Breaks**

Complimentary coffee and tea will be available in the morning and at selected breaks.

## **Assisted Listening Devices**



A limited amount of assisted listening devices are available at the AV Booth in the rear of Room 220ABC.

## **A Special Note for the Disabled**

ARO wishes to take steps that are required to ensure that no individual with a disability is excluded, denied services, segregated, or otherwise treated differently than other individuals because of the absence of auxiliary aids and services. If you need any auxiliary aids or services identified in the American with Disabilities Act, or any assistance in registering for this course please contact ARO Meetings Department at [meetings@aro.org](mailto:meetings@aro.org); via telephone at 856-423-0041, option 2; or write to ARO Meetings Department, 19 Mantua Road, Mt. Royal, NJ 08061.

## **Lactation Room**

Please come to the ARO Registration Desk for location and access. Available hours are noted in the mobile app.

## About San Jose

San José is known as a business mecca, but it's not all about work. Visitors will discover that Silicon Valley takes play seriously, making the most of its 300 days of great weather. California's 3rd largest city is one of the safest, boasting a variety of family activities and plenty to do for the culture vultures too.

It's easy to find your way to San José with three international airports within the Bay Area to choose from. Located just 3.9 miles from downtown San José, the San José International Airport is the best kept secret for traveling to San José. The airport includes such high-tech perks as free high-speed wireless Internet throughout, power outlets and USB ports in arm rests, and concierge robots.

VISIT over 250 downtown dining and entertainment options and free downtown high-speed wireless Internet.

PLAY at 193 regional and city parks and gardens, including 60 miles of trails for the best hiking, walking and biking under the sun.

EXPERIENCE an abundance of cultural offerings and attractions including The Tech Interactive, the Winchester Mystery House, San Pedro Square Market, the Rosicrucian Egyptian Museum, the San José Museum of Art and Santana Row, San José's premier shopping destination.

### **Weather:**

Typical west coast winter weather awaits you in San José, CA. Temperatures in the past have averaged a low of 42°F up to a high of 60°F with rain always remaining a possibility. It is advisable to pack a sweater or light jacket as meeting rooms tend to be cold.

## **Fly In:**

San José Mineta International Airport (SJC) is Silicon Valley's airport and is located less than 4 miles from downtown San Jose. Serving nearly 4 million people and averaging 170+ daily flights, 40+ nonstop destinations and 15 domestic and international carriers, you're sure to find a flight. If not, no worries, San Francisco and Oakland international airports are a short drive.

## **Rail In:**

From San Francisco, hop on Caltrain which connects you directly to San José Diridon station as your downtown stop.

From Oakland, you can take Bart to Millbrae where you can catch the Caltrain to San José. For a shorter route, you can hop on Bart to the city of Fremont followed by a car service or public bus to San José.

## **Hotels:**

### **SAN JOSÉ MARRIOTT**

300 S Almaden Blvd  
San Jose, CA 95110, USA  
Phone: 1-408-280-1300

### **FAIRMONT SAN JOSÉ**

170 South Market Street  
San Jose, CA 95113, USA  
Phone: 1-408-998-1900

### **HILTON SAN JOSÉ**

300 S Almaden Blvd  
San Jose, CA 95110, USA  
Phone: 1-408-287-2100

### **WESTIN SAN JOSÉ**

302 South Market Street  
San Jose, CA 95113, USA  
Phone: 1-408-295-2000



# Schedule of Events

| Friday, January 24, 2020   |   |   |
|----------------------------|---|---|
| 4:00 PM - 7:00 PM          | <b>Registration Open</b>  | Executive Ballroom Foyer                        |
| 7:00 PM - 10:00 PM         | <b>Speaker Ready Room</b>   | Room 213  |
| Saturday, January 25, 2020 |   |   |
| 7:00 AM-6:00 PM            | <b>Registration</b>   | Executive Ballroom Foyer                        |
| 7:00 AM-6:00 PM            | <b>Speaker Ready Room</b>   | Room 213  |
| 7:30 AM-8:00 AM            | <b>Morning Break</b>  | Grand Ballroom Prefunction                      |
| 8:00 AM-12:00 PM           | <b>Presidential Symposium</b><br>Innate Immunity in the Auditory System   | Grand Ballroom 220A                             |
| 10:00 AM - 10:20 AM        | <b>Mid-Morning Break</b>  | Grand Ballroom Prefunction                      |
| 12:00 PM - 6:30 PM         | <b>Exhibit Hall Open</b>  | Executive Ballroom ABDEFG and Hallway to Hall 1 |
| 12:00 PM                   | <b>Poster Session 1</b><br><b>Set up at 12:00 PM</b><br><b>Open 24 hours</b>  | Executive Ballroom ABDEFG and Hallway to Hall 1 |
| 12:00 PM - 1:30 PM         | <b>Lunch (on own)</b>   | N/A   |
| 12:15 PM - 1:30 PM         | <b>Travel Awards Lunch</b>  | Room 212AB                                      |
| 12:15 PM - 1:15 PM         | <b>Mentoring Session</b><br>Publishing  | Room 211A                                       |
| 12:15 PM - 1:15 PM         | <b>Mentoring Session</b><br>Lab Management  | Room 211C                                       |
| 12:15 PM - 1:15 PM         | <b>Mentoring Session</b><br>Clinician Scientist   | Room 211D                                       |
| 12:00 PM                   | <b>Poster Session 1</b><br><b>Open 24 hours</b><br>Afferents and Efferents of the Vestibular System<br>Animal Models of Human Otologic Disease<br>Auditory Brainstem I: Normal Hearing & Hearing Impairment<br>Auditory Nerve: Anatomy & Physiology<br>Auditory Nerve: Damage & Protection<br>Auditory Prostheses I<br>Auditory Prostheses II<br>Blast and Head Trauma<br>Cochlear Mechanics I<br>Collicular/Midbrain Circuitry<br>Genetics: General<br>Inner Ear: Anatomy & Physiology<br>Middle Ear<br>Noise Injury<br>Sensorineural Hearing Loss and Audiology<br>Tinnitus: Human Studies and Animal Models<br>VOR, VEMP, VsEP | Executive Ballroom                              |
| 1:30 PM - 2:30 PM          | <b>Coffee Break</b>   | Executive Ballroom DH                           |
| 2:00 PM - 4:00 PM          | <b>Symposium:</b> Gene Therapeutic Approaches for Hearing Loss  | Grand Ballroom 220A                             |
| 2:00 PM - 4:00 PM          | <b>Symposium:</b> Characterizing Auditory Function with Functional Near-Infrared Spectroscopy   | Grand Ballroom 220B                             |
| 2:00 PM - 4:00 PM          | <b>Podium:</b> Speech Perception  | Grand Ballroom 220C                             |

# Schedule of Events

## Saturday, January 25, 2020 (continued)

|                   |   |                              |
|-------------------|---|------------------------------|
| 3:00 PM - 5:00 PM | <b>spARO Reverse Science Fair</b>   | The Tech Interactive         |
| 4:30 PM - 6:30 PM | <b>Poster Blitz</b>   | Grand Ballroom 220B          |
| 4:30 PM - 6:30 PM | <b>Tribute to Shig Kuwada</b>   | Grand Ballroom 220C          |
| 5:30 PM - 6:30 PM | <b>Welcome Get Together</b>   | Executive Ballroom and Foyer |
| 6:00 PM - 7:30 PM | <b>NIDCD Workshop #1:</b><br>Applying for NIDCD Training and Career Development Awards  | Room 211A                    |
| 6:00 PM - 7:30 PM | <b>NIDCD Workshop #2:</b><br>Early Stage Investigators (ESI) and New Investigators (NI) | Room 211B                    |
| 6:00 PM - 7:30 PM | <b>NIDCD Workshop #3:</b><br>SBIR and STTR Grant Programs from NIH / NIDCD              | Room 211C                    |

## Sunday, January 26, 2020

|                     |  |                            |
|---------------------|--|----------------------------|
| 7:00 AM-6:00 PM     | <b>Registration</b>  | Executive Ballroom Foyer   |
| 7:00 AM-6:00 PM     | <b>Speaker Ready Room</b>  | Room 213                   |
| 7:30 AM - 8:00 AM   | <b>Morning Break</b>   | Grand Ballroom Prefunction |
| 8:00 AM - 10:00 AM  | <b>Symposium:</b> Binaural Processing with Hearing Impairment                | Grand Ballroom 220A        |
| 8:00 AM - 10:00 AM  | <b>Podium:</b> Development: Patterning                                       | Grand Ballroom 220B        |
| 8:00 AM - 10:00 AM  | <b>Podium:</b> Cochlear Mechanics: Ad Astra per Alas Cochleum                | Grand Ballroom 220C        |
| 9:00 AM - 5:00 PM   | <b>Exhibit Hall Open</b>   | Executive Ballroom         |
| 10:00 AM - 10:30 AM | <b>Mid-Morning Break</b>   | Grand Ballroom Prefunction |
| 10:30 AM - 12:30 PM | <b>Podium:</b> Vestibular Periphery  | Grand Ballroom 220A        |
| 10:30 AM - 12:30 PM | <b>Podium:</b> Gene and Drug Delivery into the Inner Ear                     | Grand Ballroom 220B        |
| 10:30 AM - 12:30 PM | <b>Symposium:</b> A Multidisciplinary Approach to Tinnitus                   | Grand Ballroom 220C        |
| 12:00 PM - 2:00 PM  | <b>Awards Committee</b>  | Room 211C                  |
| 12:00 PM - 2:00 PM  | <b>Long Range Planning</b>   | Room 211D                  |
| 12:00 PM            | <b>Poster Session 2</b><br><b>Set up at 12:00 PM</b><br><b>Open 24 hours</b> | Executive Ballroom         |
| 12:15 PM - 1:15 PM  | <b>Funding Your Scientific Genius!</b>                                       | Room 211B                  |
| 12:15 PM - 1:30 PM  | <b>Women in Science Roundtable</b>   | Room 212ABCD               |
| 12:15 PM - 1:30 PM  | <b>Travel Awards Committee</b>   | Room 211A                  |
| 12:30 PM - 1:00 PM  | <b>Lunch (on own)</b>  | N/A                        |

# Schedule of Events

## Sunday, January 26, 2020 (continued)

|                   |   |                       |
|-------------------|---|-----------------------|
| 1:00 PM           | <b>Poster Session 2<br/>Open 24 hours</b><br><br>Age-Related Hearing Loss: Behavioral & Physiological Assessments<br>Auditory Cortex - Human Studies I<br>Auditory Cortex: Processing and Perception<br>Auditory Prostheses III<br>Auditory Prostheses IV<br>Binaural Hearing and Speech Perception<br>Binaural Hearing: Cochlear Implants, Bone Conduction, and Hearing Aids<br>Clinical Vestibular Disorders<br>Development I<br>Endolymph & Ménière's Disease<br>Gene Expression and Regulation Potpourri<br>Hair Cells to Vestibular Nuclei<br>Human Temporal Bone Studies, Head and Neck Disease<br>Inner Ear Therapeutics I<br>Neuron and Synapse Regeneration<br>Otitis Externa, Otitis Media and Eustachian Tube Pathology<br>Otoacoustic Emissions I<br>Psychoacoustic Studies on Humans and Animals<br>Synaptopathy | Executive Ballroom    |
| 1:30 PM - 2:30 PM | <b>Coffee Break</b>   | Executive Ballroom DH |
| 2:00 PM - 4:00 PM | <b>Symposium:</b> Auditory Brainstem and Midbrain Implants: Advances in Basic and Translational Research  | Grand Ballroom 220A   |
| 2:00 PM - 4:00 PM | <b>Symposium:</b> On the Form and Functions of Type II Spiral Ganglion Neurons  | Grand Ballroom 220B   |
| 2:00 PM - 4:00 PM | <b>Podium:</b> Plasticity Following Hearing Loss or Restoration   | Grand Ballroom 220C   |
| 4:00 PM - 5:00 PM | <b>Mentoring Session</b><br>Careers in Industry   | Room 211A             |
| 4:00 PM - 5:00 PM | <b>Mentoring Session</b><br>Navigating the Grant Landscape as a Trainee/Getting Grants  | Room 211B             |
| 4:00 PM - 5:00 PM | <b>gEAR Workshop</b>  | Room 212AB            |
| 4:00 PM - 5:00 PM | <b>spARO Science Communication Workshop</b>   | Grand Ballroom 220B   |
| 5:00 PM - 6:00 PM | <b>Mentorship Program Social</b>  | Room 211AB            |
| 6:00 PM - 7:00 PM | <b>ARO Business Meeting/<br/>NIDCD Town Hall</b>  | Grand Ballroom 220C   |
| 7:30 PM - 9:15 PM | <b>ERC Event at Montgomery Theater</b>  |                       |

## Monday, January 27, 2020

|                    |   |                            |
|--------------------|---|----------------------------|
| 7:00 AM - 6:00 PM  | <b>Registration</b>   | Executive Ballroom Foyer   |
| 7:00 AM - 6:00 PM  | <b>Speaker Ready Room</b>                                     | Room 213                   |
| 7:00 AM - 8:00 AM  | <b>Morning Break</b>  | Grand Ballroom Prefunction |
| 8:00 AM - 10:00 AM | <b>Podium:</b> Traditional Psychophysics and Sound Perception | Grand Ballroom 220A        |

# Schedule of Events

| Monday, January 27, 2020 (continued) |   |                            |
|--------------------------------------|---|----------------------------|
| 8:00 AM - 10:00 AM                   | <b>Symposium:</b> Pulling the Threads of Hair Cell Fate with an Omic Tug  | Grand Ballroom 220B        |
| 8:00 AM - 10:00 AM                   | <b>Symposium:</b> Stereocilia Dynamics: Insights into Cytoskeleton and Membrane Organization  | Grand Ballroom 220C        |
| 9:00 AM - 5:00 PM                    | <b>Exhibit Hall Open</b>  | Executive Ballroom         |
| 10:00 AM - 10:30 AM                  | <b>Mid-Morning Break</b>  | Executive Ballroom DH      |
| 10:30 AM - 12:30 PM                  | <b>Symposium:</b> Coming to Our Senses: Vestibular Research, From Molecules to Systems, Commonalities and Differences with the Auditory System  | Grand Ballroom 220A        |
| 10:30 AM - 12:30 PM                  | <b>Podium:</b> Hair Bundles and Mechanotransduction   | Grand Ballroom 220B        |
| 10:30 AM - 12:30 PM                  | <b>Podium:</b> Gene Expression and Regulation   | Grand Ballroom 220C        |
| 11:30 AM - 1:00 PM                   | <b>JARO Editorial Board</b>   | Room 111                   |
| 12:00 PM                             | <b>Poster Session 3<br/>Set up at 12:00 PM<br/>Open 24 hours</b>  | Executive Ballroom         |
| 12:00 PM - 2:00 PM                   | <b>Diversity and Minority Affairs</b>   | Room 211C                  |
| 12:15 PM - 1:30 PM                   | <b>External Relations Committee</b>   | Room 211D                  |
| 12:15 PM - 1:30 PM                   | <b>Young Investigator Lunch</b>   | Room 212ABCD               |
| 12:30 PM - 1:00 PM                   | <b>Lunch (on own)</b>   | N/A                        |
| 12:00 PM - 2:00 PM                   | <b>Program Committee</b>  | Room 211B                  |
| 12:00 PM - 2:00 PM                   | <b>Finance &amp; Investment Committee</b>   | Room 211A                  |
| 1:00 PM                              | <b>Poster Session 3<br/>Open 24 hours</b><br>Auditory Cortex - Human Studies II<br>Auditory Learning<br>Auditory Prostheses V<br>Auditory Prostheses VI<br>Auditory Prostheses VII<br>Binaural Hearing in Animals:<br>Neural Recordings<br>Cochlear Mechanics II<br>Complex Sounds in Complex Environments<br>Electrophysiology of Binaural Hearing<br>Hair Cell Regeneration<br>Human Auditory Development<br>Inner Ear: Drug Delivery<br>Inner Ear: Gene Therapy<br>Mechanotransduction<br>Otoacoustic Emissions II<br>Ototoxicity I<br>Physiology and Attention in<br>Speech Perception<br>Plasticity in the Central Auditory Pathway<br>Speech Perception Methodology<br>Stem Cells<br>Tinnitus<br>Vestibular Orientation | Executive Ballroom         |
| 1:30 PM - 2:30 PM                    | <b>Coffee Break</b>   | Grand Ballroom Prefunction |

# Schedule of Events

| Monday, January 27, 2020 (continued) |  |                            |
|--------------------------------------|--|----------------------------|
| 2:00 PM - 4:00 PM                    | <b>Symposium:</b> Exploring the Structure and Function of Hair-Cell Ribbon Synapses  | Grand Ballroom 220A        |
| 2:00 PM - 4:00 PM                    | <b>Podium:</b> Recent Advances in Age-Related Hearing Loss   | Grand Ballroom 220B        |
| 2:00 PM - 4:00 PM                    | <b>Symposium:</b> Infection and Inflammation from Middle Ear to Inner Ear: Effects on Hearing                                | Grand Ballroom 220C        |
| 4:00 PM - 5:00 PM                    | <b>Mentoring Session</b><br>Work-life Balance  | Room 211B                  |
| 4:00 PM - 5:00 PM                    | <b>Mentoring Session</b><br>Interviewing and Negotiation Skill Development   | Room 211A                  |
| 5:00 PM - 6:00 PM                    | <b>spARO Town Hall</b>   | Room 212AB                 |
| 5:30 PM - 7:00 PM                    | <b>Award of Merit Lecture</b><br><b>Honoring Lynne Werner</b>  | Grand Ballroom 220A        |
| 7:00 PM - 8:00 PM                    | <b>Awards Reception</b>  | Grand Ballroom Foyer       |
| 8:00 PM - 11:00 PM                   | <b>spARO Student/Postdoc/Medical Resident Social</b>   | Camino Brewing             |
| Tuesday, January 28, 2020            |  |                            |
| 7:00 AM - 6:00 PM                    | <b>Registration</b>  | Executive Ballroom Foyer   |
| 7:00 AM - 6:00 PM                    | <b>Speaker Ready Room</b>  | Room 213                   |
| 7:30 AM - 8:00 AM                    | <b>Morning Break</b>   | Grand Ballroom Prefunction |
| 8:00 AM - 10:00 AM                   | <b>Podium:</b> Middle-Ear Bonanza  | Grand Ballroom 220A        |
| 8:00 AM - 10:00 AM                   | <b>Symposium:</b> The Current Status of Inner Ear Neurons: Development, Death, and Stem Cell-Based Transplantation Therapies | Grand Ballroom 220B        |
| 8:00 AM - 10:00M                     | <b>Podium:</b> Auditory Brainstem: Beyond Hearing Detection  | Grand Ballroom 220C        |
| 10:00 AM - 10:30 AM                  | <b>Mid-Morning Break</b>   | Grand Ballroom Prefunction |
| 10:30 AM - 12:30 PM                  | <b>Symposium:</b> The Newborn Hearing Screen – Its History, Where We Are, and Where We Should Be Going                       | Grand Ballroom 220A        |
| 10:30 AM - 12:30 PM                  | <b>Podium:</b> Regeneration  | Grand Ballroom 220B        |
| 10:30 AM - 12:30 PM                  | <b>Symposium:</b> Neuroplasticity and Tinnitus – In Memory of Larry Roberts  | Grand Ballroom 220C        |
| 12:00 PM                             | <b>Poster Session 4</b><br><b>Set up at 12:00 PM</b><br><b>Open 24 hours</b>   | Executive Ballroom         |
| 12:15 PM - 1:15 PM                   | <b>Behind the Scenes with Publication!</b>   | Room 212B                  |
| 12:30 PM - 1:00 PM                   | <b>Lunch (on own)</b>  | N/A                        |
| 12:15 PM - 1:15 PM                   | <b>Mentoring Session</b><br>Job Search and Independence  | Room 211A                  |
| 12:15 PM - 1:15 PM                   | <b>Mentoring Session</b><br>Mentor-Mentee Communication  | Room 211B                  |
| 12:15 PM - 1:15 PM                   | <b>Mentoring Session</b><br>Teaching and Research  | Room 211C                  |
| 12:15 PM - 1:30 PM                   | <b>International Committee</b>   | Room 211D                  |

# Schedule of Events

## Tuesday, January 28, 2020 (continued)

|                    |   |                            |
|--------------------|---|----------------------------|
| 1:00 PM            | <p><b>Poster Session 4<br/>Open 24 hours</b></p> <p>Age-Related Changes in Animal Models<br/>Auditory Brainstem II: Normal Hearing &amp; Hearing Impairment<br/>Auditory Brainstem:<br/>    Functional Measurements<br/>Auditory Brainstem: Molecules &amp; Function<br/>Auditory Cortex: Neural Mechanisms<br/>Auditory Cortex: Neural Responses<br/>Binaural Hearing: Psychoacoustics,<br/>    Modeling, and Multisensory<br/>Collicular/Midbrain Function<br/>Development II<br/>Hair Cell Synaptic Transmission<br/>Hair Cells<br/>Inner Ear Therapeutics II<br/>Inner Ear: Fluids &amp; Vasculature<br/>Inner Ear: Synapses &amp; Auditory Nerve<br/>Ototoxicity II<br/>Outer Hair Cells<br/>Plasticity After Hearing Loss or Restoration<br/>Speech Psychophysics<br/>Therapeutics for the Prevention of Age-Related Hearing Loss</p> | Executive Ballroom         |
| 1:30 PM - 2:30 PM  | <b>Coffee Break</b>   | Grand Ballroom Prefunction |
| 2:00 PM - 4:00 PM  | <b>Podium:</b> Generally Genetics   | Grand Ballroom 220A        |
| 2:00 PM - 4:00 PM  | <b>Podium:</b> Clinical Otolaryngology and Pathology  | Grand Ballroom 220B        |
| 2:00 PM - 4:00 PM  | <b>Podium:</b> Auditory Prostheses: Factors and Mechanisms Shaping Outcomes   | Grand Ballroom 220C        |
| 4:00 PM - 5:00 PM  | <b>gEAR Workshop</b>  | Room 212AB                 |
| 8:00 PM - 12:00 AM | <b>Hair Ball</b>  | Grand Ballroom 220B        |

## Wednesday, January 29, 2020

|                     |  |                            |
|---------------------|--|----------------------------|
| 7:00 AM - 12:00 PM  | <b>Registration</b>  | Executive Ballroom Foyer   |
| 7:00 AM - 11:00 AM  | <b>Speaker Ready Room</b>  | Room 213                   |
| 7:00 AM - 8:00 AM   | <b>Morning Break</b>   | Grand Ballroom Prefunction |
| 8:00 AM - 10:00 AM  | <b>Podium:</b> Brain Imaging of Auditory Function - Human Studies    | Grand Ballroom 220A        |
| 8:00 AM - 10:00 AM  | <b>Podium:</b> Auditory Nerve Function                               | Grand Ballroom 220B        |
| 8:00 AM - 10:00 AM  | <b>Podium:</b> Inner Ear Therapeutics                                | Grand Ballroom 220C        |
| 10:00 AM - 10:30 AM | <b>Mid-Morning Break</b>   | Grand Ballroom Prefunction |
| 10:30 AM - 12:30 PM | <b>Podium:</b> Auditory Circuits for Sound Processing and Perception | Grand Ballroom 220A        |
| 10:30 AM - 12:30 PM | <b>Podium:</b> Development: Molecular Foundations                    | Grand Ballroom 220B        |
| 10:30 AM - 12:30 PM | <b>Podium:</b> Inner Ear Structure & Function                        | Grand Ballroom 220C        |

# **Special Events & Meetings**

## **Travel Awards Luncheon**

Saturday, January 25, 2020      12:15 PM-1:30 PM  
Room 212 AB

### **Special Guest Speaker: Wade Chien**

Associate Professor

*Division of Otology & Skull Base Surgery  
Johns Hopkins School of Medicine  
Neurotologist  
Inner Ear Gene Therapy Program  
NIDCD/NIH*

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## **NIDCD Workshops**

### **NIDCD Workshop 1: Applying for NIDCD Training and Career Development Awards**

Saturday, January 25, 2020      6:00 PM-7:30 PM  
Room 211A

*This workshop will include an overview of research training and career development opportunities appropriate for graduate students, postdoctoral fellows and new clinician investigators. The presentation will include essential information on the submission and review of individual NRSA fellowship awards (F30, F31 & F32), as well as selected mentored career development (K-) awards. Drs. Alberto Rivera-Rentas and Melissa Stick will lead the discussion and provide updates on these funding mechanisms.*

### **NIDCD Workshop 2: Early Stage Investigators (ESI) and New Investigators (NI)**

Saturday, January 25, 2020      6:00 PM-7:30 PM  
Room 211B

*This workshop will provide information for junior scientists seeking to obtain their first research project grant. The goal is to answer questions and clarify the application, review, and award process for the NIDCD Early Career Research (ECR) R21 Award and the NIDCD R01 award with respect to ESIs and new investigators. This workshop is intended for both postdoctoral trainees ready to transition to independence and individuals who have recently transitioned to independence, e.g. accepted a new faculty position and are in the early stages of establishing an independent research program. The presentation will include an overview of the NIDCD Early Career Research (ECR) R21 Award and provide information to facilitate the most expeditious route to funding for R01s. Drs. Kelly King and Katherine Shim will lead the discussion.*

## **Special Events & Meetings Continued**

### **NIDCD Workshop 3:**

### **SBIR and STTR Grant Programs from NIH/NIDCD**

Saturday, January 25, 2020

6:00 PM-7:30 PM

Room 211C

*This workshop will provide an overview of these unique grants, which have funds set aside for awards to small businesses based in the U.S.A. Postdocs considering a new career path or a brief foray into commercialization are especially encouraged to attend. NIDCD staff Drs. Roger Miller and Shiguang Yang will share the latest updates for these grant programs. Formal presentations will briefly go over the crucial elements of successful applications and substantial time will be allowed to answer questions raised by attendees.*

*Investigators of all stages are welcome. The emphasis however will be on information most useful to those in early career stages seeking NIH/NIDCD funding for research, training, and career development and those seeking information about Small Business Research grants.*

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### **Women in Science Luncheon**

Sunday, January 26, 2020

12:15 PM-1:30 PM

Room 212ABCD

*Please join us for a discussion on women related issues.*

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### **ARO Business Meeting and NIDCD Update**

Sunday, January 26, 2020

6:00 PM-7:00 PM

Grand Ballroom 220C

*Immediately following the ARO Business Meeting, the new **Director of the NIDCD, Dr. Debara Tucci**, will present an update on NIDCD and discuss future directions. Dr. Tucci will also answer questions from attendees.*

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### **Public Outreach Event**

### **Musae on the Brain: Women in Voice and Science**

Sunday, January 26, 2020

7:30 PM-9:15 PM

Montgomery Theater

*This is a public event. Join us for a fantastic evening of music and science by Musae ([musae.org/](http://musae.org/)), San Francisco's premier women's choral ensemble, and scientists Sarah Schneider and Dana Boebinger. Tickets are \$15 (general), \$10 (student/trainee). Watch for email blast, website updates, and as always, check the AROMWM Twitter feed.*

## **Special Events & Meetings Continued**

### **spARO Social**

Monday, January 27, 2020

8:00 PM-11:00 PM

**Camino Brewing**  
718 S 1st Street  
San Jose, CA 95113  
408-352-5331

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### **gEAR Workshop**

Sunday, January 26, 2020

and Tuesday, January 28, 2020 4:00 PM – 5:00 PM

Room 212AB

**Get into gEAR!** *The gEAR (UMgEAR.org) is a portal for visualization, analysis and sharing of multi-omic data. Join us to create an account and explore the portal's capabilities in a 90-min hands-on workshop with guided exercises. Please bring your laptop. Further support for uploading of private datasets is available after the workshop.*

## **Special Events & Meetings Continued**

### **Participants**

#### **General Interest Panels ARO '20**

##### **Funding your Scientific Genius!**

Sunday, January 26, 2020              12:15 PM-1:15 PM  
Room 211B

### **Participants**

#### *Introduction*

Larry Hoffman

American Neurotology Society

Ronna Hertzano

<https://www.americanneurotologysociety.com>

American Hearing Research Foundation

Joan Wincentsen

<https://www.american-hearing.org>

American Otological Society

John Oghalai

<https://www.americanotologicalsociety.org>

Action on Hearing Loss

Cláudia Gonçalves

<https://www.actiononhearingloss.org.uk>

Cures Within Reach

Clare Thibodeaux

<https://cureswithinreach.org/>

Fondation pour l'Audition

Marie-Josée Duran

<https://www.fondationpourlaudition.org/en>

Hearing Health Foundation

Christopher Geissler

<https://hearinghealthfoundation.org/>

Military Funding Opportunities

NIDCD/NIH

Janet Cyr

<https://www.nidcd.nih.gov>

Veteran's Administration

Lina Kubli

[Lina.Kubli@va.gov](mailto:Lina.Kubli@va.gov)

*Whether you are an early stage or seasoned investigator, this session will provide key information from private and federal organizations dedicated to your scientific success! New opportunities will be announced, so grab your lunch and attend! The presenters are happy to discuss your ideas.*

# **Special Events & Meetings Continued**

## **Participants**

### **General Interest Panels ARO '20**

#### **Behind the Scenes with Publication!**

Tuesday, January 28, 2020      12:15 PM-1:15 PM  
Room 212B

#### **Participants**

|   |   |
|---|---|
| Larry Hoffman<br>Geffen School of<br>Medicine, UCLA<br>ARO Program Committee      | Andrew Oxenham<br>University of Minnesota<br>Editor-in-Chief<br>Trends in Hearing                                 |
| Barbara Canlon<br>Karolinska Institute<br>Editor-in-Chief<br>Hearing Research     | Brenda Ryals<br>James Madison University<br>Editor-in-Chief<br>Ear & Hearing                                      |
| Ben Crane<br>University of Rochester<br>Associate Editor<br>Otology & Neurotology | Peter Narins<br>University of California,<br>Los Angeles<br>Associate Editor<br>J. of Comparative<br>Physiology A |
| Paul Manis<br>University of North Carolina<br>Editor-in-Chief<br>JARO             |   |

*This panel of highly experienced journal editors will provide insights concerning contemporary topics in publishing, including insightful reviewing as author and reviewer, interpreting journal metrics, and new opportunities to establish a leadership profile.*

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#### **Awards Ceremony and Reception(following)**

Monday, February 11, 2020      5:30 PM - 8:00 PM  
Grand Ballroom 220A

#### **Honoring:**

Award of Merit Recipient

Dr. Lynne Werner

Young Investigator Award Recipient

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#### **Hair Ball**

Tuesday, January 28, 2020      8:00 PM-MIDNIGHT  
Grand Ballroom 220B

**Performance by: Shaky Feelin'**

# **Special Events & Meetings Continued**

## **ARO Council Meetings**

Friday, January 24, 2020                    8:00 AM-3:00 PM

Tuesday, January 28, 2020                12:00 PM-2:00 PM

## **ARO Committee Meetings**

\* Lunches to be provided for Committee Members only, tickets will be provided.

| <b>Time</b>                      | <b>Committee</b>                         | <b>Location</b>  |
|----------------------------------|--|------------------|
| <b>Sunday, January 26, 2020</b>  |  |                  |
| 12:00 PM - 2:00 PM               | Awards Committee                         | 211C             |
| 12:00 PM - 2:00 PM               | Long Range Planning                      | 211D             |
| 12:15 PM - 1:30 PM               | Travel Awards Committee                  | 211A             |
| <b>Monday, January 27, 2020</b>  |  |                  |
| 11:30 PM - 1:00 PM               | JARO Editorial Board                     | 111              |
| 12:00 PM - 2:00 PM               | Diversity and Minority Affairs Committee | 211C             |
| 12:15 PM - 1:30 PM               | External Relations Committee             | 211D             |
| 12:00 PM - 2:00 PM               | Program Committee                        | 211B             |
| 12:00 PM - 2:00 PM               | Finance & Investment Committee           | 211A             |
| <b>Tuesday, January 28, 2020</b> |  |                  |
| 12:15 PM - 1:30 PM               | International Committee                  | 211D             |
| 6:30 PM - 8:00 PM                | spARO Steering Committee                 | Elyse Restaurant |

# **Special Events & Meetings Continued**

## **ARO Ancillary Meetings**

| <b><i>Time</i></b>                | <b><i>Ancillary Meeting</i></b>      | <b><i>Location</i></b> |
|-----------------------------------|--------------------------------------|------------------------|
| <b>Saturday, January 25, 2020</b> |                                      |                        |
| 3:00 PM - 5:00 PM                 | NIH/NIDCD Meeting                    | 111                    |
| 4:00 PM - 5:00 PM                 | NIDCD T32 Program Director's Meeting | 211A                   |
| <b>Sunday, January 26, 2020</b>   |                                      |                        |
| 12:30 PM - 2:00 PM                | Hearing Research Board Mtg           | Hilton San Jose        |
| 4:00 PM - 5:00PM                  | gEAR Workshop                        | 212 AB                 |
| <b>Monday, January 27, 2020</b>   |                                      |                        |
| 5:00 PM - 6:00 PM                 | Scientific Director CNRS             | 212D                   |
| <b>Tuesday, January 28, 2020</b>  |                                      |                        |
| 12:00 PM - 1:30 PM                | AN Modeling Meeting                  | 212 A                  |
| 4:00 PM - 5:00 PM                 | gEAR Workshop                        | 212 AB                 |

# **ARO Committees**

## **PROGRAM COMMITTEE**

### **Chair:**

Matt Kelley, PhD (3/19 - 2/22)

### **Scientific Program Co-Chairs:**

Carolina Abdala, PhD (3/17 - 2/20)

Christopher Shera, PhD (3/17 - 2/20)

### **Members:**

Martin Basch, PhD (3/18 - 2/21)

Maria Chait, PhD (3/17 - 2/20)

Monita Chatterjee, PhD (3/17 - 2/20)

Brandon Cox, PhD (3/19 - 2/22)

Robert Froemke, PhD (3/18 - 2/21)

Gregory Frolenkov, PhD (3/18 - 2/21)

Nandini Iyer, PhD (3/17 - 2/20)

Steve Lomber, PhD (3/19 - 2/22)

Rebecca Lim, PhD (3/17 - 2/20)

Jose Antonio Lopez-Escamez, MD (3/17 - 2/20)

Teresa Nicolson, PhD (3/18 - 2/21)

Kevin Ohlemiller, PhD (3/18 - 2/21)

Sunil Puria, PhD (3/19 - 2/22)

Maria Rubio, MD, PhD (3/19 - 2/22)

Konstantina Stankovic, MD, PhD (3/17 - 2/20)

Eric Thompson, PhD (3/17 - 2/20)

Matt Winn, PhD (3/19 - 2/22)

*Council Liaison:* Ruth Y. Litovsky, PhD (3/17 - 2/20)

*spARO Representative:* Grace Soon Kim (3/19 - 2/22)

## **EX-OFFICIO COUNCIL MEMBER**

### **International Committee Chair**

Isabel Varela-Nieto, PhD (3/18 - 2/21)

### **Long Range Planning Committee Chair**

Lisa Goodrich, PhD (3/17 - 2/20)

### **Mentoring – spARO Committee Chair**

Catherine (Cat) Weisz, PhD (3/17 - 2/20)

### **Program Chair**

Matthew W. Kelley, PhD (3/19 - 2/22)

### **spARO Representative Chair**

Nicole Jiam (3/18 - 2/19)

# **ARO Committees**

## **BYLAW COMMITTEES**

### **LONG RANGE PLANNING**

#### **Chair:**

Lisa Goodrich, PhD (3/17 - 2/20)

#### **Members:**

Peter Barr-Gillespie, PhD (3/18 - 2/21)

Alan Cheng, MD (3/18 - 2/21)

Brandon Cox, PhD (3/8 - 2/21)

Bernd Fritzsch, PhD (3/17 - 2/20)

Matthew McGinley (3/19 - 2/22)

Chris Plack, PhD (3/18 - 2/21)

Amy Poremba, PhD, NIDCD Rep.

Yilai Shu, MD, PhD (3/18 - 2/21)

Aleta Steevens, (3/18 - 2/21)

Aaron Tward, MD, PhD (3/19 - 2/22)

Catherine Weisz, PhD (3/18 - 2/21)

*Past Chair:* Steven Green, PhD (3/17 - 2/20)

*Council Liaison: President-Elect:* Ruth Litovsky, PhD  
(3/19 - 2/20)

*Chair, International Committee:* Isabel Varela-Nieto, PhD:  
Spain (3/18 - 2/21)

*spARO Representative:* Kirupa Suthakar

## **NOMINATING**

#### **Chair:**

Karen Steel, PhD (3/19 - 2/20)

#### **Members:**

Paul Fuchs, PhD (3/19 - 2/20)

Ronna Herzano, MD, PhD (3/19 - 2/20)

Jose Antonio Lopez-Escamez, MD, PhD (3/19 - 2/20)

Heidi Nakajima, MD, PhD (3/19 - 2/20)

## **STANDING COMMITTEES**

### **AWARDS COMMITTEE**

#### **Chair:**

Ruth Anne Eatock, (3/17 - 2/20)

#### **Members:**

Jutta Engel, PhD (3/18 - 2/21)

Paul Fuchs, PhD (3/17 - 2/20)

Elisabeth Glowatzki, PhD, (3/19 - 2/22)

Phil Joris (3/18 - 2/21)

Matt Kelley, PhD (3/18 - 2/21)

Anna Lysakowski, PhD (3/17 - 2/20)

Richard Rabbitt, PhD, (3/19 - 2/22)

Jenny Stone, PhD (3/18 - 2/21)

Deb Tucci, (3/18 - 2/21)

Sarah Wooley, (3/18 - 2/21)

*Council Liaison:* Past-President Karen Steel, PhD (3/19 - 2/20)

## **ARO Committees**

### **DIVERSITY & MINORITY AFFAIRS**

#### **Chair:**

Ivan Lopez, PhD (3/18 - 2/21)

#### **Members:**

Kelsey Anbuhl (3/18 - 2/21)  
Alain Dabdoub, PhD (3/18 - 2/21)  
Avril Holt, PhD, (3/19 - 2/22)  
Tejbeer Kaur, PhD (3/19 - 2/22)  
Anil Lalwani, MD (3/19 - 2/22)  
Yi Zhou, PhD (3/18 - 2/21)  
*Council Liaison:* Lisa Cunningham, PhD (3/19 - 2/22)  
*spARO Representative:* Karen Barrett

### **EXTERNAL RELATIONS**

#### **Chair:**

Keith Duncan, PhD (3/18 - 2/21)  
Allison Coffin, PhD (3/18 - 2/21)

#### **Members:**

Yuri Agrawal, MD (3/17 - 2/20)  
Dylan Chan (3/18 - 2/21)  
Ronna Hertzano, MD, PhD (3/17 - 2/20)  
J. Chris Holt, PhD (3/19 - 2/22)  
Judith Kempfle, MD (3/19 - 2/22)  
Becky Lewis (3/19 - 2/22)  
Ross Maddox, (3/18 - 2/21)  
Dave Raible, PhD (3/19 - 2/22)  
Lavinia Sheets, PhD (3/18 - 2/21)  
Aaron Tward, (3/19 - 2/22)  
*Council Liaison:* Mark Worchol, PhD (3/18 - 2/21)  
*spARO Representative:* Benjamin Shuster

### **FINANCE AND INVESTMENT**

#### **Chair:**

Erick Gallun, PhD (3/17 - 2/20)

#### **Members:**

Steve Eliades (3/19 - 2/22)  
Michael Roberts, PhD (3/19 - 2/22)  
Anna Lysakowski, PhD (3/18 - 2/21)  
Lisa Olson, PhD (3/17 - 2/20)  
*Ex-officio: Secretary-Treasurer* Gabriel Corfas, PhD  
(3/17 - 2/20)

## **ARO Committees**

### **INTERNATIONAL**

#### **Chair:**

Isabel Varela-Nieto, PhD (3/18 - 2/21)

#### **Members:**

Barbara Canlon, PhD: Sweden (3/19 - 2/22)  
Yun-Hoon Choung, MD, PhD: Korea (3/18 - 2/21)  
Lukas Landegger: Austria (3/19 - 2/22)  
Yong Lu, PhD: USA (3/19 - 2/22)  
Takayuki Nakagawa, MD, PhD: Japan (3/18 - 2/21)  
Sonya Pyott, PhD: Netherlands (3/18 - 2/21)  
Saima Riazuddin, PhD: USA (3/19 - 2/22)  
*Council Liaison:* Gwen Geleoc, PhD (3/18 - 2/21)  
*spARO Representative:* Patrick Atkinson, PhD

### **TRAVEL AWARDS**

#### **Chair:**

Mike Bowl, PhD (3/17 - 2/20)

#### **Members:**

Samira Anderson (3/18 - 2/21)  
Hela Azaiez, PhD (3/17 - 2/20)  
Melanie Barzik (3/19 - 2/22)  
Jonathan Bird, PhD (3/17 - 2/20)  
JinWoong Bok, PhD (3/18 - 2/21)  
Tom Coate, PhD (3/18 - 2/21)  
Stephanie Eckrich (3/18 - 2/21)  
Jeff Lichtenhan, PhD (3/17 - 2/20)  
Manuel Malmierca, MD, PhD (3/18 - 2/21)  
Jim Phillips, PhD (3/18 - 2/21)  
Diana Peterson (3/18 - 2/21)  
Maria Rubio, MD, PhD (3/18 - 2/21)  
Ruben Stepanyan (3/19 - 2/22)  
Yuri Agrawal (3/17 - 2/20)  
*Council Liaison:* Keiko Hirose, MD (3/19 - 2/20)  
*spARO Representative:* Cathy Sung

## **ARO Committees**

### **JARO EDITORIAL BOARD**

Paul B. Manis, PhD, Editor-in-Chief (2018 - 2020)

#### **Associate Editors:**

Julie Arenberg, PhD (2015 - 2020)  
Alan M. Brichta, PhD (2015 - 2020)  
Catherine E. Carr, PhD (2016 - 2020)  
Paul Delano (2017 - 2021)  
Mark A. Eckert, PhD (2013 - 2020)  
Ana Belén Elgoyhen, PhD (2013 - 2020)  
W. Robert J. Funnell, PhD (2013 - 2020)  
Elisabeth Glowatzki, PhD (2015 - 2020)  
Nace L. Golding, PhD (2016 - 2020)  
Michael G. Heinz, PhD (2016 - 2020)  
Ronna Hertzano, MD, PhD (2015 - 2020)  
Richard F. Lewis, MD (2015 - 2020)  
Ruth Y. Litovsky, PhD (2013 - 2020)  
Christian Lorenzi, PhD (2016 - 2020)  
Brigitte Malgrange, PhD (2015 - 2020)  
Colette M. McKay, PhD (2016 - 2020)  
John C. Middlebrooks, PhD (2015 - 2020)  
Heidi Nakajima, MD, PhD (2017 - 2021)  
Adrian Rees, PhD (2015 - 2020)  
Suhua Sha, MD (2017 - 2021)  
Xiaorui Shi, MD, PhD (2013 - 2020)  
George A. Spirou, PhD (2014 - 2020)  
Marcel van der Heijden, PhD (2014 - 2020)  
Joseph P. Walton, PhD (2016 - 2020)  
Robert H. Withnell, PhD (2015 - 2020)

# Mentorship and spARO Events Program

## Mentorship

### 2020 spARO Mentoring Sessions:

Professionals, Junior Faculty, Postdocs, Grad Students, & Research Assistants - Come Join the Discussion!

Ever wonder how someone runs a lab, yet still has a life? How to talk to your advisor (or advisee) in a more constructive manner? Or how people transition between academia and industry?

Once again, we will be offering multiple mentorship sessions focused on many of the critical issues related to a successful and fulfilling scientific career.

So run out, grab a lunch to go, and come join us for these open discussions.

