



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

**DNS**

DIPARTIMENTO  
DI NEUROSCIENZE

# Symposium & 56<sup>th</sup> Inner Ear Biology Workshop

"Hearing research: from history into the future"

Chairs: Alessandro Martini, Fabio Mammano and Paolo Gasparini



**7-10 SEPTEMBER 2019 - PADUA, ITALY**

## Symposium

**Saturday 7 September 2019**

### Fiera di Padova

10.00 12.00	Registration
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### Aula Magna, Bo Palace - University of Padova

13.30	Registration
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## SATELLITE SYMPOSIUM

### New Approaches for Improving Inner Ear Function

Chairman: Alessandro Martini

14.30	<b>The early days of dexamethasone-eluting electrode</b> Alessandro Martini ( <i>Padua, Italy</i> )
14.45	<b>Dexamethasone-eluting electrode /other drug delivery</b> Verena Scheper ( <i>Hannover, Germany</i> )
15.00	<b>Vestibular implants</b> Angelica Peres Fornos ( <i>Geneva, Switzerland</i> )
15.15	<b>Brief summary and closure</b> Susanne Braun ( <i>Starnberg, Germany</i> )

15.30 – 15.45 Coffee break

## INNER EAR BIOLOGY SYMPOSIUM

### Hearing Research: From History into the Future

Chairmen: Alessandro Martini, Paolo Gasparini, Fabio Mammano

15.45		Welcome address
16.00	<b>S1</b>	<b>Highlight in Human Cochlear Microanatomy</b> Helge Rask-Andersen ( <i>Uppsala, Sweden</i> )
16.30	<b>S2</b>	<b>Tailoring tissue remodeling during early inner ear development: together we can</b> Isabela Varela-Nieto ( <i>Madrid, Spain</i> )
17.00	<b>S3</b>	<b>Inner Ear Drug Delivery by Precise Perforation</b> Anil K. Lalwani ( <i>New York, USA</i> )
17.30	<b>S4</b>	<b>Central auditory prostheses: challenges and potentials</b> Andrej Kral ( <i>Hannover, Germany</i> )
18.00	<b>S5</b>	<b>Cochlear neuroregeneration: progressing towards the clinical use of human pluripotent stem cells</b> Marcelo N. Rivolta ( <i>Sheffield, UK</i> )
18.30	<b>S6</b>	<b>Padua, cradle of modern medicine</b> Giorgio Zanchin ( <i>Padua, IT</i> )
		<i>ECM - for Italian participants only: Compilazione del modulo della qualità percepita</i>

## Opening Ceremony of the 56th Inner Ear Biology Workshop

19.00	<b>Welcome from the Rector</b> <i>Magnificus Professor Rosario Rizzuto, University of Padova</i>
	<b>Elena Lucrezia Cornaro Piscopia Award Ceremony</b> <i>Helen Cornaro was a Venetian philosopher of noble descent, who in 1678 became one of the first women to receive an academic degree from a University, and the first to receive a Doctor of Philosophy degree. The degree was conferred on 25 June 1678 in the Padua Cathedral, in the presence of the University authorities.</i> <i>The Elena Lucrezia Cornaro Piscopia Awards honour outstanding women scientists from all over the world, whose studies are focused on Inner Ear Neurobiology and Developmental biology.</i>

## Palazzo della Ragione, external arcade

20.00 Welcome Reception



**DNS** DIPARTIMENTO  
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# Symposium & 56<sup>th</sup> Inner Ear Biology Workshop

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7-10 SEPTEMBER 2019 - PADUA, ITALY

## 56<sup>th</sup> Inner Ear Biology Workshop

Fiera di Padova

**Sunday 8 September 2019**

07.30	Registration
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### SESSION I

#### REGENERATION, STEM CELLS AND DEVELOPMENTAL BIOLOGY

Moderators: *Leila Abbas, Anna Rita Fetoni*

08.00	<b>TL1</b>	<p><b>TARGET LECTURE</b></p> <p><b>In vitro expansion of human fetal cochlear duct cells and differentiation into functional hair cells in 3D organoids</b></p> <p><i>Marta Roccio<sup>(1)</sup>, Silvia Erni<sup>(1)</sup>, Carlotta Palaferri<sup>(1)</sup>, Michael Perny<sup>(1)</sup>, Megan Ealy<sup>(3,4)</sup>, Hans Ruedi Widmer<sup>(1)</sup>, Stefan Heller<sup>(3)</sup>, Pascal Senn<sup>(1,2)</sup> – Bern, Switzerland<sup>(1)</sup>; Genève, Switzerland<sup>(2)</sup>; Stanford, CA – USA<sup>(3)</sup>; Springfield, MO – USA</i></p>
08.25 – 10.10		<b>COMMUNICATIONS</b>
08.25	<b>C01</b>	<p><b>Comprehensive analyses of gene expressions in the developing primate cochlea</b></p> <p><i>Makoto Hosoya, Masato Fujioka, Kaoru Ogawa - Tokyo, Japan</i></p>
08.38	<b>C02</b>	<p><b>Wnt Signalling Regulates the Formation of Inner Ear Sensory Organs by Antagonizing Prosensory signals</b></p> <p><i>Magdalena Zak, Vincent Plagnol, Nicolas Daudet - London, UK</i></p>
08.51	<b>C03</b>	<p><b>Proteostasis is essential during cochlear development for neuron survival and hair cell polarity</b></p> <p><i>Steve Freeman, Susana Mateo-Sanchez, Ronald Pouyo, Brigitte Malgrange, Laurence Delacroix - Liege, Belgium</i></p>

09.04	<b>C04</b>	<b>Frizzled3 and Frizzled6 Cooperate with Vangl2 to Direct Cochlear Innervation by Type II Spiral Ganglion Neurons</b> <i>Michael Deans - Salt Lake City, United States</i>
09.17	<b>C05</b>	<b>Differential expression of transmembrane channel-like protein 1 (TMC1) during fetal development of the human inner ear</b> <i>E.S.A. van Beelen, W.H. van der Valk, J.C.M.J. de Groot, H. Locher, P.P.G. van Benthem - Leiden, Netherlands</i>
09.30	<b>C06</b>	<b>Single-cell transcriptomics of chick auditory epithelial cells during hair cell regeneration</b> <i>Takayuki Nakagawa, Mami Matsunaga, Tomoko Kita, Ryosuke Yamamoto, Hiroe Ohnishi, Norio Yamamoto, Koichi Omori, Satoko Sakamoto, Akira Watanabe - Kyoto, Japan</i>
09.43	<b>C07</b>	<b>Evidence of intrinsic multi-potent/stem cells in the mature porcine cochlea</b> <i>Desmond Nunez, Printha Wijesinghe, Boyuan Zheng, Elizabeth Hui, Germain Ho - Vancouver, Canada</i>
09.56	<b>C08</b>	<b>How the computational methods can contribute to better knowledge of the ear</b> <i>Fernanda Gentil, Marco Parente, Carla Santos, Bruno Areias, Jorge Belinha, Renato Natal Jorge - Porto, Portugal</i>

