



THE KRESGE HEARING RESEARCH INSTITUTE PRESENTS:

THE 9TH
MIDWEST
AUDITORY
RESEARCH
CONFERENCE

We would like to thank the following for their generous support of this conference:

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MIDWEST AUDITORY RESEARCH CONFERENCE

presented by the Kresge Hearing Research Institute

Check In

On Thursday, check in is on the 4th floor of Palmer Commons outside the Great Lakes Room

- Check in opens Thursday at 7am for poster set up
- Morning coffee and breakfast is from 7:30-8:30am in the Great Lakes Room
- Please have ResponsiBLUE ready when you get to the door on Thursday

Registration fees cover breakfast and lunch each day as well as the Friday Evening Dinner at the museum. Thursday dinner is on your own.

ResponsiBLUE

To help stop the spread of Covid-19 all MARC attendees are required to complete the ResponsiBlue questions each day and show the green checkmark to UM staff at the door. Please use the QR code at the right to complete the questions.



Parking Options:

- If you are driving to down town for the conference, please turn on Palmer Drive and go to the second entrance of the parking structure marked “Visitor Parking”.
- Palmer visitor parking—cars can be left for the entirety of the conference for \$2/hour
- Parking is available at the City of Ann Arbor lots.
 - City-owned parking facilities are marked by white signs with a green letter P (lots) or blue signs with a white P (structures).
- The lots on Maynard Street or Liberty Square on E. Washington are the closest to North Quad.
- The Liberty Square structure (on Washington west of State) has a flat fee of \$5 after 3pm Mon-Fri and all day on Sat.

Activity	Location	Notes	Address
Coffee/breakfast	Great Lakes Room (4th floor)	7:30—8:30am	100 Washtenaw Ave. Ann Arbor
Sessions/podium talks	Forum Hall (4th floor)		
Posters	Great Lakes Room (4th floor)	Odd numbers on Thursday Even numbers on Friday	
Lunch	Windows Café (3rd floor)		
Friday Dinner Reception	University of Michigan Museum of Art		525 S. State, Ann Arbor



MIDWEST AUDITORY RESEARCH CONFERENCE

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DAY 1

THURSDAY, JUNE 23

POSTER SESSIONS OPEN FROM 7:30AM—7PM (Great Lakes Room)

7:00 - 8:00	Check-in and poster set up	Palmer Commons Great Lakes Room, 4th floor
7:30 - 8:30	Morning coffee and breakfast	Palmer Commons Great Lakes Room, 4th floor
8:30 - 8:40	Welcome from the 2022 Organizing Committee Kresge Hearing Research Institute, University of Michigan	Palmer Commons Forum Hall, 4th floor

Session 1 AUDITORY SYSTEM SYNAPSES

Gunseli Wallace & Luis Cassinotti (moderators)

8:40-9:30 Mechanisms and modulation of synaptic transmission in the mammalian cochlea Elisabeth Glowatzki, PhD, Johns Hopkins School of Medicine

9:30-9:42	Degeneration of bushy cell dendrites and the innervating auditory nerve synapses in the cochlear nucleus during age-related hearing loss	Meijian Wang, Chuangeng Zhang, Shengyin Lin, Ruili Xie* The Ohio State University
9:42-9:54	Spatial coupling of Ca ²⁺ entry to synaptic vesicles required for ultrafast synaptic transmission is not unique to presynaptic CaV2.1 channels	Priyadharishini Veeraraghavan*, Rene Oliver Goral, Debbie Guerro-Given, Connon Thomas, Paula Valino Ramos, Naomi Kamasawa, Samuel M. Young, Jr. University of Iowa
9:54-10:10	BREAK	Palmer Commons Great Lakes Room, 4th floor
10:10-10:22	Early-life stress impairs temporal processing across the auditory pathway	Yi Ye and Merri J. Rosen* Northeast Ohio Medical University (NEOMED)
10:22-10:34	Inner hair cell damage and cochlear synaptopathy differentially impact neural envelope coding of modulations and pitch	Andrew Sivaprakasam*, Ivy Schweinzger, Hari Bharadwaj, Michael Heinz Purdue University
10:34-1:00	POSTER SESSIONS <i>Odd number posters presented</i>	Great Lakes Room (4th floor)
11:30am-1pm	LUNCH	Lunch served on the 3rd floor in Windows Café

Session 2 BRAINSTEM: STRUCTURE, FUNCTION AND PATHOLOGY

Audrey Drotos & Adam Hockley (moderators)