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#### Saturday | 12:15 pm – 1:15 pm

|  |           |
|--|-----------|
| Mentoring Session: Publishing          | Room 211A |
| Mentoring Session: Lab Management      | Room 211C |
| Mentoring Session: Clinician Scientist | Room 211D |

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#### Saturday | 3:00 pm – 5:00 pm

spARO Reverse Science Fair  
The Tech Interactive

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#### Sunday | 12:15 pm – 1:30 pm Room 212ABCD

Women in Science Roundtable

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#### Sunday | 4:00 pm – 5:00 pm

|   |           |
|---|-----------|
| Mentoring Session: Careers in Industry  | Room 211A |
| Mentoring Session: Navigating the Grant Landscape as a Trainee/Getting Grants | Room 211B |

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#### Sunday | 4:00 pm – 5:00 pm

|                                      |           |
|--------------------------------------|-----------|
| spARO Science Communication Workshop | Room 220B |
|--------------------------------------|-----------|

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#### Sunday | 5:00 pm – 6:00 pm

|                           |            |
|---------------------------|------------|
| Mentorship Program Social | Room 211AB |
|---------------------------|------------|

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#### Monday | 12:15 pm – 1:30 pm

|                              |              |
|------------------------------|--------------|
| Young Investigators Luncheon | Room 212ABCD |
|------------------------------|--------------|

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#### Monday | 4:00 pm – 5:00 pm

|  |           |
|--|-----------|
| Mentoring Session: Work-life Balance                                   | Room 211B |
| Mentoring Session: Interviewing and Negotiation Skill Development Room | Room 211A |

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#### Monday | 5:00 pm – 6:00 pm

|                 |       |
|-----------------|-------|
| spARO Town Hall | 212AB |
|-----------------|-------|

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**Monday | 8:00 pm – 11:00 pm**

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spARO Social at Camino Brewing

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**Tuesday | 12:15 pm – 1:15 pm**

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Mentoring Session:

Job Search and Independence

Room 211A

Mentoring Session:

Mentor-Mentee Communication

Room 211B

Mentoring Session: Teaching and Research

Room 211C

## **Travel Award Recipients**

### **Henderson Travel Award Winners:**

Marina Salorio-Corbetto

Eric Nisenbaum

Suzanne de Bruijn

Chelsea Blankenship

### **Fondation pour l'Audition Award Winner:**

Fabian Blanc

### **Travel Award Winners:**

Shadi Ahmadmehrabi

Calvin Kersbergen

Emily Allen

Jeong-seo Kim

Seba Ausili

Takashi Kojima

Sarah Bakst

Shannon Lefler

Parveen Bazard

Xiaojun Li

Holly Beaulac

Andres Llico Gallardo

Jose María Bermúdez

Chase Mackey

Muñoz

Carolyn McClaskey

Fabian Blanc

Michaela Mueller

Chelsea Blankenship

Eric Nisenbaum

Eileen Brister

Aida Nourbakhsh

Emily Burg

George Ordiway

Kali Burke

Nihaad Paraouty

Luis Cassinotti

Ashley Parker

Nam Hyun Cho

Devon Pawley

Janet Choi

Stefanie Peña

Alexander Claussen

Evan Ratzan

Parinaz Dabestani

Luis Rivera-Perez

Samantha Davis

Daniel Romano

Suzanne de Bruijn

Marina Salorio-Corbetto

Niklas Edvall

Laurel Screven

Afagh Farhadi

Viraj Shah

Michelle Frank

Austen Sitko

Tom Gajecki

Jeffrey Skidmore

Jay Gantz

Samantha Stiepan

Charlotte Garcia

Angelo Augusto Sumalde

Sumana Ghosh

Farshid Taghizadeh

Hannah Goldberg

Natalia Trpchevska

Aravind Chenrayan

Lucas Vattino

Govindaraju

Soumya Venkitakrishnan

Charles Heller

Zhirong Wang

Chengjie Huang

John Wilson

Matthew Ingersoll

Victor Wong

Lingchao Ji

Fan Wu

## **Exhibits**

Educational and informational exhibits will be available in the Grand Ballroom during the MidWinter Meeting. Exhibiting company representatives will be available to answer your questions about their products and services. Please visit the exhibits and thank the representatives for their support.

|                      |                    |
|----------------------|--------------------|
| Saturday, January 25 | 12:00 PM – 6:30 PM |
| Sunday, January 26   | 9:00 AM – 5:00 PM  |
| Monday, January 27   | 9:00 AM – 2:00 PM  |

## **2020 Exhibitors**

**Audioptics Medical, Inc.** **Booth #102**  
1971 Parkwood Terrace  
Halifax, NS Canada  
Phone 774-329-1679  
Email [rob.adamson@audiopticsmedical.com](mailto:rob.adamson@audiopticsmedical.com)

Audioptics Medical has developed a middle ear microscope capable of seeing through the tympanic membrane to image the middle ear and of performing vibrometric measurements on middle ear structures.

**Charles River** **Booth #107**  
251 Ballardvale St  
Wilmington, MA 01887  
Phone 1-877-CRIVER  
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500 Shire Way

Lexington, MA 02421

Phone 617-899-4795

Email marie-pierre.pasdelou@cilcare.com

Web www.cilcare.com

CILcare is a unique CRO specialized in ear disorders. We offer preclinical services and consultancy to accelerate the development of innovative products for hearing loss, tinnitus, and otic disorders.

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ENT Clinical is the science-driven Clinical Research Organization which combines academic expertise and operational capacity to successfully deliver clinical trials in the hearing field. We can design, set up and deliver world-class clinical trials.

**Etymotic Research****Booth #108**

61 Martin Lane  
Elk Grove Village, IL 60007  
Phone 847-228-0006  
Fax 847-228-6836  
Email customer-service@etymotic.com  
Web www.etymotic.com

Etymotic Research, Booth #108, is featuring the ER10X Extended Bandwidth Probe System. This extremely small, lightweight low noise microphone offers an extended bandwidth to 40 kHz. In addition, it features low distortion (up to 100 dB SNR) and 90 dB SPL maximum. It comes with single use, disposable probe tubes

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**Interacoustics****Booth #101**

Audiometer Allé 1  
5500 Middelfart, Denmark  
Phone: +45 6371 3555  
Email: info@interacoustics.com  
Web: www.interacoustics.com

A system for measuring Wide Band Tympanometry and Wide Band Absorbance / Reflectance is exhibited by Interacoustics at ARO 2018. The system is developed together with Douglas Keefe, Ph. D. and Boys Town National Research Hospital. Also ABR with Chirp stimuli will be on display by Interacoustics, a world leading full line supplier of audiometric equipment.

**IstoVisio, Inc.****Booth #112**

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Email: wongb@mail.nih.gov  
Web: www.nidcd.nih.gov

The NIDCD supports and conducts research in the normal and disordered processes of hearing, balance, taste, smell, voice, speech, and language. Scientists at all levels can apply for research and training opportunities on the NIH campus in Bethesda, Maryland (intramural training) or at institutions nationwide (extramural training). More info: [www.nidcd.nih.gov](http://www.nidcd.nih.gov).

**NeuroNexus****Booth #113**

655 Fairfield Ct, Suite 100  
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Phone: 734-913-8858  
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NeuroNexus powers research through innovative microelectrodes, systems, and software. NeuroNexus microelectrodes include high-quality, customizable arrays for electrophysiology. NeuroNexus systems provide integrated plug-and-play solutions to support diverse neurophysiology experiments and workflows up to 512 channels and counting. The NeuroNexus software platform provides powerful, scalable, tools for handling neurophysiological data.

**Shenzhen Giant Technologies Co.,Ltd Booth #109**  
Room 102-10 Building 3, Ruiteng Innovation Park  
Nanshan District  
Shenzhen, China  
Phone: 86-15099926052  
Email: 386972067@qq.com

Shenzhen Giant technology is a company, working in neurosciences (hearing) lab equipment. Our products cover auditory and vestibular functional testing on modal animals, such as zebrafish and mouse. We have: 1) Multiple animal ABR (Auditory Brain-stem Response) for rodents; 2) VOR (vestibular ocular reflex) testing system for mouse and zebrafish; 3) Auditory function testing (startle response) system for zebrafish. All products are made from the published research prototype system.

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**Booth #114**

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**Booth #115**

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Email: [jturner@turnerscientific.com](mailto:jturner@turnerscientific.com)  
Web: [www.turnerscientific.com](http://www.turnerscientific.com)

**Booth #111**

Turner Scientific is an audiology preclinical contract research organization. We conduct efficacy studies for hearing, tinnitus, and vestibular treatments, and screen compounds for ototoxicity, using multiple animal models (mice, rats, guinea pigs, rabbits, non-human primates, others). Assessments include behavioral testing, gap detection tinnitus testing, ABRs, immunohistochemistry, and many other modalities.

**ViewPoint Life Sciences**  
2550 Bates  
Suite 404  
Montreal, QC H3S 1A7  
Canada  
Phone: 1-514-343-3003  
Email: [ebatut@vplsi.com](mailto:ebatut@vplsi.com)  
Web: [www.vplsi.com](http://www.vplsi.com)

**Booth #103**

## Lynne A. Werner 2020 ARO Award of Merit Recipient



Lynne Ann Werner was born in Pittsburgh, Pennsylvania. The oldest of seven children, she describes her childhood as “unremarkable.” She received her bachelor’s degree from Northwestern University. Having sampled majors in biology, chemistry, education, and anthropology, she finally settled on psychology.

Following graduation, Lynne stayed in the Chicago area and began graduate school at Loyola University of Chicago, in the lab of Debbie Holmes, a developmental psychologist working mostly on visual perceptual development. In the Holmes lab she began her lifelong adventure toward discovering what human infants hear, completing a dissertation entitled “Auditory frequency analysis in infancy” in addition to several other papers on visual attention and a neurophysiology study on the goldfish 8th nerve with Richard Fay. Lynne then took a position as Assistant Professor of Psychology at Virginia Commonwealth University. Soon after that she was enticed to move her lab to the University of Virginia, and then in 1986 she moved to the University of Washington, where she rapidly rose to Full Professor with Tenure. She officially retired and became Professor Emeritus in 2017, but still continues to mentor junior scientists and to collaborate on research in other labs.

Early in her career, Lynne began running in her efforts to quit smoking. She ran her first marathon a year later and has since run nearly 200 marathons and ultramarathons. She no longer smokes. Lynne’s other interests include baseball, classical music and opera, theater, train travel, beer, cooking, camping, and hiking. Lynne has been married to David Olsho for 48 years. David is also a runner. They have two daughters: Lauren Olsho is a health economist with a research focus on nutrition and risky behavior; Alexis Olsho is a researcher in physics education. Lynne and David have three grandchildren, Daisy, Sidney, and Willa, all of whom she describes as “sweet”, “smart,” and **“good runners”**.

When Lynne started her work on infant hearing in the 1980s, there were few quantitative behavioral data on young infants. There were careful observations of responses to a variety of acoustic stimuli, and there were studies based on the habituation of infant responses to sound that allowed researchers to determine whether infants could discriminate between two quite different sounds. However, these paradigms did not allow researchers to quantify infant sensitivity or to compare infants and adults directly. The

conditioned head-turn procedure developed by researchers at the University of Washington was a great advance that allowed for estimation of both detection and discrimination thresholds in the clinic as well as in the lab. Unfortunately, the conditioned head-turn technique does not yield reliable results for infants younger than about 6 months of age.

In 1987, Lynne and her colleagues introduced a major paradigm shift in the study of infant hearing, the Observer-based Psychophysical Procedure (OPP). This procedure combines the conditioned head-turn technique and the forced-choice preferential looking procedure, developed for infant vision studies by Davida Teller at University of Washington. This method actually tests the ability of a trained observer to detect a sound or a change in a sound using only the infant's behavior as evidence. It is incredibly powerful and has allowed the collection of reliable psychophysical data on a large variety of acoustic parameters in normal-hearing and hearing-impaired infants as young as a few weeks old.

Armed with this new, powerful methodology, Lynne's lab produced a series of remarkable studies that told us how infants detect, discriminate, or categorize acoustic stimuli. Among the important findings of her experiments, is that while some infant perceptual skills are surprisingly mature by 6 months of age (e.g., high frequency discrimination, low frequency resolution, and pitch categorization), other percepts remain immature, even as infants begin to acquire their first words (e.g., gap detection and spectral ripple discrimination). During this period, Lynne not only trained her students in OPP, but opened her lab to colleagues from the US and abroad who learned the OPP procedure and applied it to a variety of research questions. It is not an overstatement to say the research from Lynne's lab is the pillar upon which Developmental Psychoacoustics is built.

Age-related improvements in auditory performance were sometimes attributed to failures of attention, memory, or general "efficiency". While such effects were considered uninteresting to some hearing researchers, Lynne and the members of her lab demonstrated that such cognitive factors had a direct effect of infants' perception. For example, one reason that infants are worse than adults at detecting a tone in noise is that while adults listen selectively for a particular frequency, infants listen broadly across frequency. One consequence is that infants are actually better than adults at detecting unexpected tones. The idea that listening strategy changes during infancy and childhood has broad implications for our understanding of the development of speech perception and for pediatric audiology.

Another facet of Lynne's research contribution is her attempts to interpret her behavioral results in the context of our emerging understanding of the physiology and pharmacology of the auditory periphery and the brain. This is apparent in

her early work, in her collaborations relating psychophysical measures to conductive, cochlear and brainstem measures in infants, and in her recent studies of hearing-impaired children. It is most apparent in her book entitled "Human Auditory Development" and in the many superb chapters she has authored and co-authored.

Lynne's work has been widely recognized. Her R01 grant "Development of Frequency Resolution" was continuously funded, first by NINCDS then by NIDCD, from 1985 to 2018. She was elected a Fellow of the Acoustical Society of America in 2002. Since arriving at the University of Washington she has served as the research advisor to 26 graduate students and postdoctoral fellows. She was recognized as Outstanding Mentor by the Student Council of the Acoustical Society in 2018.

Finally, in order to understand what makes Lynne Werner an outstanding recipient of the 2020 ARO Award of Merit, it is important to understand her commitment to her colleagues and the fields of Auditory Science. She served on or chaired more than 30 university and national committees and was principal investigator on conference grants, core grants, and a training grant. While this shows her commitment and leadership outside the lab, her commitment to her colleagues has always been a top priority. We have never seen her turn down a request to help with a grant or a paper, or provide advice, or attend a practice talk. Every letter for this nomination stressed Lynne's commitment as a mentor and colleague and her leadership as a role model for women in science. Her students and colleagues are thrilled that Lynne Ann Werner is receiving the Award of Merit from the Association for Research in Otolaryngology.

## Past Presidents

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| 2019    | Karen P. Steel, PhD        |
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## Award of Merit Recipients

|      |   |
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| 1988 | Josef Zwislocki, PhD                            |
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| 1990 | Robert Kimura, PhD                              |
| 1991 | William D. Neff, PhD                            |
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| 1994 | Peter Dallos, PhD                               |
| 1995 | Kirsten Osen, MD                                |
| 1996 | Ruediger Thalmann, MD &<br>Isolde Thalmann, PhD |
| 1997 | Jay Goldberg, PhD                               |
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| 1999 | Murray B. Sachs, PhD                            |
| 2000 | David M. Green, PhD                             |
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| 2014 | H. Steven Colburn, PhD                          |
| 2015 | Thomas B. Friedman, PhD                         |
| 2016 | Geoffrey A. Manley, PhD                         |
| 2017 | Alan R. Palmer, PhD                             |
| 2018 | Christine Petit, MD, PhD                        |
| 2019 | Peter Narins, PhD                               |
| 2020 | Lynne A. Werner, PhD                            |

## Acknowledgements

The ARO MidWinter Meeting is supported partially by a grant from the National Institutes of Health.



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- Submit proposals online at [www.American-Hearing.org](http://www.American-Hearing.org)
- Deadline is Friday, August 14, 2020
- Awardees notified in December 2020
- Grants funded in January 2021
- Resident grants have a July to June project time

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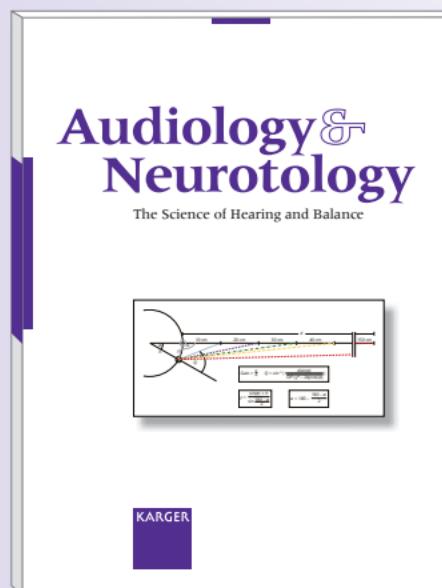
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# Audiology & Neurotology

The Science of Hearing and Balance



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<http://www.nidcd.nih.gov/research>



National Institute on  
Deafness and Other  
Communication Disorders

## **Notes**

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**Friday, January 24, 2020**

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## **Registration**

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4:00 PM – 7:00 PM

***Executive Ballroom Foyer***

**Saturday, January 25, 2020**

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## **Registration**

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7:00 AM – 6:00 PM

***Executive Ballroom Foyer***

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## **Speaker Ready Room**

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7:00 AM – 6:00 PM

***Room 213***

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## **Morning Coffee Break**

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7:30 AM – 8:00 AM

***Grand Ballroom Foyer***

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## **Presidential Symposium**

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***Innate Immunity in the Auditory System***

Chair: Keiko Hirose

8:00 AM – 12:30 PM

***Grand Ballroom 220A***

8:00 AM

**Introduction by Keiko Hirose**

**8:30 AM | PRES SYMP 1**

***Innate Immunity in the Central Nervous System***

***Jessica Williams***

**9:00 AM | PRES SYMP 2**

***Microbiota and Development of Intestinal Immunity***

***Gretchen Diehl***

**9:30 AM | PRES SYMP 3**

***Homeostasis and Inflammatory Signature of***

***Myeloid Cells in the Central Nervous System:***

***Lost in Translation***

***Bahareh Ajami***

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## **Mid-morning Break**

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10:00 AM – 10:20 AM

***Grand Ballroom Foyer***

**10:20 AM | PRES SYMP 4**

***Innate Immune Cells in the Inner Ear: Macrophage***

***Interactions with Hair Cells and Afferent Neurons***

***Mark Warchol***

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**10:50 AM | PRES SYMP 5**  
**NLRP3 Mutation and Cochlear Autoinflammation Cause Syndromic and Nonsyndromic Hearing Loss**  
**DFNA34 Responsive to Anakinra Therapy**

*Andrew Griffith*

**11:20 AM | PRES SYMP 6**  
**Interplay between Cochlear Inflammation, Circadian Rhythms and Noise Damage**

*Barbara Canlon*

**11:50 AM**  
**Remarks from Keiko Hirose**

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**Exhibit Hall Open**

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**12:00 PM – 6:30 PM**  
**Executive Ballroom**

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**Lunch (on own)**

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**12:00 PM – 2:00 PM**

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**Mentoring Sessions**

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**12:15 PM – 1:15 PM**

- **Publishing**  
*Room 211A*
- **Lab Management**  
*Room 211C*
- **Clinician Scientist**  
*Room 211D*

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**Travel Awards Lunch**

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**12:15 PM – 1:30 PM**  
**Room 212AB**

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**Poster Session 1 - Open 24 hours**

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**1:00 PM to 11:00 AM Sunday**  
**Executive Ballroom**

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**Afferents and Efferents of the Vestibular System**

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**PS 1**

**Phase Locking of Vestibular Afferent Neurons in the Oyster Toadfish**

*Richard D. Rabbitt; Marta Iversen*

**PS 2****Resurgent Sodium Currents in Mature Vestibular Calyx Afferent Terminals***Frances Meredith; Karen Dockstader; Katherine Rennie***PS 3****Persistent and Resurgent Voltage-gated Sodium Currents in Mouse Vestibular Ganglion Neurons***Selina Baeza Loya; Ruth Anne Eatock***PS 4****A Generative Model of Vestibular Afferent Discharge Reveals a Targeted Deficit of Gentamicin-Induced Hypofunction***Larry Hoffman; Michael G. Paulin***PS 5****The High Precision of Phase Locking of Guinea Pig Irregular Otolith Afferents to High Frequency Sound and Vibration***Ian S. Curthoys; Wally Grant; Ann M. Burgess; Alan Brichta; Rebecca Lim***PS 6****Assessment of Utricular Nerve, Hair cell and Mechanical Function, In Vivo.***C Pastras; S Stefani; Camp A; Ian S. Curthoys; Daniel Brown***PS 7****Excitatory GABAergic Modulation of the Vestibular Nerve***Yugandhar Ramakrishna; Soroush Sadeghi***PS 8****Efferent Cholinergic Targets in the Mammalian Utricle***Johnny J. Saldate; Felix E. Schweizer; Larry Hoffman***PS 9****Further Characterization of Mouse Behavioral Models for Probing Vestibular Efferent Function.***Natalie B. Dang; Anjali Sinha; Choongheon Lee; Joseph C. Holt***PS 10****Characterizing the Use of Intrabulla Drug Application to Target Efferent Synaptic Mechanisms in the Vestibular Periphery***Choongheon Lee; Anjali Sinha; Natalie B. Dang; Joseph C. Holt*

# **Animal Models of Human Otologic Disease**

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## **PS 11**

### **Raman Spectroscopy to Identify Changes in the Tympanic Membrane Associated With Acute Otitis Media**

**Anping Xia; Tulio A Valdez; Surya Singh; Mahbuba Tusty; Andrey Victorovich Malkovskiy; David Zarabanda; Meena Easwaran1**

## **PS 12**

### **Development of Gold Nanoclusters as Adjuvants for the Treatment of Chronic Suppurative Otitis Media**

**Laurent Adonis Bekale; Anping Xia; Kelly M. Khomtchouk; Peter Santa Maria**

## **PS 13**

### **Predictive Power of Antibiotic Tolerance and Preclinical Evaluation of Fluoroquinolone Treatment of Pseudomonas aeruginosa Chronic Suppurative Otitis Media**

**Kelly M. Khomtchouk; Ali Kouhi; Anping Xia; Peter Santa Maria**

## **PS 14**

### **Characterizing the Osteolytic and Osteoblastic Responses to Cholesteatoma and Oncolytic Virotherapy**

**Joseph Pinkl; Ivy Schweinzer; Josephine Fernandez; Mark Currier; Noga Lipschitz; Timothy P. Cripe; Ravi N. Samy; Brian R. Earl**

## **PS 15**

### **An Investigative Study on Efficacy and Safety of Intratympanic Botulinum Toxin**

**Jung Mee Park; Min Jung Kim; Jaclyn Vidal; So Young Park; Shi Nae Park**

## **PS 16**

### **Sensorineural Hearing Loss Occurs in a Pseudomonas Aeruginosa Chronic Suppurative Otitis Media Mouse Model**

**Anping Xia; Zhixin Cao; Xiaohua Chen; Laurent Adonis Bekale; Peter Santa Maria**

## **PS 17**

### **Anatomical Consequences of Postnatal Zika Virus Infection on the Cochlea and Vestibular End Organs in a Mouse Model**

**Kathleen T. Yee; Biswas Neupane; Fengwei Bai; Douglas E. Vetter**

**PS 18**

**The Acoustic Reflex: A Comparison Between Noise-induced Hearing Loss and Selective Inner Hair Cell Loss in Carboplatin-treated Chinchillas**

*Andie Zang; Monica Trevino; Karen Pawlowski; Edward Lobarinas*

**PS 19**

**Hearing Preservation from Controlled Internal Jugular Vein Compression During Traumatic Noise Exposure**

*Celia D. Escabi; Christina Campbell; Karen S. Pawlowski; Brian Sindelar; Colleen Le Prell; Edward Lobarinas*

**PS 20**

**Role of Neuroinflammation in Noise Induced Hearing Loss**

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*Victor Adenis; Elie Partouche; Dan Gnansia; Pierre Stahl; Jean-Marc Edeline*

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*Marko Takanen; Stefan Strahl; Konrad Schwarz; Dyan Ramekers*

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*Jeffrey Skidmore; William J. Riggs; Chloe Vaughan; Shuman He*

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*Viral Tejani; Jeong-Seo Kim; Paul Abbas; Carolyn Brown; Marlan R. Hansen*

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*Ivo Dobrev; Tahmine Faramandi; Namkeun Kim; Alexander Huber; Christof Röösli*

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*Nathiya Chandrasekaran; Daniel A. Llano*

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*William A. Noftz; Nichole L. Beebe; Brett R. Schofield*

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*Brett R. Schofield; Pooyan Mirjalili; Nichole L. Beebe*

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*Nichole L. Beebe; Brett R. Schofield*

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*Nichole L. Beebe; Colleen S. Sowick; Inga Kristaponyte; Alexander V. Galaxyuk; Brett R. Schofield*

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*Lindsay N. Hofer; Amir Mafi; Matthew Russ; Jeffrey G. Mellott*

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*Amir Mafi; Jeffrey G. Mellott*

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*Jeffrey G. Mellott; Lindsay N. Hofer; Amir Mafi*

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*Xiaoyu Yu; Tao Yang; Hao Wu*

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*Baoai Han; Haiying Sun*

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*Lu Ying Liu; YuKe Zheng; JiangPing Zhang; Christopher Mccarty; HePing Yu; Qingyin Zheng*

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**Generation and genetic correction of USH2A point mutations in human iPSCs**

*Zaohua Huang; Nicholas Gostola; Derek Dykxhoorn; Dykxhoorn; Justin Lillywhite; Colin Maguire; Jun Yang; Zheng-Yi Chen; Xue Liu*

**PS 151**

**Variants in MYH1 are associated with Autosomal Recessive Syndromic Hearing Loss.**

*Ju Sun Yung; Jinsei Jung; Ji-Hyun Ma; Kim Byoung Chul; Choi Hye ji; Jinwoong Bok; Jae Young Choi; Heon Yung Gee*

**PS 152**

**Hearing loss and cochlear sensory outer hair cell patterning defect in mice carrying a human mutation in Thra gene**

*Corentin Affortit; Frédéric Flamant; Jamal Nasr; Carolanne Coyat; Jean-Luc Puel; Jing Wang*

**PS 153 WITHDRAWN**

**Moleculargenetic Analysis of Genes Involved in the Homeostasis of the Inner Ear in Patients Suffering from M. Menière**

*Nicolas Gurtler; Karl Heinemann*

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**PS 154**

**Elucidation of Genetic Background and Phenotypic Features in Patients with Hereditary Hearing Loss to Improve Diagnosis and Care**

**Tatsuo Matsunaga; Hideki Mutai; Kiyomitsu Nara; Koichiro Wasano; Shujiro Minami; Kimitaka Kaga**

**PS 155**

**The Hearing Loss Phenotype Associated with P2RX2 Gene Is Dependent on The Mutation Type**

**Xiaoya Chen; Clemer Abad; Abhiraami Kannan Sundhari; Juan I. Young; Katherina Walz; Xuezhong Liu**

**PS 156**

**Genetic heterogeneity of autosomal dominant hearing loss in pediatric patients**

**Dominika Oziębło; Marcin Leja; Anna Sarosiak; Henryk Skarżyński; Monika Oldak**

**PS 157**

**Genetic Counselors are Critical in Providing Comprehensive and Tailored Care for Individuals with Hearing Loss and Their Families**

**Amanda M. Schaefer; Amanda O. Taylor; Carla J. Nishimura; Kathy L. Frees; Diana L. Kolbe; Kevin T. Booth; Robert J. Marini; Donghong Wang; Amy E. Weaver; Jori E. Hendon; Colleen A. Campbell; Hela Azaiez; Richard J.H. Smith**

**PS 158**

**A recurrent mutation in KCNQ4 in Korean families with nonsyndromic hearing loss and rescue of the channel activity by KCNQ activators**

**Jinsei Jung; Chan Il Song; Dong Hoon Shin; Young IK Koh; Seung Ho Shin; Young Kyun Hur; Jae Young Choi; Heon Yung Gee**

**PS 159**

**A Genome-First Approach to EYA4-related SNHL**

**Shadi Ahmadmehrabi; Joseph Park; Douglas Epstein; Jason Brant; Dan Rader**

**PS 160**

**Genome Wide Association Study of Tinnitus in the United Kingdom Biobank Indicates Significant Genetic Heritability, Multiple Significant Loci, and Correlation with Psychiatric Traits**

**Royce E. Clifford; Adam E. Maihofer; Allen Ryan; Caroline E. Nievergelt**

**PS 161****Genomic Analysis of Hearing Loss and Cochlear Implant Outcomes**

*Ryan J. Carlson; David L. Horn; Mary-Claire King; Jay T. Rubinstein*

**PS 162****A Genetic Study for Sensorineural Tinnitus Based on Genome-wide Association & Endophenotype Study: Development of Genetic Diagnostic Kit for Precision Medicine**

*Jae Sang Han; Minho Lee; Yeun-Jun Chung; Jung Mee Park; Hamzah Alshaikh; Shi Nae Park*

**PS 163****Identification of a Potential Founder Effect of a Novel PDZD7 Variant Involved in Moderate-to-Severe Sensorineural Hearing Loss in Koreans**

*Sang-Yeon Lee; Byung Yoon Choi; Bong Jik Kim; Seungmin Lee; Doo-Yi Oh*

**PS 164****Towards a Non-Invasive Differential Diagnostic Test to determine the underlying Pathology of Hearing Loss.**

*Neil Ingham; Karen Steel*

**PS 165****COL11A1 causes autosomal dominant non-syndromic hearing loss in the DFNA37 locus – confirmation of a novel splicing variant**

*Thore Schade-Mann; Barbara Vona; Anke Tropitzsch; Fritz Schneider; Marcus Müller; Hubert Löwenheim*

**PS 166****Clinical next-generation sequencing database of deafness: unified management tool of clinical and genetic information.**

*Shin-ya Nishio; Shin-ichi Usami*

**PS 167****Clinical Features of Deafness Caused by a Novel CLDN14 Variant**

*Tomohiro Kitano; Shin-ichiro Kitajiri; Shin-ya Nishio; Shin-ichi Usami*

**PS 168****Copy Number Variation Detection is Essential in the Diagnosis of Hearing Loss**

*Paige L. Harlan; Amanda O. Taylor; Carla J. Nishimura; Kathy L. Frees; Diana L. Kolbe; Kevin T. Booth; Robert J. Marini; Donghong Wang; Amanda M. Schaefer; Amy E. Weaver; Jori E. Hendon; Richard J.H. Smith; Hela Azaiez*

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**PS 169**

**Contribution of mitochondrial tyrosyl-tRNA synthetase p.191Gly>Val mutation to the phenotypic manifestation of the deafness-associated mitochondrial tRNASer(UCN) 7511A>G mutation**

*Wenlu Fan; Min-Xin Guan*

**PS 170**

**Integrating Phenotypic and Genotypic Data to Enhance Diagnosis and Clinical Care of Persons with Hearing Loss**

*Amanda O. Taylor; Carla J. Nishimura; Kathy L. Frees; Diana L. Kolbe; Kevin T. Booth; Robert J. Marini; Donghong Wang; Amanda M. Schaefer; Paige L. Harlan; Amy E. Weaver; Jori E. Hendon; Hela Azaiez; Richard J.H. Smith*

**PS 171**

**TJP2 and Hearing Loss: Identification of a Novel Disease-Mechanism**

*Erika M. Renkes; Kevin T. Booth; Kimia Kahrizi; Luke T. Hovey; Hossein Najmabadi; Richard J.H. Smith; Hela Azaiez*

**PS 172**

**In Vivo Base Editing Rescues Hearing in a Mouse Model of Recessive Deafness**

*Wei-Hsi Yeh; Olga Shubina-Oleinik; Jonathan Levy; Bifeng Pan; Gregory Newby; Michael Wornow; Rachel Burt; Jeffrey R. Holt; David Liu*

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**Inner Ear: Anatomy & Physiology**

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**PS 173**

**Distribution of Glucocorticoid Receptors in Human Cochlea and Endolymphatic Sac - An Immunohistochemistry Study**

*Wei Liu; Charlotta Nordström; Niklas Danckwardt-Lillieström; Helge Rask-Andersen*

**PS 174**

**Analyses of hearing impairment in GNE V572L point-mutant mice**

*Akiyoshi Yasumoto; Ippei Kishimoto; Kazushi Sugihara; Toru Yoshihara; Masahide Asano; Koichi Omori; Norio Yamamoto*

**PS 175**

**Knockout of Mice Cochlear Connexin26 in Dose-Dependent Modes Induce Different Kinds of Hearing Loss and Pillar Cells Development Arrest Pattern.**

*Sen Chen; Le Xie; Kai Xu; Yue Qiu; Huimin Zhang; Xiaohui Wang; Yu Sun; Weijia Kong*

**PS 176**

**Expression of Chemokine CXCL1 and its Receptor DARC in the Murine Inner Ear**

*Sasa Vasilijic; Lukas D. Landegger; Richard Seist; Konstantina M. Stankovic*

**PS 177**

**Hearing Loss Associated with Diabetes: Changes of Cochlear Function in a Mouse Model of Diabetes**

*Ah-Ra Lyu; Tae-Hwan Kim; Seong-Hun Jeong; Sun-Ae Shin; Min Jung Park; Yong-Ho Park*

**PS 178**

**Re-evaluating the Histopathology of Presbycusis: Hair Cell Loss explains Audiometric Shifts in all four types**

*Peizhe Wu; Leslie D. Liberman; Jennifer T. O'Malley; M. Charles Liberman*

**PS 179**

**Neuro-immune Consequences of Noise-induced and Age-related Hearing Loss in the Mouse Cochlea**

*Benjamin Seicol; Ruili Xie*

**PS 180**

**GATA3 Expression in Cochlear Tissues is Conserved across Mice, Rats, Macaques, and Humans.**

*Sumana Ghosh; Robert Wineski; Michael Pittman; Bradley J. Walters*

**PS 181**

**Long-term Histological Outcomes of Low Dose Carboplatin Administration in the Chinchilla Cochlea**

*Karen S. Pawlowski; Celia D. Escabi; Patricia R. Moody; Edward Lobarinas*

**PS 182**

**Elucidating the Localization of Estrogen and Estrogen-related Receptors in the Inner Ear**

*Erika Lipford; Benjamin Shuster; Beatrice Milon; Mark McMurray; Jessica Mong; Ronna Hertzano*

**PS 183**

**Mitochondrial Calcium Uniporter in Cochlear Hair Cells is Dispensable for Hearing in Mice**

*Manikandan Mayakannan; Carlos Antonio Padilla; Aditi Deshmukh; Sriya Donthi; Ruben Stepanyan*

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**PS 184****Natural History and Disease Progression in Two Rodent Models of Monogenic Hearing Loss**

*Xichun Zhang; Xudong Wu; Shu-Lin Liu; Lars Becker; Arun Senapati; Nancy Paz; Bifeng Pan; Emma Alterman; Lillian Smith; Elizabeth Amaro Gonzalez; Yong Ren; Kathryn Ellis; Inmaculada Silos-Santiago; Fuxin Shi; Joseph C. Burns; Ning Pan; Adam T. Palermo; Jonathon Whitton; Martin Schwander*

**PS 185****Activating Muscarinic Acetylcholine Receptors Shapes Firing patterns By Simultaneously Closing KCNQ Channels and Activating HCN Channels in Vestibular Ganglion Neurons**

*Daniel Bronson; Christopher Ventura; Radha Kalluri*

**PS 186****Combined behavioral assays for more specifically evaluating auditory/vestibular and visual function of zebrafish larvae**

*Sun Peng; Zhuo Liu; Fangyi Chen*

**PS 187****Large Animal Models for Auditory Research: a Guide to the Perplexed**

*Suchi Raghunathan; Randolph Abutin; Amanda McSweeney; Misty J. Williams-Fritze; Rami Tzafriri Tzafriri; Cyrille Sage*

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**Middle Ear**

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**PS 188****Elephant Middle Ear Anatomy and Bone Conduction Physiology**

*Caitlin O'Connell-Rodwell; Anbuselvan Dharmarajan; Rachel Chen; Sunil Puria*

**PS 189****Skull surface motion in bone conduction stimulation depends on stimulation position and coupling**

*Tahmine Faramandi; Ivo Dobrev; Alexander Huber; Christof Röösli*

**PS 190****A Lumped-Element Model of the Human Middle Ear for Bone Conduction**

*Xiying Guan; Sunil Puria; John Rosowski; Hideko H. Nakajima*

**PS 191**

**Middle-ear Muscle Contraction Measurements Reveal No Anticipatory Activation Prior to Live Rifle Fire**

*Heath G. Jones; Ellis R. Akins; Lana S. Milam; Stephen M. Tasko; Madeline V. Smith; William J. Murphy; Gregory A. Flamme; Kristy K. Deiters; William A. Ahroon*

**PS 192**

**Tympanic Membrane Mechanics after Repeated Exposure to Loud Sound**

*Haimi Tang; Pavel Psota; John Rosowski; Cosme Furlong; Jeffrey Cheng*

**PS 193**

**Finite-Element Modelling Based on Optical Coherence Tomography and Corresponding X-ray MicroCT Data for Two Human Middle Ears**

*Marzieh Golabbakhsh; Xuan Wang; Dan MacDougall; Josh Farrell; Thomas Landry; Robert Funnell; Robert Adamson*

**PS 194**

**Forward and Reverse Middle Ear Transmission in Gerbil with a Spontaneously Healed Tympanic Membrane**

*Xiaohui Lin; Sebastiaan Meenderink; Eric Duong; Timothy Jung; Wei Dong*

**PS 195**

**Functional Role of Ligaments in the Gerbil Middle Ear**

*Eileen Brister; Claus-Peter Richter; Mackenzie Mills; Stephen Hoff; Yi Shen; Robert Withnell*

**PS 196**

**Causally-Constrained Measurements of Aural Acoustic Reflectance and Reflection Functions**

*Douglas H. Keefe*

**PS 197**

**Controlled Comparison of Methods for Measuring Ear-Canal Reflectance**

*Kren Monrad Nørgaard; Karolina K. Charaziak; Christopher A. Shera*

**PS 198**

**Quantification of Ear-Canal Cross-Sectional Area to Improve Absorbance Measurements**

*Katherine Fairbank; Nicholas J. Horton; Susan E. Voss*

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**PS 199**

**High-speed Holographic Shape and Vibration Measurement of Semi-transparent Tympanic Membrane**

**Haimi Tang; Pavel Psota; John Rosowski; Cosme Furlong; Jeffrey Cheng**

**PS 200**

**Estimating Young's Modulus of Thin Elastic Structures Using Holographic Measurements of Harmonic Vibration with an Application to Tympanic Membrane Characterization**

**Arash Ebrahimian; Haimi Tang; Jeffrey Cheng; Nima Mafsoon**

**PS 201**

**Optimizing Umbo Microphone for Fully Implantable Assistive Hearing Devices via Analytical and Numerical Modeling, and Electrical Shielding**

**Benjamin G. Cary; Nicolas Verhaert; Tasher Losenegger; Elizabeth S. Olson; Jeffrey H. Lang; Hideko H. Nakajima**

**PS 202**

**Mechanics of Total Drum Replacement**

**Tympanoplasty Measured with Wideband Acoustic Immittance**

**Kristine Elisabeth Eberhard; Salwa F. Masud; Hamza Khalid; Aaron K. Remenschneider; Hideko H. Nakajima**

**PS 203**

**Holographic Measurement of Semi-transparent Tympanic Membrane Shape by a Multiple Angle Illumination Technique**

**Haimi Tang; Pavel Psota; John Rosowski; Cosme Furlong; Jeffrey Cheng**

**PS 204**

**Characterization of Quasi-Static 3-DOF-Stiffness and 3D-Morphometry of the Human Stapedial Annular Ligament**

**Merlin Schär; Raoul Hopf; Ivo Dobrev; Alexander Huber; Jae Hoon Sim**

**PS 205**

**Dual-Laser Measurement of Stapes Footplate Movement in Human Ears with and without Hearing Protection Device (HPD) under Blast Exposure**

**Rong Z. Gan; Shangyuan Jiang; Kyle Smith; Chenkai Dai**

**PS 206****A Comparative Study of Avian Middle Ear****Morphology and Mechanics***John Peacock; Garth Spellman; Nathaniel T. Greene;  
Daniel J. Tollin***PS 207****Assessment of Sound Transmission Efficiency of  
Middle Ear Based on Direct Excitation of Ossicles  
by Vibration Probe***Sho Kanzaki; Takuji Koike; Yuuka Irie; Takaaki  
Fujishiro; Chee Sze Keat; Takenobu Higo; Kenji  
Ohoyama; Masaaki Hayashi; Hajime Ikegami***PS 208****Eustachian stent placement and tubography in  
Fresh-frozen Human Cadavers***Byung Chul Kang; Kun Yung Kim; Ho-Young Song;  
Jung-Hoon Park; Hong Ju Park; Woo Seok Kang*

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**Noise Injury**

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**PS 209****Susceptibility to Noise Exposure in Mice****Expressing Channelrhodopsin-2***Aditi Agarwal; Xiaodong Tan; Yingjie Zhou; Alan  
Robinson; Claus-Peter Richter***PS 210****Stress receptors in frontal brain regions impact on  
auditory nerve function and auditory brainstem  
responses***Philine Marchetta; Philipp Eckert; Lukas Rüttiger;  
Wibke Singer; Marlies Knipper***PS 211****Noise-Induced Hearing Loss and Cochlear Injury  
Vary Dramatically with Impulsiveness of the  
Exposure***Mo Chen; Wei Qiu; Sharon G. Kujawa***PS 212****Reliability of Personal Noise Dosimetry***Ashley Parker; Jennifer Tufts; Erika Skoe***PS 213 - WITHDRAWN****PS 214****Stress-induced Expression of Galectin-3 in  
Cochlear Immune Cells and Supporting Cells in the  
Mouse Cochlea***Henry Adler; Richard Salvi; Qingyin Zheng; Celia  
Zhang; Gail Seigel; Bo Hua Hu*

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**PS 215****Repair of Noise-Induced Damage in Stereocilia****F-actin Cores****Elizabeth Wagner; Maura I. Nakahata; Terrence Imbery; Jung-Bum Shin****PS 216****All Shook Up: Modeling Noise-Induced Damage and Repair in the Zebrafish Lateral Line****Melanie Holmgren; Mike E. Ravicz; Kenneth E. Hancock; Mark Warchol; Lavinia Sheets****PS 217****The Weaker Sex: Male Rats Sustain Greater Hearing Loss and Hair Cell Loss from Gaussian and Non-Gaussian Noise Exposure****Guang-Di Chen; Mo Chen; Xiaopeng Liu; Senthilvelan Manohar; Li Li; Wei Qiu; Sharon G. Kujawa; Richard Salvi****PS 218****The Effects of Circadian Disruption on Threshold Shifts After Noise Exposure****Chao-Hui Yang; Chung-Feng Hwang; Ming-Yu Yang; Jui-Haur Chuang****PS 219****Prolonged Low-Level Noise Exposure Reduces Cochlear Temporal Resolutions****Xiaopeng Liu; Li Li; Guang-Di Chen; Richard Salvi****PS 220****Changes in microRNA expression in the cochlear nucleus and inferior colliculus after acute noise-induced hearing loss****Dong-Han Lee; Sohyun Park; Myung-Whan Suh; Jun Ho Lee; Seung-Ha Oh; Moo Kyun Park****PS 221****Acoustic Trauma Modulates the Cochlear Blood Flow and Vasoactive Factors in a Rodent Model of Noise-induced Hearing Loss****Sun-Ae Shin; Ah-Ra Lyu; Min Jung Park; Yong-Ho Park****PS 222****Treatment with FK506 Promotes Noise Induced-Hearing Loss through Inhibition of Calcineurin and Activation of Autophagy****Zuhong He; Shan Xu; Qiaojun Fang; Su-Hua Sha****PS 223****Noise-induced Loss of Sensory Hair Cells is Triggered by ROS/p-AMPKa Pathway****Fan Wu; Su-Hua Sha**

**PS 224**

**LCCL activates innate immunity in the cochlea by bacterial infection or noise stimulation**

*Jinsei Jung; Jee Eun Yoo; Byunghwa Noh; Kyu Min Kim; Gina Na; Seung Ho Shin; Dong Chul Cha; Haiyue Lin; Min Jin Kang; Young Kyun Hur; Jae Young Choi*

**PS 225**

**Synergistic interaction between TRPV1 and TNF- $\hat{\alpha}$  in mediating noise-induced hearing loss**

*Asmita Dhukhwa; Sandeep Sheth; Chaitanya Mamillapalli; Vickram Ramkumar; Debashree Mukherjee*

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**Sensorineural Hearing Loss and Audiology**

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**PS 226**

**Ototoxicity in Cystic Fibrosis Patients Following a Single Course of Intravenous Tobramycin in a Prospective Cohort Study**

*Angela Garinis; Malcolm Gleser; Alexis Johns; Erik Larsen; Jay Vachhani*

**PS 227**

**Ototoxicity in Cancer Survivors with Chemotherapy-Induced Peripheral Neuropathy**

*Jennifer Henderson Sabes; Christine Miaskowski; Judy Mastick; Grace Mausisa*

**PS 228**

**Hearing Loss Characterization in Younger and Older Adults: Insights from the Hearing Examinations of Southern Denmark Database**

*Manuella Lech Cantuaria; Ellen Raben Pedersen; Mette Sørensen; Frans Boch Waldorff; Jesper Hvass Schmidt*

**PS 229**

**Reduced diameter of nervus cochlearis in long term deaf patients quantified with semiautomatic MRI ZOOMIT sequence.**

*Katrin Reimann; Ulrike Eherenpfordt; Ulrich Kloose; Maximilian Schulze*

**PS 230**

**Correlation of ECAP and Anamnestic Parameters in Cochlear Implant Patients - Identification of Predictors for Neuronal Health Status**

*Verena Schepers; Katharina Klötzer; Thomas Lenarz; Lutz Gärtner*

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**PS 231**

**Anatomy of vestibular aqueduct in the patients who had the edolymphatic sac surgery and its usefulness for surgery.**

*Takashi Sato; Takao Imai; Yumi Ohta; Kazuo Oshima; Hidenori Inohara*

**PS 232**

**Cytokine Expression in Cyst Fluid and Tumor Associated Macrophages in Cystic Vestibular Schwannomas**

*Eric Nisenbaum; Olena Bracho; Stefanie Peña; Esperanza Bas; Cristina Fernandez-Valle; Michael Ivan; Fred Telischi; Xuezhong Liu; Christine Dinh*

**PS 233**

**Test-Retest Reliability of Serum Prestin Levels in Normal Hearing Young Adults**

*Ashley Parker; Kourosh Parham; Erika Skoe*

**PS 234**

**The Effect of Diabetes on The Prognosis of Sudden Sensorineural Hearing Loss: Propensity Score Matching Analysis**

*Yunjae Lee; hayoung byun; jaeho chung*

**PS 235**

**Early detection of occupational noise induced cochlear synaptopathy among young adults with normal audiograms through electrocochleogram**

*Qixuan Wang; Lu Yang; zhiwu huang; Hao Wu*

**PS 236**

**Predictive Factors for Hearing aid Satisfaction for Experienced and First-time Hearing aid Users: Using the International Outcome Inventory for Hearing aids**

*Sabina S. Houmoeller; Anne Wolff; Vijay Narne; Gérard Loquet; Dan Dupont Hougaard; Dorte Hammershøi; Christian Godballe; Jesper Hvass Schmidt*

**PS 237 - WITHDRAWN**

**PS 238**

**The effects of an active noise control technology applied to earphones on preferred listening levels in noisy environments**

*Takunari Hoshina; Daiki Fujiyama; Takuji Koike; Katsuhisa Ikeda*

**PS 239**

An Early Health Economic Model on Hearing Loss: the potential added value of Novel Hearing Therapeutics

*Rishi Mandavia; Yvette Horstink; Mirre Scholte; Janneke Grutters; Evie Landry; Carl May; Maroeka Rovers; Anne G. Schilder*

**PS 240**

The PATH study: Preparing for the Adoption of novel Therapeutics in Hearing loss.