Coffee station in the Exhibition Area from 10.00 to 11.30

## SESSION II

<b>EAR PHYSIOLOGY AND AGING</b>		
Moderators: <i>Ito Juichi, Fabio Mammano</i>		
10.10	<b>TL2</b>	<b>TARGET LECTURE</b> <b>The voltage and frequency dependence of prestin nonlinear capacitance is time-dependent</b> <i>Joseph Santos-Sacchi, Winston Tan - New Haven, United States</i>
10.30 – 13.00	<b>COMMUNICATIONS</b>	
10.30	<b>C09</b>	<b>Emilin 2 promotes the stiffness and smooth mechanical gradient of the cochlear basilar membrane that is essential for fine, consistent, frequency resolution</b> <i>Ian Russell<sup>(1)</sup>, Victoria A. Lukashkina<sup>(1)</sup>, Snezana Levic<sup>(1)</sup>, Young-Wook Cho<sup>(2)</sup>, Lily Ng<sup>(2)</sup>, Douglas Forrest<sup>(2)</sup>, Andrei N. Lukashin<sup>(1)</sup> - Brighton, UK<sup>(1)</sup>; Bethesda, Maryland, United States<sup>(2)</sup></i>
10.43	<b>C10</b>	<b>Membrane traffic in the outer hair cell</b> <i>Csaba Harasztosi, Anthony W. Gummer - Tübingen, Germany</i>
10.56	<b>C11</b>	<b>Correlation analysis of inner hair cell Ca<sup>2+</sup> action potential activity and spontaneous Ca<sup>2+</sup> signaling in non-sensory cells of the pre-hearing mouse cochlea</b> <i>Federico Ceriani<sup>(1)</sup> - Stuart L. Johnson<sup>(1)</sup> - Aenea Hendry<sup>(1)</sup> - Bechara Kachar<sup>(2)</sup> - Walter Marcotti<sup>(1)</sup> - Fabio Mammano<sup>(3)</sup> - Sheffield, UK<sup>(1, 2)</sup>; Bethesda, MD, USA<sup>(2)</sup> - Padova, Italy<sup>(3)</sup></i>

11.09	<b>C12</b>	<b>Mechanical creep of the hair bundle is not correlated with Ca<sup>2+</sup>-dependent slow adaptation</b> <i>Giusy Caprara, Andrew Mecca, Anthony Peng - Aurora, United States</i>
11.22	<b>C13</b>	<b>Age-related structural changes at auditory hair cell ribbon synapses: the role of cadherin23 and otoferlin</b> <i>Didier Dulon - Bordeaux, France</i>
11.35	<b>C14</b>	<b>Second messengers regulate the sensitivity of cochlear hair cell mechanotransduction</b> <i>Andrew Mecca, Anthony Peng - Aurora, United States</i>
11.48	<b>C15</b>	<b>Relevance of the presence of auditory nerve peripheral processes for the electrically evoked compound action potential</b> <i>Dyan Ramekers, Henk Vink, Ferry Hendriksen, Huib Versnel - Utrecht, Netherlands</i>
12.01	<b>C16</b>	<b>G6PD overexpression protects from oxidative stress and ameliorates ARHL progression</b> <i>Jose María Bermúdez Muñoz<sup>(1)</sup>, Adelaida María Celaya<sup>(1)</sup>; Sara Hijazo<sup>(1)</sup>, Manuel Serrano<sup>(2)</sup>, Isabel Varela Nieto<sup>(1)</sup> - Madrid, Spain<sup>(1)</sup>; Barcelona, Spain<sup>(2)</sup></i>
12.14	<b>C17</b>	<b>Inflammatory cytokines as diagnostic predictors of age-related hearing loss: cross-sectional investigation from the Great Age Study</b> <i>Rodolfo Sardone, Petronilla Battista, Rossella Donghia, Marcello Chieppa, Madia Lozupone, Vito Guerra, Fabio Castellana, Letizia Pesole, Valeria Passalacqua, Antonio Lippolis, Domenico Scrutinio, Ilaria Bortone, Gianluigi Giannelli, Francesco Panza, Giancarlo Logroscino, Nicola Quaranta - Bari, Italy</i>
12.27	<b>C18</b>	<b>Age-related differences in the auditory temporal processing at peripheral and central levels in Fischer 344 rats</b> <i>Jiří Popelář<sup>(1)</sup>, Kateryna Pysanenko<sup>(1)</sup>, Zbyněk Bureš<sup>(2)</sup>, Daniel Šuta<sup>(1)</sup>, Natalia Rybalko<sup>(1)</sup>, Tzai-Wen Chiu<sup>(3)</sup>, Yohan Bouleau<sup>(4)</sup>, Didier Dulon<sup>(4)</sup>, Josef Syka<sup>(1)</sup> - Prague, Czech Republic<sup>(1)</sup>; Jihlava, Czech Republic<sup>(2)</sup>; Hsinchu, Taiwan, Province of China<sup>(3)</sup>; Bordeaux, France<sup>(4)</sup></i>
12.40	<b>C19</b>	<b>Hearing Loss in aging: does the shape of the audiogram predict perfusion changes in the primary auditory cortex?</b> <i>Renzo Manara<sup>(1)</sup>, Sara Ponticorvo<sup>(1)</sup>, Davide Brotto<sup>(2)</sup>, Arianna Cappiello<sup>(1)</sup>, Sofia Cuoco<sup>(1)</sup>, Donato Troisi<sup>(1)</sup>, Claudia Cassandro<sup>(1)</sup>, Marta John<sup>(1)</sup>, Alfonso Scarpa<sup>(1)</sup>, Ettore Cassandro<sup>(1)</sup>, Francesco Di Salle<sup>(1)</sup>, Maria Teresa Pellicchia<sup>(1)</sup>, Fabrizio Esposito<sup>(1)</sup> - Salerno, Italy<sup>(1)</sup>; Padova, Italy<sup>(2)</sup></i>

13.00 - 13.15 **Group photo**

13.15 - 14.00 **Lunch time**

## SAELLITE SYMPOSIUM

<b>BEYOND THE DEVICE: NEW THERAPEUTIC APPROACHES FOR HEARING LOSS</b>	
14.00	<b>Cochlear Implants: the future is now</b> <i>Denise Goldman (UK)</i>
14.07	<b>Understanding how drugs work in the cochlea – Pharmacokinetics studies</b> <i>Manuel Manrique Rodriguez (Navarra, Spain)</i>
14.27	<b>The journey from preclinical to the clinic</b> <i>Jonas Dyhrfjelds-Johnsen (France)</i>
14.47	<b>Conclusions</b> <i>Denise Goldman (UK)</i>

## SESSION III

<b>COCHLEAR IMPLANT, IMPLANTABLE PROSTHESIS AND DRUG DELIVERY SYSTEMS</b>		
Moderators: <i>Verena Scheper, Roberto Bovo</i>		
15.00	<b>TL3</b>	<b>TARGET LECTURE</b> <b>Delivery of drugs to the entire cochlea without breaking its boundaries</b> <i>Andrei Lukashkin<sup>(1)</sup>, Ildar Sadreev<sup>(2)</sup>, Natalia Zakharova<sup>(3)</sup>, Yury Yarin<sup>(4)</sup>, Ian Russell<sup>(1)</sup> - Brighton, UK<sup>(1)</sup>; Bristol, UK<sup>(2)</sup>; Uckfield, UK<sup>(3)</sup>; Dresden, Germany<sup>(4)</sup></i>
15.20 – 17.20	<b>COMMUNICATIONS</b>	
15.20	<b>C20</b>	<b>Hearing preservation at low frequencies by insulin-like growth factor 1 in a guinea pig model of cochlear implantation</b> <i>Norio Yamamoto<sup>(1)</sup>, Kohei Yamahara<sup>(1)</sup>, Koji Nishimura<sup>(1)</sup>, Hideaki Ogita<sup>(2)</sup>, Juichi Ito<sup>(2)</sup>, Takayuki Nakagawa<sup>(1)</sup>, Ichiro Furuta<sup>(1)</sup>, Tomoko Kita<sup>(1)</sup>, Koicich Omori<sup>(1)</sup> - Kyoto, Japan<sup>(1)</sup>; Moriyama, Japan<sup>(2)</sup></i>
15.33	<b>C21</b>	<b>Advances in piezoelectric nanomaterials for cochlear stimulation</b> <i>Serena Danti<sup>(1)</sup>, Delfo D'Alessandro<sup>(1)</sup>, Bahareh Azimi<sup>(1)</sup>, Marco Onorati<sup>(1)</sup>, Luisa Trombi<sup>(1)</sup>, Laura Astolfi<sup>(2)</sup>, Alessando Martini<sup>(2)</sup>, Stefano Berrettini<sup>(1)</sup> - Pisa, Italy<sup>(1)</sup>; Padova, Italy<sup>(2)</sup></i>
15.46	<b>C22</b>	<b>Hearing preservation of adult cochlear implant users with Partial Deafness – one year follow up after using steroids therapy</b> <i>Magdalena B. Skarzynska<sup>(1)</sup>, Piotr H. Skarzynski<sup>(2)</sup>, Bartlomiej Krol<sup>(2)</sup>, Elzbieta Gos<sup>(2)</sup>, Kamila Kordowska<sup>(2)</sup>, Monika Boruta<sup>(2)</sup> - Henryk Skarzynski<sup>(2)</sup> - Kajetany, Poland<sup>(1)</sup> - Warsaw/Kajetany, Poland<sup>(2)</sup></i>
15.59	<b>C23</b>	<b>Surgical feasibility of localized therapeutic hypothermia application for preservation of residual hearing in cochlear implantation</b> <i>Andrea Viziano<sup>(1)</sup>, Enrique Perez<sup>(2)</sup>, Zaid Al-Zaghal<sup>(2)</sup>, Fred F. Telischi<sup>(2)</sup>, Rachele Sangaletti<sup>(2)</sup>, Weitao Jiang<sup>(2)</sup>, W. Dalton Dietrich<sup>(2)</sup>, Curtis King<sup>(3)</sup>, Michael Hoffer<sup>(2)</sup>, Suhrud Rajguru<sup>(2)</sup> - Rome, Italy<sup>(1)</sup>; Miami, FL, United States<sup>(2)</sup>; Seattle, WA, United States<sup>(3)</sup></i>