1:00-1:50 Exploring the diversity of cell types in the cochlear nucleus Larry Trussell, PhD, Oregon Hearing Research Center, Vollum Institute, Oregon Health & Science University

1:50-2:02	Group I mGluR-triggered temporally patterned spontaneous synaptic transmission in mouse MNTB neurons	Huimei Wang*, Kang Peng, Rebecca J. Curry, Dong Li, Yuan Wang, Xiaoyu Wang, Yong Lu Northeast Ohio Medical University (NEOMED)
2:02-2:14	Tinnitus emerges independently of inferior colliculus hyperactivity and thalamic dysrhythmia after noise trauma	Calvin Wu*, Susan E. Shore University of Michigan
2:14-2:26	Neural population activity in the shell inferior colliculus predicts behavioral outcomes	Gunnar L. Quass*, Meike M. Rogalla, Alexander F. Ford, Pierre F. Apostolides University of Michigan
2:26-2:38	Inhibition in the auditory tectothalamic pathway is shaped by NPY neurons	Marina Silveira*, Yoani Herrera, Audrey Drotos, Trevor Versalle, Michael T. Roberts University of Michigan
2:38-2:50	BREAK	Palmer Commons Great Lakes Room, 4th floor



MIDWEST AUDITORY RESEARCH CONFERENCE

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DAY 1

THURSDAY, JUNE 23

Session 3 HUMAN HEARING

Gunnar Quass & Shuze Wang (moderators)

2:50-3:40	Cortical networks involved in everyday listening Barbara Shinn-Cunningham, PhD, Carnegie Mellon Neuroscience Institute	
3:40-3:52	Immediate neural network impact after the loss of a semantic hub	Zsuzsanna Kocsis*, Rick L. Jenison, Thomas E. Cope, Peter N. Taylor, Ryan M. Calmus, Bob McMurray, Ariane E. Rhone, McCall E. Sarrett, Yukiko Kikuchi, Phillip E. Gander, Joel I. Berger, Christopher K. Kovach, Inyong Choi, Jeremy D. Greenlee, Hiroto Kawasaki, Timothy D. Griffiths, Matthew A. Howard III, Christopher I. Petkov University of Iowa
3:52-4:04	Investigating the neural correlates of harmonicity in auditory cortex in humans	Anahita H. Mehta*, Emily J. Allen, Juraj Mesik, Kendrick N. Kay, Andrew J. Oxenham University of Minnesota
4:04-4:25	BREAK	Palmer Commons Great Lakes Room, 4th floor
4:25-4:37	Multi-unit neuronal responses to sound pitch recorded directly from human auditory cortex	Joel I. Berger *, Phillip E. Gander, Yukiko Kikuchi, Sukhbinder Kumar, Christopher Kovach, Hiroyuki Oya, Christopher I. Petkov, Hiroto Kawasaki, Matthew A. Howard, Timothy D. Griffiths University of Iowa
4:37-4:49	A language independent monosyllabic word-recognition test	Kristina Mardlin*, Rachael Kirby, Anthony T. Cacace, Robert H. Margolis Wayne State University

CAREER PATH NARRATIVES

Calvin Wu (moderator)

4:50-4:55	NIDCD Division of Scientific Programs	Janet Cyr, PhD
4:55-5:00	University of Iowa	Marlan Hansen, PhD
5:00-5:05	Carnegie Mellon	Barb Shinn-Cunningham, PhD
5:05-5:10	Decibel Therapeutics	Orion Keifer, PhD
5:10-end	Q & A	
Open until 7pm	POSTER SESSIONS & INFOMAL DISCUSSIONS	Palmer Commons Great Lakes Room, 4th floor



MIDWEST AUDITORY RESEARCH CONFERENCE

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DAY 2

FRIDAY, JUNE 24

POSTER SESSIONS OPEN FROM 7:30AM—5PM

7:30-8:30 Morning coffee and breakfast Palmer Commons Great Lakes Room, 4th floor

Session 4 CORTICAL PROCESSING

Hannah Oberle & Carlos Vivaldo (moderators)