*Rishi Mandavia; Anne G. Schilder; Maroeka Rovers; Carl May*

**PS 241 · WITHDRAWN**

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**Tinnitus: Human Studies and Animal Models**

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**PS 242**

Inducing Tinnitus in Guinea Pigs Through Stimulus Timing-Dependent Plasticity

*Michael Selesko; Jennifer Lampen; Rebekah Weeks; Calvin Wu; Adam Hockley; Susan E. Shore*

**PS 243**

Bushy cells of the ventral cochlear nucleus and their relationship to tinnitus and hyperacusis

*David T. Martel; Susan E. Shore*

**PS 244**

VACHT Expression in the Cochlear Nucleus of Guinea Pigs After Tinnitus Induction and Reversal

*Jennifer Lampen; Karan Joseph; Susan E. Shore*

**PS 245**

Decoding Acute Tinnitus by Classifying Dorsal Cochlear Nucleus Spiking Activity

*Calvin Wu; Susan E. Shore*

**PS 246**

Comparison of three methods to detect tinnitus on a rat salicylate-induced tinnitus model

*Sylvie Pucheu; Camille Dejean; Amandine Laboulais; Veronique Baudoux; Maida Cardoso; Yves Cazals; Arnaud Norena; Christophe Goze-Bac; Gaelle Naert*

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**PS 247**

**TNF-alpha mediates blast-induced tinnitus:**

**Behavioral, electrophysiological and**

**immunocytochemical studies**

*Hao Luo; Xiuyuan Liang; Bin Liu; Edward Pace;  
Ruishuang Geng; Shaowen Bao; Jinsheng Zhang*

**PS 248**

**Blocking TNF-alpha Mitigates Blast-Induced Neural Anomalies in the Auditory and Limbic Systems and Protects Hearing**

*Ethan Firestone; Hao Luo; Edward Pace; Bin Liu;  
Shane Perrine; Shaowen Bao; Jinsheng Zhang*

**PS 249**

**Effects of Tinnitus and Hearing Loss on Spatial Release from Speech-on-speech Masking and Physiological Proxies of Cochlear Synaptopathy**

*Chhayakant Patro; Nour El Hidek; Heather A. Kreft;  
Magdalena Wojtczak*

**PS 250**

**Discriminating Tinnitus Subgroups Based on the Audiometric Profile**

*Eleni Genitsaridi; Theodore Kypraios; Derek Hoare;  
Deborah Hall*

**PS 251**

**Evaluating Candidate Measurement Instruments for Assessing the Impact of Chronic Subjective Tinnitus on Ability to Concentrate**

*Maryam Shabbir; Michael Akeroyd; Deborah Hall*

**PS 252**

**Alterations in Auditory Brainstem Response**

**Latencies in Subjects with Constant Tinnitus**

*Niklas Edvall; Golbarg Mehraei; Andra Lazar; Esma Idrizbegovic; Barbara Canlon; Christopher Cederroth*

**PS 253**

**A Pharmacogenomic Approach to Unravel the Genetic Contributors to Tinnitus**

*Natalia Trpchevska; Yitian Zhou; Kristi Krebs; Lili Milani; Volker Lauschke; Barbara Canlon; Christopher Cederroth*

**PS 254**

**Intracochlear Voltage Induced During Non- or Minimally-Invasive Electrical Stimulation of the Cochlea for Tinnitus Relief**

*Marina Salorio-Corbetto; Simone R. de Rijk; Chen Jiang; Manohar Bance*

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## VOR, VEMP, VsEP

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### PS 255

**TRPC6 knockout mice exhibit lower vestibulo-ocular reflex (VOR) gain to high frequency head rotation**

*Jun Huang; Tianwen Chen; Youguo Xu; Amy Pang; Yang Ou; Jerome Allison; Zhen Wang; Wu Zhou; Hong Zhu*

### PS 256

**Gravity Affects VOR Adaptation to Magnetic Vestibular Stimulation**

*Jacob M. Pogson; Dale C. Roberts; Jorge Otero-Millan; David S. Zee; Bryan K. Ward*

### PS 257

**Effect of Viewing Distance on the Vestibuloocular Reflex in Central Field Loss**

*Anca Velisar; Natela Shanidze*

### PS 258

**A Novel 3D Video Oculography System for Measuring Three Dimensional Vestibulo-Ocular Reflex**

*Junfeng Liang; Venus Luong; Josh McCraw; Shangru Wu; Gallucci Spencer; Ke Zhang; Ryan Myers; Rong Z. Gan; Chenkai Dai*

### PS 259

**Development of real-time 3D video-oculography using high quality infrared video Frenzel and galvanic evoked vestibulo-ocular monitoring.**

*Makoto Hashimoto; Yosuke Okinaka; Hironori Fujii; Kazuma Sugahara; Yoshinobu Hirose; Shunsuke Tarumoto; Takuo Ikeda; Hiroshi Yamashita*

### PS 260

**Evaluation of Motor Function in Rats with Noise-Induced Vestibular Loss**

*Courtney E. Stewart; David S. Bauer; Ariane C. Kanicki; Richard A. Altschuler; W Michael King*

### PS 261

**Instrumental and Strategic Development of the Short Latency Otolith Evoked Potential in Humans: Some Preliminary Observations**

*Anthony T. Cacace; Sabahet T. Rizvi; Faith W. Akin; Paul Kileny*

### PS 262

**Novel Evaluation Method for CVEMP**

*Toru Seo; Izumi Koizuka*

**PS 263****Effects of Sports-Related Head Impact on Otolith Function in Young adults: Preliminary Findings***Amanda Rodriguez; Sarah Schmoker; Jonathan Chiao***S  
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R****PS 264****Detecting Superior Semicircular Canal Dehiscence Syndrome using 2 kHz cVEMP in a Clinical Population***Kimberley Noij; Aaron K. Remenschneider; Barbara S. Herrmann; John Guinan; Steven D. Rauch***PS 265****Potential Screening Utility of 4 kHz oVEMP Responses in the Diagnosis of Superior Canal Dehiscence Syndrome***Kristen K. Steenerson; Emma Tran; Austin Swanson; Yona Vaisbuch; Matthew B. Fitzgerald; Jeffrey D. Sharon*

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**Coffee Break**

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1:30 PM – 2:00 PM

**Executive Ballroom DH**

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**Characterizing Auditory Function with Functional Near-Infrared Spectroscopy**

Chairs: Antje Ihlefeld &amp; Robert Luke

2:00 PM – 4:00 PM

**Grand Ballroom 220B****2:00 PM | SYMP 1****Functional Near Infrared Spectroscopy:  
Enabling Routine Functional Brain Imaging***Maria A. Franceschini***2:30 PM | SYMP 2****A Review of the Potential for fNIRS Deployed With Audiological Intent***Hamish Innes-Brown***2:45 PM | SYMP 3****Using fNIRS to Investigate Effortful Listening in Cochlear Implant and Normal Hearing Listeners***Xin Zhou; Ruth Y. Litovsky***3:00 PM | SYMP 4****Using Functional Near-infrared Spectroscopy to Characterize Listening Effort in Hearing-Device Users***Ian Wiggins; Francisca Perea Perez; Graham Naylor; Adriana Zekveld; Douglas Hartley*

3:15 PM | **SYMP 5**

## **fnirs Applications for Clinical Management of Hearing Loss in Infants**

*Colette McKay; Julia Wunderlich; Emily Jeffries; Namita Bhojani; Boris Savkovic; Michael Eager; Virginia Olivares; Hamish Innes-Brown*

3:30 PM | **SYMP 6**

## **Using Optical Neuroimaging to Understand Cognitive Effort in Listeners with Cochlear Implants**

*Jonathan E. Peelle*

3:45 PM | **SYMP 7**

## **Functional near Infrared Spectroscopy Can Help Predict and Monitor Cochlear Implant Outcome**

*Douglas Hartley; Carly Anderson; Rachael Lawrence; Ian Wiggins*

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## **Gene Therapeutic Approaches for Hearing Loss**

Chairs: Karen Avraham & Anne Schilder

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2:00 PM – 4:00 PM

### **Grand Ballroom 220A**

2:00 PM | **SYMP 8**

## **Genome Editing with and Without CRISPR**

*Adi Barzel*

2:30 PM | **SYMP 9**

## **Next Generation Gene Therapies for Genetic Hearing Loss**

*Jeffrey R. Holt*

2:45 PM | **SYMP 10**

## **Developing Comprehensive Patient Databases to Prepare for Gene Therapy Trials in Hearing Loss**

*Anne G. Schilder*

3:00 PM | **SYMP 11**

## **The Adeno-Associated Viral Anc80 (AAVAnc80) Vector - Precision Genetic Medicines to Address Hearing Loss**

*Michelle D. Valero*

3:15 PM | **SYMP 12**

## **Moving Gene therapies for Hearing Loss into the Clinic**

*Jonathan Whitton*

3:30 PM | **SYMP 13**

## **Optimizing Delivery of Molecular Therapeutics to the Inner Ear**

*Hinrich Staecker*

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3:45 PM | **SYMP 14**

**Biohybrid Cochlear Implants: An Approach for Molecular Therapy in Cochlear Implantation?**

*Jennifer Schulze; Eva Rohde; Thomas Lenarz; Hinrich Staecker; Mario Gimona; Athanasia Warneck*

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**Speech Perception**

Moderators: Matthew Winn & Mishaela DiNino

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2:00 PM – 4:00 PM

**Grand Ballroom 220C**

2:00 PM | **PD 1**

**Age-Related Changes in Phonetic Cue Usage: Contributions to Speech Understanding in Noise**

*Mishaela DiNino; Lillian Behm; Yunan Charles Wu; Barbara G. Shinn-Cunningham; Lori L. Holt*

2:15 PM | **PD 2**

**Effects of Age on the Electrophysiological Correlates of Continuous-speech Processing**

*Juraj Mesik; Lucia A. Ray; Magdalena Wojtczak*

2:30 PM | **PD 3**

**Challenging Speech Perception: A Potential Role for Individual Differences in Perceptual Learning**

*Karen Banai; Limor Lavie*

2:45 PM | **PD 4**

**Understanding Different Forms of Degraded Speech as an Auditory Skill**

*Stephen C. Van Hedger; Ingrid Johnsrude*

3:00 PM | **PD 5**

**Examining listener's use of cross-modal temporal cues in audiovisual speech perception**

*Kaylah Lalonde; Destinee Halverson*

3:15 PM | **PD 6**

**Taking Attention Away from the Auditory Modality: Behavioral and Electrophysiological Effects on Continuous Speech Processing**

*Zilong Xie; Bharath Chandrasekaran*

3:30 PM | **PD 7**

**Active Listening: A Framework for Generating and Recognizing Speech**

*Emma Holmes; Noor Sajid; David Quiroga-Martinez; Thomas Parr; Cathy Price; Karl Friston*

3:45 PM | **PD 8**

**Cognitive Resources are Recruited Highly Consistently Across Individuals During Story Listening**

*Matthew T. Bain; Björn Herrmann; Ingrid Johnsrude*

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**Poster Blitz**

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4:30 PM – 6:30 PM

**Grand Ballroom 220B**

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**Special Session in Memory of Shigeyuki Kuwada**

Chair: Laurel H. Carney

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4:30 PM – 6:30 PM

**Grand Ballroom 220C**

4:30 PM

**Introduction from Laurel Carney**

4:33 PM | **SYMP 15**

**Peakers, Troughers and Tweeners**

*Tom C. T. Yin*

4:46 PM | **SYMP 16**

**The Kid, the Curmudgeon, and the Rabbit:**

**Recollections from the Kuwada Lab's Early Days**

*Terrence R. Stanford*

4:59 PM | **SYMP 17**

**From Cochlear Nucleus to Cortical Evoked**

**Potentials: Two Decades of the Neurophysiology of**

**Monaural and Binaural Hearing with Shige San**

*Ranjan Batra*

5:12 PM | **SYMP 18**

**You Stick'em, I'll Stain'em and how Shig's AMFR was a Blast**

*Douglas L. Oliver*

5:25 PM | **SYMP 19**

**Gain Control by Local Circuits in the Inferior**

**Colliculus: The Legacy of the Rabbit**

*Shobhana Sivaramakrishnan*

5:38 PM | **SYMP 20**

**Transformation in ITD Processing in the Auditory Pathway: From Superior Olivary Complex to**

**Auditory Cortex**

*Douglas C. Fitzpatrick*

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5:51 PM | **SYMP 21**

**OFF inhibition to the Inferior Colliculus:  
a Computational Study on its Functions in  
Coding Speech**

*Yan Gai*

6:04 PM | **SYMP 22**

**Auditory Distance Coding using Amplitude  
Modulation Depth**

*Pavel Zahorik; Laurel H. Carney; Duck O. Kim*

6:17 PM | **SYMP 23**

**Remembrance of Shig Kuwada**

*Duck O. Kim*

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## **Welcome Get Together**

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5:30 PM – 6:30 PM

**Executive Ballroom**

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## **NIDCD Workshops**

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6:00 PM – 7:30 PM

**NIDCD Workshop #1 Applying for NIDCD Training  
and Career Development Awards**

**Room 211A**

Presenters: Dr. Kelly King and Dr. Katherine Shim

**NIDCD Workshop #2 Early Stage Investigators (ESI)  
and New Investigators (NI)**

**Room 211B**

Presenters: Dr. Kelly King and Dr. Katherine Shim

**NIDCD Workshop #3 SBIR and STTR Grant  
Programs from NIH / NIDCD**

**Room 211C**

Presenters: Dr. Roger Miller and Dr. Shiguang Yang

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## **Speaker Ready Room**

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7:00 PM – 10:00 PM

**Room 213**

**Sunday, January 26, 2020**

## **Registration**

7:00 AM – 6:00 PM

*Executive Ballroom Foyer*

## **Speaker Ready Room**

7:00 AM – 6:00 PM

*Room 213*

## **Morning Coffee Break**

7:30 AM – 8:00 AM

*Grand Ballroom Foyer*

## **Binaural Processing with Hearing Impairment**

Chairs: Sean Anderson & Jonas Klug

8:00 AM – 10:00 AM

*Grand Ballroom 220A*

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### **8:00 AM | SYMP 24**

**Auditory Motion Perception in Noise for Listeners with Cochlear Implants and with Normal Hearing**

*Michaela Warnecke; Ruth Y. Litovsky*

### **8:15 AM | SYMP 25**

**Neurophysiological Measures of Binaural Processing – from the Lab to the Clinic**

*Lindsey N. Van Yper; Jaime A. Undurraga; Juan Pablo Faúndez; David McAlpine*

### **8:30 AM | SYMP 26**

**Frequency Limit of ITD Sensitivity in Normal Hearing and Hearing Impaired Systems – Experimental Data and Model**

*Helen Heinermann; Jonas Klug; Sven Herrmann; Go Ashida; Jörg Encke; Mathias Dietz*

### **8:45 AM | SYMP 27**

**Aided Loudness and Speech Perception Outcomes in Children and Adults with Extended Bandwidth Hearing Aids**

*Maaike Van Eeckhoutte; Danielle Glista; Paula Folkeard; Robin O'Hagan; Susan Scollie*

### **9:00 AM | SYMP 28**

**Binaural Hearing in Single-Sided Deafness with a Cochlear Implant**

*Sebastian Ausili*

**SUN** 9:15 AM | **SYMP 29**

**Using Temporal Envelope ITD Sensitivity to Match Electric and Acoustic Hearing in Patients with Unilateral Cochlear Implants and Residual, Contralateral Acoustic Hearing: Localization and Speech Perception Outcomes**

*Coral Dirks; Peggy Nelson; Andrew J. Oxenham*

9:30 AM | **SYMP 30**

**Binaural Processing in Children with Asymmetric Hearing Who Listen with Bimodal Devices**

*Melissa J. Polonenko; Karen A. Gordon*

9:45 AM | **SYMP 31**

**Comparison of Single Cell Spike Rate and Timing in the Brainstem in Response to Cochlear Implant and Acoustic Stimulation**

*Michaela Müller; Barbara Beiderbeck; Benedikt Grothe; Michael Pecka*

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## **Cochlear Mechanics:**

### **Ad Astra per Alas Cochleum**

Moderators: Renata Sisto & Amir Nankali

8:00 AM – 10:00 AM

**Grand Ballroom 220C**

8:00 AM | **PD 9**

**An Extended Model of the Characteristics of Spontaneous Otoacoustic Emissions in Lizards**

*Geoffrey A. Manley; Pim Van Dijk; Hero Wit*

8:15 AM | **PD 10**

**Effects of Voltage and Membrane Cholesterol on Prestin Conformation: Insights from Molecular Dynamics Simulations**

*Jashan Sandhu; Richard D. Rabbitt; Tamara C. Bidone*

8:30 AM | **PD 11 WITHDRAWN**

**A Case To Re-Evaluate Baseline Shifts Of The Basilar Membrane -- 30 Years Later**

*Eric L. Le Page*

8:45 AM | **PD 12**

**Properties of the Traveling Wave measured with Optical Coherent Tomography (OCT)**

*Marcel van der Heijden; Anna Vavakou; Nigel P. Cooper*

9:00 AM | **PD 13**

**Acoustic Coupling between Active Oscillators Explains Identical-Frequency Spontaneous Otoacoustic Emissions from the Two Ears**

*Daibhid O Maoileidigh; Yuttana Roongthumskul; AJ Hudspeth*

**9:15 AM | PD 14**

**Nonlinear Cochlear Mechanics Without Direct BM Vibration-Amplification Feedback.**

*Alessandro Altoè; Christopher A. Shera*

**9:30 AM | PD 15**

**Three-Dimensional Motion Pattern of the Human Inner Ear during Bone Conduction Stimulation**

*Stefan Stenfelt; Mohammad Ghoncheh; Patrick Maas; Hannes Maier*

**9:45 AM | PD 16**

**Generation Mechanisms and Intracochlear Dynamics of Spontaneous Otoacoustic Emissions**

*Thomas Bowling; Haiqi Wen; Julien Meaud*

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**Development: Patterning**

Moderators: Michael Hoa & Magdalena Zak

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8:00 AM – 10:00 AM

**Grand Ballroom 220B**

**8:00 AM | PD 17**

**Characterization of Spiral Ganglion Neuron**

**Subgroup Development Using Single Cell RNA-Seq**

*Tessa R. Sanders; Matthew W. Kelley*

**8:15 AM | PD 18**

**Molecular Basis of Neuronal Diversification in the Mouse Cochlea**

*Brikha Shrestha; Lorna Wu; Lisa Goodrich*

**8:30 AM | PD 19**

**Shear forces drive precise patterning of hair cells in the mammalian inner ear**

*Roie Cohen; Liat Amir-Zilberman; Micha Hersch; Shiran Wolland; Shahar Taiber; Fumio Matsuzaki; Svenn Bergmann; Karen B. Avraham; David Sprinzak*

**8:45 AM | PD 20**

**The Role of LIN28B and Let-7 MiRNAs in Cochlear Tonotopic Specialization**

*Meenakshi Prajapati-DiNubila; Angelika Doetzlhofer*

**9:00 AM | PD 21**

**Dual regulation of planar polarization by Wnt-dependent and -independent pathways in the developing mouse cochlea**

*Elvis Huarcaya Najarro; Jennifer Huang; Adrian Jacobo; Lee Quiruz; Nicolas Grillet; Alan Cheng*

**9:15 AM | PD 22**

**High Resolution Imaging of Hair-Cell Ribbon**

**Synapse Formation and Stabilization**

**Natalie Mosqueda; Katie Kindt**

**9:30 AM | PD 23**

**Early Development of Resident Macrophages in the Mouse Cochlea Depends on Yolk Sac Hematopoiesis**

**Takayuki Okano; Ippei Kishimoto; Koichi Omori**

**9:45 AM | PD 24**

**Wnt Signalling Regulates the Formation of Inner Ear Sensory Organs by Antagonizing Prosensory Signals**

**Magdalena Zak; Vincent Plagnol; Nicolas Daudet**

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## **Exhibit Hall Open**

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9:00 AM – 5:00 PM

**Executive Ballroom**

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## **Mid-Morning Break**

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10:00 AM – 10:30 AM

**Grand Ballroom Foyer**

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## **A Multidisciplinary Approach to Tinnitus**

Chairs: Rebecca M. Lewis & Josef P. Rauschecker

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10:30 AM – 12:30 PM

**Grand Ballroom 220C**

**10:30 AM | SYMP 32**

**The Holy Grail for Subjective Tinnitus? Seeking Standardisation amongst Heterogeneity**

**Deborah A. Hall**

**11:00 AM | SYMP 33**

**Audiology Treatments for Tinnitus and Hyperacusis**

**Richard Tyler; Ann Perreau**

**11:30 AM | SYMP 34**

**Mindfulness Based Tinnitus Stress Reduction: Tinnitus, Brain Functioning, Psychology & Mindfulness**

**Jennifer Gans**

**12:00 PM | SYMP 35**

**Emotional and Cognitive Impact of Tinnitus: Role of Frontostriatal Gating**

**Josef P. Rauschecker**

# **Gene and Drug Delivery into the Inner Ear**

Moderators: Alan Cheng & Maryna Ivanchenko

10:30 AM – 12:30 PM

**Grand Ballroom 220B**

**10:30 AM | PD 25**

**Gene Therapy Using RNA Interference with Concomitant Gene Replacement in a Mature Murine Model of TMC1-related Hearing Loss**

***Yoh-ichiro Iwasa; Paul Ranum; Seiji Shibata; Hidekane Yoshimura; Ryotaro Omichi; Cody West; Richard J.H. Smith***

**10:45 AM | PD 26**

**Preclinical Testing of AAV9-PHP.B for Transgene Delivery to the Non-Human Primate Cochlea**

***Maryna V. Ivanchenko; Killian S. Hanlon; Maya K. Devine; David P. Corey; Casey A. Maguire***

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**11:00 AM | PD 27**

**Template-free Genome Editing Profiles are Biased in Postmitotic Hair Cells**

***Wei Xiong; Lian Liu; Jie Li***

**11:15 AM | PD 28**

**Local Delivery of Adeno-Associated Virus Vectors with Neurotrophin Gene Prevents Reduction in Synapses and ABR Amplitude in Noise Exposed Rats**

***Subhendu Mukherjee; Ayesha Noman; Brandon T. Paul; Andrew Dimitrijevic; Joseph Chen; Vincent Lin; Trung Le***

**11:30 AM | PD 29**

**Supraparticle-Mediated Drug Delivery Supports Retention and Biodistribution of Neurotrophin 3 in the Guinea Pig Cochlea**

***Niliksha Gunewardene; Yutian Ma; Patrick Lam; Rachael Richardson; Frank Caruso; Andrew Wise***

**11:45 AM | PD 30**

**A665-conjugated Acetylcysteine target prestin of outer hair cells with peptide hydrogel delivery preventing cisplatin-induced hearing loss**

***Jiaqi Pang; Hao Xiong; Yiqing Zheng***

**12:00 PM | PD 31**

**Extracellular Vesicles from HEI-OC1 Cells as Nanocarriers for Anti-inflammatory Drugs and Pro-resolving Mediators**

***Gilda M. Kalinec; Lucy Gao; Withaker Cohn; Julian Whitelegge; Kym Faull; Federico Kalinec***

**12:15 PM | PD 32**

**Additive Manufacturing of Fully Metallic Precision Microneedles for Round Window Membrane Perforation**

**Aykut Aksit; Amber M. Parker; Anil K. Lalwani; Alan C. West; Jeffrey W. Kysar**

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**Vestibular Periphery**

Moderators: Suhrud Rajguru & Donatella Contini

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10:30 AM – 12:30 PM

**Grand Ballroom 220A**

**10:30 AM | PD 33**

**Hearing and Proprioception Defects in Drosophila Dyb Mutants: Model for Meniere Disease**

**Teresa Requena Navarro; Alyona Keder; Joerg T. Albert; Andrew Jarman**

**10:45 AM | PD 34**

**Sox2 Maintains Type II Hair Cell Fate in Adult Mouse Vestibular Organs**

**Brandon C. Cox; Rémy Pujol; Tot B. Nguyen; Jennifer S. Stone**

**11:00 AM | PD 35**

**Dissecting the Differentiation Fates of Hair Cells in the Vestibular Sensory Epithelia during Mouse Inner Ear Development using Single Cell Transcriptomics**

**Soumya Negi; Gabriela Pregernig; Kathy So; Ryan McCarthy; Ning Pan; Tian Yang; Michael DeRan; Adam T. Palermo; Joseph C. Burns**

**11:15 AM | PD 36**

**The 3-D Spatial Orientation of the Vestibular Organs are altered in Casp3 deficient mice**

**Rebecca Cook; Shinji Urata; Tomoko Makishima**

**11:30 AM | PD 37**

**W276S/W276S mutation in KCNQ4 causes vestibular dysfunction via hair cell degeneration after acceleration stimulation**

**Hansol Hong; Jinsei Jung; Jae Young Choi; Gyu Cheol Han; Sung Huhn Kim**

**11:45 AM | PD 38**

**Evaluation of Synaptic Ribbon Architectures and Distributions in Vestibular Neuroepithelia Using Super-resolution Fluorescence Microscopy**

**Johnny J. Saldate; Felix E. Schweizer; Larry F. Hoffman**

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**12:00 PM | PD 39**

**Sensitivity of Type I hair cells to infrared radiation  
is conferred by intracellular TRPV4**

**Federica Maddalena Raciti; Weitao Jiang; Suhurd M.  
Rajguru**

**12:15 PM | PD 40**

**A Novel Cell Niche in the Cristae Ampullaris with  
Unprecedented Acetylcholine Evoked Calcium  
Transients in Mice**

**Holly A. Holman; Richard D. Rabbitt**

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## **Awards Committee**

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**12:00 PM – 2:00 PM**

**Room 211C**

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## **Long Range Planning**

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**12:00 PM – 2:00 PM**

**Room 211D**

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## **Funding Your Scientific Genius!**

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**12:15 PM – 1:15 PM**

**Room 211B**

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## **Travel Awards Committee**

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**12:15 PM – 1:30 PM**

**Room 211A**

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## **Women in Science Roundtable Lunch**

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**12:15 PM – 1:30 PM**

**Room 212ABCD**

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## **Lunch (on own)**

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**12:30 PM – 1:00 PM**

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## **Poster Session 2 - Open 24 hours**

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**1:00 PM – 11:00 AM**

**Executive Ballroom**

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## **Age-Related Hearing Loss: Behavioral and Physiological Assessments**

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### **PS 266**

**The Effects of Ageing, Hearing Loss and Tinnitus on  
White Matter in the Human Auditory Pathway**

**Oliver Profant; Antonín Škoch; Jaroslav Tintěra;  
Veronika Svobodová; Diana Tothová; Josef Syka**

## **PS 267**

**Alzheimer's Disease (AD) Mouse Models Show Features of Hidden Hearing Loss at an Early Age**  
*Mincheol Kang; Seojin Park; Jeong Han Lee; Robert Renden; Ebenezer N. Yamoah*

## **PS 268**

**Age-related Changes in the Auditory Steady-State Response Measured across the Lifespan of CBA/CaJ Mice**

*Kendra E. Stebbins; Joseph P. Walton*

## **PS 269**

**Auditory-Frontal Channeling In Alpha And Beta Bands Is Altered by Age-Related Hearing Loss and Relates To Speech Perception In Noise**

*Caitlin Price; Gavin Bidelman*

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## **PS 270**

**Natural Progression of Age-Related Hearing Loss in Male Wistar Rats**

*Mathieu Petremann; Christophe Tran Van Ba; Charlotte Romanet; Viviana Delgado-Betancourt; Pauline Liaudet; Vincent Descossy; Jonas Dyhrfjeld-Johnsen*

## **PS 271**

**Hearing Impairment Directly Associated with Cognitive Function Decline: Results from the AGES-Reykjavik Study**

*Chuan-Ming Li; Howard J. Hoffman; Christa L. Themann; Gudny Eiriksdottir; Johanna E. Sverrisdottir; Vilmundur Gudnason; Hannes Petersen*

## **PS 272**

**Relating Perception of Temporal Fine Structure to Measures of Synaptopathy in the Gerbil**

*Henning Oetjen; Sonny Bovee; Friederike Steenken; Christine Köpli; Georg M. Klump*

## **PS 273**

**Age-Related Effects on the Perceptual Resolution of Attended Temporal and Spatial Acoustic Features**

*Kristina C. Backer; Lee M. Miller; Gregg H. Recanzone*

## **PS 274**

**Exposure to a Temporally Modulated Augmented Acoustic Environment Improves Behavioral Gap Detection in Old CBA/CaJ Mice**

*Collin Park; Ryan Longenecker; Dimitri Brunnell; Mary Reith; Joseph P. Walton*

## **PS 275**

**Differential time course of cochlear processing deficits and GABAergic inhibition in the aging Mongolian gerbil**

**Mariella Kessler; Mario Lukacevic; Martin Mamach; Jens P. Bankstahl; Frank M. Bengel; Tobias L. Ross; Georg Berding; Georg M. Klump**

## **PS 276**

**Clinical feasibility of auditory processing tests in Japanese older adults: a pilot study**

**Shohei Fujimoto; Yukihide Maeda; Kazunori Nishizaki**

## **PS 277**

**Time Course of Synaptopathy and Compound Auditory-Nerve Activity in Quiet-Aged Gerbils**

**Friederike Steenken; Rainer Beutelmann; Amarins N. Heeringa; Sonny Bovee; Henning Oetjen; Georg M. Klump; Christine Koepli**

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## **PS 278**

**EEG Measures of Auditory Processing in Aging Mice**

**Jeffrey A. Rumschlag; Jonathan W. Lovelace; Khaleel A. Razak**

## **PS 279**

**Aging and the Auditory Nerve – Synaptic Structure, Endbulb Morphology and Peripheral Physiology**

**Kiera E. Grierson; Satoshi Nishitani; Tan Pongstaporn; David Ryugo**

## **PS 280**

**Neural Envelope Coding in Middle-aged Humans with Normal Audiograms**

**Homeira Kafi; Alexandra Mai; Kelsey Dougherty; Anna Hagedorn; Hari Bharadwaj**

## **PS 281**

**Peripheral Contributions to Age-Related Reductions in Phase Locking**

**Samira Anderson; Alanna Schloss; Rebecca Bieber**

## **PS 282**

**Age-Related Changes in Auditory Nerve Fiber Frequency Tuning, Temporal Coding, and Spontaneous Rate**

**Amarins N. Heeringa; Lichun Zhang; Go Ashida; Rainer Beutelmann; Friederike Steenken; Christine Koepli**

## **PS 283**

**Blockade of Corticothalamic Projections Alters Coding in Medial Geniculate Body to Less Salient Modulated Stimuli**

**Srinivasa Prasad Kommajosyula; Edward Bartlett; Rui Cai; Donald Caspary**

## **PS 284**

**The Influence of Presbycusis on the Processing of Temporal Features of Sound Stimuli in the Auditory Cortex of Rats**

**Josef Syka; Kateryna Pysanenko; Zbyněk Bureš**

## **PS 285**

**The Characteristics of Peripheral Cochlear Function And Central Auditory Function in Different Age Groups**

**Minfei Qian; Hao Wu; zhiwu huang; Qixuan Wang**

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## **Auditory Cortex – Human Studies I**

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## **PS 286**

**Difficulties with Speech-in-Noise Perception Related to Fundamental Grouping Processes in Auditory Cortex**

**Emma Holmes; Karl Friston; Timothy Griffiths**

## **PS 287**

**High Frequency Cortical Processing of Continuous Speech in Younger and Older Listeners**

**Joshua P. Kulasingham; Christian Brodbeck; Alessandro Presacco; Stefanie E. Kuchinsky; Samira Anderson; Jonathan Z. Simon**

## **PS 288**

**Fundamental Properties of Auditory Cortical Activity in Children as Observed from Direct Intracranial Recordings**

**Ariane Rhone; Kirill Nourski; Christopher Kovach; Brian Dlouhy; Mitchell Steinschneider**

## **PS 289**

**Neural Processing and Perception of Speech in Children with Mild to Moderate Sensorineuronal Hearing Loss**

**Axelle Calcus; Stuart Rosen; Lorna Halliday**

## **PS 290**

**Fast Click Rate Evoked Auditory Brainstem Response in Children with Autism**

**chun liang; Jierong Chen; Binbin Sun; Yalin Liu; Chengyun Zou; Guobin Wan**

**PS 291**

**Acoustic Change Complex and the Auditory Steady State Response with Amplitude Modulated Noise in Children with Listening Difficulties**

*Chelsea Blankenship; Lauren Petley; Thu Nguyen; Noah Campagna; Audrey Perdew; Nathan Clevenger; Erin Cash; Andrew Dimitrijevic; David R. Moore*

**PS 292**

**A Brain Network of Temporo-Frontal and Hippocampal Areas Support Pattern Detection in Rapid Sound Sequences**

*Roberta Bianco; Pavan Chaggar; Rosemary Southwell; Sven Bestmann; Gareth Barnes; Maria Chait*

**PS 293**

**The Developing Creative Brain: a Functional Magnetic Resonance Imaging (fMRI) Investigation of Musical Creativity in School-Aged Children**

*Karen C. Barrett; Patpong Jiradejvong; Lauren Jacobs; Charles J. Limb*

**PS 294**

**Application of an Auditory Steady State Response Paradigm to Cortical Evoked Potentials**

*Linda J. Hood; Rafael E. Delgado; John D. Durrant*

**PS 295**

**A pilot study to evaluate spectral resolution with Acoustic Change Complex using Ear Electroencephalography**

*Soojin Kang; Hye Yoon H. Seol; Sung Hwa Hong; Il Joon Moon*

**PS 296**

**Physiology and Connectivity of the Human Superior Temporal Sulcus as Revealed by Intracortical Recordings**

*Mitchell Steinschneider; Kirill Nourski; Ariane Rhone; Christopher Kovach; Hiroto Kawasaki; Matthew Banks*

**PS 297**

**Informational and Energetic Masking Effects on the Acoustic Change Complex**

*Jared Carter; Barbara Cone*

**PS 298**

**Extracting neural representations of auditory attentional processes from fMRI using multivariate pattern analysis**

*winko An; Abigail Noyce; Alexander Pei; Barbara Shinn-Cunningham*

## **PS 299**

**Transcranial Current Stimulation with the Speech Envelope Filtered in the Theta- but not in the Delta Band Modulates the Comprehension of Speech in Noise**

*Mahmoud Keshavarzi; Mikolaj Kegler; Shabnam Kadir; Tobias Reichenbach*

## **PS 300**

**Low Frequency Cortical and Cochlear Oscillations during Selective Attention to Visual and Auditory Stimuli in Tinnitus**

*Rodrigo Donoso; Alexis Leiva; Constantino Dragicevic; Paul Delano*

## **PS 301**

**Representation of Timbre variations in Human Auditory Cortex**

*Prachi Patel; Jose Herrero; Ashesh Mehta; Shihab Shamma; Nima Mesgarani*

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## **Auditory Cortex: Processing and Perception**

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### **PS 302**

**Cocktail Party Training Improves the use of Level Cues for Speech Intelligibility. Behavioral and fNIRS evidence.**

*Cosima Lanzilotti; Guillaume Andeol; Sébastien Scannella*

### **PS 303**

**Comparison of Two-Tone Forward Suppression in the Auditory Thalamus and Cortex**

*Colin Xiong; Xiuping Liu; JUN YAN*

### **PS 304**

**Signal-to-Noise Ratio Shapes Dip Listening in Auditory Cortex**

*Nima Alamatsaz; Antje Ihlefeld*

### **PS 305**

**Characterizing Cortical Auditory Evoked Potentials in Mice**

*Warren M. Bakay; Olivier Postal; Typhaine Dupont; Christine Petit; Nicolas Michalski; Boris Gourévitch*

### **PS 306**

**Physiological Correlates of Masking Release**

*Hyojin Kim; Bastian Epp*

### **PS 307**

**Dynamic encoding of sensory features, perceptual category and behavioural choice in ferret A1**

*Rupesh K. Chillale; Shihab Shamma; Srdjan Ostojic; Yves Boubenec*

**PS 308**

**Functional and Structural Analysis of Cortical Profiles in Feline Primary Auditory Cortex – Effect of Auditory Deprivation**

**Peter Hubka; Lea Sollmann; Kwame S. Kutten; J. Tilak Ratnanather; Andrej Kral**

**PS 309**

**Temporal Integration of Sequences in Secondary Auditory Region of the Zebra Finch Forebrain**

**Adam R. Fishbein; Kai Lu; Wanyi Liu; William J. Idsardi; Jonathan B. Fritz; Shihab A. Shamma; Robert J. Dooling**

**PS 310**

**Differential Neural Representation of Identical Acoustic Stimuli in the Context of Different Behavioral Paradigms in Frontal Cortex of the Ferret**

**Wanyi Liu; Kai Lu; Pingbo Yin; Shihab A. Shamma; Jonathan B. Fritz; Stephen V. David**

**PS 311**

**Auditory Learning Improves a Natural Social Behavior in Mice**

**Cristina Besosa; Alex G. Dunlap; Brenda Belwood; Dorottya Kacsoh; Robert C. Liu**

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**Functional UltraSound imaging of Ferret Auditory Cortex Reveals a Unique Neural Signature of Human Speech and Music Perception**

**Agnes Landemard; Celian Bimbard; Sam Norman-Haigneré; Yves Boubenec**

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**Representation of Perceptual Integration Time Downstream of Auditory Cortex**

**Justin D. Yao; Justin Gimoto; Dan H. Sanes**

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**Spectral Combination-sensitivity and FM Direction Preference Contribute Equally to Maximizing Responses of Cortical Neurons: A Possible Mechanism for Binding Acoustic Features**

**Stuart D. Washington; Georgios A. Keliris; Jagmeet S. Kanwal**

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**Auditory Prostheses III**

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**PS 314**

**The Effect of Tactile Stimulation on Pitch Perception in Normal Hearing and Cochlear Implant Users**

**Susan R. Bissmeyer; Juri Hwang; Raymond L. Goldsworthy**

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**Understanding the Causes and Effects of Temporal Pitch Distortion in Cochlear Implant Users.**

*Barry D. Jacobson*

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**Pulse Symmetry and Channel Interactions in Cochlear Implants**

*Gunnar L. Quass; Peter Baumhoff; Dan Gnansia;  
Pierre Stahl; Andrej Kral*

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**Exploring Polyphonic Pitch Perception in Cochlear Implant Users**

*Andres Camarena; Raymond L. Goldsworthy*

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**A Coding Strategy to Remove Temporally Masked Pulses and its Effect on Speech Perception by Cochlear Implant Listeners**

*Wiebke Lampert; Tobias Goehring; Jeremy Marozeau;  
Robert P. Carlyon*

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**Evaluating the Effect of Focussed Stimulation on Excitation Patterns in Humans and Cats: Linking Psychophysics and EEG Measurements**

*Francois Guerit; Andrew J. Harland; John C. Middlebrooks; Robin Gransier; Matthew L Richardson;  
Jan Wouters; Robert P. Carlyon*

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**How Temporal is Temporal Modulation Detection? The Relationship between Modulation Sensitivity and Spectral Resolution in Cochlear Implant Users**

*Ning Zhou; Lixue Dong; Susannah Dixon; Baylee Engelhardt*

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**Rapid Simultaneous-Masked Spatial Tuning Curves in Cochlear-Implant Users**

*Jordan A. Beim; Heather A. Kreft; Julie G. Arenberg;  
Andrew J. Oxenham*

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**Revisiting Loudness Growth with Increasing Pulse Amplitude or Phase Duration in Cochlear Implant Users**

*Ning Zhou; Lixue Dong; John Galvin III*

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**Effects of Instrument Timbre on Musical Emotion Recognition by Cochlear Implant Users**

*Brendon Warner; Xin Luo*

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**Impact of Flat Panel CT-Based Cochlear Implant Fittings on Speech, Timbre, and Pitch Perception**

*Melanie L. Gilbert; Nicole T. Jiam; Patpong Jiradejvong; Daniel L. Cooke; Charles J. Limb*

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**Decoding Selective Attention in Cochlear Implant Users and its Relation to Speech Performance**

*Waldo Nogueira; Hanna Dolhopiatenko; Irina Schierholz*

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**F0 Discrimination, Speech recognition, and Emotion Recognition in Younger and Elderly Adults Listening to Noise-Vocoded Harmonic Complexes**

*Lendra M. Friesen; Robert Morse*

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**Cochlear Implants Users have Larger Visual Evoked Potentials and Delayed Alpha Oscillations in a Visual Working Memory Task**

*Priyanka Yogarajah; Brandon T. Paul; Andrew Dimitrijevic*

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*Sandra Prentiss*

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**Contribution of the Functional Status of the Cochlear Nerve to Speech Recognition Outcomes in Adult Cochlear Implant Users**

*Jeffrey Skidmore; William J. Riggs; Chloe Vaughan; Shuman He*

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**Improved Neural Responses in Cochlear Implants Using a Physiologically Based Stimulation Strategy: Preliminary Results**

*Andres F. Llico; Thomas M. Talavage*

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**Evaluating a mixed-rate cochlear implant strategy on speech understanding in noise**

*Tanvi Thakkar; Thibaud Leclere; Alan Kan; Ruth Y. Litovsky*

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**Age-related Temporal Processing Deficits for Word Segments in Adult Cochlear-Implant Users: Perceptual and Electrophysiological Evidence**

*Zilong Xie; Samira Anderson; Sandra Gordon-Salant; Matthew Goupell*

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**Compared to Normally Hearing Listeners, Cochlear Implant Users Rely More on Lexical-Semantic Cues than on Prosodic Cues for Speech Emotion Identification**

*Margaret Richter; Monita Chatterjee*

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**The Role of Semantic Context and Talker Variability in Speech Perception for Cochlear-Implant Users and Normal-Hearing Listeners under Vocoded Conditions**

*Erin R. O'Neill; Heather A. Kreft; Andrew J. Oxenham*

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**Age at Cochlear Implantation and Frequency-to-Place Mismatch Influence Early Speech Recognition Outcomes**

*Michael W. Canfarotta; Brendan P. O'Connell; Emily Buss; Kevin D. Brown; Margaret T. Dillon*

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**Behavioral Assessment of Selective Attention with Competing Speech Stimuli in Hearing Aid Users**

*Sébastien Santurette; Martha Larsen; Lu Xia; Jens-Christian Britze Kijne; Josefine Juul Jensen*

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*Yonghee Oh; Curtis Hartiling; Nirmal Kumar Srinivasan; Morgan Eddolls; Anna Diedesch; Frederick J. Gallun; Lina Reiss*

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**Binaural Hearing: Cochlear Implants, Bone Conduction, and Hearing Aids**

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**Sound Localization in Patients with a Unilateral Hearing Aid: Discordance Between Right and Left Ear**

*Hun Yi Park; Hantai Kim*

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**Cochlear Implant for Congenitally Deaf Children with Single-sided Deafness**

*Susan Arndt; Hassepass Frederike; Antje Aschendorff; Thomas Wesarg; Iva Speck; Rainer Beck*

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**Objective and Subjective Long-term CI Usage Evaluation of Patients with Single-sided Deafness and Asymmetric Hearing Loss**

*Susan Arndt; Pascal Challier; Hassepass Frederike; Ann-Kathrin Rauch; Thomas Wesarg; Iva Speck*

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**Lateralization of Competing Interaural Envelope Cues Measured with the CCi-Mobile Research Platform**

*Stephen R. Dennison; Alan Kan; Tanvi Thakkar; Ruth Y. Litovsky*

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**Aiding the Fitting of Bilateral Cochlear Implants Using a Tool for Loudness Balancing**

*Marina Salorio-Corpetto; Deborah Vickers; Lorenzo Picinali*

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**Robust Spatial Unmasking of Speech in Children with Bilateral Cochlear Implants by Harnessing Interaural Time and Level Cues with Large Angular Separation between Target and Maskers**

*Z. Ellen Peng; Ruth Y. Litovsky*

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**Onset Weighting of Temporal Spatial Cues with Cochlear Implant Stimulation in Early Onset Deafness**

*Alexa Buck; Nicole Rosskothen-Kuhl; Lakshay Khurana; Stella Mayer; Kongyan Li; Jan W. Schnupp*

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**Spatial Hearing with Two CIs: Pulse Rate and Envelope Shape Affect Interaural Time Difference Sensitivity of Hearing Inexperienced Rats**

*Nicole Rosskothen-Kuhl; Alexa N. Buck; Stella Mayer; Lakshay Khurana; Jan W. Schnupp*

**PS 354**

**Impact of Synchronized Automatic Gain Controls on Perception of Stereo Spatialization in Bilateral Cochlear Implant Users**

**Stephanie B. Purnell; Charles J. Limb; Patpong Jiradejvong; Karen C. Barrett**

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**Binaural Hearing Benefits in Aging Bilateral Cochlear Implant Recipients**

**Sandra Prentiss; Hillary Snapp**

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**Clinical Vestibular Disorders**

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**Human Schwann Cells are Less Susceptible to Radiation Injury than Merlin-Deficient Schwann Cells through Expression of RAD51 DNA Repair**

**Stefanie Peña; Erin Cohen; Stefania Goncalves; Olena Bracho; Brian Marples; Nagy Elsayyad; Michael Ivan; Paul Monje; Cristina Fernandez-Valle; Fred Telischi; Xuezhong Liu; Christine Dinh**

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**Vibration-induced nystagmus in patients with vestibular schwannoma: Characteristics and clinical implications**

**Jeon Mi Lee; Hyun Jin Lee; Sung Huhn Kim**

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**Identification of A Genetic Mutation Underlying Familial Cases of Recurrent Benign Paroxysmal Positional Vertigo**

**Yinfang Xu; Yan Zhang; Ivan Lopez; Shelley Smith; Akira Ishiyama; Xuezhong Liu; Yesha (Yunxia) Lundberg**

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**Improvement in Postural Control and Quality of Life after Stapedotomy**