16.12	<b>C24</b>	<b>Cochlear implant perspective in congenital single side deafness: a temporal bone study</b> <i>Eva Orzan, Giulia Pizzamiglio, Paola Staffa, Raffaella Marchi, Sara Ghiselli, Flora Maria Murru, Enrico Muzzi, Lucio Torelli, Massimo Gregori - Trieste, Italy</i>
16.25	<b>C25</b>	<b>Accelerated osteointegration of the titanium-implant coated with biocomponents, collagen/hydroxyapatite/bone morphogenetic protein-2, for bone-anchored hearing aid</b> <i>ChulHo Jang<sup>(1)</sup>, HyungJin Lee<sup>(2)</sup>, GeunHyung Kim<sup>(3)</sup> - Gwangju, Republic of Korea<sup>(1)</sup>; Winston-Salem, United States<sup>(2)</sup>; Suwon, Republic of Korea<sup>(3)</sup></i>
16.38	<b>C26</b>	<b>Outcomes after application of active bone conducting implants</b> <i>Eleonor Koro<sup>(1,2)</sup>, Mimmi Werner<sup>(1,2)</sup> - Umeå, Sweden<sup>(1)</sup>; Örnsköldsvik, Sweden<sup>(2)</sup></i>
16.51	<b>C27</b>	<b>Sustained N-acetylcysteine delivery to the inner ear by poloxamer 407 hydrogels in a guinea pig model</b> <i>Christoph Arnoldner, Julia Clara Gausterer, Nodir Saidov, Navid Ahmadi, Chengjing Zhu, Michael Wirth, Gottfried Reznicek, Franz Gabor, Clemens Honeder - Vienna, Austria</i>

## POSTER SESSION

17.15 – 20.00

**Poster viewing and discussion**

Wine & Cheese

20.00 End of daily sessions

**Monday 9 September 2019**

07.30	Registration
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## SESSION IV

### GENETICS OF DEAFNESS AND GENE THERAPY

Moderators: *Helena Caria, Giorgia Girotto*

08.00	<b>TL4</b>	<b>TARGET LECTURE</b> <b>Mutations in PLS1 cause autosomal dominant non-syndromic hearing loss in three families of European ancestry</b> <i>Anna Morgan<sup>(1)</sup>, Daniel C. Koboldt<sup>(2)</sup>, Elizabeth S. Barrie<sup>(2)</sup>, Erin R. Crist<sup>(2)</sup>, Gema García García<sup>(3)</sup>, Massimo Mezzavilla<sup>(1)</sup>, Flavio Faletra<sup>(1)</sup>, Theresa Mihalic Mosher<sup>(2)</sup>, Richard K. Wilson<sup>(2)</sup>, Catherine Blanchet<sup>(3)</sup>, Kandamurugu Manickam<sup>(2)</sup>, Anne-Francoise Roux<sup>(3)</sup>, Paolo Gasparini<sup>(1)</sup>, Daniele Dell'Orco<sup>(4)</sup>, Giorgia Girotto<sup>(1)</sup> - Trieste, Italy<sup>(1)</sup>; Columbus, Ohio, United States<sup>(2)</sup>; Montpellier, France<sup>(3)</sup>; Verona, Italy<sup>(4)</sup></i>
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08.20 – 10.30	<b>COMMUNICATIONS</b>	
08.20	<b>C28</b>	<p><b>Gene Therapy of Usher Syndrome Type IC</b>  <u>Gwenaëlle Geleoc</u><sup>(1)</sup>, Carl Nist-Lund<sup>(1)</sup>, Charles Askew<sup>(2)</sup>, Christopher Tran<sup>(3)</sup>, Alice Galvin<sup>(1)</sup>, Abhilash Ponnath<sup>(3)</sup>, Selena Heman-Ackah<sup>(1)</sup>, Yukako Asai<sup>(1)</sup>, Artur Indzykulian<sup>(1)</sup>, Francine Jodelka<sup>(4)</sup>, Michelle Hasting<sup>(4)</sup>, Hamilton Farris<sup>(3)</sup>, Frank Rigo<sup>(5)</sup>, Jeffrey Holt<sup>(1)</sup>, Jennifer Lentz<sup>(3)</sup> - Boston, United States<sup>(1)</sup>; Chapel Hill, United States<sup>(2)</sup>; New Orleans, United States<sup>(3)</sup>; Chicago, United States<sup>(4)</sup>; Carlsbad, United States<sup>(5)</sup></p>
08.33	<b>C29</b>	<p><b>A rationally designed adeno-associated viral vector enables safe and efficient gene transfer to supporting cells in the mouse cochlea</b>  <u>Renjie Chai</u> - Nanjing, China</p>
08.46	<b>C30</b>	<p><b>The distinct functions of TRIOBP-5: sculpting stereocilia rootlets and stiffening supporting cells</b>  <u>Shin-ichiro Kitajiri</u><sup>(1)</sup>, Tatsuya Katsuno<sup>(2)</sup>, Inna Belyantseva<sup>(3)</sup>, Alexander Cartagena-Rivera<sup>(3)</sup>, Keisuke Ohta<sup>(4)</sup>, Shawn Crump<sup>(5)</sup>, Ronald Petralia<sup>(3)</sup>, Kazuya Ono<sup>(2)</sup>, Risa Tona<sup>(3)</sup>, Ayesha Imtiaz<sup>(3)</sup>, Atteeq Rehman<sup>(3)</sup>, Hiroshi Kiyonari<sup>(6)</sup>, Mari Kaneko<sup>(6)</sup>, Ya-Xian Wang<sup>(3)</sup>, Takaya Abe<sup>(6)</sup>, Makoto Ikeya<sup>(2)</sup>, Cristina Fenollar-Ferrer<sup>(3)</sup>, Gavin Riordan<sup>(3)</sup>, Elisabeth Wilson<sup>(3)</sup>, Tracy Fitzgerald<sup>(3)</sup>, Kohei Segawa<sup>(2)</sup>, Koichi Omori<sup>(2)</sup>, Juichi Ito<sup>(2)</sup>, Gregory Frolenkov<sup>(5)</sup>, Thomas Friedman<sup>(3)</sup> - Matsumoto, Japan<sup>(1)</sup> - Kyoto, Japan<sup>(2)</sup> - Bethesda, United States<sup>(3)</sup> - Kurume, Japan<sup>(4)</sup> - Lexington, United States<sup>(5)</sup> - Kobe, Japan<sup>(6)</sup></p>
08.59	<b>C31</b>	<p><b>Disruption of CLRN2, a gene encoding clarin-2, causes autosomal recessive hearing loss in humans and zebrafish</b>  <u>Barbara Vona</u><sup>(1)</sup>, Neda Mazaheri<sup>(2)</sup>, Reza Maroofian<sup>(3)</sup>, Hela Azaiez<sup>(4)</sup>, Kevin T. Booth<sup>(4)</sup>, Kate Clancy<sup>(5)</sup>, Gholamreza Shariati<sup>(2)</sup>, Alireza Sedaghat<sup>(2)</sup>, Ruben Stepanyan<sup>(5)</sup>, Richard J. H. Smith<sup>(4)</sup>, Thomas Haaf<sup>(6)</sup>, Hamid Galehdari<sup>(2)</sup>, Kumar N. Alagramam<sup>(5)</sup>, Suhasini R. Gopal<sup>(5)</sup> - Tuebingen, Germany<sup>(1)</sup>; Ahvaz, Iran (Islamic Republic of)<sup>(2)</sup>; London, United Kingdom<sup>(3)</sup>; Iowa City, United States<sup>(4)</sup>; Cleveland, United States<sup>(5)</sup>; Wuerzburg, Germany<sup>(6)</sup></p>
09.12	<b>C32</b>	<p><b>Disease modelling and drug screening for GJB2 related hearing loss with iPS cells</b>  <u>Kazusaku Kamiya</u>, Ichiro Fukunaga, Shori Tajima, Keiko Kanayama, Yoko Oe, Cheng Chen, Sayaka Ohta, Osamu Minowa, Katsuhisa Ikeda - Tokyo, Japan</p>
09.25	<b>C33</b>	<p><b>Synaptic Changes in Cochlear Hair cells of Tmc Mutant Mice</b>  <u>John Lee</u><sup>(1)</sup>, Jeffrey Holt<sup>(2)</sup> Gwenaëlle Géléoc<sup>(2)</sup> - Cambridge, United States<sup>(1)</sup>; Boston, United States<sup>(2)</sup></p>
09.38	<b>C34</b>	<p><b>Whole exome sequencing in Slovak patients with bilateral sensorineural hearing impairment</b>  <u>Zuzana Slobodova</u>, Lukas Varga, Lucia Demesova, Ivica Masindova, Daniel Danis, Lenka Langova, Milan Profant, Daniela Gasperikova - Bratislava, Slovak Republic</p>