8:40-9:30	Cortical mechanisms for making sense of sounds Maria Neimark Geffen, PhD, University of Pennsylvania	
9:30-9:42	Location-specific facilitation in marmoset auditory cortex	Chenggang Chen*, Xiaoqin Wang Johns Hopkins University
9:42-9:54	Tinnitus-related increases the activity of auditory cortical neurons: In vivo and in vitro studies	Madan Ghimire*, Rui Cai, Lynne Ling, Kevin Brownell, and Donald Caspary Southern Illinois University, School of Medicine
9:54-10:10	BREAK	Palmer Commons Great Lakes Room, 4th floor
10:10-10:22	Enhanced stability of complex sound representations in the auditory cortex	Harini Suri* and Gideon Rothschild University of Michigan
10:22-10:34	Cell-type-specific roles of inhibitory interneurons in the rehabilitation of auditory cortex after peripheral damage	Manoj Kumar*, Gregory Handy, Stylianos Kouvaros, Lovisa Ljungqvist Brinson, Brandon Bizup, Brent Doiron, and Thanos Tzounopoulos, University of Pittsburgh
10:34-10:46	PHOTOS OF KEYNOTES & ATTENDEES	Palmer Commons Forum Hall
10:46-1:00	POSTER SESSIONS <i>Even number posters presented</i>	Great Lakes Room (4th floor)
11:30am—1pm	Lunch	Lunch served on the 3rd floor in Windows Café

Session 5 FOUND IN TRANSLATION SYMPOSIUM

Meike Rogalla & Luis Rivera (moderators)

1:00-1:35	Structural and functional preservation of the cochlea following implantation Marlan Hansen, PhD, University of Iowa	
1:35-2:10	Precisely-timed sensory stimulation to treat tinnitus Susan Shore, PhD, University of Michigan/Auricle	
2:10-2:45	Reduction of severity of self-reported vertigo and dizziness by bone conduction masking Didier Depireux, PhD, Otholith Labs	
2:45-3:20	Using gene therapy to address unmet needs in the treatment of hearing loss Orion Keifer, PhD, Decibel Therapeutics	
3:20-3:30	BREAK	Palmer Commons Great Lakes Room, 4th floor



MIDWEST AUDITORY RESEARCH CONFERENCE

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DAY 2

FRIDAY, JUNE 24

Session 6 GENETICS OF HEARING LOSS & GENE THERAPY

Beatriz Borges & Alex Ford (moderators)

3:30-4:20 Development of therapeutic approaches for usher syndrome Gwen Geleoc, PhD, Harvard Medical School

4:20-4:32	Centrin-2 is a candidate light chain for Myosin-15 and a new member of the Elongation Complex in hair cells	Elli Hartig*, James Heidings, Zane Moreland, Jonathan Bird and Basile Tarchini Tufts University school of Medicine
4:32-4:44	GRXCR2 function in hearing and deafness	Chang Liu and Bo Zhao* Indiana University School of Medicine
4:44-4:56	Mechanisms of auditory sensation in C. elegans	Can Wang*, Elizabeth A. Ronan, Yuling Guo, Adam Iliff, Jianfeng Liu, X.Z. Shawn Xu University of Michigan
4:56-5:08	Cochlear neurotrophin-3 overexpression at mid-life prevents age-related cochlear synaptopathy and slows age-related hearing loss	Luis R. Cassinotti *, Lingchao Ji, Beatriz C. Borges, Nathan D. Cass, Aditi Desai, David Kohrman, M. Charles Liberman and Gabriel Corfas University of Michigan
5:08-5:20	Dual vector mediated gene therapy for restoration of STRC-related hearing loss	Quynh-Anh Fucci, Madeline Barnes, Sarah Cancelarich, Tyler Gibson, Nivanthika Wimalasena, Yoojin Chung, XuDong Wu, Martin Schwander, Danielle Velez, Tian Yang, Leah Sabin , Ning Pan, Meghan Drummond, Lars Becker* Decibel Therapeutics

University of Michigan Museum of Art

4:00—8:00pm	Museum open for MARC visitors	535 S. State St, Ann Arbor, MI 48109
6:00pm	Appetizers/cocktails - viewing/networking in museum	Lizzie and Jonathan Tisch Apse
7:00-8:30pm	Dinner & dessert buffet	
8:00 - 9:00pm	Am I Included? Culture, Recruitment and Retention: Improving Culture as a Key to Enhance Diversity in Hearing and Balance Research	Panel Discussion lead by Dr. David Brown



MIDWEST AUDITORY RESEARCH CONFERENCE

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DAY 3

SATURDAY, JUNE 25

POSTER SESSIONS OPEN FROM 7:30AM to Dismissal

7:30-8:30 Morning coffee and hot breakfast provided Palmer Commons Great Lakes Room, 4th floor

Session 7 VESTIBULAR AND COCHLEAR HAIR CELL FUNCTION

Wen Cai & Mamiko Niwa (moderators)