**Andrea Viziano; Alessandro Micarelli; Marco Alessandrini**

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**Noisy Galvanic Vestibular Stimulation Has a Greater Ameliorating Effect on Postural Stability in Unstable Subjects.**

**Chisato Fujimoto; Makoto Kinoshita; Teru Kamogashira; Tatsuya Yamasoba; Shinichi Iwasaki**

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### **Vestibular Implantation and the Feasibility of Fluoroscopy-guided Electrode Insertion**

***Raymond Van de Berg; Joost Stultiens; Herman Kingma; AA Postma; Nils Guinand; Angélica Perez-Fornos***

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### **Multimodality Electrode Interactions in a Combined Vestibular and Cochlear Implant.**

***James Phillips; Leo Ling; Amy Nowack; Jay T. Rubinstein***

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### **Prevalence of Vestibular and Balance Disorders in Asymptomatic Controls and HIV+ Adults**

***Helen S. Cohen; Michael W. Plankey; Susan P. Willilams; Haleh Sangi-Haghpeykar***

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## **PS 364**

### **Bilateral vestibulopathy, age and walking speed increase drop-out rate when testing Dynamic Visual Acuity during walking**

***Raymond Van de Berg; Herman Kingma; Floor Lucieer; Marlou Snelders; Dmitrii Starkov; Maksim Pleshkov; Vincent Van Rompaey; Nils Guinand; Angélica Perez-Fornos***

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### **Understanding Extremely Elevated Dizziness Handicap Inventory Scores: An Analysis of Predictive Factors**

***Emily C. Wong; Whitney Chiao; Katrina Luong; Lauren Pasquesi; Jeffrey D. Sharon***

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## **Development I**

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### **The Notch Ligand Jagged1 is Required for Normal Cochlear Function and Inner Hair Cell Stereocilia Integrity in the Postnatal Organ of Corti**

***Felicia A. Gilels; Jun Wang; Anwen Bullen; Patricia M. White; Amy E. Kiernan***

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### **Wnt Signaling Impacts Central Pathfinding of Spiral Ganglion Neurons**

***Zach A. Stoner; Elizabeth Ketchum; Karen Elliott; Jeremy S. Duncan***

**PS 368****A Novel Wnt/G-Protein/PI3K Signaling Pathway****Regulates Planar Polarity In The Cochlea*****Andre Lanin Malt; Arielle K. Hogan; Connor D. Smith; Maxwell Madani; Xiaowei Lu*****PS 369****Deficient and Excessive Retinoic Acid Signaling Inhibits Morphogenesis of Stem Cell-Derived Otic Vesicles into Inner Ear Organoids*****Liqian Liu; R. Keith Duncan*****PS 370****Defining the Role of Gata3 During Cellular Differentiation*****Paige Blinkiewicz; Jeremy S. Duncan*****PS 371****Endothelin Expression Suggests Multiple Roles in Inner Ear Development*****Justine M. Renauld; William Davis; Martín L. Basch*****PS 372****Retinoic Acid Synthesis via Retinol Dehydrogenase 10 and Aldehyde Dehydrogenase 1a3 Enzymes Mediate Formation of Peripheral versus Central Region of Vestibular Sensory Organs*****Kazuya Ono; Doris Wu*****PS 373****GATA3 and NEUROD1 Regulate the Projection of Spiral Ganglion Neurons from the Cochlea to the Cochlear Nucleus*****Elizabeth Ketchum; Jeremy S. Duncan*****PS 374****Multiple Roles of the Notch Ligand Jagged1 during Sensory Development of the Cochlea*****Courtney Kellogg; Amy E. Kiernan*****PS 375****Insulin-Like Growth Factor-1 Controls Autophagic Flux in Differentiating Otic Cells*****Sara Pulido; Angela Garcia-Mato; Lourdes Rodriguez de la Rosa; Marta Magariños; Isabel Varela-Nieto*****PS 376****Signaling by Ndp through its Receptor Fzd4 in Cochlear Hair Cells is Critical for Hair Cell Function and is Disrupted in Norrie Disease*****Yushi Hayashi; Artur Indzhykulian; Albert Edge***

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**Development of Ossification in the Neonatal Gerbil Middle Ear**

*Eileen Brister; Christoph Rau; Robert Withnell; Yi Shen; Stephen Hoff; Claus-Peter Richter*

## **PS 378**

**FGF8 expression specifically marks differentiating type I vestibular hair cells shortly after mitosis**

*Evan Ratzan; Michael Deans*

## **PS 379**

**Expression of Semaphorins and Their Receptors in Developing Chicken Auditory Ganglion and Cochlear Nucleus**

*Xiaoyu Wang; M. Katie Scott; Donna Fekete; Yuan Wang*

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**Absence of Integrin Alpha8 Apical Expression Results in Abnormal Hair Cell Morphology and Hearing Loss**

*Marisa Zallocchi; Jian Zuo; Huizhan Liu; Duane Delimont; Linda Goodman; David Z. He*

## **PS 381**

**Canonical Wnt signaling modulation using CHIR vs non-canonical signaling with photobiomodulation on the development of inner ear organoids**

*Nathaniel Carpena; So-Young Chang; Jae Yun Jung; Phil-Sang Chung; Min Young Lee*

## **PS 382**

**Differentiation of Inner Ear Progenitors with Defective CHD7 in Chimeric Human Inner Ear Organoids**

*Yoshitomo Ueda; Jing Nie; Eri Hashino*

## **PS 383**

**Patterning the Radial Axis of the Cochlea: Exploring the Role of Fgfs downstream of Wnt Signaling**

*Elizabeth R. Wehren; M. Katie Scott; Rachel M. Maibach; Donna Fekete*

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**Slc26a9P2ACre, a New Pan-Otic Cre Driver for Conditional Manipulation of Inner Ear Gene Expression**

*Lisa Urness; Xiaofen Wang; Chaoying Li; Rolen Quadros; Channabasavaiah Gurumurthy; Suzanne Mansour*

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**Generation and Characterization of PAX2-CreERT2 Reporter Cell Lines for Lineage Tracing in Human Inner Ear Organoids**

*Takashi Nakamura; Jing Nie; Eri Hashino*

**PS 386**

**Evaluating the Role of the Basic Helix-Loop-Helix Family Member E40 (Bhlhe40) Transcription factor in Inner Ear Development and Function.**

*Braulio Peguero; Sarah Allen; Talah Wafa; Rafal Olszewski; Michael Hoa; Tracy S. Fitzgerald; Matthew W. Kelley*

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**Live Imaging of Cochlear Organotypic Explants – a Tool for Studying Development, Pathology, and Regeneration**

*Shahar Taiber; Shiran Wolland; Roie Cohen; Liat Amir-Zilberstein; Olga Lonza; Karen B. Avraham; David Sprinzak*

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**Early determinants of cell fate in 3D inner ear organoids**

*Pei-Ciao Tang; Emily R. Verbrugge; Rick F. Nelson*

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**Endolymph & Ménière's Disease**

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**The Modulation of the Sensitivity of the Mammalian Utricle by Low Frequency Hydrostatic Bias.**

*C Pastras; S Stefani; Ian S. Curthoys; Camp A; Daniel Brown*

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**Effect of Intratympanic Vasopressin on Inner Ear in Mouse**

*Minbum Kim; So Yeon Yoon*

**PS 391**

**Rat Model of Acute Attack of Ménière's Disease: Direction-changing Spontaneous Nystagmus and Hearing Fluctuations Induced by Intratympanic Injection of Potassium Chloride**

*Takefumi Kamakura; Tadashi Kitahara; Makoto Kondo; Arata Horii; Yukiko Hanada; Yasumitsu Takimoto; Yusuke Ishida; Yukiko Nakamura; Takao Imai; Hidenori Inohara; Shoichi Shimada*

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**Roles of Macrophages/Microglia in Endolymphatic**

**Sac Pathologies Associated with Meniere's Disease**

**David Bächingen; Joseph B. Nadol; Joe C. Adams;**

**Andreas H. Eckhard**

## PS 393

**Quantitative 3D Volume Measurement of  
Endolymphatic Hydrops is Different from the  
Conventional 2D Area Measurement in Meniere's  
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**Tae-Soo Noh; In Chan Song; Ji Hoon Kim; Doo Hee  
Kim; Moo Kyun Park; Jun Ho Lee; Seung-Ha Oh;  
Myung-Whan Suh**

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**Vestibulo-ocular Reflex Gain of the Video Head  
Impulse Test (vHIT) with Re-fixation Saccades on  
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**Shreyas Bharadwaj; Michelle Petrak; Cammy Bahner;  
Laurin Moodie; Sara Claycomb; Akihiro Matsuoka**

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### PS 395

**Comparison of Different Sample Preparation  
Methods for sNuc-RNASeq of the Adult Stria  
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**Shoujun Gu; Rafal Olszewski; Ian Taukulis; Madeline  
Pyle; Zheng Wei; Daniel Martin Izquierdo; Robert  
Morell; Michael Hoa**

### PS 396

**The ATP-Dependent Chromatin Remodeler CHD7  
is Critical for Neuronal Lineage Differentiation by  
Changing Chromatin Accessibility and Nascent RNA**

**D Ford Hannum; Hui Yao; Sophie F. Hill; Ricardo D.  
Albanus; Wenjia Lou; Jennifer M. Skidmore; Gilson  
J. Sanchez; Alina R. Saiakhova; Stephanie L. Bielas;  
Peter C. Scacheri; Mats Ljungman; Stephen CJ Parker;  
Donna M. Martin**

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**«Passenger Gene» Problem in Transgenic C57BL/6  
Mice Used in Hearing Research**

**Jun Suzuki; Hitoshi Inada; Chul Han; Mi-Jung Kim;  
Ryuichi Kimura; Yusuke Takata; Yohei Honkura; Yuji  
Owada; Tetsuaki Kawase; Yukio Katori; Shinichi  
Someya; Noriko Osumi**

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**Characterisation of Fibroblasts Derived From an Usher Syndrome Patient with USH2A Gene Mutations and the Subsequent Generation of Induced Pluripotent Stem Cell Lines**

*Abbie Francis; Sam McLenachan; Sharon Redmond; Fred Chan; Marcus Atlas; Rodney Dilley; Elaine Y.M. Wong*

**PS 399**

**Generation and Correction of P2RX2 c.178G>T mutation in Human and Mouse iPSCs**

*Aida Nourbakhsh; Zheng-Yi Chen; Zaohua Huang; Nicholas Gosstola; Derek Dykxhoorn; Dykxhoorn; Xuezhong Liu*

**PS 400**

**Conditional Deletion of the RNA-Binding Protein Caprin-1 Leads to Progressive Hearing Loss in Mice.**

*Lisa S. Nolan; Jing Chen; Ana Cláudia Gonçalves; Emily Towers; Naila Haq; Karen Steel; Jonathan Gale\*; Sally Dawson\**

**PS 401**

**Genomic Analysis of Enhancer Identity and Function in Hair Cell Regeneration**

*Erin Jimenez; Claire Slevin; Shawn Burgess*

**PS 402**

**The expression of human TMPRSS3 gene in zebrafish**

*Shunsuke Tarumoto; Youichi Asaoka; Kazuma Sugahara; Yoshinobu Hirose; Makoto Hashimoto; Makoto Seiki; Hiroshi Yamashita*

**PS 403**

**The Expression of GPD3 and its Response to Noise in the Cochlea**

*Holly J. Beaulac; Patricia M. White*

**PS 404**

**Connexin 26 in Mature Ears Influences Survival of Hair Cells and Neurons**

*Xiaobo Ma; Jennifer M. Skidmore; Jelka Cimerman; Lisa A. Beyer; Donald L. Swiderski; Lisa Kabara; David F. Dolan; Donna M. Martin; Yehoash Raphael*

**PS 405**

**Screened AAV Variants Permit Efficient Transduction Access to Inner Ear Cells for Gene therapy**

*Yilai Shu; Jinghan Wang; Xinde Hu; Yuanyuan Xue; Hui Yang; Huawei Li*

## **PS 406**

**DYNC1LI1 is required for auditory hair cell development in mice**

*Yuan Zhang; Renjie Chai*

## **PS 407**

**The Genetics of Variation of The Wave 1 Amplitude of The Mouse Auditory Brainstem Response**

*Ely Cheikh Boussaty; Danielle Gillard; Joel Lavinsky; Pezhman Salehi; Juemei Wang; Amanda L Crow; Aline Mendonça; Hooman Allayee; Uri Manor; Rick A Friedman*

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## **PS 408**

**Investigating the effects of exonic and intronic variants of NF2 on pre-mRNA splicing**

*Masaru Noguchi; Masato Fujioka; Naoki Oishi; Hideki Mutai; Kiyomitsu Nara; Tatsuo Matsunaga; Kaoru Ogawa; Koichiro Wasano*

## **PS 409**

**Serum activity of MMP9 and functional polymorphism of MMP9 and BDNF as potential biomarkers of neuroplasticity in prelingual deafness treatment with cochlear implantation**

*Monika Matusiak; Anita Obrycka; Emilia Rejmak-Kozicka; Leszek Kaczmarek; Henryk Skarzynski*

## **PS 410**

**Investigating the effects of exonic single nucleotide variants of SLC26A4 on pre-mRNA splicing**

*Koichiro Wasano; Takashi Kojima; Satoe Takahashi; Hideki Mutai; Tatsuo Matsunaga; Kazuaki Homma*

## **PS 411**

**Constructing and Exploring Regulatory Networks of miR-96 in the Inner Ear**

*Morag Lewis; Maria Lachgar; Miguel Angel Moreno Pelayo; Karen Steel*

## **PS 412**

**CACD1-Deficient Mice Exhibit Hearing and Balance Deficits Associated with a Disruption of Calcium Homeostasis in the Inner Ear**

*Cong Tian; Jaclynn M. Lett; Robert Voss; Alec N. Salt; Jared J. Hartsock; Kevin Ohlemiller; Kenneth R. Johnson*

## **PS 413**

**The Shared Genetic Program of the Peripheral and Central Auditory Systems Using Transcriptomics**

*Mor Bordeynik-Cohen; Constanze Krohs; Naama Messika Gold; Ran Elkon; Hans Gerd Nothwang; Karen B. Avraham*

**PS 414****Characterization of a Prestin Mouse Model****Carrying the p.R130S Missense Variant****Satoe Takahashi; Yingjie Zhou; Mary Ann Cheatham;  
Kazuaki Homma****PS 415****KCNQ4 variants lacking the C-terminal cytosolic domain are cytotoxic****Takashi Kojima; Koichiro Wasano; Satoe Takahashi;  
Kazuaki Homma****PS 416****The Genetic Background of Mice Plays a Role in the Severity of TECTA-Related Hearing Loss****A. Monique Weaver; Kevin T. Booth; Hela Azaiez;  
Richard J.H. Smith****PS 417****Single Nucleus Sequencing of the Mouse Cochlea with Cisplatin Treatment****Erica C. Sadler; Soumya Korrapati; Ian Taukulis;  
Madeline Pyle; Rafal Olszewski; Katharine Fernandez;  
Zheng Wei; Erich Boger; Robert Morell; Michael Hoa;  
Lisa L. Cunningham****PS 418****Partial Vestibular Deficit after Cx26 Deletion in Mice****Xiaobo Ma; Jennifer M. Skidmore; Donald L. Swiderski;  
Donna M. Martin; Yehoash Raphael****PS 419****Long-Term Expression Stability of Anc80L65-Containing Virus Infected Hair Cells in the USH1C Mouse Model****Weinan Du; Gwenaelle S. Geleoc; Aizhen Zhang;  
Tianwen Chen; Jun Huang; Hong Zhu; Wu Zhou;  
Qingyin Zheng****PS 420****Differential Effects of Immune Modulation on Cochlear Responses to Acute and Chronic Degeneration in of Cdh23-erl/erl Mice****Qingyin Zheng; Aizhen Zhang; Weinan Du; Bo Hua Hu; Fangfang Zhao****PS 421****Investigating the Role of the Epigenetic Reader Brd4 in Hearing and Development of the Inner Ear****Abhiraami Kannan Sundhari; Clemer Abad; Marie Maloof; Nagi Ayad; Juan Young; Susan Blanton;  
Katherina Walz; Xuezhong Liu**

## **PS 422**

### **Characterizing a Mouse Model of Non-Syndromic Deafness Caused by TMPRSS3 Mutation**

*Ksenia A. Aaron; Ina A. Lee; Katja Pekrun; Elvis Huarcaya Najarro; Yasmin Eltawil; Wuxing Dong; Mark A. Kay; Alan Cheng*

## **PS 423**

### **Overexpression of mitochondrial histidyl-tRNA synthetase restored mitochondrial dysfunction caused by a deafness-associated tRNAHis mutation**

*Shasha Gong; Min-Xin Guan*

## **PS 424**

### **DFNA5 abilitation augments noise induced hearing loss by inhibition synapse regeneration**

*Yong Tao; zhuoer Sun; Xingle Zhao; Hao Wu*

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## **PS 425**

### **HOMER2 is Involved in Actin Dynamics in Hair-Cell Stereocilia**

*Heather Widmayer; Kevin T. Booth; Ana Sierra; Hela Azaiez; Richard J.H. Smith*

## **PS 426**

### **Big Data to Therapy: Precision Medicine for the Deaf in the Diverse Jewish Population**

*Zippora Brownstein; Shahar Taiber; Mor Bordeynick-Cohen; Hana Bibi; Daniella Beller; Gabriel Chodick; Varda Shalev; Karen B. Avraham*

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## **Hair Cells to Vestibular Nuclei**

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## **PS 427**

### **Cellular Origins and Response to Atoh1**

### **Overexpression in the Vestibular Flat Epithelium of Mice**

*Lu He; Jing-Ying Guo; Teng-Fei Qu; Wei Wei; Ke Liu; Zhe Peng; Guo-Peng Wang; Shu-Sheng Gong*

## **PS 428**

### **The Role of Pou4f3 in Vestibular Hair Cell Survival and Function**

*Betty Y. Chen; Nnenna Ezeilo; Kaley A. Graves; Tianwen Chen; Jun Huang; Hong Zhu; Wu Zhou; Bradley J. Walters; Brandon C. Cox*

## **PS 429**

### **Single-cell RNA-seq Reveals Novel Cell Subtypes and Gene Expression Patterns in the Mouse Crista Ampullaris**

*Brent A. Wilkerson; Alex D. Chitsazan; Heather L. Zebroski; Olivia Bermingham-McDonogh*

**PS 430**

**Hypergravity stimulation deteriorates vestibular function in mouse with selective ablation of p2rx2**  
**Sang Hyun Kwak; Hansol Hong; Jae Young Choi; Gyu Cheol Han; Sung Huhn Kim**

**PS 431**

**Evidences of vestibular synaptopathy induced by aminoglycoside exposure**

**Hee-Won Jeong; Jae-Hun Lee; Han-Seung Nam; Hyeongbeom Kim; Ilyong Park; Nathaniel Carpena; So-Young Chang; Ji Eun Choi; Min Young Lee; Phil-Sang Chung; Jae Yun Jung**

**PS 432**

**Electrical Response Evoked by Pulsed Infrared Stimulation on Mouse Peripheral Vestibular System**

**Weitao Jiang; Fangyi Chen; Dingxuan Zeng**

**PS 433**

**Bilateral Round Window Ouabain Application as a Model for Vestibular Hypofunction**

**Matthew Farr; Leila Abbas; Jaydip Ray; Marcelo N. Rivolta**

**PS 434**

**The Starliner Zebrafish Mutant Has Central Deficits in Hearing and Balance**

**Yan Gao; Eliot Smith; Itallia Pacentine; Timothy Erickson; Alex Nechiporuk; Teresa Nicolson**

**PS 435**

**Central Defects in the raumschiff Zebrafish Mutant**

**Anna Shipman; Matthew Hill; Eliot Smith; Timothy Erickson; Teresa Nicolson**

**PS 436**

**Systemic Injection of CGRP Prolongs a Nausea-like State in Mice**

**Benjamin Liang; Catherine Hauser; Stefanie Faucher; Raajan Jonnala; Shafaqat Rahman; Anne E. Luebke**

**PS 437**

**Systemic Injection of CGRP Increases Postural Sway and Auditory Sensitivity in Mice**

**Benjamin Liang; Catherine Hauser; Stefanie Faucher; Raajan Jonnala; Shafaqat Rahman; Anne E. Luebke**

## **PS 438**

**Vestibulo-Sympathetic Projections: Synaptic Proteins Associated with Vestibular Axonal Varicosities in the Rostral and Caudal Ventrolateral Medullary Regions of the Rat**

**Amelia H. Gagliuso; Giorgio P. Martinelli; Gay R. Holstein**

## **PS 439**

**Stochastic Noise Differentially Effects Neuronal Subtypes within the Medial Vestibular Nucleus In Vitro**

**S Stefani; C Pastras; P Breen; J Serrador; M Schubert; Camp A**

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## **Human Temporal Bone Studies, Head and Neck Disease**

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## **PS 440**

**Middle-Ear-Muscle Forces Could Aid the Diagnosis of Otosclerosis with Wideband Tympanometry (WBT)**

**Anbuselvan Dharmarajan; Mike E. Ravicz; Kevin N. O'Connor; Sunil Puria**

## **PS 441**

**Improving Anatomical Understanding of the Human Tympanic Membrane Through Histologic Processing and Imaging**

**Jennifer S. Zhu; Nicole Black; Dhrumi Gandhi; Aaron K. Remenschneider**

## **PS 442**

**Intra-Operative Assessment of Ossicular Mobility: Measurements in Cadavers and Numerical Analysis**

**Takuji Koike; Sho Kanzaki; Sinyoung Lee; Yuuka Irie; Takaaki Fujishiro; Chee Sze Keat; Takenobu Higo; Kenji Ohoyama; Masaaki Hayashi; Hajime Ikegami**

## **PS 443**

**Soft Tissue Stimulation Result in Hearing by Skull Bone Vibration**

**Stefan Stenfelt; Srdan Prodanovic**

## **PS 444**

**3D X-ray Microscopy Quantification of Intracochlear Tissue Response and Trauma Following Cochlear Implantation in Multiple Species**

**Alexander D. Claussen; Christopher Kaufmann; Rene Vielman Quevedo; Brian Mostaert; Marlan R. Hansen**

**PS 445****Fetuin A – A Potential Biomarker of Hearing Loss*****Wei Liu; Goran Laurell; Jesper Edvardsson-rasmussen; Per-Olof Eriksson*****PS 446****Are thickened subneuroepithelial extracellular deposits of the crista ampullares in the human associated with vestibular diseases?*****Tadao Okayasu; Jennifer T. O'Malley; Joseph B. Nadol*****PS 447****Otopathologic Findings in Patients with Alzheimer's Disease*****Renata M. Knoll; Nicholas Koen; Rory J. Lubner; Victor E. Alvarez; David H. Jung; Aaron K. Remenschneider; Elliott D. Kozin*****PS 448****Effect of Intermittent Hypoxia on Respiratory Allergic Reaction*****Do-Yang Park; Dong Young Kim; Jung Jun Lee; Hun Yi Park; Hyun Jun Kim; Chul-Ho Kim*****PS 449****Determining Neck Lymph Node Level Patterns in Different Subtypes of Head and Neck Cancer*****Brianna Hope; Rahul Varman; Joehassine Cordero***

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**Inner Ear Therapeutics I**

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**PS 450****Mitochondrial-ROS Induced Cochlear Hair Cell Death in IDH2 Deficiency Can be Prevented by Mitochondria-Targeted Antioxidant MitoQ*****Myung Hoon Yoo; Ye-Ri Kim; Min-A Kim; Un-Kyung Kim; Kyu-Yup Lee*****PS 451****Quinoxaline protects hair cells from noise-induced damage*****Marisa Zallocchi; Jian Zuo; Santanu Hati; Sonia Rocha-Sanchez; Umesh Pyakurel; Shikha Tarang*****PS 452****Drug-Induced Hearing Loss Prevention through Clinical Data Driven Drug Re-purposing*****Dong Xu; Shaikh Emdadur Rahman; Yuying Huang*****PS 453****Reducing Cisplatin-Induced Hearing Loss by Manipulating the Blood Labyrinth Barrier*****Ayesha Noman; Subhendu Mukherjee; Trung Le***

## **PS 454**

**Screening Hair Cell Protection in Autophagy Library using the zebrafish lateral line**  
***Yoshinobu Hirose; Kazuma Sugahara; Makoto Hashimoto; Shunsuke Tarumoto; Hiroshi Yamashita***

## **PS 455**

**Drug Repurposing by Transcriptomic Analysis Identifies Potential Otoprotective Agent for Noise-induced Hearing Loss**  
***Parinaz Dabestani; Joseph DiGuiseppi; Cassidy Nguyen; Jian Zuo; Sarath Vijayakumar***

## **PS 456**

**Identification of Exosome Associated Factors that Protect Against Aminoglycoside Induced Hair Cell Death**

***Tucker Q. Costain; Lizhen Wang; Andrew M. Breglio; Lindsey A. May; Nora C. Welsh; D. Eric Anderson; Melanie Barzik; Lisa L. Cunningham***

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## **PS 457**

**Too much of a good thing: High doses of antioxidant can damage P3 cochlear cultures**  
***Haiyan Jiang; Dalian Ding; Richard Salvi***

## **PS 458**

**Protective Effects of Synthesized Berbamine Analogs Against Aminoglycoside-Induced Hair Cell Death**  
***Alexandria Hudson; Gavin Lockard; Bruce Blough; Peter Steyger; Allison Coffin***

## **PS 459**

**Evaluation of various therapeutic classes in protection against cisplatin-induced hearing loss (Preclinical models)**

***Natalia Tsivkovskiaia; Rayne Fernandez; Claudia Fernandez; Bonnie E. Jacques; Fabrice Piu***

## **PS 460**

**Otoprotective Effect of Selegiline in Noise-Induced Hearing Loss in BALB/c Mice**

***Judit Szepesy; Viktória Humli; Ágnes Szirmai; Gábor Polony; Anita Gáborján; László Tamás; Tibor Zelles***

## **PS 461**

**Role of Mitochondrial Deacetylase SIRT3 in Hearing Protection**

***Xiaodong Tan; Yingjie Zhou; Aditi Agarwal; Alan Robinson; David Gius; Claus-Peter Richter***

**PS 462****Transcriptome Analysis to Identify Drugs Against Cisplatin-Induced Ototoxicity**

*Pezhman Salehi; Marisa Zallocchi; Madeleine Urbanek; Molly Kubesh; Zhuo Li; Kimberlee Giffen; Tal Teitz; Jian Zuo*

**PS 463****DB-020 Protects Cells from Cisplatin Cytotoxicity in vitro and Hair Cells in a Guinea Pig Model of Cisplatin Induced Ototoxicity**

*Yong Ren; Changsuk Moon; Ryan McCarthy; Yuan Xu; Brendan Arsenault; Qi-Ying Hu; Ruiben Feng; Janeta V. Popovici-Muller; John Lee; John Soglia; Inmaculada Silos-Santiago; Fuxin Shi*

**PS 464****Ex Vivo Evaluation of the Therapeutic Potential of Several Drug Classes to Prevent Cisplatin Mediated Ototoxicity in the Rat Cochlea**

*Pranav D. Mathur; Phillip Uribe; Stephanie Szobota; Anne Harrop-Jones; Sairey Siegel; Oliver Silerio; Fabrice Piu; Bonnie E. Jacques; Alan C. Foster*

**PS 465****Cellular Senescence Caused by a Low Concentration of Hydrogen Peroxide is Alleviated by a NAC Treatment in a HEI-OC1 Cell Line**

*Tae-Hwan Kim; Min Jung Park; Yong-Ho Park*

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**Neuron and Synapse Regeneration**

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**PS 466****Electrical Stimulation and Exogenous BDNF and NT-3 in Murine Cochlea Explant Cultures: Only a Neural Survival Factor or also Promoting Axonal Outgrowth?**

*Dominik Schmidbauer; Stefan Fink; Francis Rousset; Marcus Müller; Pascal Senn; Rudolf Glueckert*

**PS 467****Single-Cell Fluorescence Analysis of Pseudotemporal Ordered Cells Provides Protein Expression Dynamics for Neuronal Differentiation**

*Zhichao Song; Alejandra Laureano; Kishan Patel; Sylvia Yip; Azadeh Jadali; Kelvin Y. Kwan*

**PS 468****Directional Growth and Development of Spiral Ganglion Neurons Regulated by Superparamagnetic Iron Oxide Nanoparticles and Magnetic Field**

*Menghui Liao; Renjie Chai*

## **PS 469**

**A novel bisphosphonate-NT-3 small molecule derivative for regeneration of spiral ganglion synapses**

**Judith Kempfle; Andrea Zhang; Marlon Duro; Carolina Amador; Boris Kashemirov; Charles McKenna; David H. Jung**

## **PS 470**

**A 3D Finite Element Model of the Diffusion Profile of BDNF in the Murine Inner Ear: Biological Validation**

**Shreyas Bharadwaj; Kevin Nella; Sajel Peters; Christian Roque; Rachel Heuer; Jose Fernandez; Andy Oleksijew; Kyle Coots; Akihiro Matsuoka**

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## **Otitis Externa, Otitis Media and Eustachian Tube Pathology**

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### **PS 471**

**Single Application Thixotropic Drug Delivery Systems for Otitis Externa**

**Bogdan Serban; Jeremy Alverson; Nigel Priestley; Monica Serban**

### **PS 472**

**Deep Learning in Automated Region Proposal and Diagnosis of Chronic Otitis Media Based on Computed Tomography**

**Yan-Mei Yang; Yi-Ke Li; Yu-Shu Cheng; Zi-Yu He; Juan-Mei Yang; Jiang-Hong Xu; Zhang-Cai Chi; Fang-Lu Chi; Dongdong Ren**

### **PS 473**

**A System for High-throughput Clinical Optical Coherence Tomography and Vibrometry**

**Robert Adamson; Dan MacDougall; Josh Farrell; Christine Morrison; Matthew Jahns; Matthew Farrell; Drew Hubley; David Morris; Nael Shoman**

### **PS 474**

**A New Detection Scheme for Detection of Otitis Media with Effusion**

**Junfeng Liang; Warid Islam; Ke Zhang; Chen Wang; Sarah Crooks; Rong Z. Gan; Qinggong Tang; Bin Zheng; Chenkai Dai**

### **PS 475**

**High-energy Visible Light Inactivation of Bacteria Found in Otitis Media**

**Shae D. Morgan; Deborah Yoder-Himes; John Naber; Thomas J. Roussel; Douglas Jackson; Rachel Berry**

**PS 476****Hearing Loss and Audiologic Features in Children with Down Syndrome**

*Siran Liu; Fangfang Zhao; Robin Tellez; Alberto Costa; Sarah Mowry; Qingyin Zheng*

**PS 477****High Frequency Hearing Following Middle Ear Surgery**

*Marc Polanik; Danielle Trakimas; Jeffrey Cheng; Elliott D. Kozin; Aaron K. Remenschneider*

**PS 478****Assessment of Eustachian tube with optical coherence tomography**

*Jae Ho Chung; Yeon Hoon Kim; Hayoung Byun; Yunjae Lee; Hongki Yoo,*

**PS 479****Cone Beam CT with Different Prototypes of a Eustachian Tube Stent**

*Robert Schuon; Tamara Wilfling; Philipp Krueger; Tobias Stein; Kerstin Schuemann; Niels Grabow; Thomas Lenarz; Gerrit Paasche*

**PS 480****Mid-term Results of Fluoroscopy-guided Balloon Dilatation using a Flexible Guide Wire to Treat Obstructive Eustachian tube Dysfunction**

*Yehree Kim; Kun Yung Kim; Jung-Hoon Park; Sung Hwan Yoon; Jae Yong Jeon; Ho-Young Song; Hong Ju Park; Woo Seok Kang*

**PS 481****Serial Histopathologic Changes after Repeated Eustachian Tube Balloon Dilatation in Rats**

*Yehree Kim; Zhe Wang; Jun Min Kang; Ho-Young Song; Hong Ju Park; Woo Seok Kang*

**PS 482****Complications After Eustachian Tube Dilatation**

*Ingo Todt; Holger Sudhoff*

**PS 483****A Novel Technique for Patulous Eustachian Tube Surgery**

*Holger Sudhoff; Ingo Todt*

**PS 484****Development of Eustachian Tube Dysfunction in a Rat Model**

*Yehree Kim; Zhe Wang; Jung-Hoon Park; Sung Hwan Yoon; Jae Yong Jeon; Ho-Young Song; Hong Ju Park; Woo Seok Kang*

# Otoacoustic Emissions I

## PS 485

Comparing Spontaneous and Stimulus Frequency Otoacoustic Emissions in Mice with Tectorial Membrane Defects

*Mary Ann Cheatham; Yingjie Zhou; Peter Dallos*

## PS 486

The Effects of the Mouse Middle Ear on Otoacoustic Emissions

*Hamid Motallebzadeh; Sunil Puria*

## PS 487

An Otoacoustic Emissions Screen to Identify Hearing Loss Mutations in the Rhesus Macaque Colony at the Oregon National Primate Research Center

*J. Beth Kempton; Edward V. Porsov; Samuel M. Peterson; Benjamin N. Bimber; Betsy Ferguson; John V. Brigande*

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## PS 488

Loading the Basilar Membrane: Effects of Heavy Beads on Reflection-Source OAEs in Gerbil

*Sebastiaan Meenderink; Xiaohui Lin; Wei Dong*

## PS 489

Acoustic Communication is Not Compromised by Dysmorphic Features in Cururu Toads

*Ariadna Cobo-Cuan; Luís Felipe Toledo; Peter M. Narins*

## PS 490

Otoacoustic Emissions Show Hearing Impairment as an Early non-Motor Feature of Parkinson's Disease

*Andrea Viziano; Arturo Moleti; Rocco Cerroni; Elena Garasto; Mariangela Pierantozzi; Renata Sisto; Alessandro Stefani*

## PS 491

Longitudinal Monitoring of Medial Olivocochlear Reflex Inhibition in Patients with Cystic Fibrosis

Receiving Intravenous Aminoglycoside Treatments  
*Angela Garinis; Patrick Feeney; Douglas Keefe; Dawn Konrad-Martin; Garnett McMillan; Jay Vachhani*

## PS 492

Utilizing Cochlear Place-Specific Properties in Distortion Product Otoacoustic Emission Stimuli for the Identification of Hearing Loss

*Samantha Stiepan; Sumitrajit Dhar*

**PS 493****Developing a Combined SFOAE+DPOAE****Diagnostic Profile***Carolina Abdala; Chandan Suresh; Ping Luo;**Christopher A. Shera***PS 494****Diagnostic Accuracy of Clinical DPOAEs and High-Frequency Chirp TEOAEs to Identify Aminoglycoside Ototoxicity and Detect Significant Changes in Hearing in Individuals with Cystic Fibrosis***Chelsea Blankenship; Lisa Hunter; Lindsey Bittinger; Jordan Caylor; Douglas H. Keefe; Patrick Feeney; Denis Fitzpatrick*

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**Psychoacoustic Studies on Humans and Animals**

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**PS 495****The Effects of Blasts on Hearing in CBA/CaJ Mice***Kali Burke; Senthilvelan Manohar; Laurel Screven; Amanda M. Lauer; Richard Salvi; Micheal L. Dent***PS 496****Effects of Noise Level Statistics and Instantaneous Compression on Adaptation to Noise in Word Recognition***Enrique A. Lopez-Poveda; Miriam I. Marrufo-Pérez; Dora Sturla; Almudena Eustaquio-Martin***PS 497****Gap Detection Tests Reveal Central Auditory Deficits in Adults with Well Controlled Human Immunodeficiency Virus Infection***Jay Buckey; Christopher Cox; Gayle Springer; Abigail Fellows; Peter Torre; Howard J. Hoffman; Michael Plankey***PS 498****A 6 dB Increase in Trauma Level reduces ABR Wave 1 Amplitude without Alteration of Behavioral Thresholds***Katja Bleckmann; Sonja J. Pyott; Georg M. Klump***PS 499****Effect of the Distribution of Tone Frequency in Tone Cloud Scene on the Discrimination of Notched Noise***Shunsuke Kidani*

**PS 500**

**Masking of Amplitude-Modulation Detection by Low-Frequency Temporal Fine Structure in Listeners with Normal Hearing and Sensorineural Hearing Loss**

*Charles Babb; Kenneth S. Henry*

**PS 501**

**Spectrotemporal Modulation Discrimination in Normal Hearing School-Aged Children and Adults: Effects of Age and Vocoding.**

*Anisha R. Noble; Jesse M. Resnick; Jay T. Rubinstein; Lynne A. Werner; Mariette S. Broncheau; David L. Horn*

**PS 502**

**Informational Masking in the Modulation Domain**

*Christopher Conroy; Gerald Kidd*

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**PS 503**

**Investigating the role of harmonic cancellation in masked speech intelligibility**

*Luna Prud'homme; Mathieu Lavandier; Virginia Best*

**PS 504**

**The Effect of Harmonic Number and Pitch Salience on the Ability to Understand Speech-on-speech Based on Differences in Fundamental Frequency**

*Sara M. K. Madsen; Andrew J. Oxenham; Torsten Dau*

**PS 505**

**Sensitivity to Temporal Fine Structure Predicts Language Skills in Children with Sensorineural Hearing Loss**

*Lorna Halliday; Laurianne Cabrera*

**PS 506**

**Factors Underlying the Relationships Between Performance on Different Psychoacoustic Tasks During Adolescence**

*Julia J. Huyck; Beverly A. Wright*

**PS 507**

**Modeling Pitch Perception of Concurrent High-Frequency Complex Tones with Auditory Nerve Simulations**

*Daniel R. Guest; Andrew J. Oxenham*

**PS 508**

**The Discriminability of Temporal and Frequency Modulations in Budgerigars' Natural Vocalizations**

*Huaizhen Cai*

**PS 509**

**Multiple Integration Windows in Auditory Perception**

*Richard McWalter; Josh H. McDermott*

**PS 510**

**Extending the GammaChirp Model of Notched-Noise Masking to Include Absolute Threshold: Exploring Improvements in the Fit Provided by Assuming an Internal, Level-Dependent, Cochlear Noise Floor**

*Kenji Yokota; Toshio Irino; Roy D. Patterson*

**PS 511**

**Internal Noise in AM and FM Detection**

*Sarah Attia; Andrew King; Leo Varnet; Christian Lorenzi*

**PS 512**

**Sensitivity to Periodicity: Potential Discrepancies between Frequency-Following Response and Psychophysics**

*Yi Shen; Ryan Anderson; William P. Shofner*

**PS 513**

**Characterizing Comodulation Masking Release in Hearing-Impaired Listeners**

*Jonathan Regev; Paolo A. Mesiano; Johannes Zaar; Torsten Dau*

**PS 514**

**Connecting a Biophysical Auditory Periphery Model to Perceptual Back-ends for Psychoacoustic Performance Prediction across Tasks**

*Alejandro Osse Vecchi; Sarah Verhulst*

**PS 515**

**The Effect of Broadband Elicitor Duration on Transient-Evoked Otoacoustic Emissions and a Behavioral Measure of Gain Reduction**

*William B. Salloom; Kristen Wade; Hari Bharadwaj; Elizabeth A. Strickland*

**PS 516**

**Effects of Tone Duration on Three Psychophysical Measures: Evidence of Temporal Integration in Rhesus Macaques**

*Chase Mackey; Alejandro Tarabillo; Ramnarayan Ramachandran*

# Synaptopathy

## PS 517

**Persistence of the Acoustic Reflex After Selective Inner Hair Cell Loss and its Relation to Auditory Tasks in Carboplatin-treated Chinchillas**

**Monica Trevino; Celia D. Escabi; Karen Pawlowski; Edward Lobarinas**

## PS 518

**SENS-401 Significantly Reduces ABR Wave 1 Amplitude Loss after Chronic Noise Exposure in a Rat Model**

**Mathieu Petremann; Christophe Tran Van Ba; Viviana Delgado-Betancourt; Charlotte Romanet; Vincent Descossy; Pauline Liaudet; Jonas Dyhrfjeld-Johnsen**

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## PS 519

**Relationship Among Selective Inner Hair Cell Loss, Auditory Brainstem Response Amplitudes and Acoustic Reflexes in Carboplatin Treated Chinchillas**

**Celia D. Escabi; Monica Trevino; Christina Campbell; Karen Pawlowski; Edward Lobarinas**

## PS 520

**The Role of Sex in the Pathophysiology and Treatment of Cochlear Synaptopathy**

**Stephanie Rouse; Ian Matthews; Dylan Chan**

## PS 521

**Endolymphatic Hydrops is a Marker of Synaptopathy Following Traumatic Noise Exposure**

**Ido Badash; Patricia M. Quiñones; Juemei Wang; Christopher G. Lui; Frank D. Macías-Escrivá; Brian E. Applegate; John S. Oghalai**

## PS 522

**Effect of IGF1 Receptor Antagonist on Presynaptic Ribbons in Inner Hair Cells in Mouse Cochlear Explants**

**Li Gao; Tomoko Kita; Tatsuya Katsuno; Koichi Omori; Takayuki Nakagawa**

## PS 523

**Circadian impact of Cisplatin-induced Ototoxicity on Synaptic Ribbons.**

**Evangelia Tserga; Heela Sarlus; Rocio Moreno-Paublete; Erik Björn; Barbara Canlon; Christopher Cederroth**

**PS 524**

**Characterization of OTO-413, an intratympanic sustained-exposure formulation of the neurotrophic factor BDNF, in preclinical models of cochlear synaptopathy**

*Natalia Tsivkovskia; Xiaobo Wang; Claudia Fernandez; Jeremy Barden; Rayne Fernandez; Phillip Uribe; Bonnie E. Jacques; Fabrice Piu*

**PS 525**

**Post-Exposure Recovery of Synaptic Counts and Ribbon Gradients in Noise-Exposed Guinea Pigs**

*Tyler T. Hickman; Ken Hashimoto; M. Charles Liberman*

**PS 526**

**Multiple Outcome Parameters of Auditory Evoked Potential for measuring Noise-induced Cochlear Synaptopathy and its Postnoise Time Course**

*Ning Hu; Zhenshen Zhang; Steven H. Green*

**PS 527**

**Lack of Macrophages Impair Spontaneous Repair of Ribbon Synapses After Synaptopathic Acoustic Trauma in C57BL/6 Mice**

*Anna C. Clayman; Kevin Ohlemiller; Mark Warchol; Tejbeer Kaur*

**PS 528**

**Photobiomodulation protects noise induced cochlear synaptopathy by affecting synaptogenesis**

*Jae-Hun Lee; Jun-Sang Bae; Nathaniel Carpena; Hee-Won Jeong; So-Young Chang; Ji Eun Choi; Min Young Lee; Phil-Sang Chung; Jae Yun Jung*

**PS 529**

**Temporary versus permanent synaptic loss from repeated noise exposure in Guinea pigs and C57 mice**

*Jian Wang; Zhen Zhang; Liqiang Fan*

**PS 530**

**Measures of Synaptopathy Linked with Tinnitus and Hyperacusis**

*Naomi F. Bramhall; Sarah M. Theodoroff; Sean D. Kampel*

**PS 531**

**Modulating the Cochlear Proteostasis Network to Prevent Hidden Hearing Loss**

*Jeffrey N. Savas; Nopporn Jongkamonwiwat; Miguel A. Ramirez*

## Coffee Break

1:30 PM – 2:30 PM

**Executive Ballroom DH**

## Auditory Brainstem and Midbrain Implants: Advances in Basic and Translational Research

Chairs: Mahan Azadpour & Andreas Bahmer

2:00 PM – 4:00 PM

**Grand Ballroom 220A**

**2:00 PM | SYMP 36**

**Investigating Perceptual Limitations in ABI and AMI Devices**

*Colette McKay; Karl-Heinz Dyballa; Waldo Nogueira; Hubert H. Lim; Thomas Lenarz*

**2:30 PM | SYMP 37**

**How the Auditory Brainstem Implant Advances Auditory Neuroscience**

*Robert V. Shannon*

**2:45 PM | SYMP 38**

**New Directions in Central Auditory Prostheses: Development of an Auditory Midbrain Implant and an Auditory Nerve Implant**

*Hubert H. Lim; Thomas Lenarz*

**3:00 PM | SYMP 39**

**Revisiting the Design of the Auditory Brainstem Implants Using Microtechnology**

*Nicolas Vachicouras; Osama Tarabichi; Vivek V. Kanumuri; M. Christian Brown; Daniel J. Lee; Stéphanie Lacour*

**3:15 PM | SYMP 40**

**New Insights Into Array Position and Perception in Adult Auditory Brainstem Implant Patients**

*Dana Egra-Dagan; Isabeau van Beurden; Barbara S. Herrmann; Mary E. Cunnane; Samuel R. Barber; M. Christian Brown; Daniel J. Lee*

**3:30 PM | SYMP 41**

**Computational Modeling of Auditory Brainstem and Midbrain Networks for Improving Central Auditory Prostheses**

*Andreas Bahmer*

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3:45 PM | SYMP 42

## Temporal Processing and Hearing Performance with Auditory Brainstem Implants

*Mahan Azadpour; William H. Shapiro; Mario A. Svirsky*

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## On the Form and Functions of Type II Spiral-Ganglion Neurons