09.51	<b>C35</b>	<b>Characterization of the genetic bases of hearing loss in an Italian cohort</b> <i>Federica Cesca</i> <sup>(1)</sup> , <i>Elisa Bettella</i> <sup>(1)</sup> , <i>Roberta Polli</i> <sup>(1)</sup> - <i>Emanuela Leonardi</i> <sup>(1)</sup> , <i>Maria Cristina Aspromonte</i> <sup>(1)</sup> , <i>Mariagrazia Bellini</i> <sup>(1)</sup> , <i>Stefania Bigoni</i> <sup>(2)</sup> , <i>Alberto Sensi</i> <sup>(3)</sup> , <i>Pietro Scimemi</i> <sup>(1)</sup> , <i>Rosamaria Santarelli</i> <sup>(1)</sup> , <i>Alessandra Murgia</i> <sup>(1)</sup> - <i>Padova, Italy</i> <sup>(1)</sup> - <i>Ferrara, Italy</i> <sup>(2)</sup> - <i>Cesena, Italy</i> <sup>(3)</sup>
10.04	<b>C36</b>	<b>Enrichment of rare missense variants in OTOG gene in Familial Meniere disease</b> <i>Pablo Román-Naranjo</i> <sup>(1)</sup> , <i>Maria del Carmen Moleon</i> <sup>(1)</sup> , <i>Alvaro Gallego-Martinez</i> <sup>(1)</sup> , <i>Andrés Soto-Varela</i> <sup>(2)</sup> , <i>Juan Carlos Amor-Dorado</i> <sup>(3)</sup> , <i>Ángel Batuecas-Caletrio</i> <sup>(4)</sup> , <i>Ismael Aran</i> <sup>(5)</sup> , <i>Paz Perez-Vazquez</i> <sup>(6)</sup> , <i>Jose Antonio Lopez-Escamez</i> <sup>(1)</sup> - <i>Granada, Spain</i> <sup>(1)</sup> ; <i>Santiago de Compostela, Spain</i> <sup>(2)</sup> ; <i>Ibiza, Spain</i> <sup>(3)</sup> ; <i>Salamanca, Spain</i> <sup>(4)</sup> ; <i>Pontevedra, Spain</i> <sup>(5)</sup> ; <i>Oviedo, Spain</i> <sup>(6)</sup>

Coffee station in the Exhibition Area from 10.00 to 11.30

## SESSION V

<b>NOISE INDUCED HEARING LOSS, OTOTOXICITY AND OTOPROTECTION</b>		
Moderators: <i>Anthony W. Gummer, Laura Astolfi</i>		
10.20	<b>TL5</b>	<b>TARGET LECTURE</b> <b>Implications of compound screens for protection of mammalian hair cells from aminoglycoside ototoxicity</b> <i>Allen F Ryan, Kwang Pak, Taylor Wyrick, Clara Draf,, Arwa Kurabi</i> - <i>La Jolla, United States</i>
10.40 – 13.10	<b>COMMUNICATIONS</b>	
10.40	<b>C37</b>	<b>MicroRNA Expression Changes in the Cochlear Nucleus and Inferior Colliculus after Noise-Induced Hearing Loss</b> <i>Sohyeon Park, Myung-Whan Suh, Jun Ho Lee, Seung Ha Oh, Moo Kyun Park</i> - <i>Seoul, Republic of Korea</i>
10.53	<b>C38</b>	<b>Glucose supplementation and prevention of noise-induced hearing loss</b> <i>Hao Xiong</i> - <i>Guangzhou, China</i>
11.06	<b>C39</b>	<b>Targeting cellular defensive response and inflammation in cancer cells and cisplatin-induced ototoxicity</b> <i>Anna Rita Fetoni, Fabiola Paciello, Rolando Rolesi, Diana Troiani, Gaetano Paludetti</i> - <i>Rome, Italy</i>
11.19	<b>C40</b>	<b>Entry rate of gentamicin through the MET channels of outer hair cells varies with position along the cochlea</b> <i>Virginia Mahieu</i> <sup>(1)</sup> , <i>Peter Steyger</i> <sup>(2)</sup> , <i>Corne Kros</i> <sup>(1)</sup> - <i>Brighton, United Kingdom</i> <sup>(1)</sup> ; <i>Omaha, United States</i> <sup>(2)</sup>
11.32	<b>C41</b>	<b>Prevention of cisplatin ototoxicity: the role of nanoceria and dexamethasone</b> <i>Erica Gentilin</i> <sup>(1)</sup> , <i>Mariarita Candito</i> <sup>(1)</sup> , <i>Edi Simoni</i> <sup>(1)</sup> , <i>Serena Danti</i> <sup>(2)</sup> , <i>Alessandro Martini</i> <sup>(1)</sup> , <i>Laura Astolfi</i> <sup>(1)</sup> - <i>Padua, Italy</i> <sup>(1)</sup> ; <i>Pisa, Italy</i> <sup>(2)</sup>