8:30-9:20 Ion channels that shape and transmit head-motion signals in rodent utricular hair cells and afferents Ruth Anne Eatock, PhD, University of Chicago

9:20-9:32	Tip-link breakage during the mechanotransduction-dependent remodeling of the stereocilia cytoskeleton in mammalian auditory hair cells	Sara Gonzalez-Velez*, Abigail K. Dragich, Gregory I. Frolenkov, A. Catalina Velez-Ortega University of Kentucky
9:32-9:44	The potassium channel subunit Kv1.8 (Kcna10) differentially shapes gain, tuning, and timing of type I and II vestibular hair cells	Hannah R Martin*, Anna Lysakowski, Ruth Anne Eatock University of Chicago
9:44-9:56	Taperin deficiency increases nonlinearity of stereocilia bundle motion and transduction current-displacement relationship in mammalian auditory hair cells	K. Sofia Zuluaga-Osorio*, Isabel Aristizábal-Ramírez, Rizwan Yousaf, Elizabeth Wilson, Sayaka Inagaki, Shadan Hadi, Thomas B. Friedman, Inna A. Belyantseva, Gregory I. Frolenkov University of Kentucky
9:56-10:08	The effect of repetitive linear acceleration on gravity receptor function	Syed Naqvi*, Rod Braun, Avril Gene Holt Wayne State University
10:08-10:30	BREAK	Palmer Commons Great Lakes Room, 4th floor
10:30-10:35	Please complete closing survey	
10:35-11:00	MARC BUSINESS MEETING	Palmer Commons Forum Hall

Session 8 AUDITORY AND VESTIBULAR SYSTEM DEVELOPMENT

Yoani Herrera & David Martel (moderators)

11:00-11:50 Cochlear development; new tools to address old questions Matthew W. Kelley, PhD, National Institute on Deafness and Other Communication Disorders National Institutes of Health

11:50-12:02	GluA3 subunits are required for the appropriate assembly of AMPA receptors at cochlear afferent synapses and for presynaptic modiolar-pillar features	Mark A. Rutherford*, Atri Bhattacharyya, Maolei Xiao, Hou Ming Cai, Indra Pal, María E. Rubio Washington University School Of Medicine
12:02-12:14	Gata3 expression in inner hair cells is required for their long-term survival and pillar cell development	Paige V. Blinkiewicz*, Jeremy S. Duncan Western Michigan University
12:14-12:26	Single-cell analysis reveals cochlear and vestibular developmental trajectories in organoid-derived sensory cells	Linghua Jiang*, Liqian Liu, Joerg Waldhaus, Jie Liu, R. Keith Duncan University of Michigan
12:26-12:38	Opposing gradients of retinoic acid and sonic hedgehog signaling specify the tonotopic axis in the murine cochlea	Saikat Chakraborty*, Shuze Wang, Yujuan Fu, Mary P. Lee, Jie Liu, Joerg Waldhaus University of Michigan
12:45	DISMISSAL	