Chairs: Tom Coate & Michaels Deans

2:00 PM – 4:00 PM

*Grand Ballroom 220B*

2:00 PM | SYMP 43

### Introduction to Type II SGNs and Eph/Ephrin Signaling in Type II SGN Development

*Thomas Coate; Juliet Mejia; Mansa Gurjar*

2:15 PM | SYMP 44

### Seq-ing Insights into Molecular Heterogeneity of Spiral Ganglion Neurons

*Brikha Shrestha; Lisa Goodrich*

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2:30 PM | SYMP 45

### Staying in or Going Out: Neurotropic and Neurotrophic Signals in Spiral Ganglion Peripheral Process Navigation

*Bernd Fritzsch; Karen Elliott Thompson; Jennifer  
Kersigo*

2:45 PM | SYMP 46

### PCP Signaling and Axon Pathfinding: Molecular Trail Blazes that Guide Growth Cone Navigation

*Michael Deans*

3:00 PM | SYMP 47

### Peripheral Sensory Neurons that Participate in the Perception Pain

*Rebecca Seal*

3:30 PM | SYMP 48

### The Not-so-hidden ‘Hearing Loss’ of Type II Cochlear Afferents

*Paul Fuchs*

3:45 PM | SYMP 49

### Efferent Inhibition of Type II Cochlear Afferents

*Catherine Weisz*

# **Plasticity Following Hearing Loss or Restoration**

Moderators: Steve Lomber & Andrej Kral

2:00 PM – 4:00 PM

**Grand Ballroom 220C**

**2:00 PM | PD 41**

**Hearing loss is associated with modified brain oscillations during non-auditory verbal working memory**

***Brandon T. Paul; Arunan Srikanthanathan; Andrew Dimitrijevic***

**2:15 PM | PD 42**

**Neural Acclimatization to Hearing Aids**

***Hanin Karawani; Samira Anderson***

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**2:30 PM | PD 43**

**Effects of Auditory Hair Cell Ablation on Spatial Learning/Memory**

***Z. Jason Qian; Anthony Ricci***

**2:45 PM | PD 44**

**Deep Neural Networks With Simulated Hearing Impairment Replicate Behavioral Deficits of Hearing Impaired Listeners**

***Mark R. Saddler; Jenelle Feather; Andrew Franci; Ray Gonzalez; Josh H. McDermott***

**3:00 PM | PD 45**

**Developmental sensory deprivation weakens interareal coupling in the auditory connectome**

***Prasandhya Yusuf; Peter Hubka; Jochen Tillein; Martin Vinck; Andrej Kral***

**3:15 PM | PD 46**

**Auditory Sequence Learning with Linguistic and Environmental Stimuli in Cochlear Implant Users as Compared to Normal Hearing Listeners**

***Liat Kishon-Rabin; Shira Cohen; Ronen Perez***

**3:30 PM | PD 47**

**Neuromodulation Enhances Plasticity in a Rodent Model of Cochlear Implant Use**

***Erin G. Glennon; Mario A. Svirsky; Robert C. Froemke***

**3:45 PM | PD 48**

**Tinnitus Induced Hyperexcitability in View of Deafness and Cochlear Implants?**

***Marlies Knipper; Pim van Dijk; David Baguley; Lukas Rüttiger***

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## **Mentoring Sessions**

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4:00 PM – 5:00 PM

- **Careers in Industry**  
*Room 211A*

- **Navigating the Grant Landscape as a Trainee/Getting Grants**  
*Room 211B*
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## **spARO Science Communication Workshop**

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4:00 PM – 5:00 PM

*Grand Ballroom 220B*

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## **gEAR Workshop**

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4:00 PM – 5:00 PM

*Room 212AB*

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## **Mentorship Program Social**

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5:00 PM – 6:00 PM

*Room 211AB*

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## **ARO Business Meeting/NIDCD Town Hall**

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6:00 PM – 7:00 PM

*Grand Ballroom 220C*

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## **ERC Outreach Event (Montgomery Theater)**

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7:30 PM – 9:15 PM

*271 S. Market Street, San Jose*

**Monday, January 27, 2020**

## **Registration**

7:00 AM – 6:00 PM

*Executive Ballroom Foyer*

## **Speaker Ready Room**

7:00 AM – 6:00 PM

*Room 213*

## **Morning Break**

7:00 AM – 8:00 AM

*Grand Ballroom Foyer*

## **Pulling the Threads of Hair Cell Fate with an Omic Tug**

Chairs: Ronna Hertzano & Mike Bowl

8:00 AM – 10:00 AM

*Grand Ballroom 220B*

**8:00 AM | SYMP 50**

**Functional Characterization and Therapeutic  
Targeting of Gene Regulatory Elements**

*Nadav Ahituv*

**8:30 AM | SYMP 51**

**"First came Atoh1.....: Epigenetic Mechanisms  
Guiding Hair Cell Gene Regulatory Networks  
During Development and Transdifferentiation."**

*Neil Segil*

**8:45 AM | SYMP 52**

**The Role of GFI1 in Hair Cell Development: Further  
Hints From RiboTag Analyses**

*Maggie Matern*

**9:00 AM | SYMP 53**

**Outer vs Inner Hair Cell Fate Consolidation by Zinc  
Finger Transcription Factor INSM1**

*Jaime Garcia-Añoveros*

**9:15 AM | SYMP 54**

**RFX Transcription factors – Key Regulators of Hair  
Cell Terminal Differentiation**

*Ronna Hertzano*

**9:30 AM | SYMP 55**

**Helios, Helping Illuminate Our Understanding of  
Outer Hair Cell Maturation**

*Michael Bowl*

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**9:45 AM | SYMP 56**

**Transcription Factors and Hair Cell Fate; Where Do We Go From Here?**

**Matthew W. Kelley**

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**Stereocilia Dynamics: Insights into Cytoskeleton and Membrane Organization**

Chairs: A. Catalina Velez-Ortega & Ben Perrin

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**8:00 AM – 10:00 AM**

**Grand Ballroom 220C**

**8:00 AM | SYMP 57**

**New Tools for a Dynamic View of GPSM2-GNAI Function in Stereocilia**

**Anil Akturk; Amandine Jarysta; Basile Tarchini**

**8:15 AM | SYMP 58**

**Characterization of the Molecular Impact of Deafness Mutations in MYO3A**

**Laura K. Gunther; Joseph A. Cirilo; Christopher M. Yengo**

**8:30 AM | SYMP 59**

**Molecular Mechanisms that Shape the Stereocilia Actin Cytoskeleton**

**Jonathan E. Bird**

**8:45 AM | SYMP 60**

**Role of Myosin XV Isoforms in the Mechanotransduction-dependent Remodeling of the Stereocilia Cytoskeleton**

**Ana I. López-Porras; Gregory Frolenkov; A. Catalina Vélez-Ortega**

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**9:00 AM | SYMP 61**

**Mechanotransduction-dependent Control of Stereocilia Dimensions and Row Identity in Inner Hair Cells**

**Jocelyn F. Krey; Paroma Chatterjee; Rachel A. Dumont; Dongseok Choi; Jonathan E. Bird; Peter G. Barr-Gillespie**

**9:15 AM | SYMP 62**

**Refining Stereocilia Shape by Severing Actin Filaments**

**James McGrath; Benjamin Perrin**

**9:30 AM | SYMP 63**

**Voltage and Calcium Modulate Stereocilia Membrane Fluidity: Implications Regarding Hair Cell Mechanotransduction**

**Shefin George; Charles Steel; Anthony Ricci**

**9:45 AM | SYMP 64**

**LOXHD1 is required for Mechanotransduction and Lipid Dynamics in Mature Hair Cells**

*Alix Trouillet; Shefin George; Katharine Miller; Noor Ali; Charles Steel; Anthony Ricci; Nicolas Grillet*

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**Traditional Psychophysics and Sound Perception**

Moderators: Pavel Zahorik & Laurianne Cabrera

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8:00 AM – 10:00 AM

**Grand Ballroom 220A**

**8:00 AM | PD 49**

**Speech in Noise Perception in Childhood: Role of Modulation Filtering and Processing Efficiency**

*Irene Lorenzini; Christian Lorenzi; Laurianne Cabrera*

**8:15 AM | PD 50**

**The Roles of Long-Term Envelope Regularity and Efferent Activation in the Simultaneous Masker Phase Effect**

*Hisaoaki Tabuchi; Bernhard Laback*

**8:30 AM | PD 51**

**Are a Sound and the Background in Which It Is Presented Perceived Simultaneously?**

*Beverly A. Wright; Ruijing Ning; Victoria Smith; Julia R. Curato; Matthew B. Fitzgerald*

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**8:45 AM | PD 52**

**Probing Spectrot temporal Modulation Processing to Better Understand Supra-Threshold Hearing Deficits**

*Emmanuel Ponsot; Peter Neri*

**9:00 AM | PD 53**

**A Population of Adults with Normal Hearing Sensitivity but Significant Noise Exposure and/or Tinnitus exhibit Speech Recognition Deficits at High Levels and Weak Middle-Ear-Muscle-Reflexes**

*James Shehorn; Olaf Strelcyk; Pavel Zahorik*

**9:15 AM | PD 54**

**Effects of Age on Behavioral and Electrophysiological Measures of Cochlear Synaptopathy in Humans**

*Samuele Carcagno; Christopher J. Plack*

**9:30 AM | PD 55**

**Sound-Offset Sensitivity in Individuals with Speech-in-Noise Perception Difficulties**

*Fatima Ali; Stuart Rosen; Doris E. Bamjiou; Jennifer F. Linden*

9:45 AM | **PD 56**

## Selective Sensory Gating of Behaviorally Significant Sounds during Sleep

*Philipp van Kronenberg; Linus Milinski; Livia de Hoz*

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## Exhibit Hall Open

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9:00 AM – 5:00 PM

**Executive Ballroom**

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## Mid-Morning Break

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10:00 AM – 10:30 AM

**Executive Ballroom DH**

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## Coming to Our Senses: Vestibular Research From Molecules to Systems – Commonalities and Differences with the Auditory System

Chairs: Gwenaelle S. Geleoc & Hong Zhu

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10:30 AM – 12:30 PM

**Grand Ballroom 220A**

10:30 AM | **SYMP 65**

### Introduction: What Binds and Distinguishes Vestibular and Auditory Research?

*Ruth Anne Eatock*

11:00 AM | **SYMP 66**

### Genetic of Audio-Vestibular Disorders

*Jose Antonio Lopez-Escamez; Alvaro Gallego-Martinez; Pablo Roman-Naranjo; Teresa Requena*

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11:15 AM | **SYMP 67**

### How Mammalian Vestibular Hair Cells Differ From Auditory Hair Cells

*Katie Rennie*

11:30 AM | **SYMP 68**

### Role of Tmc1 and Tmc2 Channels in Hair Cells of the Vestibular Organs

*John Lee; Gwenaelle S. Geleoc*

11:45 AM | **SYMP 69**

### The Unusual Hair Cell – Calyx Terminal Synapse in the Vestibular Periphery

*Soroush Sadeghi; Elisabeth Glowatzki*

12:00 PM | **SYMP 70**

### The New Vestibular Stimuli: Sound and Vibration

*Ian S. Curthoys; J. Wally Grant; Alan Brichta; Rebecca Lim*

**12:15 PM | SYMP 71**

**Single afferent recording of vestibular responses to acoustic stimuli**

*Hong Zhu; Wu Zhou*

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## **Gene Expression and Regulation**

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Moderators: Lisa Nolan & Ruben Stepanyan

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220C**

**10:30 AM | PD 57**

**Comparing Mouse and Human Fetal Cochlear Development with Single Cell Analysis**

*Kevin Shengyang Yu; Stacey Frumm; Jason Park; Katharine Lee; Daniel Wong; Lauren Byrnes; Sarah Knox; Julie Sneddon; Aaron Tward*

**10:45 AM | PD 58**

**RNA-seq Profiling and Co-expression Network**

**Analysis of lncRNAs and mRNAs Reveal Novel Pathogenesis of Noise-induced Hidden Hearing Loss**  
*Wei Wei; Xi Shi; Wei Xiong; Lu He; Shusheng Gong; Ke Liu; Xiulan Ma*

**11:00 AM | PD 59**

**Co-regulation of multiple genes promote inner ear progenitors to regenerate hair cells via AAV mediated gene therapy**

*Renjie Chai*

**11:15 AM | PD 60**

**Functional Evaluation of Hair Cell Specific Promoter Variants for Gene Therapy in the Inner Ear**

*Sarah Canelarich; Ning Pan; Lars Becker; Janell Smith; Danielle Velez; Daniela Di Battista Miani; Max Beyman; Kathryn Ellis; Martin Schwander; Jonathon Whitton; Adam T. Palermo; Christos Kyratsous; Leah Sabin; Meghan C. Drummond*

**11:30 AM | PD 61**

**Single-cell Transcriptional Profiling of Mature Cochlear Inner and Outer Hair Cells**

*Giovanni Diaz; Joerg Waldhaus; Daniel Ellwanger; Mirko Scheibinger; Amanda Janesick; Stefan Heller*

**11:45 AM | PD 62**

**Mice with Targeted Deletion of the Estrogen-Related Receptor Gamma (ESRRG) Gene exhibit a Low Frequency Hearing Loss.**

*Lisa S. Nolan*

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**12:00 PM | PD 63**

**Gom1 mice as a model of otitis media**

*Qingyin Zheng; Wenyi Huang; HePing Yu; Lu Lu; YuKe Zheng; Christopher Mccarty; JiangPing Zhang; Bo Hua Hu*

**12:15 PM | PD 64**

**The CDHR3 c.1586G>A (p.Cys529Tyr) Variant is Protective against Otitis Media in Children**

*Scott Hirsch, MD; Tori C. Bootpatch Roberts, BS; Norman R. Friedman, MD; Todd M. Wine, MD; Sven-Olrik Streubel, MD; Jeremy D. Prager, MBA, MD; Patricia J. Yoon, MD; Kenny H. Chan, MD; Melissa A. Scholes, MD; Daniel N. Frank, PhD; Regie Lyn P. Santos-Cortez*

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**Hair Bundles and Mechanotransduction**

Moderators: Teresa Nicolson & Korne Cros

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220B**

**10:30 AM | PD 65**

**Viscoelastic Coupling of Stereocilia Coordinates Whole Bundle Motion in Mammalian Auditory Inner Hair Cells**

*Alexandra L. Scharr; Daibhid O Maoileidigh; Anthony Ricci*

**10:45 AM | PD 66**

**TRIOBP-5 is Required to Establish and Maintain Stereocilia Rootlet Architecture: Implications for Presbycusis and Gene Therapy**

*Inna A. Belyantseva; Tatsuya Katsuno; Alexander X. Cartagena-Rivera; Keisuke Ohta; Ronald S. Petralia; Kazuya Ono; Risa Tona; Ayesha Imtiaz; Atteeq Rehman; Hiroshi Kiyonari; Tracy S. Fitzgerald; Takaya Abe; Makoto Ikeya; Cristina Fenollar-Ferrer; Kohei Segawa; Koichi Omori; Juichi Ito; Gregory I. Frolenkov; Shin-ichiro Kitajiri; Thomas B. Friedman*

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**11:00 AM | PD 67**

**ANKRD24 is Required for Hair Bundle Organization and Hearing Function in the Mouse Cochlea.**

*Jocelyn F. Krey; Julia Halford; Rachel A. Dumont; Michael Bateschell; Bo Zhao; Peter G. Barr-Gillespie*

**11:15 AM | PD 68**

**Structuring Inner-Ear Mechanotransduction**

*Deepanshu Choudhary; Yoshie Narui; Brandon L. Neel; Sanket Walujkar; Jeffrey M. Lotthammer; Joseph C. Sudar; Collin Nisler; Lahiru N. Wimalasena; Carissa F. Klansek; Pedro De-la-Torre; Conghui Chen; Raul Araya-Secchi; Elakkiya Tamilselvan; Marcos Sotomayor*

**11:30 AM | PD 69**

**Novel Myosin VIIa Isoforms And Their Significance For Shaping Hair Cell Mechanotransduction And Hearing Function.**

*Sihan Li; Andrew Mecca; Jeewoo Kim; Elizabeth Wagner; Tingting Du; Guisy Caprara; Runjia Cui; Ivan Rebustini; Bechara Kachar; Anthony Peng; Jung-Bum Shin*

**11:45 AM | PD 70**

**Exploring the Functional Implications of the Structural Relationship Between TMC1 and TMEM16 proteins.**

*Angela Ballesteros; Kenton J. Swartz*

**12:00 PM | PD 71**

**Tmie and TMC1/2 Cooperate to Form Mechanotransduction Channels in Cochlear Hair Cells**

*Christopher L. Cunningham; Xufeng Qiu; Zizhen Wu; Bo Zhao; Ye-Hyun Kim; Amanda M. Lauer; Ulrich Mueller*

**12:15 PM | PD 72**

**Unconventional Secretory Pathway Activation Restores Hair Cell Mechanotransduction in an Usher Syndrome type IIIA Model**

*Suhasini Gopal; Yvonne Lee; Ruben Stepanyan; Brian McDermott; Kumar Alagramam*

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**JARO Editorial Board**

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11:30 AM – 1:00 PM

*Room 111*

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**Diversity and Minority Affairs**

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12:00 PM – 2:00 PM

*Room 211C*

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**External Relations Committee**

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12:15 PM – 1:30 PM

*Room 211D*

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**Young Investigators Luncheon**

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12:15 PM – 1:30 PM

*Room 212ABCD*

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**Finance & Investment Committee**

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12:00 PM – 2:00 PM

*Room 211A*

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## **Lunch (on own)**

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12:30 PM – 1:00 PM

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## **Program Committee**

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12:00 PM – 2:00 PM

**Room 211B**

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## **Poster Session 3 - Open 24 hours**

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1:00 PM – 11:00 AM

**Executive Ballroom**

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## **Auditory Cortex: Human Studies II**

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### **PS 532**

**Switches in Perception During Auditory Streaming of Bistable Stimuli Enhances BOLD Activity in Auditory Cortex**

**Nathan C. Higgins; Alexandra Scurry; Fang Jiang; David F. Little; Mounya Elhilali; Claude Alain; Joel S. Snyder**

### **PS 533**

**Central Auditory Tests Show Differences Between Drug Treatment Regimens in Human Immunodeficiency Virus Affected Adults**

**Fengxiang Song; Yi Zhan; Hongzhou Lu; Guochao Chen; Abigail Fellows; Sigfrid Soli; Odile Clavier; Jay Buckey; Yuxin Shi**

### **PS 534**

**Tinnitus and Auditory Cortex; Using Adapted Functional Near-Infrared-Spectroscopy to Expand Brain Imaging in Humans**

**Angela Ash-Rafzadeh; Tianqu Tian Zhai; Xiao-Su Hu; Jessica Kim; Juan San Juan; Mohammed Islam; Ioulia Kovelman; Gregory Basura**

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### **PS 535**

**Electrophysiological Measurement of Working Memory in Veterans with APD: Effects of Sensory Modality on the N-back test**

**Melissa A. Papesh; Melissa T. Frederick; Curtis J. Billings; Frederick J. Gallun**

### **PS 536**

**Cortical Processing of Location and Feature Changes of Sounds in Normal Hearing Listeners**

**Fawen Zhang; Kelli McGuire; Gabrielle Firestone; Qian-jie Fu**

## **PS 537**

**Isolating Neural Correlates of Streaming and Attention to Components within Complex Tones**

*Hao Lu; Andrew J. Oxenham*

## **PS 538**

**[18F]FDG PET Imaging to visualize Asymmetry of the Inferior Colliculi and Primary Auditory Cortex in Asymmetric Hearing Loss**

*Iva Speck; Susan Arndt; Johannes Thurow; Antje Aschendorff; Ganna Blazhenets; Philipp T. Meyer; Lars Frings*

## **PS 539**

**Neural Mechanisms underlying Speech Perception in Listeners with Cochlear Implants Mapped using High-density Diffuse Optical Tomography**

*Arefeh Sherafati; Mahlega S. Hassanpour; Noel Dwyer; Adam T. Eggebrecht; Joseph P. Culver; Jill B. Firszt; Jonathan E. Peelle*

## **PS 540**

**Concurrent EEG and Pupillometry Measures of Listening Effort while Listening to Speech in Noise.**

*Emily Graber; Emmanuel Chan; Brandon T. Paul; Andrew Dimitrijevic*

## **PS 541**

**Neural modulation to direction and speaker in spatial multi-talker speech perception**

*Prachi Patel; Jose Herrero; Ashesh Mehta; Nima Mesgarani*

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## **PS 542**

**Neural Correlates of Auditory Enhancement**

*Anahita H. Mehta; Lei Feng; Andrew J. Oxenham*

## **PS 543**

**Signatures of Regularity in Low- and High-Frequency Activity Recorded from Human Primary and Non-Primary Auditory Cortex**

*Alexander Billig; Phillip Gander; Christopher Kovach; Hiroto Kawasaki; Timothy Griffiths; Ingrid Johnsrude; Matthew Howard; Maria Chait*

## **PS 544**

**Task Effects on Cortical Responses to Auditory Novelty: An Intracranial Electrophysiology Study**

*Kirill Nourski; Mitchell Steinschneider; Ariane Rhone; Hiroto Kawasaki; Matthew Banks*

## **PS 545**

**Using Functional Near-Infrared Spectroscopy to Assess Auditory Responses in Auditory and Lateral Frontal Cortex**

*Min Zhang; Antje Ihlefeld*

## **PS 546**

**Effects of Linguistic and Non-Linguistic Interference on Speech Categorization and Neural Encoding**

*Jared Carter; Gavin Bidelman*

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## **Auditory Learning**

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### **PS 547**

**Rapid Perceptual Learning and Individual Differences in the Recognition of Rapid Speech in Younger and Older Adults**

*Tali Rotman; Limor Lavie; Karen Banai*

### **PS 548**

**Rats Discriminate the Salience of Deviant Stimuli in an Oddball Paradigm**

*Camilo J. Morado-Díaz; Gonzalo Terreros; Cristian Aedo-Sánchez; Daniel Duque; Manuel S. Malmierca*

### **PS 549**

**Observational Learning Exploits the Available Physical and Social Cues**

*Nihaad Paraouty; Joey A. Charbonneau; Dan H. Sanes*

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### **PS 550**

**Auditory Categorical Learning is Shaped by Inherent Musical Listening Skills**

*Kelsey Mankel; Gavin Bidelman*

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## **Auditory Prostheses V**

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### **PS 551**

**Electric Stimulation Thresholds Are Correlated with Acoustic Hearing Changes in an Aged Guinea Pig Cochlear Implant Model**

*Lina Reiss; Melissa Lawrence; Irina Omelchenko; Wenzuan He; Michael Reiss; Jonathon R. Kirk; Douglas Fitzpatrick*

### **PS 552**

**Relationship between Peripheral Spread of Excitation and Binaural Fusion in Bilateral Cochlear Implant Users**

*Logan Remington; Holden Sanders; Morgan Eddolls; Lina Reiss*

## **PS 553**

**Acoustically Evoked Compound Action Potentials (CAPs) Recorded from Electro-Acoustic Stimulation (EAS) Cochlear Implant Users: A Preliminary Study**  
*Jeong-Seo Kim; Viral Tejani; Carolyn Brown; Paul Abbas; Inyong Choi*

## **PS 554**

**Perceptual Integration of Speech Information Across Ears with Bilateral Cochlear Implants and Simulations in Normal-Hearing**  
*Sean R. Anderson; Frederick J. Gallun; Ruth Y. Litovsky*

## **PS 555**

**Within-Ear Balancing of Response Strength Between Acoustic and Electric Stimulation Improves Interaural Time Difference Coding in an Animal Model of Single-Sided Deafness**  
*Maike Vollmer; Merle Berents; Andrew Curran; Armin Wiegner*

## **PS 556**

**Unilateral Hearing Loss During Development and Adulthood Differently Disrupts Binaural Integration in the Auditory Midbrain**  
*Andrew Curran; Maike Vollmer*

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## **PS 557**

**Effects of Amplitude Modulation on Binaural Pitch Fusion in Cochlear Implant Users**  
*Yonghee Oh; Lina Reiss*

## **PS 558**

**Comparison of Acoustic and Electrical Functional Changes Over Time after Cochlear Implant Surgery**  
*Deborah J. Colesa; Laila A. Al-Jerdi; Donald L. Swiderski; Yehoash Raphael; Bryan E. Pfingst*

## **PS 559**

**Comparing Complementary Usage of Information with Better-Ear-Listening in Bimodal and Single-Sided Deaf Cochlear Implant Users**  
*Ben Williges; Ladan Zamanindezhad; Tim Jürgens*

## **PS 560**

**A Computational Model of Electric-Acoustic Stimulation in Cochlear Implant Subjects with Residual Hearing**  
*Daniel Alrutz; Waldo Nogueira*

## **PS 561**

**Influence of Cochlear Place Frequency on Initial Low-frequency Pitch Matches in Cochlear Implant Recipients with Normal Hearing in the Contralateral Ear**

*Brendan P. O'Connell; Michael W. Canfarotta; Emily Buss; Kevin D. Brown; Margaret T. Dillon*

## **PS 562**

**Spatial Disadvantage in the Listening of Spatialized Noise by Bilateral and Bimodal Cochlear Implant Patients**

*Qian-jie Fu; Shelby Willis; Kevin Xu; Quinton Gopen; Akira Ishiyama*

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## **Auditory Prostheses VI**

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### **PS 563**

**Auditory Profiling and Profile-based Hearing-aid Processing Strategies**

*Raul H. Sanchez-Lopez; Michal Fereczkowski; Sébastien Santurette; Tobias Neher; Torsten Dau*

### **PS 564**

**Computational Optimization of Total Ossicular Replacement Prosthesis Shape**

*Mario Milazzo; Pieter G. G. Muyshondt; Josephine V. Carstensen; Joris J. J. Dirckx; Serena Danti; Markus J. Buehler*

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### **PS 565**

**Comparison of Perception Characteristics of Distantly-presented Bone-conducted Sounds between Ultrasonic and Low-frequency Ranges**

*Riki Ogino; Koichiro Doi; Sho Otsuka; Seiji Nakagawa*

### **PS 566**

**Benefits of a new hearing device termed as cartilage conduction hearing aids in the ears with aural atresia**

*Tadashi Nishimura; Hiroshi Hosoi; Osamu Saito; Tadao Okayasu; Chihiro Morimoto; Toshiaki Yamanaka; Tadashi Kitahara*

### **PS 567**

**Perceptual characteristics of bone-conducted ultrasound presented to the neck, trunk, and arms - Effect of self-demodulation in the human body**

*Koichiro Doi; Riki Ogino; Sho Otsuka; Seiji Nakagawa*

## **PS 568**

**Which patients with a unilateral hearing aid for symmetric sensorineural hearing loss have auditory deprivation?**

**Hyun Jin Lee; Gina Na; Jinsei Jung**

## **PS 569**

**Development of the novel hearing device as a substitute for the bone conduction hearing aid**

**Ichiro Furuta; Hideaki Ogita; Fukuichiro Iguchi; Takayuki Okano; Kohei Yamahara; Tatsuya Namatsu; Shinsuke Shichi; Kazuya Nakatera; Yoshihiro Iwasaki; Shuichi Kawata; Koichi Omori; Norio Yamamoto**

## **PS 570**

**New stapes-head (SH) coupler for Vibrant Soundbridge (VSB) system**

**Birthe Warnholtz; Merlin Schär; Pascale Cuny; Kathrin Sonntag; Ivo Dobrev; Flurin Pfiffner; Christof Röösli; Alexander Huber; Jae Hoon Sim**

## **PS 571**

**Clinical Performance of a New Implant System for Bone Conduction Hearing**

**Susan Arndt; Emmanuel Mylanus; Rob Briggs; Piotr Skarzynski; Steven Telian**

## **PS 572**

**Predicting the Utility of Hearing-Aid Noise Reduction based on Spectro-Temporal Modulation Detection**

**Johannes Zaar; Lisbeth Simonsen; Thomas Behrens; Torsten Dau; Søren Laugesen**

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## **PS 573**

**Validation of a Fitting Method for Over-The-Counter Hearing Aids: A Clinical Trial**

**Soumya Venkitakrishnan; Dana Urbanski; Yu-Hsiang Wu**

## **PS 574**

**Diaphanoscopy of the Tympanic Membrane**

**Madeleine Goblet; Farnaz Matin; Thomas Lenarz; Gerrit Paasche**

## **PS 575**

**Effects of Body-Coupled Ultrasound Stimulation on the Auditory System for a New Hearing Technology**

**Gerardo Rodriguez; John Basile; Hubert H. Lim**

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## **Auditory Prostheses VII**

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## **PS 576**

**The Optical Cochlear Implant**

**Claus-Peter Richter**

## **PS 577**

**Hearing Colors: Evaluation of Frequency Representation in Optogenetic Midbrain Implants**  
**Meike Rogalla; Adina Seibert; K. Jannis Hildebrandt**

## **PS 578**

**Combined Optogenetic and Electrical Stimulation of Auditory Neurons**

*Alex Thompson; Andrew Wise; William Hart; Karina Needham; James Fallon; Paul Stoddart; Rachael Richardson*

## **PS 579**

**Comparison of Responses to DCN or VCN Electrode Placements in a Mouse Model of the Auditory Brainstem Implant (ABI)**

*Stephen McInturff; Nicolas Vachicouras; Stéphanie Lacour; Daniel J. Lee; Christian Brown*

## **PS 580**

**A Penetrating Auditory-Nerve Electrode for Improved Transmission of Temporal Fine Structure**

*John C. Middlebrooks; Bing Xu; Matthew L Richardson; Harrison W Lin*

## **PS 581**

**Development and Translation of an Intracranial Auditory Nerve Implant**

*Hubert H. Lim; Abigail Heiller; Meredith Adams; Loren Rieth; Moritz Leber; Karl-Heinz Dyballa; Waldo Nogueira; Geoffrey Ghose; Luke Johnson; Amir Samii; Rob Franklin; David Warren; Bo Connelly; Florian Solzbacher; Andrew J. Oxenham; Thomas Lenarz*

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## **PS 582**

**Pre-Clinical Validation of Silicon-Based Auditory Brainstem Prostheses**

*Nicholas Nolta; Pejman Ghelich; Martin Han*

## **PS 583**

**Light-induced Protein Synthesis in Human Mesenchymal Stem Cells for Cochlea Implants**

*Nina L. Wichert; Andy Martinez; Martin Witt; Rebecca Jonczyk; Malte Sgodda; Lani Torres; Marc Wahalla; Alexander Heisterkamp; Tobias Cantz; Holger Blume; Cornelia Blume*

## **PS 584**

**Robotic Insertion of New Cochlea Implants**

*Hideaki Ogita; Koji Nishimura; Takayuki Nakagawa; Juichi Ito; Tetsuro Tsuji; Satoyuki Kawano; Hidetoshi Kotera; Takeshi Nizuka; Masanori Enrin; Hisakazu Ninomiya*

## **PS 585**

**Safety of Transcranial Ultrasound for Neuromodulation and a Novel Hearing Technology**  
**John Basile; Gerardo Rodriguez; James Kerber;**  
**Hubert H. Lim**

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## **Binaural Hearing in Animals: Neural Recordings**

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### **PS 586**

**Hidden Island Navigation Task (HINT): A Novel Paradigm to Study Auditory Processing During Goal-Oriented Behavior in Freely Moving Animals**  
**Dardo N. Ferreiro; Diana Amaro; Lucile Belliveau;**  
**Michael Pecka**

### **PS 587**

**Age-Related Changes to Binary Hearing and the Auditory Brainstem in the Mongolian Gerbil**

**Elizabeth McCullagh; Alexandra Lucas; Shani Poleg;**  
**Nathaniel T. Greene; John Peacock; Melinda Anderson;**  
**Daniel J. Tollin; Achim Klug**

### **PS 588**

**In Vivo Physiological and Functional Investigation of Cholinergic Modulation in the MNTB of Adult Gerbil**  
**Chao Zhang; Nichole L. Beebe; Michael Pecka; Brett R. Schofield; Michael Burger**

### **PS 589**

**Neuronal Encodings of Upper Spatial Hemifield Across the Ascending Auditory Pathway of awake mouse (*mus musculus*)**

**Paul LC Feyen; Alfonso Junior Apicella**

### **PS 590**

**Loss of Neural Sensitivity to Interaural Time Difference Following Noise-Induced Hearing Loss**  
**Hariprakash Haragopal; Ryan Dorkoski; Gareth A. Whaley; Timothy R. Wohl; Noelle C. Stroud; Mitchell L. Day**

### **PS 591**

**The Effect of Anticipated Cue Reliability on the Barn Owl's Discriminability of Sound Location**  
**Keanu Shadron; Roland Ferger; Andrea J. Bae; Brian J. Fischer; José L. Peña**

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## **PS 592**

**Pushing the envelope: understanding responses of low-frequency MSO neurons through their sensitivity to the stimulus envelope**

**Jason Mikiel-Hunter; Barbara Biederbeck; Michael Pecka; David McAlpine**

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## **Cochlear Mechanics II**

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### **PS 593**

**Localization of Harmonic Distortion inside the Cochlear Partition in Sensitive Gerbil Cochleae**

**Tianying Ren; Wenxuan He**

### **PS 594**

**Even-order Distortion Products in the Organ of Corti at the Base of the Gerbil Cochlea**

**Anna Vavakou; Nigel P. Cooper; Marcel van der Heijden**

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**Frequency Dependence of Harmonic Distortions in Vibrations of the Mouse Organ of Corti**

**James B. Dewey; Alessandro Altoè; Christopher A. Shera; Brian E. Applegate; John S. Oghalai**

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**Two-tone Acoustic Suppression in the Ear Canal Mirrors Organ of Corti but not Basilar Membrane Suppression**

**Jonathan H. Siegel**

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**Does the “Reticular Lamina nonlinearity” contribute to the basal DPOAE source?**

**Renata Sisto; Arturo Moleti**

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**Effects of Rotation of the Stereociliary Bundles of Outer Hair Cells on the Cochlear Amplification**

**Michio Murakoshi; Hiroshi Wada**

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**Resonance in Outer Hair Cells is Essential for Human Auditory System**

**Yasushi Horii; Wenjia Hong; Airi Tamaki; Toshiaki Kitamura; Koichiro Wasano**

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**Output Evaluation of a Transcutaneous and a Percutaneaous Bone Conduction Device using LDV and Intracochlear Pressure measurements**

**Mohammad Ghoncheh; Stefan Stenfelt; Patrick Maas; Hannes Maier**

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**Influence on Intracochlear Sound Pressure Variations due to Round Window Reinforcement: A Human Temporal Bone Study**

*Nuwan Liyanage; Julian Grosse; Lukas Prochazka; Adrian Dalbert; Michail Chatzimichalis; Christof Röösli; Tobias Kleinjung; Alexander Huber; Flurin Pfiffner*

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**Transport of Prestin-dependent Fructose in the Outer Hair Cell Electromotil Responses**

*Metin BUDAK; Zuleyha Dilek GULMEZ; Erdogan BULUT; Rahul Mittal; Adrien A. Eshraghi*

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**Building a Structural Model of the Tip-Link Cadherin-23 Protein**

*Pedro De-la-Torre; Jasvir Sandhu; Joseph Sudar; Deepanshu Choudhary; Marissa Boyer; Florencia Velez-Cortes; Jeshua K. Avila; Collin Nisler; Michael Leake; Marcos Sotomayor*

## **PS 604**

**LATS1 Deficiency Cause Congenital Hearing Loss Associated with Mouse Cochlea Abnormally**

*Takanori Nishiyama; Masato Fujioka; Makoto Hosoya; Naoki Oishi; Tatsuhiko Harada; Kaoru Ogawa*

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**Identification of Hearing-Loss Associated Mutations in MYO6 and In Vitro Functional Analysis**

*Timothy F. Day; Shin-ichiro Oka; Shin-ichiro Kitajiri; Hideaki Moteki; Shin-ya Nishio; Shin-ichi Usami*

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**Generation of Schwann Cells from unaffected and NF2-mutated human iPSCs**

*Nicholas Gosstola; Zaohua Huang; Eric Nisenbaum; Christine Dinh; Fred Telischi; Derek Dykxhoorn; Dykxhoorn; Xue Liu; Cristina Fernandez-Valle*

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**Minimal oscillator model of auditory streaming**

*Andrea Ferrario; James Rankin*

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**Pupil Response to Rapid Predictable Auditory Sequences**

*Alice E. Milne; Christina Tampakaki; Sijia Zhao; Maria Chait*

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**Segregation from Noise as Outlier Detection**

*Jarrod M. Hicks; Josh H. McDermott*

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**Is Auditory Salience Just About the Acoustic Structure of Natural Scenes?**

*Sandeep Reddy Kothinti; Mounya Elhilali*

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**Resetting of Auditory and Visual Segregation Occurs Only After Transient Stimuli of the Same Modality**

*Ambar G. Monjasas; Nathan C. Higgins; Breanne D. Yerkes; David F. Little; Jessica E. Nave-Blodgett; Mounya Elhilali; Joel S. Snyder*

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**Auditory Sustained Attention Fluctuates Similarly to Visual Sustained Attention**

*Hiroki Terashima; Ken Kihara; Jun I. Kawahara; Hirohito M. Kondo*

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*Jaclyn Vidal; Jung Mee Park; Jae Sang Han; Hamzah Alshaikh; Shi Nae Park*

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**Modulation Transfer Functions Measured with Broad- and Narrow-band Noise Carriers in a Deep Neural Network Trained for Natural Sound Recognition**

*Takuya Koumura; Hiroki Terashima; Shigeto Furukawa*

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**Comparison of Cartilage-conduction and Conventional Bone-conduction Hearings on Fundamental Perception Characteristics: Temporal and Frequency Resolution**

*Gaik Sean Yap; Sho Otsuka; Seiji Nakagawa*

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**Effect of the vibrator placement on perception and propagation of bone-conducted sound during earplugging**

*Taishi Shinobu; Sho Otsuka; Seiji Nakagawa*

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*Xiuyuan Qin; Sho Otsuka; Seiji Nakagawa*

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**Sound Descriptions of Musicianship: Relationships between Pitch Discrimination, Audiometric Measures of Hearing Sensitivity and Musical Skill.**

*Justin Cha; Kevin Ng; Devin Inabinet; Jan de la Cruz; Patricia Tan; Gabriella Musacchia*

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**Musician Advantage for F0 Coding**

*Kelly Whiteford; Angela Sim; Kara Stevens; Andrew J. Oxenham*

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**Exploring the Relationship between Statistical Surprisal and Music Engagement**

*Sandeep Reddy Kothinti; Benjamin Skerritt-Davis; Aditya G. Nair; Alain de Cheveigné; Mounya Elhilali*

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**Harmonicity Aids Detection of Sounds in Noise**

*Malinda McPherson; River Grace; Josh H. McDermott*

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**Effects of Modified Auditory Feedback Simulating Age-Related Hearing Loss on Piano Performances**

*Minoru Tsuzaki; Noriko Maegawa; Chie Ohsawa; Hideki Banno; Toshio Irino*

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**Simultaneous Measures of Auditory Brainstem Frequency Following Response, Pupillary Response, and Microsaccade during Auditory Selective Attention Task**

*Shimpei Yamagishi; Shigeto Furukawa*

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**Sensitivity of Eye-Metrical Responses to Sound Salience: Contributions of Detectability, Signal-to-Noise Ratio, and Spectral Consistency of Acoustic Context**

*Yung-Hao Yang; Hsin-I Liao; Shigeto Furukawa*

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**Phasic arousal suppresses suboptimal auditory decision biases in mice and humans**

*Jan Willem de Gee; Konstantinos Tsetsos; David McCormick; Tobias Donner; Matthew J. McGinley*

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**Automated Classification of Acoustic Startle Reflex Measurements in Young CBA/CaJ Mice using Machine Learning**

*Timothy Fawcett; Chad Cooper; Ryan Longenecker; Joseph P. Walton*

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**Psychoacoustical assessment of thermal impression of HVAC sounds**

*Seiji Nakagawa; Takuya Hotehama*

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**Effect of Interaural Frequency Mismatch on Lateralization Threshold and the Binaural Interaction Component of the Auditory Brainstem Response in Human Subjects**

*Carol A. Sammeth; Nathaniel T. Greene; Andrew D. Brown; Daniel J. Tollin*

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**Cortical Electrophysiology Indices of Fixed vs. Moving Stimuli**

*Barrett St. George; Barbara Cone*

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**Anticipated ITD Statistics in Human Sound Localization**

*Rodrigo Pavão; Elyse S. Sussman; Brian Fischer; José L. Peña*

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*Robert Luke; David McAlpine*

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**Effects of Age on the Neural Coding and Perception of Binaural Cues**

*Tess K. Koerner; Ramesh Kumar Muralimanohar; Frederick J. Gallun; Curtis J. Billings*

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**Design of a Chirp Stimulus to Maximize the Binaural Interaction Component (BIC) of the Auditory Brainstem Response (ABR)**

*Zoe Owрутский; Daniel J. Tollin*

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**Influence of Arousal State and Asymmetries on Objective Neural Measures of ITD Processing in Normal Hearing Adults**

*Juan Pablo Faúndez; Lindsey N. Van Yper; Jaime A. Undurraga; David McAlpine*

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*Won So; Spencer Smith*

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## **Hair Cell Regeneration**

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**Effects of Dexamethasone—an Enhancer of Hair-Cell Regeneration—on Lateral-Line Innervation and Synapse Formation**

*Allison L. Saettele; Joseph Kwengwa; Lavinia Sheets*

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**Single-Cell Transcriptomics of Chick Basilar Papillae in the Process of Hair Cell Regeneration Using an Explant Culture Model**

*Takayuki Nakagawa; Mami Matsunaga; Tomoko Kita; Hiroe Ohnishi; Norio Yamamoto; Ryosuke Yamamoto; Koichi Omori; Satoko Sakamoto; Akira Watanabe*

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**Early Regenerative Signaling Pathways in the Chicken Basilar Papilla**

*Nesrine Benkafadar; Amanda Janesick; Mirko Scheibinger; Stefan Heller*

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**Bulk Transcriptome Analysis for the Initial Process of Hair Cell Regeneration in Chick Basilar Papilla Explant Cultures**

*Mami Matsunaga; Tomoko Kita; Hiroe Ohnishi; Norio Yamamoto; Koichi Omori; Takayuki Nakagawa*

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**Single-cell RNA-seq Uncovers Molecular Homology between the Chick and Mammalian Cochlea**

*Amanda Janesick; Mirko Scheibinger; Daniel C. Ellwanger; Stefan Heller*

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### **Identification of Analogous Sub-types of Hair Cells and Support Cells Across Mammalian and Non-mammalian Species**

**Brian Herb; Gurmannat Kalra; Nesrine Benkafadar; Amanda Janesick; Beatrice Milon; Kevin Rose; Mirko Scheibinger; Michael Lovett; Tatjana Piotrowski; Stefan Heller; Ronna Hertzano; Neil Segil; Seth Ament; Peter G. Barr-Gillespie; Hearing Restoration Project**

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### **YAP Signals During Direct Transdifferentiation of Supporting Cells in Cochlear Explant Culture of Chicken and Mouse**

**Tomoko Kita; Mami Matsunaga; Tomomi Miyatake; Li Gao; Ryosuke Nakamura; Norio Yamamoto; Takayuki Nakagawa; Koichi Omori**

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### **YAP-Activating Small Molecules for Inner Ear Regeneration and Beyond**

**Nathaniel Kastan; Ksenia Gnedeva; AJ Hudspeth**

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### **Dynamic Changes of Surviving Hair Cells of the Damaged Mouse Utricle**

**Grace Kim; Tian Wang; Zahra N. Sayyid; Alan Cheng**

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### **Transcriptomic and Epigenetic Regulation of Hair Cell Regeneration in The Mouse Utricle and Its Potentiation by Atoh1**

**Hsin-I Jen; Matthew Hill; Litao Tao; Kuanwei Sheng; Wenjian Cao; Hongyuan Zhang; Haoze Yu; Juan Llamas; Chenghang Zong; James Martin; Neil Segil; Andrew K. Groves**

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### **Sox2 is Required for Regeneration of Vestibular Hair Cells in Adult Mice**

**Amanda Ciani; Brandon C. Cox; Jennifer Stone**

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### **Atoh1 Enhances Proliferation and Hair Cell Regeneration in the Adult Mouse Utricle**

**Zahra N. Sayyid; Tian Wang; Leon J. Chen; Sherri M. Jones; Alan Cheng**

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### **Viral Expression of Hair Cell-Specific Transcription Factors in Supporting Cells of the Adult Mouse Utricle**

**Tara Balasubramanian; Beatrice Mao; Matthew W. Kelley**

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**Hippo Signaling Regulates Inner Ear Sensory Organ Growth and Restricts Regenerative Responses Through the Yap/Tead complex.**

*Ksenia Gnedeva; Xizi Wang; Melissa McGovern; Matthew Barton; Juan Llamas; Nathaniel Kastan; Litao Tao; Talon Trecek; Tanner Monroe; Haoze Yu; Welly Makmura; James Martin; A. James Hudspeth; Andrew K. Groves; Mark Warchol; Neil Segil*

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**Downstream Targets of Atoh1 during Mammalian Cochlear Hair Cell Differentiation**

*Dunia Abdul-Aziz; Nicolai Hathiramani; Lauren Phung; Albert Edge*

## **PS 652**

**Comparison of the Proliferative Capacity of Neonatal Supporting Cell Subtypes**

*Marie Kubota; Mirko Scheibinger; Stefan Heller*

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**Comparison of Single Versus Combinatorial Strategies for Hair Cell Regeneration in Cochlear Explants**

*Phillip Uribe; Anne Harrop-Jones; Pranav D. Mathur; Fabrice Piu; Alan C. Foster; Bonnie E. Jacques*

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**Characterization of Stem Cell Traits amongst Nestin Expressing Cells in the Mammalian Organ of Corti**

*Hiroki Takeda; Anna Dondzillo; Samuel P. Gubbel*

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**ERBB2 Signaling Promoted Hearing Recovery After Noise in Vivo**

*Jingyuan Zhang; Daxiang Na; Kenneth S. Henry; Patricia M. White*

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**Restoration of Cochlear Hair Cell Populations and Hearing Function in Noise-Deafened Guinea Pigs through Administration of Therapeutic siHes1 Nanoparticles**

*Richard D. Kopke; Matthew B. West; Xiaoping Du; Wei Li; Qunfeng Cai; Ibrahima Youm; Xiangping Huang; Jianzhong Lu; Weihua Cheng; Don Nakmali; Don Ewert; Richard Gammans*