11.45	<b>C42</b>	<b>3R mouse model for cisplatin ototoxicity studies: platinum correlation with deafness</b> <i>German Nacher-Soler, Francis Rousset, Marta Coelho, Karl-Heinz Krause, Pascal Senn - Genève, Switzerland</i>
11.58	<b>C43</b>	<b>Inhibition of the adenosine A2A receptor mitigates excitotoxic injury in organotypic tissue cultures of the rat cochlea</b> <i>Srdjan Vlajkovic, Belinda Han, Shelly Lin, Kristan Espinosa, Peter Thorne - Auckland, New Zealand</i>
12.11	<b>C44</b>	<b>Opioid modulation of cochlear auditory responses in the rat inner ear</b> <i>Enrique Soto, Teresa Ramírez, Rosario Vega - Puebla, Mexico</i>
12.24	<b>C45</b>	<b>A665-conjugated Acetylcysteine target prestin of outer hair cells with peptide hydrogel delivery preventing cisplatin-induced hearing loss</b> <i>Jiaqi Pang, Hao Xiong, Xiaoding Xu, Yiqing Zheng - Guangzhou, China</i>
12.37	<b>C46</b>	<b>Loss of function mutation in the NADPH oxidase subunit p22phox prevents early onset hearing loss</b> <i>Francis Rousset, German Nacher Soler, Marta Coelho, Sten Ilmjarv, Antoine Marteyn, Vivianne Kokje, Karl-Heinz Krause, Pascal Senn - Geneva, Switzerland</i>
12.50	<b>C47</b>	<b>Head-to-head comparison of different classes of otoprotectants against cisplatin-induced hearing loss in clinically relevant ex vivo models of hair cell, SGN and stria vascularis damage</b> <i>Bonnie Jacques, Pranav Mathur, Phillip Uribe, Anne Harrop-Jones, Stephanie Szobota, Sairey Siegel, Kathie Bishop, Fabrice Piu, Alan Foster - San Diego, United States</i>

13.10 - 13.20 **Spendlin Award Ceremony**

13.30 *FREE AFTERNOON*

**Tuesday 10 September 2019**

07.30 Registration

## SESSION VI

### PHYSIOPATHOLOGY OF AUDITORY PATHWAYS AND INNER EAR IMMUNOLOGY

Moderators: *Marlies Knipper, Rosamaria Santarelli*

08.00	<b>TL6</b>	<b>TARGET LECTURE</b> <b>Presence and characterization of cochlear mast cells</b> <i>Agnieszka Szczeppek, Heidi Olze, Alina Smorodchenko - Berlin, Germany</i>
08.20 – 10.20		<b>COMMUNICATIONS</b>
08.20	<b>C48</b>	<b>Brain-derived neurotrophic factor in auditory brainstem controls central learning mechanisms and social behavior</b> <i>Philipp Eckert<sup>(1)</sup>, Philine Marchetta<sup>(1)</sup>, Michael Walter<sup>(1)</sup>, Marie Manthey<sup>(2)</sup>, Wibke Singer<sup>(1)</sup>, Michele Jacob<sup>(2)</sup>, Lukas Rüttiger<sup>(1)</sup>, Thomas Schimmang<sup>(3)</sup>, Peter Pilz<sup>(1)</sup>, Marlies Knipper<sup>(1)</sup> - Tuebingen, Germany<sup>(1)</sup>; Boston, United States<sup>(2)</sup>; Valladolid, Spain<sup>(3)</sup></i>
08.33	<b>C49</b>	<b>Neural correlates of fine structure and temporal envelope in the human auditory nerve</b> <i>Xavier Dubernard<sup>(1)</sup>, Frederic Venail<sup>(1)</sup>, Jean-Charles Kleiber<sup>(2)</sup>, Arnaud Bazin<sup>(2)</sup>, André Chays<sup>(2)</sup>, Jean-Luc Puel<sup>(1)</sup>, Jérôme Bourien<sup>(1)</sup> - Montpellier, France<sup>(1)</sup>; Reims, France<sup>(2)</sup></i>
08.46	<b>C50</b>	<b>The development and subpopulation of tissue-resident macrophages in the mouse cochlea</b> <i>Ippei Kishimoto, Takayuki Okano, Koichi Omori - Kyoto, Japan</i>
08.59	<b>C51</b>	<b>Decoding the auditory nerve and measuring the effect on speech-in-noise intelligibility of each known sensorineural pathology in the auditory periphery</b> <i>Jacques Grange, John Culling - Cardiff, UK</i>
09.12	<b>C52</b>	<b>Vascular associations in the choroid plexus: do they matter for the auditory system?</b> <i>Paola Perin, Victoria Barcio, Simone D'Onofrio, Stefano Scarpa, Roberto Pizzala - Pavia, Italy</i>
09.25	<b>C53</b>	<b>Absence of STAT1 predisposes mice to otitis-related hearing loss</b> <i>Soledad Levano<sup>(1)</sup>, Peter Kern<sup>(1)</sup>, Ana Bento<sup>(1)</sup>, David Bächinger<sup>(2)</sup>, Arianne Monge Naldi<sup>(2)</sup>, Daniel Bodmer<sup>(1)</sup> - Basel, Switzerland<sup>(1)</sup>; Zurich, Switzerland<sup>(2)</sup></i>
09.38	<b>C54</b>	<b>Cell-free biological drug for the inner ear: Extracellular vesicles derived from mesenchymal stromal cells support the survival of spiral ganglion neurons</b> <i>Jennifer Schulze<sup>(1)</sup>, Athanasia Warnecke<sup>(1)</sup>, Thomas Lenarz<sup>(1)</sup>, Eva Rohde<sup>(2)</sup>, Julia Hollerweger<sup>(2)</sup>, Teresa Lassacher<sup>(2)</sup>, Mario Gimona<sup>(2)</sup> - Hannover, Germany<sup>(1)</sup>; Salzburg, Austria<sup>(2)</sup></i>

09.51	<b>C55</b>	<b>Stress receptors in higher frontal brain regions influence auditory nerve function and auditory brainstem responses</b> <i>Philine Marchetta, Philipp Eckert, Lukas Rüttiger, Wibke Singer, Marlies Knipper - Tübingen, Germany</i>
10.04	<b>C56</b>	<b>The acoustic challenge in school age children with mild hearing loss</b> <i>Claudia Cassandro, Giulia Aschero, Valeria Landi, Silvano Lovallo, Alessandra Manassero, Diego Sammarco, Irene Vernerio, Roberto Albera - Turin, Italy</i>

Coffee station in the Exhibition Area from 10.00 to 11.30

## SESSION VII

<b>TINNITUS AND VESTIBULAR DISORDERS</b>		
Moderators: Jose Antonio Lopez-Escamez, Cosimo De Filippis		
10.20	<b>TL7</b>	<b>TARGET LECTURE</b> <b>Tinnitus induced hyperexcitability in view of deafness and cochlear implants?</b> <i>Marlies Knipper<sup>(1)</sup>, Pim Van Dijk<sup>(2)</sup>, David Baguley<sup>(3)</sup>, Lukas Rüttiger<sup>(1)</sup> - Tübingen, Germany<sup>(1)</sup>; The Netherlands<sup>(2)</sup>; University of Nottingham, UK<sup>(3)</sup></i>
10.40 – 13.10	<b>COMMUNICATIONS</b>	
10.40	<b>C57</b>	<b>Identification of functional biomarkers of tinnitus and tinnitus/hyperacusis in patients</b> <i>Benedikt Hofmeier, Marlies Knipper, Lukas Rüttiger, Uwe Klose, Stephan Wolpert - Tübingen, Germany</i>
10.53	<b>C58</b>	<b>Psychiatric comorbidity in patients with tinnitus or auditory hallucination and sound therapy</b> <i>Kensuke Kiyomizu, Takeshi Nakamura, Tetsuya Tono, Kensei Yoshida, Yasushi Ishida - Miyazaki, Japan</i>
11.06	<b>C59</b>	<b>Subclinical cochlear dysfunction in newly diagnosed relapsing- remitting multiple sclerosis</b> <i>Massimo Ralli<sup>(1)</sup>, Marco de Vincentiis<sup>(1)</sup>, Arianna Di Stadio<sup>(2)</sup>, Stefano Di Girolamo<sup>(1)</sup>, Maria Albanese<sup>(1)</sup> - Roma, Italy<sup>(1)</sup>; Perugia, Italy<sup>(2)</sup></i>
11.19	<b>C60</b>	<b>The proteome of the perilymph in relation to hearing loss in patients with vestibular schwannoma</b> <i>Jesper Edvardsson Rasmussen, Per Olof Eriksson, Jonas Bergquist, Göran Laurell - Uppsala, Sweden</i>
11.32	<b>C61</b>	<b>Pharmacological Ablation of Vestibular Hair Cells or Ganglion Neurons to Generate a Model of Unilateral Vestibular Dysfunction</b> <i>Koji Nishimura<sup>(1)</sup>, Akiyoshi Yasumoto<sup>(1)</sup>, Steven Meas<sup>(2)</sup>, Hideaki Ogita<sup>(3)</sup>, Akiko Taura<sup>(4)</sup>, Juichi Ito<sup>(3)</sup>, Koichi Omori<sup>(1)</sup> - Kyoto, Japan (1); Toronto, Canada (2); Moriyama, Japan (3); Ibaraki, Japan (4)</i>

11.45	<b>C62</b>	<b>Ionic direct current stimulation results in spike-rate adaptation in vestibular afferents of the mouse crista in vitro</b> <i>Marco Manca, Elisabeth Glowatzki, Dale Roberts, Gene Yevgeny Fridman, Felix Peter Aplin - Baltimore, United States</i>
11.58	<b>C63</b>	<b>Inefficient cranial venous outflow and increased CSF pulsatility in the Aqueduct of Sylvius in patients with Meniere's disease</b> <i>Nivedita Agarwal <sup>(2)</sup>, Christian Contarino <sup>(1)</sup>, Giuseppe Nicolò Frau <sup>(2)</sup>, Sabino Walter Della Sala <sup>(2)</sup>, Eleuterio F. Toro <sup>(3)</sup> - Delaware, United States <sup>(1)</sup>; Rovereto, Italy <sup>(2)</sup>; Trento, Italy <sup>(3)</sup></i>
12.11	<b>C64</b>	<b>Biomarkers for the differential diagnosis of Vestibular Migraine and Meniere Disease</b> <i>Marisa Flook <sup>(1)</sup>, Lidia Frejo <sup>(2)</sup>, Alvaro Gallego-Martinez <sup>(1)</sup>, Eduardo Martin-Sanz <sup>(3)</sup>, Marcos Rossi-Izquierdo <sup>(4)</sup>, Juan Carlos Amor-Dorado <sup>(5)</sup>, Andres Soto-Varela <sup>(6)</sup>, Sofia Santos-Perez <sup>(6)</sup>, Angel Batuecas-Caletrio <sup>(7)</sup>, Juan Manuel Espinosa-Sanchez <sup>(1)</sup>, Patricia Perez-Carpena <sup>(1)</sup>, Marta Martinez-Martinez <sup>(1)</sup>, Jose Antonio Lopez-Escamez <sup>(1)</sup> - Granada, Spain <sup>(1)</sup>; New York, United States <sup>(2)</sup>; Getafe, Spain <sup>(3)</sup>; Lugo, Spain <sup>(4)</sup>; Ibiza, Spain <sup>(5)</sup>; Santiago de Compostela, Spain <sup>(6)</sup>; Salamanca, Spain <sup>(7)</sup></i>
12.24	<b>C65</b>	<b>Electrocochleography finding in Meniere disease after active pressure treatment</b> <i>Edoardo Covelli, Maurizio Barbara, Simonetta Monini, Silvia Tarentini - Roma, Italy</i>
12.37	<b>C66</b>	<b>Anatomical, biochemical and behavioural characterization of a mouse model for Meniere's Disease</b> <i>Anna Lysakowski <sup>(1)</sup>, Maria Teresa Requena <sup>(2)</sup>, Jacob Kulaga <sup>(1)</sup>, Joseph Lesus <sup>(1)</sup>, Jose Antonio Lopez Escamez <sup>(3)</sup> - Chicago, United States <sup>(1)</sup> - Edinburgh, UK <sup>(2)</sup> - Granada, Spain <sup>(3)</sup></i>
12.50	<b>C67</b>	<b>Metabolomics in Meniere's disease: redox modulation by nutritional approaches with mushrooms</b> <i>Maria Concetta Scuto, Angela Trovato Salinaro, Gabriele Di Rosa, Vittorio Calabrese, Luigi Maiolino - Catania, Italy</i>
		<i>ECM - for Italian participants only: Compilazione del modulo della qualità percepita</i>
13.10-14.00		<b>IEB Business Meeting and Closing</b>

# POSTER SESSION

**Sunday 8 September 2019**

**From 17.15 to 20.00 hrs**

Poster viewing and discussion - Wine & Cheese

*The Moderators of the Workshop oral sessions will also moderate the poster session*

<b>Imaging and Anatomy</b>	
<b>P1</b>	<b>The innervation of the mammalian cochlea, an immunocytochemical study</b> <u>Linda Bieniussa</u> , Johannes Völker, Kristen Rak, Rudolf Hagen - <i>Würzburg, Germany</i>
<b>P2</b>	<b>Abnormalities of the ear and far beyond: the long lasting Padua's experience on aural atresia</b> <u>Davide Brotto</u> , Flavia Sorrentino, Ezio Caserta, Patrizia Trevisi, Silvia Montino, Anna Agostinelli, Roberto Bovo, Miriam Torsello, Diletta Giuntoli, Renzo Manara, Alessandro Martini - <i>Padua, Italy</i>
<b>P3</b>	<b>The vascularization of the labyrinth: an anatomical study</b> <u>Sebastiano Franchella</u> , Giulia Ramacciotti, Diego Cazzador, Alessandro Martini, Antonio Mazzoni, Elisabetta Zanoletti - <i>Padua, Italy</i>
<b>P4</b>	<b>Hearing and cognitive impairment: a functional evaluation of associative brain areas in patients affected by Alzheimer's disease</b> <u>Emanuela Fuccillo</u> , Agostino Chiaravalloti, Maria Ricci, Pier Giorgio Giacomini, Alessandro Martorana, Orazio Schillaci, Stefano Di Girolamo - <i>Rome, Italy</i>
<b>P5</b>	<b>The complexity of multidisciplinary evaluation of children with sensorineural hearing loss: three case reports</b> <u>Sara Ghiselli</u> , Veronica Castro, Massimo Gregori, Irene Bruno, Raffaella Marchi, Stefano Pensiero, Maura Bin, Flavio Faletra, Giorgia Giroto, Paolo Gasparini, Eva Orzan - <i>Trieste, Italy</i>
<b>P6</b>	<b>Outcomes of Modified Canal Wall Down Mastoidectomy and Mastoid Obliteration Using Autologous Materials</b> <u>Bo Gyung Kim</u> , Jong Dae Lee, Jae Yong Lee - <i>Bucheon, Republic of Korea</i>
<b>P7</b>	<b>Conformity between Magnetic Resonance Imaging and Surgery Outcome in Cholesteatomas</b> <u>Eleonor Koro</u> , Emely Ögren, Mimmi Werner - <i>Umeå, Sweden</i>
<b>P8</b>	<b>Vascular network of the rat cochlear nuclei</b> <u>Paola Perin</u> , Victoria Barcio, Simone D'Onofrio, Stefano Scarpa, Roberto Pizzala - <i>Pavia, Italy</i>
<b>P9</b>	<b>Relationship between the drainage patterns of the dural venous sinus and the affected side of sudden sensorineural hearing loss</b> <u>Woongsang Sunwoo</u> - <i>Incheon, Republic of Korea</i>