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**Development of Binaural Pitch Fusion and Discrimination in Children with Normal Hearing, Hearing Aids, and Cochlear Implants**

*Morgan Eddolls; Curtis Hartling; Jennifer Fowler; Germaine Stark; Bess Glickman; Yonghee Oh; Alicia Johnson; Holden Sanders; Lina Reiss*

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**Developmental Delays Account for Some, but Not All, Aspects of Auditory Processing Impairments in Children with Language-based Learning Problems**

*Silvia Bonacina; Travis White-Schwoch; Jennifer Krizman; Trent Nicol; Nina Kraus*

## **PS 659**

**The ability to process soft speech and speech in noise is related to language outcomes in children with hearing loss**

*Monika-Maria Oster; Yoko Ishii; Nicholas Tan; Ashley Moore; Son A Chang*

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**Average Daily Speech Exposure for Fetuses and Preterm Infants**

*Brian B. Monson*

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**Relationship between Stimulus Frequency Ratios and Area of OHCs Contributing Generation of DPOAEs: Simulation using Finite-Element Model of Human Cochlea**

*Sinyoung Lee; Takuji Koike*

## **PS 662**

**Investigation of Chronological Changes in Dynamic Characteristics of Neonatal Ears Using Sweep Frequency Impedance (SFI) Technique**

*Nattikan Kanka; Michio Murakoshi; Shinji Hamanishi; Hiroshi Wada*

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**Neural Habituation of the Mismatch Response Predicts Pattern Detection and Speech Discrimination in Infants**

*Kristin Uhler; Phillip Gilley; Sharon Hunter*

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**Relationships Between Newborn Frequency-Following Responses and Follow-up Measures of Language and Cognition in Neonates with Hyperbilirubinemia.**

*Gabriella Musacchia; Jiong Hu; Qin Hong; Mei-ling Tong; Nikolas Blevins; Natalie Sienko; Matthew B. Fitzgerald*

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## **Inner Ear: Drug Delivery**

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### **PS 665**

**L-type Voltage-Gated Calcium Channel Agonists Improve Hearing Loss and Modify Ribbon Synapse Morphology in the Zebrafish Model of Usher Syndrome Type 1**

*Alaa Koleilat; Joseph Dugdale; Trace Chirstensen; Jeffrey Bellah; Aaron Lambert; Mark Masino; Stephen Ekker; Lisa Schimmenti*

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**Drug Delivery into the Cochlea is Influenced by Proximity of the Cochlea Aqueduct to Injection Site**

*Sara Talaei; Michael Schnee; Ksenia A. Aaron; Anthony Ricci*

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**Alginate as Dexamethasone Eluting System for Treatment of the Inner Ear**

*Jana Schwieger; Thomas Lenarz; Verena Scheper*

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**Mass Spectrometry Imaging shows drug distribution in the cochlea after round window application**

*Barbara Pinheiro; Monika Kwiatkowska; Marcus Müller; Hubert Löwenheim; Michael Bös*

### **PS 669**

**Rapid Method for Alzet Pump Implantation for Chronic Drug Delivery into Mouse Cochlea**

*Frederic Depreux; Claus-Peter Richter; Donna S. Whitlon*

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**Gel-Mediated Electrospray Assembly of Silica Supraparticles for Sustained Drug Delivery to the Inner Ear**

*Yutian Ma; Andrew Wise; Mattias Björnalm; Christina Cortez-Jugo; Frank Caruso*

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**Cochlear Pharmacokinetics – Impact of 3D Segmentation using Convolutional Neural Networks**  
**Sanketh S. Moudgalya; Xiaoxia Zhu; Mikalai M. Budzevich; Joseph P. Walton; Nathan D. Cahill; Robert D. Frisina; David A. Borkholder**

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**Verification of Therapeutic and Adverse effect of SU02 for Intratympanic Drug Delivery.**  
**Hye Lee; Yu-Jung Hwang; Tae-Soo Noh; Moo Kyun Park; Jun Ho Lee; Seung-Ha Oh; Myung-Whan Suh**

## **PS 673**

**In Vitro Biocompatibility of Engineered Magnetic Nanoparticles in Mouse Organ of Corti Explant Cultures**

**Nancy J. Zhou; Mukund M. Goyal; Philippe Vincent; Charles C. Della Santina; Elisabeth Glowatzki; Chao Wang; Daniel Q. Sun**

## **PS 674**

**PLGA based implants for intracochlear drug delivery for isolated use or the use in combination with a cochlear implant carrier**

**Arne Liebau; Eric Lehner; Daniel Gundel; Stefan Plontke; Karsten Mäder**

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**Blood-Inner Ear Barrier and Cisplatin-Induced Ototoxicity**

**Rui Ma; Kevin Ig-Izevbekhai; Jianqi Cui; Eunsoo Yoo; Daqing Li**

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## **PS 676**

**In Vivo Assessment of Dexamethasone (DXM) Infused and Coated Poly(lactic-co-glycolic acid) (PLGA) Microneedles as an Improved Drug Delivery System for Intracochlear Biodegradable Devices**

**Devon C. Pawley; Stefania Goncalves; Esperanza Bas; Emre Dikici; Sapna Deo; Sylvia Daunert; Fred Telischi**

## **PS 677**

**An Implantable, Refillable, And Scalable Microsystem For Chronic Murine Inner Ear Drug Delivery**

**Farzad Forouzandeh; Xiaoxia Zhu; Nuzhet N. Ahamed; Joseph P. Walton; Robert D. Frisina; David A. Borkholder**

## **PS 678**

**Novel Ionic Liquid Solution for Transtympanic Drug Delivery for Idiopathic Sudden Sensorineural Hearing Loss**

*Eva Cai; Nicole Black; Eden E.L. Tanner; Samir Mitragotri; Elliott D. Kozin; Aaron K. Remenschneider*

## **PS 679**

**analysis of the therapeutic utility of pluronic F127 based nanoparticles in acute hearing loss**

*Dong-Kee Kim; Keum-Jin Yang; So-Young Jung; Jihye Yoo; Heebeom Koo*

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## **Inner Ear: Gene Therapy**

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### **PS 680**

**The Adeno-associated Viral Anc80 Vector Efficiently Transduces Inner Ear Cells in Olive Baboons (*Papio anubis*)**

*Yuan Gao; Shimon P. Francis; Michael J. McKenna; Robert Ng; Enping Qu; Elizabeth Clemons; Cathy Sung; Yukako Asai; William Sewell; Emmanuel J. Simons; Michelle D. Valero*

### **PS 681**

**AAV mediated gene therapy restores auditory sensitivity in mouse models of autosomal recessive non syndromic deafness DFNB31 and Usher syndrome type IID**

*Hannah Goldberg; Yukako Asai; Bifeng Pan; Kevin Isgrig; Wade Chien; Jun Yang; Gwenaelle S. Geleoc*

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**Small Molecule Based Temporal Control of Protein Expression After AAVAnc80 Mediated Delivery**

*Niliksha Gunewardene; Danielle R. Lenz; Rachael Richardson; Andrew Wise; Robert Ng*

### **PS 683**

**Genetic manipulation of inner ear cells through local delivery of adeno-associated viral vectors**

*Fabian Blanc; Alexis-Pierre Bemelmens; Corentin Affortit; Michel Mondain; Florence François; Charlène Joséphine; Jean-Luc Puel; Jing Wang*

### **PS 684**

**Developmental dependent effects of local gene therapy in Usher syndrome type IG**

*Ghizlene Lahliou; Charlotte Calvet; Vincent Michel; Jacques Boutet de Monvel; Christine Petit; Saaid Safieddine*

## **PS 685**

**The Adeno-Associated Viral Anc80 Vector Efficiently Transduces Inner Ear Cells in Cynomolgus Macaques (*Macaca fascicularis*)**  
**Shimon P. Francis; Michael J. McKenna; Yuan Gao; Robert Ng; Enping Qu; Luk H. Vandenbergh; William Sewell; Emmanuel J. Simons; Michelle D. Valero**

## **PS 686**

**Comparison of AAV-GFP vs. AAV-Cre for Studying Transduction Patterns in the Mouse Inner Ear**  
**Moaz Sinan; Kevin Isgrig; Jianliang Zhu; Wade Chien**

## **PS 687**

**Transduction Efficiency of Synthetic and Conventional AAVs for Cochlear Lateral Wall**  
**Kevin Isgrig; Yasuko Ishibashi; Hong Jun Wang; Devin McDougald; Jean Bennett; Wade Chien**

## **PS 688**

**A Promising New Type of Self-assembled DNA-based Nanospheres for Drug or Gene Therapy in Inner Ear**

**Hao Wu; Dehong Yu; Xueling Wang; Yuming Chen; Jia Yi Gu**

## **PS 689**

**Identification and Characterization of POU4F3 Transcriptional Agonists for Hair Cell Regeneration in Mammalian Cochleae**  
**Vikrant Rai; Santanu Hati; Hao Feng; Joe R. Frank; Zhenhang Xu; Sarath Vijayakumar; Douglas Auld; Jian Zuo**

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**Ex vivo assessment of AAV capsid variant tropism and safety in the rat cochlea**  
**Phillip Uribe; Pranav D. Mathur; Christopher Bartolome; David Jaramillo; Anne Harrop-Jones; Stephanie Szobota; Fabrice Piu; Steven Pennock; Alan C. Foster; Mark Shearman; Bonnie E. Jacques**

## **PS 691**

**Dual Adeno-Associated Viral Anc80 Vector Efficiently Transduces Inner Ear Cells in Non-Human Primates**

**Yuanzhao Darcy; Shimon P. Francis; Michael J. McKenna; Robert Ng; Enping Qu; Yuan Gao; Cathy Sung; Yukako Asai; William Sewell; Emmanuel J. Simons; Michelle D. Valero**

## **PS 692**

**Tailored AAV-based Transgene Expression in the Inner Ear with Cell Type-Specific Promoters**  
**Martin Schwander; Xudong Wu; Shu-Lin Liu; Sarah Cancelarich; Xichun Zhang; Gabriela Pregernig; Kathryn Ellis; Fuxin Shi; Kathy So; Leah Sabin; Meghan C. Drummond; Ning Pan; Jonathon Whitton; Joseph C. Burns; Adam T. Palermo**

## **PS 693**

**Viral-Mediated Gene Delivery to Deafened DTR Mouse Cochlea**

**Sungsu Lee; Lisa A. Beyer; Diane M. Prieskorn; Xiaobo Ma; Hsin-I Jen; Andrew K. Groves; Yehoash Raphael**

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## **Mechanotransduction**

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### **PS 694**

**Prolonged Depolarization Affects the “Stopping Point” of Adaptation in the Mechanotransducer of Mammalian Auditory Hair Cells**

**Abigail Dragich; Isabel Aristizábal-Ramírez; Gregory Frolenkov**

### **PS 695**

**Calcium and Integrin Binding Protein 2 (CIB2) Is Involved in Fast Adaptation of Mechanotransducer Current in Cochlear Outer Hair Cells**

**Isabel Aristizábal-Ramírez; Abigail Dragich; Mary Freeman; Arnaud Giese; Zubair Ahmed; Gregory Frolenkov**

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### **PS 696**

**A Novel Method to Visualize Myosin Motor Proteins in Unfixed Cochleae**

**Itallia Pacentine; Peter G. Barr-Gillespie**

### **PS 697**

**The Dynamic Strength of the Hair-Cell Tip-Link Connection**

**Eric Mulhall; Andrew Ward; Darren Yang; Mounir Koussa; David P. Corey; Wesley Wong**

### **PS 698**

**Discerning multiple novel ER retention signals in TMC1 using an AQP3-GFP based reporter**

**David Soler; Manikandan Mayakannan; Andrew Sloan; Thomas McCormick; Ruben Stepanyan**

### **PS 699**

**The contribution of TMC1 to hair cell transduction.**

**Maryline Beurg; Amanda Barlow; Robert Fettiplace**

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### **Physical and Functional Interactions of TMC1 and LHFPL5 in Cochlear Hair Cells**

**Xiaojie Yu; Qirui Zhao; Xiaofen Li; Wei Xiong; Pingbo Huang**

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### **Dissection of LHFPL5 Function in Hair Cell Mechanotransduction**

**Xufeng Qiu; Christopher L. Cunningham; Xiaoping Liang; Guihong Peng; Ulrich Mueller**

## **PS 702**

### **Disruption of tmc1/2a/2b Genes in Danio rerio Reveals Hair Cell Subtypes and Partial Overlap of tmc Function in Sensory Patches of the Inner Ear**

**Eliot Smith; Italla Pacentine; Anna Shipman; Matthew Hill; Teresa Nicolson**

## **PS 703**

### **Entry Rate of Aminoglycoside Antibiotics Varies with Position Along the Neonatal Mouse Cochlea**

**Virginia N. Mahieu; Peter S. Steyger; Corne J. Kros**

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## **Otoacoustic Emissions II**

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### **High-Frequency Tuning in the Peripheral Auditory System of two Anuran Amphibians**

**Ariadna Cobo-Cuan; Ulmar Grafe; Fang Zhang; Albert Feng; Peter M. Narins**

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### **Speech-DPOAEs for Probing Speech Processing in the Inner Ear**

**Marina Saiz-Alia; Peter Miller; Tobias Reichenbach**

## **PS 706**

### **Phase characteristics of Otoacoustic Emissions Evoked by Amplitude-Modulated Low-Frequency Tone**

**Toshimasa Ebina; Sho Otsuka; Shigeto Furukawa; Yasuhide Okamoto; Seiji Nakagawa; Takashi Morimoto; Yoh-ichi Fujisaka; Takashi Nonaka; Sho Kanzaki**

## **PS 707**

### **Medial Olivocochlear Reflexes of Musicians with Various Specialities**

**Minoru Tsuzaki; Yumi Matsuura; Sho Otsuka; Shigeto Furukawa; Erika Yamamoto**

## **PS 708**

**Temporal Expectation Modulates Medial**

**Olivocochlear Bundle Reflex**

**Sho Otsuka; Seiji Nakagawa; Shigeto Furukawa**

## **PS 709**

**Effect of Temporal Regularity of Preceding Sound**

**Sequences on Medial Olivocochlear Reflex**

**Yuki Ishizaka; Sho Otsuka; Seiji Nakagawa**

## **PS 710**

**Distortion Product Otoacoustic Emissions Change**

**with Short Lasting Adaption State of Outer Hair Cells**

**Lukas Rüttiger**

## **PS 711**

**Understanding the Aging Ear: Distortion and  
Reflection Otoacoustic Emissions (OAEs) in Younger  
and Older Ears with Normal Behavioral Thresholds**

**Courtney S. Glavin; Uzma S. Wilson; Samantha M.  
Stiepan; Andrea I. Martin; Rachel S. North; Jonathan H.  
Siegel; Sumitrajit Dhar**

## **PS 712**

**Does Aging Effect Cochlear Gain and Tuning?:**

**An Investigation using Stimulus Frequency**

**Otoacoustic Emissions (SFOAEs)**

**Uzma S. Wilson; Sumitrajit Dhar**

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## **PS 713**

**Dependence of the Nonlinear-Distortion and  
Coherent-Reflection Components of Cubic  
Distortion Product Otoacoustic Emissions on Level  
and Frequency Ratio: Experiment and Model**

**Vaclav Vencovsky; Ales Vettesnik; Ondrej Klimes;  
Anthony W. Gummer**

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## **Ototoxicity I**

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## **PS 714**

**Characterization of an Acute and Cyclic Cisplatin-  
Induced Hearing Loss in Male Fischer-344 Rats**

**Trang Nguyen; Lillian Smith; Changsuk Moon; Raja  
Poda; Jessica Wang; Ning Pan; Lars Becker; Ed Rubel;  
Inmaculada Silos-Santiago**

## **PS 715**

**Consumption of betel quid is associated with  
sensorineural hearing loss**

**Yen-Fu Cheng; Yen-Hui Chan; Chin-Ju Hu; Ying-  
Chang Lu; Chuan-Jen Hsu; Chen-Chi Wu**

## **PS 716**

**Effect of Salicylate on Cochlear Temporal Resolution**

*Li Li; Xiaopeng Liu; Guang-Di Chen; Richard Salvi*

## **PS 717**

**Mechanotransduction Activity Facilitates Hair Cell Toxicity Caused by the Heavy Metal Cadmium**

*Tamara Stawicki; Isabella Alampi; Caleigh Schmid; Kelly Tarcza; Jay Briggs*

## **PS 718**

**Rapid Macrophage Response to Ototoxic Injury of Zebrafish Lateral Line Neuromasts**

*Mark Warchol; Angela Schrader; Lavinia Sheets*

## **PS 719**

**YAP1 Signaling is Involved in The Death of Cochlear Hair Cells**

*Vikrant Borse; Mark Warchol*

## **PS 720**

**Functional Validation of a Mouse Model for Otovestibular Loss Induced by Allylnitrite**

*Dorien Verdoort; Sander Eens; Krystyna Szewczyk; Isabel Pintelon; Debby Van Dam; Peter Ponsaerts; Vincent Van Rompaey*

## **PS 721**

**Neomycin inhibits mitophagy and increases auditory hair cell damage**

*Yuhua Zhang; Renjie Chai*

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## **PS 722**

**Intratympanic Lipopolysaccharide Induces Inflammatory Response and Elevates Systemic Gentamicin Uptake in the Cochlea**

*Yongchuan Chai; Alisa Hetrick; Liana Sargsyan; Hao Wu; Hongzhe Li*

## **PS 723**

**Cisplatin-induced Early Ototoxicity Appears in Spiral Ganglion Neurons**

*Yingying Chen; Eric C. Bielefeld; Jeffrey G. Mellott; Weijie Wang; Amir Mafi; Grace Szatkowsk; Ebenezer N. Yamoah; Jianxin Bao*

## **PS 724**

**Unfolded Protein Response Activation Correlates with Non-Linear Cisplatin Ototoxicity**

*Stephanie Rouse; Jiang Li; Ian Matthews; Elliott Sherr; Dylan Chan*

**PS 725**

**Histologic and Genetic Characterization of the Flat Cochlear Epithelium**

*Sydney Sheltz-Kempf; Jeremy S. Duncan*

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**Physiology and Attention in Speech Perception**

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**PS 726**

**Electroencephalography-based Optimization of Noise Reduction in Hearing Aids**

*Subong Kim; Yu-Hsiang Wu; Inyong Choi*

**PS 727**

**Effects of Age and Childhood Hearing Loss on Selective Attention in the Auditory and Visual Domains**

*Kristina M. Ward; Tina M. Grieco-Calub*

**PS 728**

**Pilot: Mapping Emotional Prosody Processing in Normal hearing Listeners with fNIRS**

*Ryssa Moffat; David McAlpine; Deniz Baskent; Robert Luke; Lindsey N. Van Yper*

**PS 729**

**Decoding of Selective Attention to Continuous Speech from the Human Auditory Brainstem Response**

*Mikolaj Kegler; Octave Etard; Antonio Forte; Tobias Reichenbach*

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**PS 730**

**Attentional Modulation of the Neural Representation of Speech: Spectral Profile and Individual Differences**

*Vibha Viswanathan; Hari Bharadwaj; Barbara Shinn-Cunningham*

**PS 731**

**The Effect of Selective Attention Training on Effort during Speech-in-noise Perception**

*Amy Sarow; Subong Kim; Jason Geller; Inyong Choi*

**PS 732**

**Switching Attention and Integration of Binaural Information: Effects of Speech Material and Masker Types on Perception of Alternated and Interrupted Speech in Children**

*Shiran Koifman; Stuart Rosen*

## **PS 733**

**The Effect of Phoneme-Based Auditory Training on Speech Intelligibility and Listening Effort in Hearing-Aid Users**

**Aleksandra Koprowska; Jeremy Marozeau; Torsten Dau; Dorothea Wendt; Maja Serman**

## **PS 734**

**A Dual-Task Paradigm Sensitive to Listening Effort in a Realistic Scenario**

**Joaquin T. Valderrama-Valenzuela; Paul Jeuelle; Kelly Miles; Elizabeth F. Beach**

## **PS 735**

**Pupil Size Tracks Semantic Ambiguity and Noise**

**Mason Kadem; Björn Herrmann; Ingrid Johnsrude**

## **PS 736**

**Pupillometry Reveals the Cognitive Cost of Recovering from Errors in Speech Perception**

**Matthew B. Winn; Katherine H. Teece**

## **PS 737**

**Autonomic Nervous System Correlates of Speech Categorization Revealed Through Pupillometry**

**Gwyneth Lewis; Gavin Bidelman**

## **PS 738**

**Subcortical Coding of Neuro-acoustic and Neuro-categorical Information in Speech**

**Erika Skoe; Emily Myers**

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## **Plasticity in the Central Auditory Pathway**

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## **PS 739**

**Practice Makes Transfer Imperfect – Evidence from Auditory Learning**

**Yael Zaltz, PhD; Liat Kishon-Rabin; Avi Karni, MD; Daphne Ari-Even Roth, PhD**

## **PS 740**

**The Role of Correlations and Rate Codes for Natural Sound Texture Recognition and Discrimination**

**Xiu Zhai; Mina Sedeghi; Fatemeh Khatami; Heather Read; Ian Stevenson; Monty Escabi**

## **PS 741**

**Experience Based Changes to Auditory Corticostriatal E/I Receptor Function Gates LTP and Permits Auditory Associative Learning**

**Nihaad Paraouty; Jessica Sharan; Todd M. Mowery**

## **PS 742**

**A New Type of Activity Dependent Plasticity in the Inferior Colliculus**

*Alice L. Burghard; Chris M. Lee; Douglas L. Oliver*

## **PS 743**

**Vivarium Noise and Ultrasonic Noise as a “Silent” Confounding Variable in Auditory (and Non-Auditory) Research Using Animal Models**

*Jeremy Turner*

## **PS 744**

**Vagal Nerve Afferents Influence Animal Behavior: A Gut-Brain Connection.**

*Diana C. Peterson*

## **PS 745**

**Brain-derived neurotrophic factor (BDNF) in the auditory periphery controls central learning mechanisms and social behavior**

*Philipp Eckert; Philine Marchetta; Marie Manthey; Michael H. Walter; Wibke Singer; Michele Jacob; Lukas Rüttiger; Thomas Schimmang; Peter K. Pilz; Marlies Knipper*

## **PS 746**

**Graded control of neuromodulatory brain state using parametric stimulation of the Vagus Nerve**

*Zakir Mridha; Jan Willem de Gee; Yanchen Shi; Rayan Alkashgari; Justin Williams; Aaron Suminski; Matt Ward; Wenhan Zhang; Matthew J. McGinley*

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## **Speech Perception Methodology**

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## **PS 747**

**The McGurk illusion effect is not attributed to audiovisual fusion**

*Mariel Gonzales; Kristina Backer; Brenna Mandujano; Antoine Shahin*

## **PS 748**

**How Representative of Everyday Speech Signals are Clinical Speech Test Materials?**

*Timothy Beechey; Jorg Buchholz; Peggy Nelson*

## **PS 749**

**Speech Error-Detection Thresholds in Cochlear Implant and Normal Hearing Listeners**

*Sarah Bakst; Caroline A. Niziolek; Ruth Y. Litovsky*

## **PS 750**

**A Cautionary Note on the Effects of Gender and Speaker Variability in a Two-Talker Separation Task**

*Lorenza Zaira Curetti; Rebecca Millman; Patrick Gaydecki; Michael Stone*

## **PS 751**

**A Non-intrusive Measure of Speech Quality using the Bispectral Features of an Auditory Neurogram and Support Vector Regression**

*Md E. Hossain; Muhammad S. Zilany*

## **PS 752**

**Assessing the Reliability and Validity of the Iowa Test of Consonant Confusion**

*Ann Holmes; Jason Geller; Adam Schwalje; Inyong Choi; Bob McMurray*

## **PS 753**

**Statistical learning in rooms under transcranial magnetic stimulation**

*Heivet Hernandez-Perez; David McAlpine; Jessica Monaghan*

## **PS 754**

**Emotional Vocalizations in Mice Evoke Distinct Patterns of Dopamine and Acetylcholine Release in the Amygdala after Brief Mating and Restraint Experiences**

*Zahra Ghasemahmad; Rishitha Panditi; Bhavya Sharma; Drishna Karthric Perumal; Jeffrey J. Wenstrup*

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## **PS 755**

**Cochlear-Implant Users Benefit from Voice-Feature Continuity at the Cocktail Party**

*Jens Kreitewolf; Daniela Hollfelder; Martin Orf; Julia Erb; Samuel R. Mathias; Karl-Ludwig Bruchhage; Barbara Wollenberg; Jonas Obleser*

## **PS 756**

**Identifying Listeners Whose Speech Intelligibility Depends on an Extra Moment to Repair Perceptual Mistakes**

*Steven P. Gianakas; Matthew B. Fitzgerald; Matthew B. Winn*

## **PS 757**

**Neural Correlates of Context-Dependent Lexical Bias (Ganong effect) on Categorical Speech Perception**

*Gwyneth Lewis; Claire Pearson; Ashleigh Harrison; Gavin Bidelman*

## **PS 758**

**Can Auditory-Nerve and Inferior Colliculus Models**

**Explain Perceptual Confusions for Fricatives?**

**Yasmeen Hamza; Afagh Farhadi; Douglas Schwarz;**

**Joyce McDonough; Laurel H. Carney**

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## **Stem Cells**

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### **PS 759**

**Matrigel Coated Mammalian Embryonic Stem Cells Survival in Artificial Endolymph**

**Irem Gul Sancak; Karunya Kandimalla; Daihyun Song; Rafael da Costa Monsanto; Mio Uchiyama; Grace Park; Michael, Mauro Paparella; Sebahattin Cureoglu**

### **PS 760**

**Translatome Analysis of Damage-Activated Hidden Progenitor Cells in the Mouse Cochlea**

**Patrick Atkinson; Beatrice Milon; Tomokatsu**

**Udagawa; Yang Song; Elvis Huarcaya Najarro; Ronna Hertzano; Alan Cheng**

### **PS 761**

**Mouse Embryonic Stem Cells Survive After Transplantation into Scala Media**

**Yozo Inagaki; Diane M. Prieskorn; Lisa A. Beyer;**

**Liqian Liu; Yehoash Raphael; R. Keith Duncan**

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### **PS 762**

**Generation of Multi-ciliated Airway Cell Sheet**

**Derived from Pluripotent Stem Cells for Middle Ear Regeneration on Temperature-responsive Polymer**

**Takeshi Tada; Hiroe Ohnishi; Fumihiko Kuwata; Koichi Omori; Tsunetaro Morino; Yoshiyuki Kasai; Hiromi Kojima; Norio Yamamoto**

### **PS 763**

**Optimizing the Differentiation Efficacy of Multiple Human-induced Pluripotent Stem Cell Lines into Multi-ciliated Airway Cells**

**Yasuyuki Hayashi; Hiroe Ohnishi; Hideaki Okuyama;**

**Yo Kishimoto; Masayoshi Yoshimatsu; Fumihiko**

**Kuwata; Ryosuke Nakamura; Tatsuo Nakamura;**

**Shimpei Gotoh; Toshiaki Takezawa; Koichi Omori**

### **PS 764**

**Examination of high expression conditions of Connexin 26 in 3D culture of ES cells for generation of inner ear cells**

**Ichiro Fukunaga; Cheng Chen; keiko kanayama; yoko oe; Sayaka Ohta; Katsuhisa Ikeda; Kazusaku Kamiya**

## **PS 765**

**Selective and super-selective induction of cochlear hair cells from human iPS cells**

*Tsubasa Saeki; Makoto Hosoya; Masato Fujioka;  
Kaoru Ogawa; Hideyuki Okano*

## **PS 766**

**Identification of Mouse Auditory Cortex-Derived Neural Stem Cells**

*Zhengqing Hu; Li Tao*

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## **Tinnitus**

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### **PS 767**

**Safety and Efficacy of Combined Sound and Trigeminal Nerve (Tongue) Stimulation to Treat Tinnitus: Effects of Different Stimulation Settings over Time**

*Hubert H. Lim; Caroline Hamilton; Stephen Hughes;  
Emma Meade; Martin Schecklmann; Thavakumar  
Subramaniam; Sven Vanneste; Deborah Hall; Berthold  
Langguth; Brendan Conlon*

### **PS 768**

**Context-Dependent Auditory Processing in Individuals with Tinnitus**

*Nike Gnanateja Gurindapalli; Bharath  
Chandrasekaran*

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### **PS 769**

**A Study of the Pan-European Prevalence of Tinnitus and Hearing Difficulty using a Standardized Set of Questions**

*Roshni Biswas; Alessandra Lugo; Deborah A. Hall;  
Michael Akeroyd; Xiaoqiu Liu; Winfried Schlee; Silvano  
Gallus*

### **PS 770**

**Identification of functional biomarkers of tinnitus and tinnitus/hyperacusis in patients**

*Benedikt Hofmeier; Fatma Refat; Pauline Hinrichs;  
Marlies Knipper; Lukas Rüttiger; Uwe Klose; Stephan  
Wolpert*

### **PS 771**

**Mapping the Cortical Tinnitus Network Using Acoustically- and Electrically-induced Suppression**

*Phillip Gander; William Sedley; Sukhbinder Kumar;  
Hiroyuki Oya; Christopher Kovach; Kirill Nourski; Hiroto  
Kawasaki; Matthew Howard; Timothy Griffiths*

## **PS 772**

**Random Forest Classification to Predict Response to High-Definition Transcranial Direct Current Stimulation Therapy for Tinnitus**

*Emilie Cardon; Laure Jacquemin; Griet Mertens; Paul Van de Heyning; Olivier M. Vanderveken; Vedat Topsakal; Vincent Van Rompaey; Annick Gilles*

## **PS 773**

**Tinnitus Does Not Impair Auditory Perception**

*Fan-Gang Zeng; Matthew L Richardson; Katie Turner*

## **PS 774**

**Hearing Protection Use, Noise Exposure, and Tinnitus in US Adolescents and Adults: A Nationally Representative Study**

*Janet S. Choi; Joni K. Doherty*

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## **Vestibular Orientation**

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## **PS 775**

**Timing Effects on Visual-Vestibular Heading Perception in Normal Subjects**

*Raul Rodriguez*

## **PS 776**

**Comparison of Spatial Navigation in Real-World vs. Virtual Reality Environments in Healthy Adults**

*Elliott Rebello; Eric Wei; Dara Bakar; Qiliang He; Timothy McNamara; Yuri Agrawal*

## **PS 777**

**Impaired Spatial Cognition in Bilateral Vestibulopathy is related to Hearing Loss.**

*Bieke Dobbels; Griet Mertens; Annick Gilles; Julie Moyaert; Raymond Van de Berg; Erik Fransen; Paul Van de Heyning; Vincent Van Rompaey*

## **PS 778**

**Effect of Visual Target Ambiguity on the Semicircular Ocular Reflex**

*Yumiko O. Kato; Koshi Mikami; Shuichi Sakamoto; Izumi Koizuka*

## **PS 779**

**Effect of Visual Field Size on Common Causation Perception During Visual-inertial Heading Estimation.**

*Benjamin T. Crane; Raul Rodriguez*

## **PS 780**

**Bilateral vestibulopathy decreases self-motion perception**

*Raymond Van de Berg; Lisa van stiphout; Floor Lucieer; Maksim Pleshkov; Vincent Van Rompaey; Josine Widdershoven; Angélica Perez-Fornos; Nils Guinand; Herman Kingma*

## **PS 781**

**Vestibular Contributions to Place-Based and Route-Based Navigation Strategies**

*Eric Wei; Elliott Rebello; Qiliang He; Timothy McNamara; Yuri Agrawal*

## **PS 782**

**Treatment of Gravitational Pull Sensation in Patients With Mal de Debarquement Syndrome (MdDS).**

*Sergei Yakushin; Viviana Mucci; Bernard Cohen*

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## **Coffee Break**

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1:30 PM – 2:30 PM

**Grand Ballroom Foyer**

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## **Exploring the Structure and Function of Hair-Cell Ribbon Synapses**

Chairs: Christian Vogl & Katie Kindt

2:00 PM – 4:00 PM

**Grand Ballroom 220A**

### **2:00 PM | SYMP 72**

**Cochlear Excitability and Excitotoxicity**

*Mark Rutherford*

### **2:30 PM | SYMP 73**

**Understanding Sound Encoding: Functional, Anatomical and Molecular Correlation of Response Properties of Cochlear Inner Hair Cell Synapses**

*Lina Maria Jaime; Tobias Moser*

### **2:45 PM | SYMP 74**

**Using Optical Approaches in the Zebrafish Lateral-line to Understand Ribbon Synapses**

*Qiuxiang Zhang; Katie Kindt*

### **3:00 PM | SYMP 75**

**Elucidating Morphological Changes of Hair Cell Ribbon Synapses Upon Maturation**

*Susann Michanski; Timo Henneck; Tina Pangršić Vilfan; Anna Maria Steyer; Wiebke Möbius; Carolin Wichmann*

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**3:15 PM | SYMP 76**

**Mechanism Underlying DFNA25**

*Yuvraj Joshi; Stéphanie Miot; Jérôme Bourien;  
Marie Guillet; Gaston Sendin; Jing Wang; Salah El  
Mestikawy; Jean-Luc Puel; Regis Nouvian*

**3:30 PM | SYMP 77**

**Active Zone Assembly and Protein Turnover in  
Cochlear Inner Hair Cells**

*Christian Vogl; Roos Voorn; Cristian Setz; Silvio Rizzoli*

**3:45 PM | SYMP 78**

**Imaging Cochlea In Vivo: First Step Towards  
Watching Hair Cells in Action**

*Jinkyung Kim; Anthony Ricci*

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**Infection and Inflammation from Middle  
Ear to Inner Ear—Effects on Hearing**

Chairs: Allen F. Ryan & Qing Zheng

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**2:00 PM – 4:00 PM**

**Grand Ballroom 220C**

**2:00 PM | SYMP 79**

**Single-cell RNASeq and selective deletion define  
the roles of middle ear cell types during otitis  
media**

*Allen F Ryan; Arwa Kurabi*

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**2:30 PM | SYMP 80**

**Targeting the biofilm to develop novel approaches  
to treat and prevent otitis media due to  
nontypeable *Haemophilus influenzae***

*Lauren Bakaletz; Steven Goodman*

**2:45 PM | SYMP 81**

**Otitis Media Susceptibility and Changes in the  
Head and Neck Microbiome due to Genetic Variants**

*Regie Lyn Santos-Cortez*

**3:00 PM | SYMP 82**

**Role of Eustachian Tube Dysfunction in Otitis  
Media**

*Cuneyt Alper*

**3:15 PM | SYMP 83**

**Development of a New Humanized Mouse Model to  
Study Otitis Media**

*Arwa Kurabi*

**3:30 PM | SYMP 84**

**Exploring the genetic landscape of chronic Otitis  
Media: towards new therapies for glue ear**

*Steve Brown*

3:45 PM | SYMP 85

**Infection and Inflammation from Middle Ear to  
Inner Ear, Effects on Hearing in mouse models for  
Usher and Down syndromes**

*Qing Zheng*

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**Recent Advances in Age-Related  
Hearing Loss**

Moderators: Kelly Harris & Hong-Bo Zhao

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2:00 PM – 4:00 PM

**Grand Ballroom 220B**

2:00 PM | PD 73

**Structural and Functional Changes in Hair Cells  
and Auditory Neurons in Aged Mouse Models with  
a Hearing Phenotype Similar to Humans**

*Jeong Han Lee; Maria Cristina Perez-Flores; Seojin  
Park; Mincheol Kang; Michael Anne Gratton; Guy  
Perkins; Ebenezer N. Yamoah*

2:15 PM | PD 74

**Characterization of Hearing Function in APP/PS1  
Alzheimer's Disease Mice**

*Yang Liu; Shu Fang; Li-Man Liu; Yan Zhu; Hong-Bo  
Zhao*

2:30 PM | PD 75

**The Role of Complement Signaling in Cochlear  
Function and Age-Related Hearing Loss**

*Kenyaria V. Noble; Gang Li; LaShardai Brown; Jeremy  
Barth; Carl Atkinson; Baerbal Rohrer; Hainan Lang*

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2:45 PM | PD 76

**Structural and Functional Changes in the Stria  
Vascularis of the Aging CBA/Caj Mouse.**

*Michael Anne Gratton; Jared J. Hartsock; Ruth Gill;  
Grady Phillips; Brianna Dufek; Dominic Cosgrove*

3:00 PM | PD 77

**ATP-Purinergic Receptor P2x2 Deficiency Induced  
Aging-Related Hearing Loss**

*Hong-Bo Zhao; Shu Fang; Yang Liu; Li-Man Liu; Ling  
Mei; Yan Zhu*

3:15 PM | PD 78

**G6PD Overexpression Protects from Oxidative  
Stress and Retard Age-related Hearing Loss  
Progression**

*Jose M. Bermúdez-Muñoz; Adelaida M. Celaya; Sara  
Hijazo-Pechero; Manuel Serrano; Jing Wang; Isabel  
Varela-Nieto*

**3:30 PM | PD 79**

**Autophagy regulates the degeneration of the auditory cortex through the AMPK-mTOR-ULK1 signaling pathway**

*jie yuan; baoai han; Haiying Sun*

**3:45 PM | PD 80**

**Evidence for Central Gain in the Auditory System of Older Adults**

*Kelly C. Harris; James W. Dias; Carolyn M. McClaskey*

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## **Mentoring Sessions**

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**4:00 PM – 5:00 PM**

- Work-life Balance**

*Room 211B*

- Interviewing and Negotiation**

**Skill Development**

*Room 211A*

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## **spARO Town Hall**

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**5:00 PM – 6:00 PM**

**Room 212AB**

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## **Award of Merit Lecture Honoring Lynne Werner**

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**5:30 PM – 7:00 PM**

**Grand Ballroom 220A**

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## **Award of Merit Reception**

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**7:00 PM – 8:00 PM**

**Grand Ballroom Foyer**

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## **spARO Student/Postdoc/Medical Resident Social (bring your badge)**

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**8:00 PM – 11:00 PM**

**Camino Brewing**

**718 S 1st St, San Jose, CA**

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**Tuesday, January 28, 2020**

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## **Registration**

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7:00 AM – 6:00 PM  
**Executive Ballroom Foyer**

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## **Speaker Ready Room**

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7:00 AM – 6:00 PM  
**Room 213**

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## **Morning Break**

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7:30 AM – 8:00 AM  
**Grand Ballroom Foyer**

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## **The Current Status of Inner Ear Neurons: Development, Death, and Stem Cell-Based Transplantation Therapies**

Chairs: Aleta Steevens & Peter Santi

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8:00 AM – 10:00 AM  
**Grand Ballroom 220B**

### **8:00 AM | SYMP 86**

**Generating Exogenous Cells for Transplantation  
in Gene Edited Animals via Blastocyst  
Complementation**  
*Walter C. Low*

### **8:15 AM | SYMP 87**

**Genetic Pathways Involved in Otic Neuroblast  
Specification**  
*Amy E. Kiernan*

### **8:30 AM | SYMP 88**

**Inner Ear Neuron Development and Auditory  
Circuit Wiring**  
*Lisa Goodrich*

### **8:45 AM | SYMP 89**

**Primary Neural Degeneration in the Inner Ear:  
Mechanisms, Prevalence, and Diagnosis**  
*M. Charles Liberman*

### **9:00 AM | SYMP 90**

**Inner Ear Stem Cells for Auditory Neuron Repair**  
*Albert Edge*

### **9:15 AM | SYMP 91**

**Generating Inner Ear Neurons using Blastocyst  
Complementation**  
*Aleta Steevens; Walter C. Low; Peter Santi*

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**9:30 AM | SYMP 92**

**Stem Cell Transplantation to the Inner Ear**

**Hainan Lang**

**9:45 AM | SYMP 93**

**Diagnosis and Treatment of Human Spiral**

**Ganglion Dysfunction**

**Hinrich Staecker; Adam Mellot; Athanasia Warnecke**

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**Auditory Brainstem:**

**Beyond Hearing Detection**

Moderators: Daibhid O Maoileidigh & Gabriella Musacchia

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**8:00 AM – 10:00 AM**

**Grand Ballroom 220C**

**8:00 AM | PD 81**

**Relationships between perception, the frequency following response and acoustic features of speech and music stimuli**

**Steven Losorelli; Gabriella Musacchia; Vivian Lou; Blair Kaneshiro; Nikolas Blevins; Matthew B. Fitzgerald**

**8:15 AM | PD 82**

**Auditory Brainstem Detection Thresholds**

**George S. Liu; Noor-E-Seher Ali; Daibhid O Maoileidigh**

**8:30 AM | PD 83**

**Membrane Filters Influence Sensitivity to Interaural Delay in the Envelope of High-Frequency Sound**

**Andrew Brughera; Jessica J. M. Monaghan; David McAlpine**

**8:45 AM | PD 84**

**Subcortical Responses to Continuous Music in Human Listeners**

**Tong Shan; Ross K. Maddox**

**9:00 AM | PD 85**

**An Efficient and Robust Approach to Detect Auditory Evoked Responses using Adaptive Averaging**

**Yunfeng Hua; Haoyu Wang; Bei Li; Xu Ding; Xueling Wang; Zhiwu Huang; Hao Wu**

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**9:15 AM | PD 86**

**Simultaneous Investigation of Subcortical and Cortical Sensitivity to Temporal Information**

**Sonia Varma; Sangamanatha Veeranna; David Purcell; Ingrid Johnsrude; Björn Herrmann**

**9:30 AM | PD 87**

**Frequency Following Responses to Voice Pitch in Newborn Infants: Effect of Phototherapy**

*Jiong Hu; Gabriella Musacchia; Qin Hong; Matthew B. Fitzgerald*

**9:45 AM | PD 88**

**Effects of speech enhancement on brainstem coding of consonants in normal-hearing listeners**

*Jayaganesh Swaminathan; Rupa Balachandran; Gabriella Musacchia; Virginia Best; Kevin Ng; Justin Cha*

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**Middle Ear Bonanza**

Moderators: Daniel Rasetshwane & Caitlin O'Connel-Rodwell

**8:00 AM – 10:00 AM**

**Grand Ballroom 220A**

**8:00 AM | PD 89**

**Changes in Saccade-Related Eardrum Oscillations After Surgical Denervation of the Stapedius Muscle**

*Stephanie Schlebusch; Matthew Cooper; David Kaylie; Cynthia King; David Murphy; Christopher A. Shera; Jennifer Groh*

**8:15 AM | PD 90**

**Frequency Dependence of Stapes Displacement and Intracochlear Pressure in Response to Very High Level, High Frequency Sounds**

*Nathaniel T. Greene; Mohamed Alhussaini; James Easter; Daniel J. Tollin; Theodore Argo; Tim Walikko*

**8:30 AM | PD 91**

**Examining the Efficacy of Forward-Pressure-Calibrated Activators on Wideband Measures of the Middle-Ear Muscle Reflex.**

*Jordan A. Beim; Chhayakant Patro; Magdalena Wojtczak*

**8:45 AM | PD 92**

**Comparison of Two Ear-Canal-Reflectance Measurement Principles in Adult Ears**

*Kren Monrad Nørgaard; Efren Fernandez-Grande; Constanze Schmuck; Søren Laugesen*

**9:00 AM | PD 93**

**In Vitro Sound-Induced Motion of Biomimetic 3D-Printed Tympanic Membrane Grafts**

*Marta Pawluczuk; Nicole Black; Elliott D. Kozin; Aaron K. Remenschneider; Jeffrey Cheng*

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**9:15 AM | PD 94**

**Otopathologic Changes of the Incudomalleolar Joint in Patients with Rheumatoid Arthritis**

*Melissa Castillo-Bustamante; Marc Polanik; Dhrumi Gandhi; Elliott D. Kozin; Aaron K. Remenschneider*

**9:30 AM | PD 95**

**Middle-Ear Sound Transmission under Static Pressure Change in Humans**

*Birthe Warnholtz; Ivo Dobrev; Benjamin Sackmann; Michael Lauxmann; Alexander Huber; Jae Hoon Sim*

**9:45 AM | PD 96**

**Vibration measurements of the gerbil eardrum under pressure sweeps**

*Orhun Kose; W. Robert J. Funnell; Sam J. Daniel*

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## **Mid-Morning Break**

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10:00 AM – 10:30 AM

**Grand Ballroom Foyer**

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### **Neuroplasticity and Tinnitus – In Memory of Dr. Larry E. Roberts**

Chairs: Susan E. Shore & Victoria M. Bajo

10:30 AM – 12:30 PM

**Grand Ballroom 220C**

**10:45 AM | SYMP 94**

**Introduction and Tribute to Larry Roberts**

*Richard Salvi*

**11:00 AM | SYMP 95**

**Homeostatic and Timing-Dependent Plasticity following Cochlear Damage and their Association with Tinnitus in Animal Models**

*Susan E. Shore*

**11:15 AM | SYMP 96**

**Neural plasticity following Restricted Cochlear Deafferentation and Optogenetic Silencing of the Auditory Cortex.**

*Victoria Bajo*

**11:30 AM | SYMP 97**

**Auditory Thalamus and Tinnitus**

*Don M. Caspary*

**11:45 PM | SYMP 98**

**Measures of Tinnitus-Related Plasticity in Humans**

*Brandon T. Paul*

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**12:00 PM | SYMP 99**

**Residual Inhibition and Tinnitus in Animal Models**

**Alex Galazyuk**

**12:15 PM | SYMP 100**

**Reconciling Animal Studies with Tinnitus in Humans**

**Jos Eggermont**

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**The Newborn Hearing Screen – Its History – Where We Are and Where We Should Be Going**

Chairs: Jun Shen & Richard Smith

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220A**

**10:30 AM | SYMP 101**

**Lessons Learned from 30 Years of Universal Newborn Hearing Screening**

**Karl White**

**11:00 AM | SYMP 102**

**National Coordination Center Newborn Hearing Screening Work Group Consensus and Plan to Implement Genetic Screening in the United States**