<b>Regeneration and Stem Cells</b>	
<b>P10</b>	<b>The Gunn Rat - A Model for Cell Transplantation Therapy in Auditory Neuropathy?</b> <u>Leila Abbas</u> , Marcelo N. Rivolta - <i>Sheffield, United Kingdom</i>
<b>P11</b>	<b>Functional recovery of regenerating lateral line hair cells</b> <u>Ana Amariutei</u> <sup>(1)</sup> , Francesca De Faveri <sup>(1)</sup> , Katherine Hardy <sup>(1)</sup> , Aenea Hendry <sup>(1)</sup> , Federico Ceriani <sup>(1)</sup> , Walter Marcotti - <i>Sheffield, United Kingdom</i>
<b>P12</b>	<b>Engraftment of human induced pluripotent stem cells (iPS) and guinea pig bone marrow-derived stem cells (MSC) into the cochlea of guinea pig</b> <u>Juichi Ito</u> <sup>(1)</sup> , Hideaki Ogita <sup>(1)</sup> , Koji Nishimura <sup>(2)</sup> , Hiroe Ohnishi <sup>(2)</sup> , Akiko Taura <sup>(3)</sup> - <i>Moriyama, Japan</i> <sup>(1)</sup> ; <i>Kyoto, Japan</i> <sup>(2)</sup> ; <i>Ibaraki, Japan</i> <sup>(3)</sup>
<b>P13</b>	<b>Alteration in Atoh1 expression during the loss and regeneration of auditory hair cells in explant cultures of chick basilar papillae</b> <u>Mami Matsunaga</u> - <i>Kyoto, Japan</i>
<b>P14</b>	<b>Examination of EYA4 gene mutation related hearing loss using the common marmoset (Callithrix jacchus) cochlea and patient-derived induced pluripotent stem cell (iPS cells)</b> <u>Saeko Matsuzaki</u> , Masato Fujioka, Makoto Hosoya, Kaoru Ogawa - <i>Tokyo, Japan</i>
<b>P15</b>	<b>The transplantation of sphere-forming stem cells from the inner ear into cochlea</b> <u>Hideaki Ogita</u> <sup>(1)</sup> , Hiroe Onishi <sup>(2)</sup> , Koji Nishimura <sup>(2)</sup> , Juichi Ito <sup>(1)</sup> - <i>Shiga, Japan</i> <sup>(1)</sup> ; <i>Kyoto, Japan</i> <sup>(2)</sup>
<b>P16</b>	<b>Improvement of Otic Induction from Human Induced Pluripotent Stem Cell</b> <u>Hiroe Ohnishi</u> <sup>(1)</sup> , Desislava Skerleva <sup>(1)</sup> , Hideaki Okuyama <sup>(1)</sup> , Norio Yamamoto <sup>(1)</sup> , Juichi Ito <sup>(2)</sup> , Koichi Omori <sup>(1)</sup> , Takayuki Nakagawa <sup>(1)</sup> - <i>Kyoto, Japan</i> <sup>(1)</sup> ; <i>Shiga, Japan</i> <sup>(2)</sup>
<b>P17</b>	<b>Stimulation of spiral ganglion neurons cultured in vitro with a global electro-magnetic field</b> <u>Viktorija Radotić</u> ; Jelena Žarković, Ana Bedalov, Damir Kovačić - <i>Split, Croatia</i>
<b>P18</b>	<b>Selective induction of cochlear hair cells from human induced pluripotent stem cells</b> <u>Tsubasa Saeki</u> , Makoto Hosoya, Masato Fujioka, Kaoru Ogawa, Hideyuki Okano - <i>Tokyo, Japan</i>
<b>P19</b>	<b>Exogenous BDNF and NT-3 in mouse explant cultures: Only a neural survival factor or also promoting axonal outgrowth?</b> <u>Dominik Schmidbauer</u> <sup>(1)</sup> , Stefan Fink <sup>(2)</sup> , Francis Rousset <sup>(3)</sup> , Marcus Müller <sup>(2)</sup> , Pascal Senn <sup>(3)</sup> , Rudolf Glückert <sup>(1)</sup> - <i>Innsbruck, Austria</i> <sup>(1)</sup> ; <i>Tübingen, Germany</i> <sup>(2)</sup> ; <i>Geneva, Switzerland</i> <sup>(3)</sup>
<b>P20</b>	<b>The efficacy and safety of Wnt and Notch-signaling modulators in the cochlea</b> <u>Rana Yadak</u> , Ferry Hendriksen, Dyan Ramekers, Huib Versnel, Robert Stokroos, Louise Straatman - <i>Utrecht, Netherlands</i>
<b>Developmental Biology</b>	
<b>P21</b>	<b>Identification of TMCC2 as novel hair cell marker and characterization of antibodies for phenotypic study of hair cell deficits</b> <u>Ranju Kumari</u> , Piotr Kazmierczak - <i>Warsaw, Poland</i>
<b>P22</b>	<b>The inhibition of endogenous ceramide kinase alters the morphogenesis of the chicken inner ear primordium</b> <u>Yolanda Leon</u> , Marta Magariños, Isabel Varela-Nieto - <i>Madrid, Spain</i>
<b>P23</b>	<b>Elucidating pathological mechanisms of hearing loss induced by hypothyroidism using Duox2 mutant mice</b> <u>Sera Park</u> , Jinwoong Bok, Jae-Young Choi - <i>Seoul, Republic of Korea</i>