**Richard Smith**

**11:15 AM | SYMP 103**

**Nationwide Population Genetic Screening Improves Outcomes of Newborn Screening for Hearing Loss in China**

**Jun Shen**

**11:30 AM | SYMP 104**

**Concurrent Hearing and Genetic Screening of 180,469 Neonates with Follow-up in Beijing, China**

**Pu Dai**

**11:45 AM | SYMP 105**

**The Value of Genetic Screening: Lessons Learned in CMV Positive Screening and Followed by Genetic Testing**

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**12:00 PM | SYMP 106**

**Sequencing a Baby for an Optimal Outcome: A Genomic Future for Newborn Screening**

**Anne Giersch**

**12:15 PM | SYMP 107**

**Panel Discussion**

# **Regeneration**

Moderators: Melissa McGovern & Alan Cheng

10:30 AM – 12:30 PM

**Grand Ballroom 220B**

**10:30 AM | PD 97**

**High Resolution Characterization of Transcriptional Responses during Zebrafish Hair Cell Regeneration**

*Sungmin Baek; Daniel Diaz; Tatjana Piotrowski*

**10:45 AM | PD 98**

**Ototoxic Damage Induces Interferon Signaling in Chicken Cochlear Epithelial Supporting Cells**

*Amanda Janesick; Mirko Scheibinger; Nesrine Benkafadar; Stefan Heller*

**11:00 AM | PD 99**

**Cross-Species Analysis of Gene Regulatory Networks Underlying Hair Cell Regeneration**

*Gurmannah Kalra; Brian Herb; Nesrine Benkafadar; Amanda Janesick; Beatrice Milon; Kevin Rose; Mirko Scheibinger; Michael Lovett; Tatjana Piotrowski; Stefan Heller; Ronna Hertzano; Neil Segil; Seth Ament; Peter G. Barr-Gillespie; Hearing Restoration Project*

**11:15 AM | PD 100**

**LATS, YAP, and TEAD Control of Proliferation in the Ear**

*Mark A. Rudolf; Mikolaj M. Kozlowski; Jeffrey T. Corwin*

**11:30 AM | PD 101**

**Ablation of Lgr5+ Cochlear Supporting Cells Induces Mitotic Regeneration by the Greater Epithelial Ridge**

*Tomokatsu Udagawa; Beatrice Milon; Patrick Atkinson; Yang Song; Elvis Huarcaya Najarro; Mirko Scheibinger; Ronna Hertzano; Alan Cheng*

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**11:45 AM | PD 102**

**Conditional Inactivation of LSD1 Promotes Atoh1-mediated Hair Cell Conversion in Mouse Cochleae**

*Yan Zhang; Huizhan Liu; Sarath Vijayakumar; Cassidy Nguyen; David Z. He; Jian Zuo*

**12:00 PM | PD 103**

**LIN28B Controls the Regenerative Capacity of Cochlear Supporting Cells**

*Xiaojun Li; Angelika Doetzlhofer*

**12:15 PM | PD 104**

## **RGMa Inhibition Promotes Synaptic Regeneration between Spiral Ganglion Neurons and Inner Hair Cells.**

***Jerome NEVOUX; Mihaela Alexandru; Thomas Bellocq; Lei Tanaka-Ouyang; Kohsuke Tani; Albert Edge***

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## **Behind the Scenes with Publication!**

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**12:15 PM – 1:15 PM**

***Room 212B***

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## **Mentoring Session**

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**12:15 PM – 1:15 PM**

- Job Search and Independence**

***Room 211A***

- Mentor-Mentee Communication**

***Room 211B***

- Teaching and Research**

***Room 211C***

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## **International Committee**

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**12:15 PM – 1:30 PM**

***Room 211D***

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## **Lunch (on own)**

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**12:30 PM – 1:00 PM**

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## **Poster Session 4 - Open 24 hours**

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**1:00 PM – 11:00 AM**

***Executive Ballroom***

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## **Age-Related Changes in Animal Models**

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### **PS 783**

#### **Preventing Presbycusis in Mice with Enhanced Medial Olivocochlear Feedback**

***Gonzalo B. Terreros; Luis E. Boero; Valeria C. Castagna; Sebastian Silva; Marcelo J. Moglie; Juan Maass; Paul Fuchs; Paul Delano; A. Belén Elgoyhen; M. Eugenia Gómez-Casati***

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### **PS 784**

#### **Exposure to a Temporally Modulated Augmented Acoustic Environment Alters Tonotopic Organization and Improves Gap Detection in IC Neurons in Old CBA/CaJ Mice**

***Luis Franco-Waite; Ryan Longenecker; terrance Jones; Rachal Love; Timothy Fawcett; Joseph P. Walton***

## **PS 785**

**Gene Expression and SVK-1 Cell Treatment Analyses of Connexin 30 and 43 in Relation to Age-Related Hearing Loss**

*Jennifer Pineros; Xiaoxia Zhu; Bo Ding; Robert D. Frisina*

## **PS 786**

**Investigation of Mechanisms and Prevention of Age-Related Decline of Outer Hair Cell Function in Aging CBA/CaJ Mice: Ibuprofen Treatments**

*Parveen Bazard; Bo Ding; Xiaoxia Zhu; Thomas Parks; Parmvir Bahia; Thomas T. Clark; Robert D. Frisina*

## **PS 787**

**Age-Related Hearing Loss in Zebrafish: Surprising Senescence in an Animal with Continuous Hair Cell Turnover**

*Allison Coffin; Riuyu Zeng; Coty Jasper; Phillip Uribe; Bonnie E. Jacques; Joseph Sisneros*

## **PS 788**

**Age-Related Hearing Loss in CBA/CaJ Mice: Inflammatory Induced TNF $\pm$  Changes in the Mouse Cochlea**

*Cody D. Spence; Bo Ding; Xiaoxia Zhu; Mark A. Bauer; Robert D. Frisina*

## **PS 789**

**Expression Level Changes of Inflammatory and Apoptotic Biomarkers under Hydrogen Peroxide Stress in HEI-OC1 Cochlear Cells**

*Mark A. Bauer; Bo Ding; Xiaoxia Zhu; Robert D. Frisina*

## **PS 790**

**Mechanisms of Protection from Premature Hearing Loss in Transgenic TFB1 Mice via Down-regulation the ROS-dependent Activation of AMPK Signaling**

*Jingjing Zhao; Gen Li; Nuno Raimundo; Hao Wu; Lei Song*

## **PS 791**

**Metformin modulated lipid metabolism and attenuated AHL through activation of AMPK**

*Yanlin Xiao; Hanqing Lin*

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## **PS 792**

**RNA-seq Analysis of Potential lncRNAs for Age-Related Hearing Loss in a Mouse Model**

*Tong Zhao; Xiuzhen Liu; Zehua Sun; Jinjin Zhang; Xiaolin Zhang; Chaoyun Wang; Bo Li; Tihua Zheng; Qingyin Zheng*

## **PS 793**

**Degradation and Modification of Cochlear Gap Junction Proteins in Early Development of Age-related Hearing Loss**

*Shori Tajima; Katsuhisa Ikeda; Kazusaku Kamiya*

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## **Auditory Brainstem II: Normal Hearing & Hearing Impairment**

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### **PS 794**

**Intrinsic Properties of Mouse MNTB Principal Neurons are Heterogeneous**

*Mackenna Wollet; Jun Hee Kim*

### **PS 795**

**Effect of Inhibitory Synapses from the Medial Nucleus of the Trapezoid Body onto Medial Olivocochlear Efferent Neurons**

*Lester Torres Cadenas; Matthew Fischl; Catherine Weisz*

### **PS 796**

**Investigation of Inhibitory Input and Synaptic Integration in Medial Olivocochlear Neurons using Novel Approaches In Vitro**

*Matthew Fischl; Catherine Weisz*

### **PS 797**

**Plasticity of Ascending and Descending Inputs onto Medial Olivocochlear Efferent Neurons**

*Gabriel E. Romero; Laurence Trussell*

### **PS 798**

**Fast Endocytosis and Dynamin Block at Auditory Brainstem Synapses**

*Andre Dagostin; Henrique von Gersdorff*

### **PS 799**

**Modulations of Neural Action Potential Rates Can Influence Electrical Properties of Oligodendrocytes and Myelination of Individual Trapezoid Body Axons**

*Mihai Stancu; Ezhilarasan Rajaram; Hilde Wohlfstrom; Tejbeer Kaur; Mark Warchol; Edwin W. Rubel; Conny Kopp-Scheinpflug*

### **PS 800**

**Urocortin 3 Provides Strength and Endurance to Calyces of Held tuned to Low Sound Frequencies within the Medial Nucleus of the Trapezoid Body (MNTB).**

*Sara Pagella; Ian D. Forsythe; Conny Kopp-Scheinpflug*

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## **PS 801**

**Effects of NLX-101, a 5-HT1A Serotonin Receptor Agonist, on the Auditory Brainstem Response of CBA/J Mice**

**Mackenzie Mills; Nikita Kumar; Robert Withnell; Laura M. Hurley**

## **PS 802**

**Hyperreactivity to Loud Noise and Increased Anxiety-like Behaviors in Serotonin Transporter (SERT) Knockout (KO) Mice After Noise Exposure**

**Ye-Hyun Kim; James H. Engel; Mark Scotto Di Vetta; Amanda M. Lauer**

## **PS 803**

**Synaptic NMDA currents and Short-Term Plasticity influence Spike Generation in Neurons of the Ventral Nucleus of the Lateral Lemniscus**

**Linda Fischer; Michael Rebhan; Nikolaos Kladisios; Christian Leibold; Felix Felmy**

## **PS 804**

**Synaptic activity at the MNTB is disrupted in a mouse model with enhanced efferent olivocochlear system**

**Mariano N. Di Guilmi; Luis E. Boero; Valeria C. Castagna; Adrián Rodríguez-Contreras; Carolina Wedemeyer; M. Eugenia Gómez-Casati; A. Belén Elgoyhen**

## **PS 805**

**Arrangement of Contact Sites from Single Excitatory Fibers on Medial Superior Olive Dendrites**

**Alexander R. Callan; Martin Heß; Christian Leibold; Felix Felmy**

## **PS 806**

**Cochlear protection after noise exposure requires 5-HT3A receptor via efferent feedback system**

**Kazuya Ohata; Makoto Kondo; Yukiko Hanada; Yoshiyuki Ozono; Takashi Sato; Hidenori Inohara; Shoichi Shimada**

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## **Auditory Brainstem: Functional Measurements**

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## **PS 807**

**Toward Improved Methods for Bone Conduction Auditory Brainstem Response Measurement**

**Andrew D. Brown; Aoi A. Hunsaker; Nathaniel T. Greene**

## **PS 808**

**Effects of Aging and Language Background in Pitch Processing at the Brainstem Level**

*Jiong Hu; Jennifer Henderson Sabes; Shuo Wang;  
Dongxin Liu*

## **PS 809**

**A Proposal for Objective Measurement of Gap Detection Threshold by Auditory Steady-State Response**

*Takashi Morimoto; Toshimasa Ebina; Yoh-ichi Fujisaka; Takashi Nonaka; Hidehiko Okamoto*

## **PS 810**

**Sex Differences in Auditory Brainstem Response Audiograms from Vasopressin-Deficient and Wild-type Long-Evans Rats**

*Payton E. Charlton; Kelcie C. Schatz; Kali Burke;  
Matthew J. Paul; Micheal L. Dent*

## **PS 811**

**Broadband and Frequency-Specific Auditory Brainstem Responses to Ongoing Naturalistic Speech**

*Melissa J. Polonenko; Ross K. Maddox*

## **PS 812**

**Modeling Place Specificity in the Parallel Auditory Brainstem Response**

*Thomas J. Stoll; Ross K. Maddox*

## **PS 813**

**Sub-cortical Responses to Continuous Musical Pieces and Selective Auditory Attention**

*Octave Etard; Rémy Ben Messaoud; Gabriel Gaugain;  
Tobias Reichenbach*

## **PS 814**

**Subcortical Synchrony Drives Speech-in-noise Perception: Evidence from Multiple Cases of Auditory Neuropathy**

*Travis White-Schwoch; Samira Anderson; Jennifer Krizman; Silvia Bonacina; Trent Nicol; Nina Kraus*

## **PS 815**

**Human Discrimination of Binaural Cues in High-Frequency Complex Sounds Simulated with a Two-Channel Count Comparison Model.**

*Jonas Klug; Jörg Encke; Go Ashida; Mathias Dietz*

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## **PS 816**

**Non-neural Artifact and Electrode Impedance**

**Minimally Influence FFR Components**

*Jennifer Krizman; Silvia Bonacina; Travis White-Schwoch; Trent Nicol; Nina Kraus*

## **PS 817**

**Auditory brainstem response estimates of hearing in deer mice (genus Peromyscus)**

*Laurel A. Screven; Madison M. Weinberg; Amanda M. Lauer*

## **PS 818**

**Effect of Anesthetic Type and Concentration on**

**Auditory Brainstem Response Parameters**

*Noor-E-Seher Ali; Anthony Ricci*

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## **Auditory Brainstem: Molecules & Function**

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## **PS 819**

**Comparison of Cochlear and Brainstem/Cortical Following Responses Evoked by Amplitude-modulated Tones in Normal-hearing Adults**

*Jessica Chen; Skyler G. Jennings*

## **PS 820**

**Molecular Characterization of the Olivocochlear Efferent System**

*Michelle Frank; Austen Sitko; Lisa Goodrich*

## **PS 821**

**A model with efferent gain control explains the time-varying responses of inferior colliculus neurons to amplitude-modulated stimuli**

*Afagh Farhadi; Skyler G. Jennings; Elizabeth A. Strickland; Laurel H. Carney*

## **PS 822**

**Low-Level Noise Increases Auditory Loudness and Temporal Processing**

*Lin Shi; Katie Palmer; Yuying Liu; Haolin Wang; Wei Sun*

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## **PS 823**

**Evidence for Two Octopus Cell Subtypes: an in vivo Single-Cell Recording and Labeling Study**

*Hsin-Wei Lu; Philip Smith; Philip Joris*

## **PS 824**

**Investigating Potential Mechanisms for Enhancement of Synchronization in Bushy Cells of the Ventral Cochlear Nucleus**

*Melih Yayli; Ian C. Bruce*

## **PS 825**

**Bushy Neurons of the Anteroventral Cochlear Nucleus in Mice Show Different Response Types In Vitro to Auditory Nerve Stimulation**  
*Meijian Wang; Ruili Xie*

## **PS 826**

**Temporary Treatment With a Colony Stimulating Factor 1 Receptor Inhibitor Early in Development Affects Auditory Brainstem Response in Young Adult Mice**

*Giedre Milinkeviciute; Sima M. Chokr; Jasmine T. Lu; Aaron Gudmundson; Karina S. Cramer*

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## **Auditory Cortex: Neural Mechanisms**

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### **PS 827**

**Functional Connectivity of Interneuron Subtypes in Layer 1 of the Mouse Primary Auditory Cortex**

*Lucas G. Vattino; Carolyn G. Sweeney; Ana C. Castro; Benjamin M. Glickman; Anne E. Takesian*

### **PS 828**

**Noise-Induced Neuroinflammation Contributes to Central Auditory Processing Disorder**

*Weihua Wang; Samer Masri; Nakayla Chan; Tyler Marsh; David Schaub; Li Zhang; Jinsheng Zhang; Shaowen Bao*

### **PS 829**

**Synaptic Zinc Shapes the Sound-Evoked Responses of Corticocollicular Neurons in the Auditory Cortex**

*Mason McCollum; Philip Bender; Charles T. Anderson*

### **PS 830**

**Long-Range Projecting Inhibitory Neurons in Primary Auditory Cortex**

*Christine Junhui Liu; Benjamin M. Glickman; Lucas G. Vattino; Ana C. Castro; Anne E. Takesian*

### **PS 832**

**Cellular and synaptic signaling mechanisms underlying increased cortical gain after noise-induced hearing loss in mice**

*Manoj Kumar; Thanos Tsounopoulos*

### **PS 833**

**Histological Cortical Depth Profiles for Microstructural Analysis of Feline Auditory Cortex**

*Kwame S. Kutten; Lea Sollmann; Peter Hubka; Jenny Trieu; Daniel J. Tward; Laurent Younes; Andrej Kral; J. Tilak Ratnanather*

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## **PS 834**

**Inactivating Parvalbumin Interneurons in Auditory Cortex Alters Cortical Oscillation Patterns**

**Mawaheb Kassir**

## **PS 835**

**Auditory Hypersensitivity and Circuit Disruptions in a Rat Model of Fragile X Syndrome**

**Benjamin D. Auerbach; Kelly Radziwon; Olivia Kozody; Richard Salvi**

## **PS 836**

**Comparing the Superficial Vasculature of the Central Nervous System and temporal bone in Six Laboratory Animals**

**Yoo Yeon Kim; Janet Ren Chao; Chulho Kim; tae-cheon kang; Jun Gyo Suh; Jun Ho Lee**

## **PS 837**

**Noise Exposure Induced Cortical Auditory Receptive Field Plasticity and Improved Signal-in-Noise Performance Dependent on the Sound Statistics**

**Natsumi Homma; Craig Atencio; Patrick Hullett; Christoph Schreiner**

## **PS 838**

**Two-Photon Activity Imaging of Corticocollicular Neurons in Layer 5 of the Auditory Cortex**

**Tatjana T. Schmitt; Simon L. Wadle; Jan J. Hirtz**

## **PS 839**

**Effects of Noise-Induced Hearing Loss on Matrix Metalloproteinase-9 and Auditory Cortex Activity**

**Jamiela Kokash; Iryna M. Ethell; Khaleel A. Razak**

## **PS 840**

**Synaptic Zinc Contributes to Contrast Adaptation in Mouse Auditory Cortex**

**Patrick A. Cody; Thanos TZOUNOPOULOS**

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## **PS 841**

**Optimization of structural imaging in auditory pathway on Chinchilla Lanigera as a pre-clinical model of Blast TBI.**

**Vijaya Prakash Krishnan Muthaiah; Kathiravan Kaliyappan; Ferdinand Schweser; Marilena Preda**

# Auditory Cortex: Neural Responses

## PS 842

### Mice Like It Rough

*Olivier Postal; Typhaine Dupont; Warren M. Bakay; Noémi Dominique; Christine Petit; Nicolas Michalski; Boris Gourévitch*

## PS 843

### Coding of Azimuthal Sound Position Across Primary and Secondary Regions of Ferret Auditory Cortex

*Jonatan Nordmark; Agnes Landemard; Celian Bimbard; Yves Boubenec; Shihab Shamma*

## PS 844

### Encoding of Acoustical and Behavioural Information by Auditory Cortical Neurons

*Amy Hammond-Kenny; Victoria M Bajo; Andrew J King; Fernando R Nodal*

## PS 845

### Context-dependent Encoding of Sounds in Primary Auditory Cortex

*Rémi Proville; Mehdi Rousset; Chris Rodgers; Yves Boubenec*

## PS 846

### Non-invasive Measures of Temporal Pitch Processing in an Animal Model using the Acoustic Change Complex (ACC) and Frequency Following Response (FFR)

*Matthew L Richardson; Francois Guerit; Andrew J. Harland; Robin Gransier; Jan Wouters; Robert P. Carlyon; John C. Middlebrooks*

## PS 847

### Multisensory Responses in Primary Auditory Cortex of the Cat

*Catherine Boucher; Xiaohan Bao; Yaser Merrikhi; M. Alex Meredith; Stephen G. Lomber*

## PS 848

### Tones Masked by Noise Bands in an Animal Model: Psychophysics and EEG

*John C. Middlebrooks; Matthew L Richardson; Francois Guerit; Robert P. Carlyon*

## PS 849

### Comparisons of Responses to Broadband Noise Sounds Between the Core and Parabelt Regions in Macaques

*John Orczyk; Troy A. Hackett; Charles E. Schroeder; Yoshinao Kajikawa*

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## **PS 850**

**Selective Spatial Tuning of Neurons in Auditory Cortex during a Freely Moving Sound Source Localization Task**

*Diana Amaro; Michael Pecka*

## **PS 851**

**Spatiotemporal Activation Patterns of the Auditory Cortex of the Free-Tailed Bat Provide a Mechanism for Ensemble Coding of Vocal Repertoire.**

*Silvio Macias; Kushal Bakshi; Michael Smotherman*

## **PS 852**

**The Sound of Silence: Responses to Omitted Tones in the Auditory System.**

*Ana B. Lao-Rodríguez; David Pérez-González; Gloria G. Parras; Manuel S. Malmierca*

## **PS 853**

**Spectrotemporal Response Properties of Primary Auditory Cortex in the Free-tailed Bat, *Tadarida brasiliensis*.**

*Silvio Macias; Kushal Bakshi; Todd Troyer; Michael Smotherman*

## **PS 854**

**Cortical Consequences of Cochlear Implant Insertion: an Electrophysiological Study in The Primary Auditory Cortex of Guinea Pig.**

*Elie Partouche; Victor Adenis; Dan Gnansia; Pierre Stahl; Jean-Marc Edeline*

## **PS 855**

**Responses of Auditory and Frontal Cortices during Sound Source Segregation**

*Neha H. Joshi; Daniel Duque; Jonathan B. Fritz; Andrew J. Oxenham; Shihab A. Shamma*

## **PS 856**

**Effects of Arousal on Population Coding of Natural Sounds in Primary Auditory Cortex**

*Charles Heller; Daniela Saderi; Zachary Schwartz; Stephen V. David*

## **PS 857**

**A Distributed Network of Noise-Resistant Neurons in the Central Auditory System**

*Samira Souffi; Chloé Huetz; Christian Lorenzi; Jean-Marc Edeline*

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## **Binaural Hearing: Psychoacoustics, Modeling, and Multisensory**

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### **PS 858**

**Resolving Front-Back Reversals in Sound-Source Localization**

*M. Torben Pastore; William Yost*

### **PS 859**

**Listeners Exhibiting “Slight” Hearing Loss and Binaural Deficits Also Exhibit Higher Levels of Stimulus-Independent Internal Noise**

*Leslie R. Bernstein; Constantine Trahiotis*

### **PS 860**

**Audiovisual Training Rapidly Improves Sound Localization With Earplugs**

*David J. Audet; William O. Gray; Andrew D. Brown*

### **PS 861**

**The perceived lateralization of binaural beats: Estimating Onset Dominance and the Perceptual Weighting of Interaural Time Difference Cues**

*Nicholas Haywood; David McAlpine*

### **PS 862**

**Using Background Noise to Improve Sound Localization Following Simulated Unilateral Hearing Loss**

*Lindsey Ryan-Warden; Eva Ng; Peter Keating*

### **PS 863**

**Time Course of Stimulus-History Dependent Adaptation and its Effect on Spatial Resolution**

*Andrea Lingner; Michael Pecka; Benedikt Grothe*

### **PS 864**

**A Virtual Reality Approach to test Biases in Human Sound Localization**

*Roland Ferger; Miguel Vivar; José L. Peña*

### **PS 865**

**Spectral Weighting for Sound Localization in the Free Field: Effects of Spectral Intensity Profile**

*Monica L. Folkerts; G. Christopher Stecker*

### **PS 866**

**Modeling “Straightness” Versus “Briefness:” Do Adapting Neural Models Account for Temporal Weighting and Bandwidth Effects on Binaural Sensitivity?**

*G Christopher Stecker*

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## **PS 867**

**Going Beyond ILD-Vector (Interaural Level Difference) Processing For Localization To Also Solve Multiple Source Separation And Source Streaming; The Needed Biology**

*Mark S. Riggie*

## **PS 868**

**Deep Neural Networks as Models of Real-World Human Sound Localization**

*Andrew FrancI; Martha Gahl; Josh H. McDermott*

## **PS 869**

**Eye Movement Decoded from Eardrum Motion: The Decipherable EMREO**

*David Murphy; Cynthia King; Rachel Landrum; Stephanie Schlebusch; Christopher Shera; Jennifer Groh*

## **PS 870**

**Relationship Between Saccade-related Eardrum Oscillations and Hearing Loss**

*Cindy King; David Murphy; Stephanie Schlebusch; Rachel Landrum; David Kaylie; Christopher A. Shera; Jennifer Groh*

## **PS 871**

**Reaction Times in Multisensory Spatial Localization in Front and Rear Space**

*Colton Clayton; Yi Zhou*

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## **Collicular/Midbrain Function**

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## **PS 872**

**Stimulus-Specific Information on Sound Azimuth Conveyed by Gerbil Collicular Neurons**

*Shigeto Furukawa; Katuhiro Maki*

## **PS 873**

**The role of group II mGluRs in spontaneous and sound-evoked firing modulation in the mouse IC**

*Inga Kristaponyte; Nichole L. Beebe; Jesse Young; Brett R. Schofield; Alexander V. Galazyuk*

## **PS 874**

**Sound Processing by VIP Neurons in the Mouse Inferior Colliculus**

*David Goyer; Marina A. Silveira; Alexander P. George; Nichole L. Beebe; Brett R. Schofield; Michael T. Roberts*

## **PS 875**

**The Role of the Auditory Cortico-collicular Pathway in Deviance Detection in the Inferior Colliculus of Awake Mice**

*Alexandria Lesicko; Maria Geffen*

## **PS 876**

**A Leading Sound Affects the Local-Field Potential Elicited by a Trailing Sound in the Rat's Inferior Colliculus in a Direction-Dependent Manner**

*Syed Anam Asim; Sarah Tran; Pamela Stark; Huiming Zhang*

## **PS 877**

**Gamma Oscillations Across the Barn Owl's Midbrain Auditory Space Map**

*Andrea J. Bae; Keanu Shadron; Roland Ferger; José L. Peña*

## **PS 878**

**Cholinergic Signaling Modulates the Excitability of VIP Neurons in the Mouse Inferior Colliculus via Nicotinic Acetylcholine Receptor-Dependent Mechanisms**

*Luis M. Rivera-Perez; Kevin O. Cruz-Colon; Michael T. Roberts*

## **PS 879**

**Responses to Tones Masked by Gaussian or Low-Noise Noise in the Inferior Colliculus of Awake Rabbits**

*Langchen Fan; Kenneth S. Henry; Laurel H. Carney*

## **PS 880**

**NPY neurons and NPY signaling in the mouse inferior colliculus**

*Marina A. Silveira; Justin Anair; Nichole L. Beebe; Brett R. Schofield; Michael T. Roberts*

## **PS 881**

**Characterization of The Lateral Cortex of The Mouse Inferior Colliculus Using A Combination of Optogenetic Circuit Mapping and In Vivo Two-Photon Imaging**

*Baher A. Ibrahim; Yoshitaka Shinagawa; Alexander R. Asilador; Daniel A. Llano*

## **PS 882**

**Neural Coding of Pitch Cues in the Auditory Midbrain of Unanesthetized Rabbits**

*Yaqing Su; Bertrand Delgutte*

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## **PS 883**

**Dopamine Gates Prediction Errors in the Auditory Midbrain**

*Guillermo V. Carbajal; Catalina Valdés-Baizabal;  
David Pérez-González; Manuel S. Malmierca*

## **PS 884**

**Temporal coding deficits of AM tones in IC neurons of mice lacking the a2d3 Ca2+ channel subunit**

*Katrin Hegmann; Gerhard Bracic; Jutta Engel; Simone Kurt*

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## **Development II**

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### **PS 885**

**Growth and cellular patterning during fetal human inner ear development studied by a correlative imaging approach**

*Lejo Johnson Chacko; David Wertjanz; Consolato Sergi; Joszef Dudas; Natalie Fischer; Theresa Eberharter; Romed Hoermann; Rudolf Glueckert; Helga Fritsch; Helge Rask-Andersen; Anneliese Schrott-Fischer; Stephan Handschuh*

### **PS 886**

**Early appearance of key transcription factors influence the spatio-temporal development of the human inner ear**

*Lejo Johnson Chacko; Consolato Sergi; Theresa Eberharter; Joszef Dudas; Helge Rask-Andersen; Romed Hoermann; Helga Fritsch; Natalie Fischer; Rudolf Glueckert; Anneliese Schrott-Fischer*

### **PS 887**

**Identifying Parallels in the Mechanisms of Hearing and Deafness Between the Fruit Fly, *Drosophila melanogaster*, and Humans**

*Daniel Sutton; Jonathan Andrews; Shinya Yamamoto; Andrew K. Groves*

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### **PS 888**

**Cochlear development of a Non-Human primate model animal, Common Marmoset**

*Makoto Hosoya; Masato Fujioka; Kaoru Ogawa*

### **PS 889**

**The gEAR Portal – Inner Ear scRNA-seq & Epigenetic Data Made Accessible**

*Joshua Orvis; Brian Gottfried; Jayaram Kancherla; Kevin Rose; Yang Song; Amiel A. Dror; Beatrice Milon; Hector C. Bravo; Anup A. Mahurkar; Ronna Hertzano*

## **PS 890**

**In silico Analysis of the Oto cyst Development using**

**Published Single Cell RNA-sequencing Data**

**Ryosuke Yamamoto; Hiroe Ohnishi; Takayuki**

**Nakagawa; Koichi Omori; Norio Yamamoto**

## **PS 891**

**Comprehensive Single Cell RNAseq Analysis of the  
Neonatal Murine Utricle**

**Taha Jan; Yasmin Eltawil; Daniel Ellwanger; Stefan  
Heller; Alan Cheng**

## **PS 892**

**Optimized Clustering and Dichotomous Testing of  
scRNA-Seq Data for Analysis of Human Inner Ear  
Organoids**

**Daniel R. Romano; Takashi Nakamura; Eri Hashino**

## **PS 893**

**Sensory Cells of Amniote Cochleas are susceptible  
to Zika Virus Infection**

**Vidhya Munnamalai; Nabilah Sammudin; Caryl Young;  
Ankita Thawani; Richard Kuhn; Donna Fekete**

## **PS 894**

**Caspase-3 Cleaves Extracellular Vesicle Proteins  
During Auditory Brainstem Development**

**Forrest Weghorst; Yeva Mirzakhanyan; Kian Samimi;  
Mehron Dhillon; Melanie Barzik; Lisa L. Cunningham;  
Paul D. Gershon; Karina S. Cramer**

## **PS 895**

**Roles of Tubby in the Formation of Stereociliary  
Links and Hearing Function**

**Jeong-Oh Shin; Woongsu Han; Ji-Hyun Ma; Hyehyun  
Min; Jinsei Jung; Jinu Lee; Un-Kyung Kim; Jae Young  
Choi; Seok Jun Moon; Dae Won Moon; Chul Hoon Kim;  
Jinwoong Bok**

## **PS 896**

**ADF and Cofilin Link Mechanotransduction to Actin  
Remodeling in Developing Stereocilia**

**Jamis McGrath; Chun-Yu Tung; Inna A. Belyantseva;  
Pallabi Roy; Melanie Barzik; Bo Zhao; Thomas B.  
Friedman; Benjamin Perrin**

## **PS 897**

**Stereociliary Bundle Reorientation in the Absence  
of PCP Signaling and Proper Tectorial Membrane  
Development**

**Justin Nemelka; Sungjin Park; Michael Deans**

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## **PS 898**

**Short Stature Homeobox 2 Contributes to a Subpopulation of Zebrafish Statoacoustic Ganglion**  
*Alejandra Laureano; Kathleen Flaherty; Anna-Maria Hinman; Kelvin Y. Kwan*

## **PS 899**

**CAMSAP3 is Required for Mucus Clearance in the Middle Ear**

*Jing Zheng; Alan Robinson; Yingjie Zhou; Mary Ann Cheatham*

## **PS 900**

**Extracellular ATP Promotes Embryonic Spiral Ganglion Neuron Branch Dynamics via P2X3 Receptors**

*Zhirong Wang; Travis Babola; Johnny Jung; Katherine Rangoussis; Talya Inbar; Christian Faaborg-Andersen; Dwight E. Bergles; Thomas Coate*

## **PS 901**

**Molecular and Physiological Profiles of Spiking Oligodendrocytes in the Developing Auditory Brainstem**

*Elizabeth Gould; Jun Hee Kim*

## **PS 902**

**Microglia and Fractalkine Signaling in Multimodal Midbrain Circuit Assembly**

*Cooper A. Brett; Mark L. Gabriele*

## **PS 903**

**FMRP expression in the auditory ganglion regulates the development of auditory nerve projections within the cochlear nucleus**

*Xiaoyu Wang; Diego Zorio; Yuan Wang*

## **PS 904**

**Role of GABA Co-transmission in the Developmental Refinement of the MNTB-LSO Pathway**

*Jongwon Lee; Brian Brockway; Karl Kandler*

## **PS 905**

**Anatomical Characterization of Developing Olivocochlear Efferent Neurons**

*Austen Sitko; Michelle Frank; Lisa Goodrich*

## **PS 906**

**Robust Development of Auditory Brainstem Responses in Pups from Different Maternal Backgrounds Suggest Intrinsic Developmental Programs Control Hearing Onset in Wistar Rats.**  
*Preethi Singh; Jingyun Qiu; Geng Pan; Annalisa De Paolis; Frances Champagne; Jia Liu; Luis Cardoso; Adrián Rodríguez-Contreras*

## **PS 907**

**Spiral Ganglion Neurons with Distinct Preferred Frequency Response Employ Different Strategies to Innervate the Cochlear Nucleus**  
*Chloe Borcean; Samiha Mohammed; Annie Parng; Hyun-Ju Yoon; Jennifer Scheffel; Darwin Gutierrez; Wei-Ming Yu*

## **PS 908**

**Complement Receptor Expression with Respect to Emerging Modular-Extramodular Framework of the Lateral Cortex of the Inferior Colliculus**  
*Julianne B. Carroll; Jacob M. Weakly; Mark L. Gabriele*

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## **Hair Cell Synaptic Transmission**

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## **PS 909**

**Using Spike-Triggered Average to Investigate the Response of Afferent Neurons in the Lateral Line System of Zebrafish**  
*James C. Liao; Otar Akanyeti*

## **PS 910**

**Modified Cochlear Surface Preparation in the Adult Mouse**  
*Qiaojun Fang; Shan Xu; Fan Wu; Su-Hua Sha*

## **PS 911**

**Restoration of Hearing and Synapses in Tmc Mutant Mice Using Virally Mediated Gene Therapy**  
*John Lee; Carl Nist-Lund; Gwenaelle S. Geleoc; Jeffrey R. Holt*

## **PS 912**

**In Vestibular Type I Hair Cells, Permeation Through the Basolateral Potassium Conductance, GK(LV), is Regulated by Interactions Between the Selectivity Filter and External Monovalent and Divalent Ions**  
*Donatella Contini; Gay R. Holstein; Jonathan Art*

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## **PS 913**

**Synaptic Transmission Between Type I Hair Cells and Calyx Afferents is Multiplexed on Three Time Scales by Ion Accumulation, Quanta, and Resistive Coupling**

*Donatella Contini; Gay R. Holstein; Jonathan Art*

## **PS 914**

**Modeling Non-Quantal Transmission at the Calyceal Synapse Between Type I Hair Cells and Vestibular Afferents**

*Aravind Chenrayan Govindaraju; Imran Quraishi; Anna Lysakowski; Ruth Anne Eatock; Robert M. Raphael*

## **PS 915**

**STORM Imaging Reveals Calcium Nanodomains in Proximity to BK Channels in Hair Cells of the Mouse and Chick**

*Na Xue; Omolara Lawal; Junping Bai; Joseph Santos-Sacchi; Dhasakumar Navaratnam*

## **PS 916**

**Cell-specific Quantification of Ion Channel Transcription upon Cochlea-Specific Ablation of Cav1.3 Calcium Channels**

*Stephanie Eckrich; Friederike Stephani; Jutta Engel*

## **PS 917**

**High Extracellular K<sup>+</sup> Causes Ribbon Synapse Degeneration in the Inner Hair Cells**

*Hong-Bo Zhao; Yan Zhu; Li-Man Liu*

## **PS 918**

**Age-Related Structural and Functional Changes at Auditory Hair Cell Ribbon Synapses**

*Thibault Peineau; Séverin BELLEUDY; Yohan Bouleau; Didier Dulong*

## **PS 919**

**Effects of Acoustic Trauma on Neurotransmitter Release by Inner Hair Cells**

*Luis E. Boero; Shelby Payne; Eugenia Gómez-Casati; Mark Rutherford; Juan Goutman*

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## **PS 920**

**Characterization Of HA-Tagged  $\tilde{\lambda} \pm 9$  And  $\tilde{\lambda} \pm 10$  nAChRs In The Mouse Cochlea**

*Pankhuri Vyas; Adam Goldring; Megan B. Wood; Yuan-Yuan Zhang; Paul Fuchs; Hakim Hiel*

## Hair Cells

### PS 921

**Deletion of Mtu1 (Trmu) in zebrafish revealed the essential role of tRNA modification in mitochondrial biogenesis and hearing function.**

*Qinghai Zhang; Min-Xin Guan*

### PS 922

**SBF-SEM Reveals a Unique, Networked Mitochondrial Phenotype in Hair Cells of the Zebrafish Lateral Line**

*Andrea L. McQuate; David W. Raible*

### PS 923

**Using Zebrafish to Understand the Role and Subcellular Localization of Gap Junctions In Vivo**

*Alisha Beirl; Katie Kindt*

### PS 924

**Characterization & gene therapy of the hearing impairment for 2 clarin genes variably affecting the auditory hair cells**

*Aziz El-Amraoui; Lucy A DUNBAR; Pranav Patni; Sedigheh Delmaghani; Carlos Aguilar; Sandrine VITRY; Andrew Parker; Maureen WENTLING; Sylvie Nouaille; Andrea Lelli; Christine Petit; Sally Dawson\*; Walter Marcotti; Steve Brown; Michael Bowl*

### PS 925

**Isolation of USH1F Protein Complexes from Purified Hair Cell Stereocilia**

*Clive P. Morgan; Jocelyn F. Krey; Peter G. Barr-Gillespie*

### PS 926

**USH2A and ADGRV1 Expression in Mammalian Cells and Their in vitro Interaction**

*Dongmei Yu; Jun Yang*

### PS 927

**Characterizing the Role of the Mouse Deafness Gene Baiap2l2 in Hair Bundle Development**

*Julia Halford; Paroma Chatterjee; Sherri M. Jones; Matthew R. Avenarius; Peter G. Barr-Gillespie*

### PS 928

**Transcription Co-Factor LBH Is Necessary for Maintenance of Stereocilia Bundles and Survival of Cochlear Hair Cells**

*Yi Li; Kimberlee Giffen; Huizhan Liu; Grati M'Hamed; Xuezhong Liu; Karoline Briegel; David Z. He*

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## **PS 929**

**GIPC3 is Essential For Normal Development of Hair Bundles and Cuticular Plates of Cochlear Hair Cell Stereocilia**

**Paroma Chatterjee; Connor Benson; Clive P. Morgan; Peter G. Barr-Gillespie**

## **PS 930**

**Dynamin 3 Is Necessary for Maintaining the Dynamic Structure and Mechanics of Stereocilia Bundles of Cochlear Outer Hair Cells**

**Huizhan Liu; David Z. He**

## **PS 931**

**Constitutive activation of Dia1 induces hair cell vulnerability via attenuated integrity of apical junctional complexes and stereocilia**

**Yuzuru Ninoyu; Hirofumi Sakaguchi; Chen Lin; Hiroaki Mohri; Naoaki Saito; Takehiko Ueyama**

## **PS 932**

**Molecular Predictions for a CNGA3/CNGB1a Channel and its Membrane Guanylyl Cyclase Pathway Targeting Rhodopsin in Hair Cells**

**Marian J. Drescher; Neeliyath A. Ramakrishnan; Dennis G. Drescher**

## **PS 933**

**Effects of Chloroquine on Hair Cells: Implications for Ototoxicity Monitoring**

**Samantha N. Davis; Patricia Wu; Esra D. Camci; Edwin W. Rubel; David W. Raible**

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## **Inner Ear Therapeutics II**

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## **PS 934**

**Morphologic changes of stem cells transplanted into scala media induced by photobiomodulation**

**So-Young Chang; Nathaniel Carpena; Jae Yun Jung; Hosup Shim; Ji Eun Choi; Phil-Sang Chung; Min Young Lee**

## **PS 935**

**Cool Otoprotective Outer ear Lavage (COOL) Therapy for Cisplatin Induced Hearing Loss**

**James Stanford; Drew Morgan; Nicholas Bosworth; Punam Thapa; Tianwen Chen; Georgio Proctor; Bradley J. Walters; Douglas E. Vetter; Robert Black; Lesco Rogers; Christopher Spankovich**

## **PS 936**

**Transient Application of a Potent and Specific KCNQ2/3 Activator, RL\_81, Protects Against Noise-Induced Hearing Loss, but Not Against Age-Related Hearing Loss (AHL)**

*Laura Marinos; Bryce Hambach; Thanos Tzounopoulos*

## **PS 937**

**Development of Dual-Action Topical Therapeutics for Cytomegalovirus-Induced Hearing Loss**

*Elizabeth Arrigali; Monica Serban*

## **PS 938**

**Protective properties of Pre- and Post-treatment of Dexamethasone Against Kanamycin Induced Ototoxicity in the mouse: ex vivo model.**

*Jeong Eun Park; Young Joon Seo; Sung Kyun Kim*

## **PS 939**

**Chemokine Receptors, CXCR1/2, Serve as Novel Targets for Treating Cisplatin Ototoxicity**

*Raheem Al Aameri; Asmita Dhukhwa; Sandeep Sheth; Debashree Mukherjea; Leonard Rybak; Vickram Ramkumar*

## **PS 940**

**The Combinatorial Otoprotective Approach to Cisplatin Ototoxicity**

*Nicole Febles; Robert D. Frisina; Bo Ding; Nathan D. Gallant*

## **PS 941**

**Harnessing the Power of Exosomes to Mediate Sensory Hair Cell Protection in the Inner Ear**

*Melanie Barzik; Andrew M Breglio; Lindsey A. May; Nora C. Welsh; Shimon P. Francis; Tucker Q Costain; Lizhen Wang; D. Eric Anderson; Ronald S. Petralia; Ya-Xian Wang; Thomas B. Friedman; Matthew JA Wood; Lisa L. Cunningham*

## **PS 942**

**High-Throughput *in silico* Screening Identified JAK Inhibitors in Preventing Gentamicin Induced Hearing Loss**

*Zhuo Li; Hao Feng; Marisa Zallocchi; Kan Lin; Jonathan Fleegel; Jian Zuo*

## **PS 943**

**Evaluation of the Otoprotective Properties of Dexamethasone and Sodium Thiosulfate in Response to Cisplatin Treatment of Lateral-Line Neuromasts in Larval Zebrafish**

*Angela Schrader; Allison Saettele; Mark Warchol; Lavinia Sheets*

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## **PS 944**

### **Small Molecule B-Raf inhibitors Protect Cochlear Hair Cells from Cisplatin Toxicity**

*Lauryn E. Caster; Matthew A. Ingersoll; Eva M. Holland; Emma A. Malloy; Duane Currier; Jaeki Min; Taosheng Chen; Jian Zuo; Tal Teitz*

## **PS 945**

### **Effect of L-N-acetylcysteine and Dexamethasone in an in vitro Model of Inner Ear Trauma**

*Rahul Mittal; David Shahal; Viraj Shah; Dibyanshi Mishra; Camron Davies; Rahul Sinha; Carolyn Garnham; Jeenu Mittal; Adrien A. Eshraghi*

## **PS 946**

### **Does Overexpression of the Transcription Factor Pou4f3 Protect Against Noise-induced Hearing Loss?**

*Jarnail Singh; Michelle R. Randle; Chantz A. Pinder; Luyi Zhou; Brandon C. Cox*

## **PS 947**

### **Quinoxaline, its Derivatives, and Application in Otoprotection**

*Sonia Rocha-Sanchez; Umesh Pyakurel; Shikha Tarang; Santanu Hati; Hazel Taylor; David Z. He; Huizhan Liu; Jian Zuo; Marisa Zallocchi*

## **PS 948**

### **Ebselen Attenuates Amikacin-Induced Ototoxicity in Mice**

*Rende Gu; Ryan Longenecker; Jennifer Homan; Jonathan Kil*

## **PS 949**

### **Histological, Physiological, and Behavioral Evidence of Ebselen Mediated Otoprotection in a Mouse Model of Noise-Induced Hearing Loss**

*Ryan Longenecker; Jennifer Homan; Rende Gu; Jonathan Kil*

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## **Inner Ear: Fluids & Vasculature**

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## **PS 950**

### **Absence of Endolymphatic Sac Ion Transport Proteins in Large Vestibular Aqueduct Syndrome**

*Andreas H. Eckhard; David Bächinger; Meng Yu Zhu; Jennifer T. O'Malley; Diane Jones; Barbara J. Burgess; Joseph B. Nadol*

## **PS 951**

### **Identification of Proteins that Interact with Slc26a4 in Endolymphatic Sac Epithelium**

*Hyun Jae Lee; Juleh Eide; Cristina Fenollar-Ferrer; Andrew Griffith; Isabelle Roux*

## **PS 952**

### **Pericytes are vital for mature vascular stability and hearing**

*Jinhui Zhang; Xiaohan Wang; Zhiqiang Hou; Lingling Neng; Han Jiang; George W. Burwood; Junha Song; Manfred Auer; Xiaorui Shi*

## **PS 953**

### **Acoustic trauma causes stria vascular degeneration and regional pericyte transition: exogenous pericyte transplantation attenuates the vascular decline**

*Zhiqiang Hou; Lingling Neng; Jinhui Zhang; Jing Cai; Xiaohan Wang; Ivan Lopez; Xiaorui Shi*

## **PS 954**

### **Hearing Loss in Congenital CMV Infection: Endocochlear Potential and Lateral Wall Function are Preserved Despite Rampant Inflammation**

*Keiko Hirose; Song-Zhe Li; Jared J. Hartsock*

## **PS 955**

### **Suppression of connexin 43 leads to stria vascular hyper-permeability, endocochlear potential drop, and hearing loss**