<b>P24</b>	<b>Analysis of auditory system of mice lacking brain-specific angiogenesis inhibitor 3 (Bai3)</b> <u>Chika Saegusa</u> , Wataru Kakegawa, Eriko Miura, Takanori Nishiyama, Makoto Hosoya, Kaoru Ogawa, Michisuke Yuzaki, Masato Fujioka - <i>Tokyo, Japan</i>
<b>P25</b>	<b>Shh Signaling Pathway Role in the Differentiation of Mouse Pluripotent Stem Cells into Inner Ear Organoids</b> Elham Salehisiavashani, Farideh Moinvaziri, Ali Sharifi-Zarchi, Hossein Baharvand - <i>Tehran, Islamic Republic of Iran</i>
<b>P26</b>	<b>Expression of Carbonic Anhydrase 13 in the Developing Mouse Cochlea</b> Yuki Tamaki, Hiroe Onishi, Ryosuke Yamamoto, Koichi Omori, Takayuki Nakagawa, Norio Yamamoto - <i>Kyoto, Japan</i>
<b>P27</b>	<b>Cochlear Implant-Based Electrical Stimulation Modulates Neural Stem Cell-Derived Neural Regeneration</b> <u>Mingliang Tang</u> , Rongrong Guo, Menghui Liao - <i>Nanjing, China</i>
<b>Ear Physiology</b>	
<b>P28</b>	<b>Otolin-1 as a possible Biomarker for Inner Ear Disease?</b> <u>Emilio Avallone</u> , Heike Schmitt, Giorgio Lilli, Athanasia Warnecke, Anke Lesinski-Schiedat, Thomas Lenarz, Kerstin Willenborg - <i>Hannover, Germany</i>
<b>P29</b>	<b>Medial olivocochlear and middle-ear reflex: is it possible to differentiate?</b> <u>Thamara Suzi Dos Santos</u> , Pierrick Bordiga, Paul Avan, Fabrice Giraude - <i>Clermont Auvergne, France</i>
<b>P30</b>	<b>Dominant deafness due to a point mutation in TMC1</b> Robert Fettiplace, <u>Maryline Beurg</u> , Amanda Barlow - <i>Madison, WI, United States</i>
<b>P31</b>	<b>Variation of intercellular K<sup>+</sup> concentration at the mouse vestibular Type I hair cell-calyx synapse can contribute to afferent signaling</b> <u>Roberta Giunta</u> <sup>(1)</sup> , Paolo Spaiardi <sup>(1)</sup> , Elisa Tavazzani <sup>(1)</sup> , Marco Manca <sup>(1)</sup> , Giancarlo Russo <sup>(1)</sup> , Ivo Prigioni <sup>(1)</sup> , Gerardo Biella <sup>(1)</sup> , Stuart Johnson <sup>(2)</sup> , Walter Marcotti <sup>(2)</sup> - Sergio Masetto <sup>(1)</sup> - <i>Pavia, Italy</i> <sup>(1)</sup> ; <i>Sheffield, United Kingdom</i> <sup>(2)</sup>
<b>P32</b>	<b>Biophysical Model of Synaptic Transmission at the Vestibular Hair Cell Calyx</b> <u>Aravind Chenrayan Govindaraju</u> <sup>(1)</sup> , Imran Quraishi <sup>(2)</sup> , Anna Lysakowski <sup>(3)</sup> , Ruth Anne Eatock <sup>(3)</sup> , Robert M Raphael <sup>(1)</sup> - <i>Houston, TX, United States</i> <sup>(1)</sup> ; <i>New Haven, CT, United States</i> <sup>(2)</sup> ; <i>Chicago, IL, United States</i> <sup>(3)</sup>
<b>P33</b>	<b>Changes in intracellular pH, Na<sup>+</sup>, and Cl<sup>-</sup> induced by hydrogen sulfide in outer hair cells</b> <u>Narinobu Harada</u> , Yukari Ito, Atsufumi Kawabata - <i>Osaka, Japan</i>
<b>P34</b>	<b>Piezoelectric Vibrator-Stimulated Potential and Heart Rate Accelerations Detected from the Fetus</b> Rina Mastuoka, Sinyoung Lee, Miho Sato, Remi Motegi, Yota Shimanuki, Misato Kasai, Kazusaku Kamiya, Atsuo Itakura, Takuji Koike, <u>Katsuhisa Ikeda</u> - <i>Tokyo, Japan</i>



<b>P35</b>	<b>Distribution of Na/K-ATPase Subunits and Voltage-Gated Ion Channels in the Human Cochlea and Auditory Nerve - A Study Using Super Resolution Microscopy with Special Reference to Cochlear Implantation</b> <u>Wei Liu</u> , Niklas Danckwardt-Lillieström, Charlotta Kämpfe Nordström, Helge Rask-Andersen - <i>Uppsala, Sweden</i>
<b>P36</b>	<b>The Role of D1-like and D2-like Dopamine Receptors in Lateral Olivocochlear Efferent Function</b> Jingjing Wu <sup>(1)</sup> - <u>Marco Manca</u> <sup>(1)</sup> - Pankhuri Vyas <sup>(1)</sup> - Kushal Sharma <sup>(2)</sup> - Eunyoung Yi <sup>(2)</sup> - Elisabeth Glowatzki <sup>(1)</sup> - <i>Baltimore, MD, United States</i> <sup>(1)</sup> ; <i>Muan, Republic of Korea</i> <sup>(2)</sup>
<b>P37</b>	<b>Simultaneous detection of Ca<sup>2+</sup> signaling and ATP release in the developing cochlea</b> <u>Flavia Mazzarda</u> <sup>(1)</sup> , Annunziata D'Elia <sup>(2)</sup> , Adele De Ninno <sup>(1)</sup> , Gaia Ziraldo <sup>(1)</sup> , Veronica Zorzi <sup>(1)</sup> , Chiara Nardin <sup>(3)</sup> , Chiara Peres <sup>(3)</sup> , Francesco Chiani <sup>(2)</sup> , Francesca Romena Bertani <sup>(1)</sup> , Luca Businaro <sup>(1)</sup> , Roberto Massari <sup>(2)</sup> , Alessandro Soluri <sup>(2)</sup> , Anna Maria Salvatore <sup>(2)</sup> , Fabio Mammano <sup>(3)</sup> - <i>Rome, Italy</i> <sup>(1)</sup> ; <i>Monterotondo, Italy</i> <sup>(2)</sup> ; <i>Padua, Italy</i> <sup>(3)</sup>
<b>P38</b>	<b>Digital hearing: biophysical modeling of auditory processes</b> <u>Evgeniy L. Ovchinnikov</u> , Danil S. Tarasenko, Anas M. Alkurdi - <i>Samara, Russian Federation</i>
<b>Aging</b>	
<b>P39</b>	<b>Gender effect, quality of life and genetic biomarkers in a Portuguese sample with ARHL with or without tinnitus</b> Haula Haider, Ganna Matskul, Diogo Ribeiro, Sara Ribeiro, Assunção O'Neill, Graça Fialho, João Paço, <u>Helena Caria</u> - <i>Lisbon, Portugal</i>
<b>P40</b>	<b>Neuro-otological treatment for patients with dementia and hearing loss in unique psychiatric hospital</b> <u>Kensuke Kiyomizu</u> <sup>(1)</sup> , Takeshi Nakamura <sup>(1)</sup> , Tetsuya Tono <sup>(1)</sup> , Yasushi Ishida <sup>(1)</sup> , Kensei Yoshida <sup>(1)</sup> , Sho Kanzaki <sup>(2)</sup> - <i>Miyazaki, Japan</i> <sup>(1)</sup> ; <i>Tokyo, Japan</i> <sup>(2)</sup>
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<b>P42</b>	<b>Life-long-lasting functional damage of the inner ear cells induced by P-type Ca<sup>2+</sup>-ATPase mutations</b> <u>Osamu Minowa</u> <sup>(1)</sup> , Takashi Daiho <sup>(2)</sup> , Kazuo Yamasaki <sup>(2)</sup> , Hiroshi Suzuki <sup>(2)</sup> , Toshihiko Shiroishi <sup>(3)</sup> , Atsushi Yoshiki <sup>(3)</sup> , Tetsuo Noda <sup>(1)</sup> , Nagomi Kurebayashi <sup>(1)</sup> , Takashi Murayama <sup>(1)</sup> , Kazusaku Kamiya <sup>(1)</sup> , Yasushi Okazaki <sup>(1)</sup> , Katsuhisa Ikeda <sup>(1)</sup> - <i>Tokyo, Japan</i> <sup>(1)</sup> ; <i>Asahikawa, Japan</i> <sup>(2)</sup> ; <i>Tsukuba, Japan</i> <sup>(3)</sup>
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## Cochlear Implant and Implantable Prosthesis

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<b>P90</b>	<b>Interactions between the ribbon-synapses and a combination of electrical stimulation and dexamethasone</b> <u>Marvin N. Peter</u> , Gerrit Paasche, Thomas Lenarz, Athanasia Warnecke - <i>Hannover, Germany</i>
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<b>P101</b>	<p><b>Human mesenchymal adipose stem cell locally applied to prevent cochlear damages in rats treated with cisplatin</b></p> <p><u>Edi Simoni</u> <sup>(1)</sup>, Erica Gentilin <sup>(1)</sup>, S Bettini <sup>(1)</sup>, E Candito <sup>(1)</sup>, Alessandro Martini <sup>(1)</sup>, V. Franceschini <sup>(2)</sup>, Laura Astolfi <sup>(1)</sup> - <i>Padua, Italy</i> <sup>(1)</sup>; <i>Bologna, Italy</i> <sup>(2)</sup></p>
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