*Jinhui Zhang; Xiaohan Wang; Zhiqiang Hou; Lingling Neng; Jing Cai; Han Jiang; Xiaorui Shi*

## **PS 956**

### **In-depth Proteome of Perilymph in Guinea Pig Model**

*Yu-Jung Hwang; Jung-Hun Lee; Hye Lee; Dohyun Han; Myung-Whan Suh; Seung-Ha Oh*

## **PS 957**

### **Time Course of Blood-Labyrinth Barrier Compromise Following Cochlear Implantation**

*Alec N. Salt; Daniel Smyth; Jared J. Hartsock*

## **PS 958**

### **Comprehensive analysis of N-glycan in the epithelial-like tissue of the mammalian cochlea**

*Yoriko Nonomura*

## **PS 959**

### **The organization of the vasculature in the normal and pathological inner ear: Healthy vasculature is important for a healthy hearing**

*Ivan A. Lopez; Gail P. Ishiyama; Dora Acuna; Xiaorui Shi; Akira Ishiyama*

## **PS 960**

### **Further Application of Light Sheet Microscopy of the Gerbil Cochlea**

*Kendall A. Hutson; Stephen H. Pulver; Douglas C. Fitzpatrick*

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## **PS 961**

**In vivo live image of mouse cochlear using two photon microscopy**

*Seong Hoon Bae; Sang Hyun Kwak; Jinsei Jung*

## **PS 962**

**A Novel 3D-Printed Head Holder for Guinea Pig Ear Surgery**

*Chris Valentini; Young Jae Ryu; Betsy Szeto; Michelle Yu; Jeffrey W. Kysar; Anil K. Lalwani*

## **PS 963**

**Biophysical Model of ATP Dependency of Ion Transport by Marginal and Vestibular Dark Cells**

*Julia Lasater; Robert M. Raphael*

## **PS 964**

**Novel 3D-Printed Hollow Microneedles Can Facilitate Safe and Reliable Aspiration of Perilymph for Proteomic Analysis**

*Betsy Szeto; Chris Valentini; Aykut Aksit; Michelle Yu; Emily G. Werth; Lewis M. Brown; Elizabeth Olson; Jeffrey W. Kysar; Anil K. Lalwani*

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## **Inner Ear: Synapses & Auditory Nerve**

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## **PS 965**

**Probing the Role of Neuroligins 1 and 3 among the Cochlear Synapses**

*Miguel A. Ramirez; Jeffrey N. Savas*

## **PS 966**

**The Role of CaBP1 and 2 in Hair Cell Synaptic Function**

*David Oestreicher; Vladan Ranković; Tina Pangršić*

## **PS 967**

**Hearing function and ribbon synapses in mice lacking Slack channels after mild to moderate noise trauma**

*Pauline Schepsky; Kerstin Blum; katharina Sorg; Dietmar Hecker; Robert Lukowski; Bernhard Schick; Peter Ruth; Simone Kurt; Jutta Engel*

## **PS 968**

**Na<sup>+</sup> Accumulation in Dendritic Projections Occur in the Absence of Na<sup>++</sup>- Activated K<sup>+</sup> Channels and Reduce Action Potential Conduction Velocity**

*Seojin Park; Maria Cristina Perez-Flores; Jeong Han Lee; Mincheol Kang; Xiao-Dong Zhang; Hannah A Ledford; Nipavan Chiamvimonvat; Victor Matveev; Ebenezer N. Yamoah*

## **PS 969**

### **The Differential Firing Pattern of Type II Spiral Ganglion Neurons**

**Maria Cristina Perez-Flores; Jeong Han Lee; Seojin Park; Mincheol Kang; Yingying Chen; Ebenezer N. Yamoah**

## **PS 970**

### **Distribution of Inner Hair Cell Efferent Synapses in the Murine Cochlea Across the Life Span**

**Anna Dondzillo; Hiroki Takeda; Samuel P. Gubbels**

## **PS 971**

### **Neurotrophin 3 (NT3) Expression by Cochlear Supporting Cells Modulates Gap Detection and Neuronal Activity in the Dorsal Cochlear Nucleus**

**Lingchao Ji; Calvin Wu; David T. Martel; M. Charles Liberman; Susan Shore; Gabriel Corfas**

## **PS 972**

### **Position Dependence of Synaptic Volume in the Organ of Corti under Different Conditions**

**Jay A. Gantz; Jason Carlquist; Babak V-Ghaffari; Mark Rutherford**

## **PS 973**

### **Three-dimensional electron microscopy of inner hair cell synapse and afferent morphology from hearing onset to maturation**

**Shelby Payne; Natalie Skigen; Jason Carlquist; Sonali Gattani; Guhan Iyer; Bethany Davis; Honey Patel; Allison Schwed; Heather Chung; Matt Nester; Atri Bhattacharyya; Mark Rutherford**

## **PS 974**

### **Electrophysiological Markers of Cochlear Nerve Function Correlate with Hearing-In-Noise Performance among Audiometrically Normal Subjects.**

**Kelsie J. Grant; Anita M. Mepani; Kenneth E. Hancock; M. Charles Liberman; Stéphane F. Maison**

## **PS 975**

### **Speech Evoked Electrocochleography- Preliminary Findings in Humans**

**William J. Riggs; Meghan M. Hiss; Varun Varadarajan; Jameson K. Mattingly; Edward Dodson; Aaron C. Moberly; Oliver F. Adunka**

## **PS 976**

### **Probable Cochlear Synaptopathy in Cochlear Implant Subjects**

**Douglas C. Fitzpatrick**

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## Ototoxicity II

### PS 977

**TLR4 and MyD88 Activation of TRPV1 Modulates Cellular Uptake of Aminoglycosides**

*Farshid Taghizadeh; Meiyang Jiang; William B. Meier; Peter S. Steyger*

### PS 978

**Using Zebrafish to Correlate Hair-Cell Presynaptic Activity and Ototoxin Resistance**

*Daria Lukasz; Katie Kindt*

### PS 979

**Studying Cisplatin Toxicity Using a Fluorescently Tagged Platinum Compound in Zebrafish and Mouse Hair Cells**

*Patricia Wu; Esra D. Camci; Roberto Ogelman; Matthew Hall; Lisa L. Cunningham; Julian A. Simon; Edwin W. Rubel; David W. Raible*

### PS 980

**The interaction of TRL7 with TRPA1 drives hyperexcitability cell death modulated by miRNA let-7b in auditory cells**

*Ken Hayashi; Yuna Suzuki; Akihiro Kishino; Fumiayuki Goto; Kaoru Ogawa*

### PS 981

**Cisplatin-Induced Loss of Hair Cells in Zebrafish Neuromasts is Accompanied by Nitration and Degradation of LMO4**

*Monazza Shahab; Rita Rosati; Samson Jamesdaniel*

### PS 982

**The Response of Cochlear Microglia-Like Cells to Ototoxic Challenge in Different Strains of Wildtype Mice**

*Liana Sargsyan; Alisa Hetrick; Yongchuan Chai; Hongzhe Li*

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### PS 983

**Reformulating Gentamicin to Reduce Ototoxicity and Maintain Antimicrobial Activity**

*Mary E. O'Sullivan; Randy Lin; Robert Greenhouse; Alan Cheng; Anthony Ricci*

### PS 984

**Identification of a Cyclodextrin Effective for Treating Niemann-Pick type C Disease Without the Ototoxicity of Currently Used 2-Hydroxypropyl-beta-cyclodextrin.**

*Anna M. Taylor; Karen S. Pawlowski; Joyce J. Repa*

## **PS 985**

**Major differences in 2-hydroxypropyl-beta-cyclodextrin ototoxicity in adult and postnatal rats**  
*Dalian Ding; Senthilvelan Manohar; Haiyan Jiang; Richard Salvi*

## **PS 986**

**Ototoxicity Profile of Platinum-based Chemotherapy Drugs in Mice**  
*Benjamin K. Gersten; Katharine Fernandez; Tracy S. Fitzgerald; Lisa L. Cunningham*

## **PS 987**

**Deletion of LMO4 in Mouse Inner Ear Enhances Susceptibility to Cisplatin-Induced Ototoxicity**  
*Rita Rosati; Monazza Shahab; Samson Jamesdaniel*

## **PS 988**

**Correlating Growth Inhibitory Effects of Sisomicin Analogs to their Uptake into Gram-Negative Bacteria**  
*Randy Lin; Mary E. O'Sullivan; Hasan DeMirci; Alan Cheng; Anthony Ricci*

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## **Outer Hair Cells**

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## **PS 989**

**Vesicle Traffic in Outer Hair Cells**  
*Csaba Harasztsosi; Entcho Klenske; Anthony W. Gummer*

## **PS 990**

**Oncomodulin Alters the Time Course of Transient Calcium Signaling in Cochlear Outer Hair Cells**  
*Yang Yang; Kaitlin Murtha; Leslie Climer; Dwayne D. Simmons*

## **PS 991**

**Macro-Patch Studies on Outer Hair Cell Nonlinear Capacitance**  
*Joseph Santos-Sacchi; Winston Tan*

## **PS 992**

**Synaptic Calcium Signals in Cochlear Outer Hair Cells**  
*Marcelo J. Moglie; Ana Belén Elgoyhen; Juan Goutman*

## **PS 993**

**Microtubule-Associated Protein 1S (MAP1S) is Required for Normal OHC Electromotility and Hearing**  
*Winston Tan; Jun-Ping Bai; Alexei Surguchev; Joseph Santos-Sacchi; Dhasakumar Navaratnam*

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## **PS 994**

**Nonlinear Capacitance in Voltage-Clamp and Temperature-Clamp**

**Richard D. Rabbitt**

## **PS 995**

**Kv7.4 Channel Exhibits Electromechanical Properties in Cochlear Outer Hair Cells**

**Maria Cristina Perez-Flores; Jeong Han Lee; Seojin Park; Mincheol Kang; Xiao-Dong Zhang; Choong-Ryoul Sihn; Hannah A Ledford; Wenying Wang; Nipavan Chiamvimonvat; Richard D Rabbitt; Ebenezer N. Yamoah**

## **PS 996**

**Local electrostatics control electromotile conformational transitions of Prestin/SLC26A5**

**Dominik Lenz; Julia Hartmann; Dominik Oliver**

## **PS 997**

**Frequency dependence of prestin: intrinsic transition rates and viscoelastic relaxation**

**Kuni H. Iwasa**

## **PS 998**

**A mouse model for studying regulation of cochlear amplification by chloride**

**Vijay Renigunta; Dominik Lenz; Julia Hartmann; Michael G. Leitner; Dominik Oliver**

## **PS 999**

**Progress in SLC26A6 (A6) Structural Studies by Cryo-EM**

**Alexei Surguchev; Alberto Rivetta; Jun-Ping Bai; Frederick Sigworth; Dhasakumar Navaratnam; Joseph Santos-Sacchi**

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## **Plasticity After Hearing Loss or Restoration**

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## **PS 1000**

**Four Historical Pediatric Case Reports Which Resulted in Major Advances in the Understanding and Care of Communication Disorders**

**Robert J. Ruben**

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## **PS 1001**

**Central Gain in the Human Auditory System: Investigations in “Normal Hearing” and in Tinnitus**

**Kelsey Dougherty; Alexandra Mai; Anna Hagedorn; Hari Bharadwaj**

## **PS 1002**

**Auditory Processing Remains Vulnerable to Prolonged Developmental Hearing Loss After the Critical Period**

*Kelsey L. Anbuhl; Todd M. Mowery; Dan H. Sanes*

## **PS 1003**

**Neural Mechanisms underlying Speech Level Processing in Hearing Loss**

*Chengjie G. Huang; Nicholas A. Lesica*

## **PS 1004**

**Accelerated Hippocampal Neurodegeneration in a Mice Model of Noise-induced Hearing Loss is Associated with Microglial Alterations**

*Hong Zhuang; Jing Yang; Zhihuil Huang; Hongyu Zhang; Haiqing Liu; Xiaobo Li; Jian Wang; Richard Salvi; Gaojun Teng; Lijie Liu*

## **PS 1005**

**Characterization of Alterations in Nociceptive Sensitivity Following Noise Exposure in Mice**

*Lorraine Horwitz; Susan E. Shore; Bo Duan*

## **PS 1006**

**Mice Exposed to Unilateral Acoustic Trauma Respond to Negatively Valenced Social Vocalizations**

*Kayleigh Hood; Laurel Screven; Madison M. Weinberg; Amanda M. Lauer; Laura M. Hurley*

## **PS 1007**

**Cortical Neural Synchrony Predicts Stimulus-Level-Dependent Increases in Auditory Evoked Potentials in Younger and Older Adults**

*Carolyn M. McClaskey; James W. Dias; Kelly C. Harris*

## **PS 1008**

**Deep Neural Network Model of Speech**

**Intelligibility for a Digit in Noise Task**

*Stephanie Haro; Gregory Ciccarelli; Thomas Quatieri; Christopher Smalt*

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## **Speech Psychophysics**

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## **PS 1009**

**Asymmetrical Forward and Backward Auditory Context Effects in Listeners with Normal Hearing and with Cochlear Implants**

*Matthew B. Winn*

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## **PS 1010**

**Perceptual Weighting of Voice Onset Time and Fundamental Frequency Cues in Noise**

*Mishaela DiNino; Yunan Charles Wu; Lillian Behm; Timothy P. Nolan; Barbara G. Shinn-Cunningham; Lori L. Holt*

## **PS 1011**

**The Role of Fundamental Frequency in Competing-Talker Scenarios**

*Paolo A. Mesiano; Johannes Zaar; Lars Bramsløw; Niels H. Pontoppidan; Torsten Dau*

## **PS 1012**

**Neural Correlates of Speech Categorization in Auditory and Visual Modalities**

*Gwyneth Lewis; Claire Pearson; Ashleigh Harrison; Gavin Bidelman*

## **PS 1013**

**Musicians Show Improved Speech Segregation In A Competitive, Multitalker Cocktail Party Scenario**

*Gavin Bidelman; Jessica Yoo*

## **PS 1014**

**Performance Intensity Function of Speech in Noise-the Effects of Linguistic Redundancy and Hearing Loss**

*Indira CP; Sandeep M*

## **PS 1015**

**Individual Differences in Frontal-Occipital**

**Fasciculus Microstructure Predict Visual**

**Enhancement of Auditory Speech Identification**

*James W. Dias; Carolyn M. McClaskey; Kelly C. Harris*

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## **PS 1016**

**Talker Variability and Audiovisual Speech**

**Augments Word Learning in Adult CI Listeners**

*Jasenia Hartman; Jenny Saffran; Ruth Y. Litovsky*

## **PS 1017**

**Predicting Masked Sentence Recognition in**

**Children with and without Hearing Loss: Noise and**

**Two-Talker Maskers**

*Kaylah Lalonde; Ryan McCreery; Elizabeth Walker*

## **PS 1018**

**The Relationship Between Response Time**

**and Presentation Level in Infant Speech**

**Discrimination: A Methodological Study**

*Kristin Uhler; Nathaniel T. Greene; Kerry Walker; Melinda Anderson*

## **PS 1019**

**Development of the Binaural Intelligibility Level**

**Difference (BILD) in a Two-Talker Masker**

*Lori Leibold; Jenna Browning; Emily Buss*

## **PS 1020**

**Speech Recognition in Quiet and Noise in Patients with Conductive, Mixed, and Sensorineural Hearing Losses**

*Michael Smith; Z. Jason Qian; Emma Tran; Nikolas Blevins; Matthew B. Fitzgerald*

## **PS 1021**

**Effects of age and hearing loss on speech understanding in quiet and noise in clinical populations.**

*Matthew B. Fitzgerald; Michael Smith; Nikolas Blevins; Z. Jason Qian*

## **PS 1022**

**Objective and Behavioral Markers of Low- and High-Frequency Processing and their Contribution to Speech Intelligibility in Healthy and Impaired Ears**

*Markus Garrett; Viacheslav Vasilkov; Manfred Mauermann; Sarah Verhulst*

## **PS 1023**

**Effects of Low Frequency Acoustic Hearing on Spectral Resolution and Speech Perception**

*Emily R. Spitzer; David M. Landsberger; David R. Friedmann*

## **PS 1024**

**Extended High Frequencies Provide both Spectral and Temporal Information to Improve Speech-in-Speech Listening**

*Allison Trine; Brian B. Monson*

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## **Therapeutics for the Prevention of Age-Related Hearing Loss**

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## **PS 1025**

**Reduced Cochlear Connexin26 Caused by Oxidative Stress is Involved in Age-Related Hearing Loss**

*Kai Xu; Sen Chen; Xiaozhou Liu; Xue Bai; Le Xie; Yuan Jin; Yu Sun; Weijia Kong*

## **PS 1026**

**Overexpression and Knockdown of Claudin 9**

**Levels Induce Hearing Loss**

*Yingying Chen; Jeong Han Lee; Seojin Park; Maria Cristina Perez-Flores; Braulio Peguero; Bruce Tempel; Ebenezer N. Yamoah*

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## **PS 1027**

**Presbycusis is Associated with Age-related Autophagy Flux Blocking in CBA/CaJ Mice**

*Bo Ding; Lauren Paganella; Xiaoxia Zhu; McKenzie Watson; Robert D. Frisina*

## **PS 1028**

**Autophagy Flux Modulation Induced by Estrogen Inhibition Affects Hearing in Female Mice**

*Xiaoxia Zhu; Bo Ding; McKenzie Watson; Tanika T. Williamson; Tian Liu; Jung-A A. Woo; David E. Kang; Robert D. Frisina*

## **PS 1029**

**Deregulation of mitophagy plays an important role in the process of age-related hearing loss**

*Yeon Ju Kim; Oak Sung Choo; Jin-Sol Lee; Hantai Kim; Jeong Hun Jang; Yun-Hoon Choung*

## **PS 1030**

**Senescent miR34a inhibited DRP-1-dependent mitophagy and exacerbated AHL**

*Hanqing Lin; Hao Xiong; Zhongwu Su; Jiaqi Pang; Yiqing Zheng*

## **PS 1031**

**Comparison of Cochlear Mitochondrial Function in Adult and Aged C57BL/6J Mice**

*Min Jung Park; Ah-Ra Lyu; Tae-Hwan Kim; Sun-Ae Shin; Seong-Hun Jeong; Yong-Ho Park*

## **PS 1032**

**Long Non-coding RNA EPHB1 Promotes Mimetic Aging Hair Cell Survival through Activation of Autophagy Pathway**

*Xia Wu; Weijia Kong*

## **PS 1033**

**Age-Related Hearing Loss due to Apoptosis of Spiral Ganglion Neurons in Atherosclerosis: In Vivo and Population-Based Study**

*YooYeon Kim; Janet Ren Chao; Chulho Kim; Harry Jung; Boyoung Kim; Phuong Nguyen Thi Thanh; Junghwa Bahng; Jiwon Chang; Jun Gyo Suh; Jun Ho Lee*

## **PS 1034**

**Establishment of oxidative-induced premature senescence model in auditory cells**

*Yuna Suzuki; Ken Hayashi; Takeshi Oshima; Makoto Makishima*

## **PS 1035**

### **Long-lasting Functional and Structural Damages on the Inner Ear Cells Induced by P-type Ca<sub>2+</sub>-ATPase Mutations**

**Osamu Minowa; Takashi Daiho; Kazuo Yamasaki; Hiroshi Suzuki; Toshihiko Shiroishi; Atsushi Yoshiki; Tetsuo Noda; Nagomi Kurebayashi; Takashi Murayama; Kazusaku Kamiya; Yasushi Okazaki; Katsuhisa Ikeda**

## **PS 1036**

### **Impact of Mitochondria Function on Endbulb of Held Synaptic Transmission during Age-related Hearing Loss**

**Yong Wang; Ruili Xie**

## **PS 1037**

### **nAChR Modulation of Auditory Cortical Signaling: Aging**

**Madan Ghimire; Rui Cai; Troy Hackett; Lynne Ling; Donald Caspary**

## **PS 1038**

### **Age-associated decline in Nrf2 signaling and associated mtDNA damage may be involved in the degeneration of the auditory cortex: Implications for central presbycusis**

**Yongqin Li; Baoai Han; Haiying Sun**

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## **Coffee Break**

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1:30 PM – 2:30 PM

**Grand Ballroom Foyer**

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## **Auditory Prostheses: Factors and Mechanisms Shaping Outcomes**

Moderators: Emily Spitzer & Shuman He

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2:00 PM – 4:00 PM

**Grand Ballroom 220C**

## **2:00 PM | PD 105**

### **Novel Variants in Syndromic Hearing Impairment Genes and Associations with Audiometric Thresholds in a Multi-ethnic Cohort of US Patients with Cochlear Implants**

**Angelo Augusto M. Sumalde; Patricia J. Yoon; Dylan C. Ray; Stephen Newton; Stephen P. Cass; Kenny H. Chan; Regie Lyn P. Santos-Cortez**

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**2:15 PM | PD 106**

**Effects of Pulse Phase Duration on the Electrically-Evoked Compound Action Potential in Children with Cochlear Nerve Deficiency and Children with Normal-Sized Cochlear Nerves**

*Shuman He; Jeffrey Skidmore; Lei Xu; William J. Riggs; Chloe Vaughan; Xiuhua Chao; Michelle Shannon; Cynthia Warner*

**2:30 PM | PD 107**

**Enhancement of Interaural Level Differences and Binaural Band Selection Improves Sound Localization in Bilateral Cochlear Implant Users**

*Tom Gajęcki; Waldo Nogueira*

**2:45 PM | PD 108**

**An objective measure of binaural sensitivity in cochlear implant recipients with bilateral acoustic hearing**

*René Gifford; Virginia Richards; Chris Stecker; Linsey Sunderhaus; Spencer Smith*

**3:00 PM | PD 109**

**Melodic Interval Perception by Unilaterally Deaf Cochlear Implant Listeners**

*Emily R. Spitzer; John J. Galvin; David R. Friedmann; David M. Landsberger*

**3:15 PM | PD 110**

**Free-Field Simultaneous Speech Recognition Reveals Asymmetric Hearing Only in Hard-Listening Conditions**

*Milagros J. Fumero; Maria Romo-Castillo; Almudena Eustaquio-Martin; Enrique A. Lopez-Poveda*

**3:30 PM | PD 111**

**Evaluating the Effect of Increased Spread of Excitation on Speech-in-Noise Perception by Cochlear Implant Listeners**

*Tobias Goehring; Julie G. Arenberg; Robert P. Carlyon*

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**3:45 PM | PD 112**

**Vowel Confusions and Threshold Profiles of Bilaterally Implanted Children**

*Kevin Franck; Kelly Jahn; Julie G. Arenberg*

## **Clinical Otolaryngology and Pathology**

Moderators: Athanasia Warnecke & Chen-Chi Wu

2:00 PM – 4:00 PM

**Grand Ballroom 220B**

**2:00 PM | PD 113**

**Rapid Detection of Circulating Inner Ear Biomarkers using an Electrochemical Immuno-biosensor.**

*Sahar Sadat Mahshid; Alain Dabdoub*

**2:15 PM | PD 114**

**Connexin 26 targeted assay on a miniaturized microarray for assessment of hemichannel function**

*Athanasia Warnecke; Hongling Wang; Frank Stahl; Steffens Melanie; Carsten Zeilinger*

**2:30 PM | PD 115**

**Revisiting the etiologies and hearing features of pediatric auditory neuropathy: an integrative approach**

*Chen-Chi Wu; Pei-Hsuan Lin; Chuan-Jen Hsu; Tien-Chen Liu*

**2:45 PM | PD 116**

**Phase 2b Randomized Double Blind Placebo-Controlled Trial of SPI-1005 for Meniere's Disease**

*Jonathan Kil; Shaun A. Nguyen; E. Emily Harruff; Thomas Willcox; Michael Hoa; Hinrich Staecker; Sujana Chandrasekhar; Jeffrey D. Sharon; J. Walter Kutz; Michael Hoffer; May Huang; Gorden McMurry; Paul R. Lambert*

**3:00 PM | PD 117**

**Audiovestibular Dysfunction in Infratentorial (Classical) Superficial Siderosis: Retrospective Cross-Sectional Study**

*Natalia Kharytaniuk; Duncan Wilson; Gargi Banerjee; Simon F. Farmer; Peter Cowley; David J. Werring; Doris E. Bamjiou*

**3:15 PM | PD 118**

**High Risk of Sudden Sensorineural Hearing Loss in Several Autoimmune Diseases According to a Population-Based National Sample Cohort Study**

*Junhui Jeong; Hyunsun Lim; Kyuin Lee; Chang Eui Hong; Hyun Seung Choi*

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**3:30 PM | PD 119**

**Pericyte Activation is at the Root of Alport Disease Initiation in both the Renal Glomerulus and the Stria Vascularis of the Inner Ear.**

**Dominic Cosgrove; Brianna Dufek; Daniel Meehan; Duane Delimont; Gina Samuelson; Xiaorui Shi; Zhiqiang Hou; Grady Phillips; Michael Anne Gratton**

**3:45 PM | PD 120**

**Healing and Hearing Outcomes of Chinchilla Tympanoplasty Procedures with Novel Biodegradable, Biomimetic 3D-Printed Tympanic Membrane Grafts**

**Nicole Black; Dhrumi Gandhi; Jennifer S. Zhu; Marta Pawluczuk; Elliott D. Kozin; Jeffrey Cheng; Jennifer Lewis; Aaron K. Remenschneider**

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**Generally Genetics**

Moderators: Karen Steel & Hannie Kremer

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**2:00 PM – 4:00 PM**

**Grand Ballroom 220A**

**2:00 PM | PD 121**

**Cx26 (GJB2) Mutation Heterozygous Carriers are Vulnerable to Noise**

**Shu Fang; Yang Liu; Li-Man Liu; Yan Zhu; Hong-Bo Zhao**

**2:15 PM | PD 122**

**Drug Screening and AAV Gene Therapy for GJB2 Related Hearing Loss with iPS cells**

**Kazusaku Kamiya; Ichiro Fukunaga; Osamu Minowa; Katsuhisa Ikeda**

**2:30 PM | PD 123**

**Burden of Rare Missense Variants in OTOG Gene in Familial Meniere's Disease**

**Pablo Roman-Naranjo; Alvaro Gallego-Martinez; Jose Antonio Lopez Escamez**

**2:45 PM | PD 124**

**Protective Genetic Variants for Usher I Syndrome and Hearing Loss**

**Qingyin Zheng; Zehua Sun; Aizhen Zhang; Fuyi Xu; Weinan Du; Robert Williams; Lu Lu**

**3:00 PM | PD 125**

**Mutations of MAP1B, encoding the microtubule-associated phosphoprotein, cause sensorineural hearing loss**

**Limei Cui; Min-Xin Guan; Ye Chen**

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**3:15 PM | PD 126**

**Acsl4 mutation leads to early and fast progressive hearing loss affecting the inflammatory response within the inner ear.**

*Elisa Martelletti; Neil Ingham; Romain Colas; Jesmond Dalli; Karen Steel*

**3:30 PM | PD 127**

**An In-Frame Deletion in RIPOR2 is an Important Cause of Adult-Onset Hearing Impairment**

*Suzanne E. de Bruijn; Jeroen J. Smits; Chang Liu; Cornelis P. Lanting; Andy J. Beynon; Joëlle Blankevoort; Jaap Oostrik; Wouter Koole; Erik de Vrieze; Cor W.R.J. Cremers; Frans P.M. Cremers; Susanne Roosing; Helger G. Yntema; Henricus P.M. Kunst; Bo Zhao; Ronald J.E. Pennings; Hannie Kremer*

**3:45 PM | PD 128**

**Treatment of Monogenic and Digenic Dominant Mutations by CRISPR/Cas9 Ribonucleoprotein Delivery In Vivo**

*Veronica Lamas; Yong Tao; Yiran Li; Xue Gao; Corena Loeb; Mingqian Huang; Yujuan Hu; Weijia Kong; Xuezhong Liu; David Liu; Zheng-Yi Chen*

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## **gEAR Workshop**

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**4:00 PM – 5:00 PM**

**Room 212AB**

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## **spARO Steering Committee Dinner**

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**6:30 PM**

**Elyse Restaurant**

**151 S 2nd St, San Jose, CA**

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## **Hair Ball**

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**8:00 PM – 11:59 PM**

**Grand Ballroom 220B**

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## **Registration**

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7:00 AM – 12:00 PM

***Executive Ballroom Foyer***

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## **Speaker Ready Room**

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7:00 AM – 11:00 AM

***Room 213***

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## **Auditory Nerve Function**

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Moderators: Kelly Harris & Daniel Rasetshwane

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8:00 AM – 10:00 AM

***Grand Ballroom 220B***

### **8:00 AM | PD 129**

**Degradation of Speech-In-Noise Coding in Auditory-Nerve Fibers Following Cochlear Hearing Loss: Insights from Spectro-Temporal and Information-Theoretic Approaches**  
***Satyabrata Parida; Michael G. Heinz***

### **8:15 AM | PD 130**

**Signal Processing for Remediation of Threshold-Independent Hearing Disorder**  
***Daniel Rasetshwane; Aryn Kamerer; Judy G. Kopun; Sara E. Fultz; Stephen Neely***

### **8:30 AM | PD 131**

**Neural Presbycusis: Age-Related Deficits in Auditory-Nerve Function and Differential Effects on Functional Abilities**

***Kelly C. Harris; Carolyn M. McClaskey; James W. Dias; Jayne B. Ahlstrom; Judy R. Dubno***

### **8:45 AM | PD 132**

**A Gaussian Model of the Auditory Brainstem Response: Proof of Concept and Validity**

***Aryn Kamerer; Stephen Neely; Daniel Rasetshwane***

### **9:00 AM | PD 133**

**Assessing Auditory Nerve Integrity with Acoustic Reflex Growth Functions**

***Joseph Pinkl; Lamiia Abdelrehim; Brian Earl***

### **9:15 AM | PD 134**

**Simulating the Effects of KLT, HCN and M-current Channels in Auditory Nerve Fibers**

***Ian C. Bruce; Daniel Shields; Laura Green; Babak V-Ghaffari; Mark Rutherford***

**9:30 AM | PD 135**

**Characterizing Auditory Nerve Function in Mice Using A Multi-Metric Approach That Quantifies Neural Synchrony in the Auditory Brainstem Response**

*Carolyn M. McClaskey; Clisse H. Panganiban; Kenyaria V. Noble; Hainan Lang; Kelly C. Harris*

**9:45 AM | PD 136**

**Behavioral Discrimination of Masked Vowel-Like Sounds in an Avian Animal Model of Auditory-Nerve Loss**

*Kenneth S. Henry; Kristina Abrams*

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**Brain Imaging of Auditory Function - Human Studies**

Moderators: Benjamin Skerritt-Davis & Maria Chait

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8:00 AM – 10:00 AM

**Grand Ballroom 220A**

**8:00 AM | PD 137**

**The Neural Processing of Sound at 3 Months**

*Bonnie K. Lau; Samu Taulu; Patricia K. Kuhl; Adrian KC Lee*

**8:15 AM | PD 138**

**Dissociating Spectral Envelope and Fundamental Frequency in Tonotopic Representations within Human Auditory Cortex**

*Emily J. Allen; Juraj Mesik; Kendrick N. Kay; Andrew J. Oxenham*

**8:30 AM | PD 139**

**Auditory Cortex Tracks Acoustic Onsets of Ignored Speech: A Potential Mechanism in Stream Segregation**

*Christian Brodbeck; L Elliot Hong; Jonathan Z. Simon*

**8:45 AM | PD 140**

**Plasticity in Auditory Categorization Is Supported by Differential Engagement of The Auditory-Linguistic Network**

*Gavin Bidelman; Breya Walker*

**9:00 AM | PD 141**

**Neural Responses to Statistical Change across Multiple Acoustic Dimensions**

*Benjamin Skerritt-Davis; Mounya Elhilali*

**9:15 AM | PD 142**

**Tone-Sequence Awareness under Informational Masking Probed with Pre- and Post-Stimulus Cues: A Magnetoencephalography Study in Human Listeners**  
*Kai Gärtner; Alexander Gutschalk*

**9:30 AM | PD 143**

**Oscillatory Correlates of Auditory Working Memory in Human Intracranial EEG**

*Joel Berger; Phillip Gander; Sukhbinder Kumar; Kirill Nourski; Matthew Banks; Hiroyuki Oya; Hiroto Kawasaki; Matthew Howard; Timothy Griffiths*

**9:45 AM | PD 144**

**Neural Alpha and Beta Oscillations are Differentially Modulated in a Challenging Visual Compared to Auditory Task**

*Vanessa C. Irsik; Ingrid Johnsrude; Björn Herrmann*

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## **Inner Ear Therapeutics**

Moderators: Lisa Cunningham & Matthew Ingersoll

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**8:00 AM – 10:00 AM**

**Grand Ballroom 220C**

**8:00 AM | PD 145**

**Statins reduce cisplatin-induced hearing loss in humans**

*Katharine Fernandez; Paul Allen; Maura Campbell; Thomas Townes; Brandi Page; Chuan-Ming Li; Jaylon Harkness; Marcia Mulquin; Anna Clements; Candice Ortiz; Carmen Brewer; Nicole Schmitt; Shawn Newlands; Lisa L. Cunningham*

**8:15 AM | PD 146**

**Repurposing an FDA approved Drug Dabrafenib for Protection from Noise- and Cisplatin- Induced Hearing Loss**

*Matthew A. Ingersoll; Lauryn E. Caster; Eva M. Holland; Emma A. Malloy; Zhenhang Xu; Hao Feng; Duane Currier; Jaeki Min; Taosheng Chen; Jian Zuo; Tal Teitz*

**8:30 AM | PD 147**

**Extracellular Vesicles derived from Mesenchymal Stromal Cells as New Cell-free but Cell-based Therapeutic for the Inner Ear**

*Jennifer Schulze; Mario Gimona; Eva Rohde; Hinrich Staecker; Thomas Lenarz; Athanasia Warnecke*

**8:45 AM | PD 148**

**Attenuating the Pathophysiologies of Noise Induced Hearing Loss by pre-Treatment with Near-Infrared-Light**

**Moritz Gröschel; Ira Strübing; Dan Jiang; Patrick Boyle; Arne Ernst; Dietmar Basta**

**9:00 AM | PD 149**

**SENS-401 Significantly Reduces Lasting Hearing Loss from Chronic Noise Exposure in a Rat Model**

**Mathieu Petremann; Charlotte Romanet; Christophe Tran Van Ba; Viviana Delgado-Betancourt; Vincent Descossy; Pauline Liaudet; Jonas Dyhrfjeld-Johnsen**

**9:15 AM | PD 150**

**Modulation of NAD+ Biosynthesis Improves Mitochondrial Function and Resist Cisplatin-induced Ototoxicity**

**Ting Zhan; Hao Xiong; Jiaqi Pang; Hanqing Lin; Haidi Yang**

**9:30 AM | PD 151**

**Insulin-like Growth Factor 1 Protects Cochlear Outer Hair Cells against Cisplatin**

**Norio Yamamoto; Kohei Yamahara; Takayuki Nakagawa; Koichi Omori; Juichi Ito**

**9:45 AM | PD 152**

**Long-term Efficacy and Safety of Non-invasive Therapeutic Hypothermia Treatment in a Preclinical Noise-Induced Hearing Loss Model**

**Samantha Rincon Sabatino; Rachele Sangaletti; Andrea Rivero; Curtis King; Suhurd M. Rajguru**

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**Auditory Circuits for Sound Processing and Perception**

Moderators: Stephen David & Anne Takesian

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220A**

**10:30 AM | PD 153**

**A Non-canonical Cortico-Amygdala Inhibitory Loop.**

**Hector Zurita; Paul LC Feyen; Alice Bertero; Alfonso Junior Apicella**

**10:45 AM | PD 154**

**Auditory Representation in Cortex During Perceptual Learning**

**Robert C. Froemke; Kathleen A. Martin**

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**11:00 AM | PD 155**

**Midbrain and Cortical Responses to Natural Sound Textures**

*Fei Peng; Ambika Mishra; Nicol Harper; Jan Schnupp*

**11:15 AM | PD 156**

**Sensory Responses in Mouse Auditory Cortex are Influenced by Behavior and Expectation**

*Nicholas Audette; David M. Schneider*

**11:30 AM | PD 157 WITHDRAWN**

**Functional Connectivity Between Cortical and Subcortical Auditory Regions During Rest and Movie Viewing**

*Chad Buckland; Mark O'Reilly; Ingrid Johnsrude*

**11:45 AM | PD 158**

**Convergence of Top-down and Bottom-up Inputs to Marmoset Auditory Cortex during Vocalization**

*Joji Tsunada; Steven J. Eliades*

**12:00 PM | PD 159**

**An Auditory Long-Range Inhibitory Projection onto Striatal Cholinergic Neurons**

*Alice Bertero; Alfonso Junior Apicella*

**12:15 PM | PD 160**

**Neuromodulatory- and Prefrontal- Sensory Cortical Interactions Underlying Motivated Shifts in Attentional (Listening) Effort**

*Jan Willem de Gee; Zakir Mridha; Yanchen Shi; Anton Banta; Wenhan Zhang; Matthew J. McGinley*

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**Development: Molecular Foundations**

Moderators: Angelika Doetzlhoefer & Martin Basch

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220B**

**10:30 AM | PD 161**

**Neural Specific Roles for the Chromatin Remodeler CHD7 in the Developing Cochlear Epithelium**

*Vinodh Balendran; Jennifer M. Skidmore; Lisa A. Beyer; Jelka Cimerman; Elizabeth A. Hurd; Yehoash Raphael; Donna M. Martin*

**10:45 AM | PD 162**

**A Single-Cell Atlas of Ear Development Reveals Molecular Foundations of Sensory Patches, Semicircular Canals, and the Endolymphatic Duct and Sac**

*Ian Swinburne; Sean Megason*

**11:00 AM | PD 163**

**Single Cell Chromatin Accessibility Delineates Cellular Identities of the Neonatal Organ of Corti**  
*Shuze Wang; Mary Lee; Jie Liu; Joerg Waldhaus*

**11:15 AM | PD 164**

**Single-cell Proteomics Reveals Downregulation of TMSB4X to Drive Actin Release for Stereocilia Assembly**

*Mirko Scheibinger; Ying Zhu; Daniel C. Ellwanger; Jocelyn F. Krey; Dongseok Choi; Ryan Kelly; Stefan Heller; Peter G. Barr-Gillespie*

**11:30 AM | PD 165**

**SoxC Transcription Factors are Crucial Regulators of Sensory Progenitor Differentiation in the Organ of Corti**

*Xizi Wang; Ksenia Gnedeva; Litao Tao; Juan Llamas; Haoze Yu; Talon Trecek; Welly Makmura; Neil Segil*

**11:45 AM | PD 166**

**Molecular Regulation of Sensory Epithelial Cell Patterning in the Mammalian Inner Ear**

*Chandrakala Puligilla; Atul Pandey; Daisy Haque; Kristen Phlegar; Bradley Schulte; Vilhelm Bohr*

**12:00 PM | PD 167**

**Dynamic changes in cis-regulatory occupancy by Six1 drive progressive differentiation to establish cell identity and hair-cell-bundle polarity in auditory sensory epithelium**

*Jun Li; Ting Zhang; Aarthi Ramakrishnan; Bernd Fritzsch; Jinshu Xu; Li Shen; Pin-Xian Xu*

**12:15 PM | PD 168**

**Brg1-Eya1/Six1-dependent regulation of the Sox2 transcriptional landscape establishes proneurosensory lineage in the mouse inner ear**  
*Jinshu Xu; Jun Li; Aarthi Ramakrishnan; Huihui Jiang; Ting Zhang; Bernd Fritzsch; Li Shen; Pin-Xian Xu*

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**Inner Ear Structure & Function**

Moderators: Gary Housley & Catalina Velez-Ortega

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**10:30 AM – 12:30 PM**

**Grand Ballroom 220C**

**10:30 AM | PD 169**

**Evaluating Estrogen's Multi-Modal Modulatory Potential: A Framework for Understanding Protection from Noise-Induced Hearing Loss**

**Benjamin Shuster; Ryan Casserly; Shaun Viechweg; Erika Lipford; Kanisa Davidson; Rafal Olszewski; Jennifer Enoch; Mark McMurray; Beatrice Milon; Mark Rutherford; Kevin Ohlemiller; Michael Hoa; Didier Depireux; Jessica Mong; Ronna Hertzano**

**10:45 AM | PD 170**

**Preservation of Pre-Hearing Spontaneous Activity in a Mouse Model of Gjb2-Mediated Deafness**

**Calvin J. Kersbergen; Travis Babola; Dwight E. Bergles**

**11:00 AM | PD 171**

**Tac1-expressing Type II Afferent Neurons in the Cochlea Respond to ATP after Acute Damage**

**Megan B. Wood; Nathaniel J. Nowak; Paul Fuchs**

**11:15 AM | PD 172**

**The role of the calcium-sensing receptor in regulating intracellular calcium dynamics in the mammalian cochlea**

**Snezana Levic; Ebenezer N. Yamoah**

**11:30 AM | PD 173**

**In-Vivo and Postmortem Gerbil Organ of Corti Fluid Space Morphology Using 3D Volume Optical Coherence Tomography (OCT)**

**NamHyun Cho; Haobing Wang; Mike E. Ravicz; Sunil Puria**

**11:45 AM | PD 174**

**A Novel Microneedle Device for Controlled and Reliable Liquid Biopsy of the Human Inner Ear**

**Samuel Early; In Seok Moon; Krishna Bommakanti; Ian Hunter; Konstantina M. Stankovic**

**12:00 PM | PD 175**

**Electrically-Evoked Olivocochlear Efferent Suppression in the Peripherin Knockout Mouse Supports Outer Hair Cell - Based Control of the Cochlear Amplifier**

**Jennie M. Cederholm; Chamini Perera; Georg von Jonquieres; Jeremy L. Pinyon; Kristina E. Parley; Jean-Pierre Julien; Allen Ryan; Gary D. Housley**

**12:15 PM | PD 176 WITHDRAWN**

**Descending Modulation of Afferent Activity by Hindbrain Efferent Neurons in the Zebrafish Lateral Line System**

**Elias Lunsford; Dimitri Skandalis; James C. Liao**

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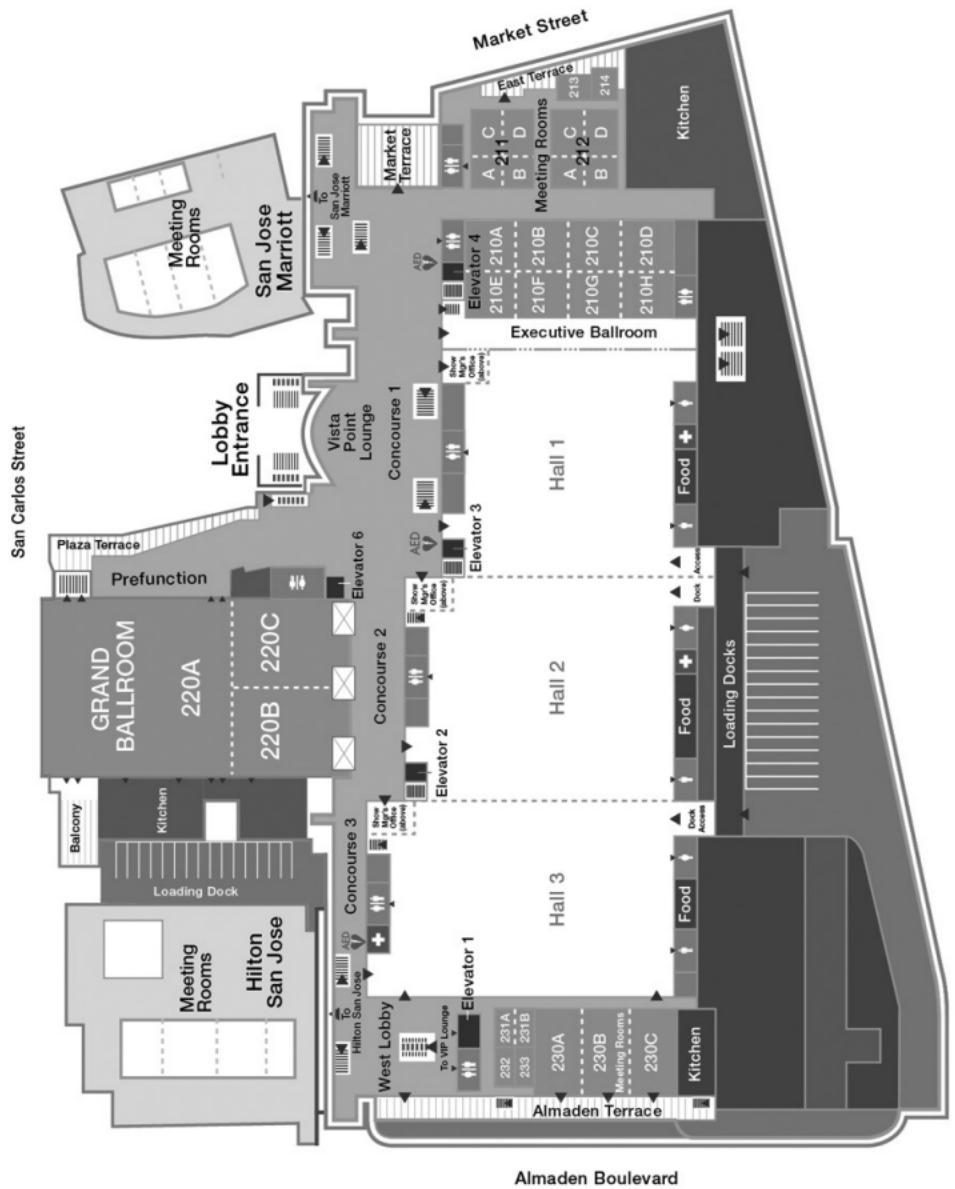
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