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POSTER INDEX

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1	A C. elegans model to study Pnpt1, a gene that causes hereditary hearing loss in humans	Yuling Guo*, Can Wang, Jianfeng Liu, and X.Z. Shawn Xu	Life Science Institute, University of Michigan
2	A new conclusion on nonlinear cochlear signal processing: It is linear!	Jont Allen*	Department of Electrical and Computer Engineering, University of Illinois
3	Active cochlear models: modeling and results	Vipin Agarwal*(1), Karl Grosh (2)	1. Department of Mechanical Engineering; 2. Department of Biomedical Engineering, University of Michigan
4	Auditory deficits following concussive traumatic brain injury	Meredith C. Ziliak*(1,2), Joseph M. Fernandez(3,4), Riyi Shi (3,4), Edward L. Bartlett(1,3)	1. Department of Biological Sciences, College of Science; 2. Interdisciplinary Life Science (PULSe); 3. Weldon School of Biomedical Engineering; 4. Department of Basic Medical Sciences, College of Veterinary Medicine, Purdue University
5	Auditory lipidomics, an approach to identify unique molecular effects of noise trauma	Gunseli Wallace*(1,2,3), Lingchao Ji, MBBS, PhD (2), Costas Lyssiotis, PhD (5,6,7), Gabriel Corfas, PhD (1,2,4)	1. Cellular and Molecular Biology Graduate Program; 2. Kresge Hearing Research Institute; 3. Medical Scientist Training Program; 4. Neuroscience Graduate Program; 5. Department of Molecular and Integrative Physiology; 6. Department of Internal Medicine, Division of Gastroenterology; 7. Rogel Cancer Center, University of Michigan
6	Calcium and integrin-binding protein 2 (CIB2) is essential for fast adaptation of mechanotransduction current in mammalian auditory hair cells	Isabel Aristizábal-Ramírez*(1), Arnaud P.J. Giese(2), Abigail K. Dragich(1), K. Sofia Zuluaga-Osorio(1), Saima Riazuddin, Zubair M. Ahmed(2), Gregory I. Frolenkov(1)	1. Department of Physiology, University of Kentucky; 2. Department of Otorhinolaryngology Head & Neck Surgery, University of Maryland
7	CHD7, the causative gene for charge syndrome, represses the transcription factor LHX1 to promote inner ear development	Jennifer M. Skidmore*, Anna M. Graf, Jelka Cimerman, Donna M. Martin	Departments of Pediatrics and Human Genetics, University of Michigan
8	Modulatory Effects of TNF-alpha on Blast-induced Hearing Loss and Tinnitus	Hao Luo, Bin Liu, Edward Pace, Shaowen Bao, and Jinsheng Zhang	Wayne State University
9	Comparing tinnitus questionnaire scores, self-reported loudness ratings, and psychoacoustic loudness measurements	Travis Riffle*, Gerilyn Jones, David Martel, Kara Schwartz-Leyzac, Greg Basura, Emily Stucken, Jackie Souter, Susan Shore	Kresge Hearing Research Institute, University of Michigan
10	Deficits in vocalization -in-noise categorization after noise-induced temporary threshold shifts in guinea pigs	Marianny Pernia, Manaswini Kar, Kayla Williams, Srivatsun Sadagopan	University of Pittsburgh
11	Dendritic non-linearities drive sensorimotor activity in auditory cortico-collicular neurons of behaving mice	*Alexander N. Ford, Pierre F. Apostolides	Kresge Hearing Research Institute, University of Michigan
12	Development of LC-MS method for detection and quantification of gentamicin	Shreshtha Dash, Peter S. Steyger	Creighton University
13	Developmental expression of nicotinic acetylcholine receptors at a central auditory synapse	Mackenna Wollet* and Jun Hee Kim, PhD	Department of Cellular and Integrative Physiology, UT Health San Antonio,



#	Title	Authors	Affiliation
14	Does impedance reflect intrascalar tissue in the implanted cochlea?	Deborah J. Colesa*, Katie L. Colesa, Yuki Low, Donald L. Swiderski, Yehoash Raphael, Bryan E. Pflugst	Kresge Hearing Research Institute, University of Michigan
15	DPOAE probe placement variability & reliability in anesthetized mice	Tamara Iccaoui*, Mark Chertoff, Lani Martin	University of Kansas Medical Center
16	Effects of cochlear synaptopathy on tone-in-noise coding in the cochlear nucleus	A. Hockley*, L.R. Cassinotti, M. Selesko, G. Corfas, S.E. Shore	Kresge Hearing Research Institute, University of Michigan
17	Effects of working memory on frequency modulation detection threshold	Benjamin C. Kohlmeier*, Adam K. Bosen, Sara E. Harris, Stephen T. Neely, and Aryn M. Kameron	Boys Town National Research Hospital
18	Electrophysiological and morphological properties of inhibitory and excitatory principal neurons of mouse lateral superior olive	Hariprakash Haragopal*, Bradley D. Winters	Northeast Ohio Medical University, Hearing Research Group, Department of Anatomy and Neurobiology
19	Excitatory commissural synapses on VIP neurons in the inferior colliculus activate NR2D-containing NMDA receptors at resting membrane potential	Audrey Drotos*, Michael Roberts	Kresge Hearing Research Institute, University of Michigan
20	Head orientation and head stability in rats is altered after exposure to intense noise or intratympanic injection of sodium arsenite	Mamiko Niwa*, Marie Anderson, Hannah N. Beck, David Bauer, W. Michael King	Kresge Hearing Research Institute, University of Michigan
21	Hearing recovery induced by DNA demethylation in a chemically deafened adult mouse model	Xin Deng*(1) and Zhengqing Hu(1,2)	1.Department of Otolaryngology-HNS, Wayne State University School of Medicine; 2.John D Dingell VA Medical Center
22	Hyperacusis correlates in noise-overexposed guinea pigs	David T. Martel* and Susan E. Shore	Kresge Hearing Research Institute; Biomedical Engineering; Molecular and Integrative Physiology, University of Michigan
23	Hypermyelination of cranial nerve VIII in a mouse model of CHARGE syndrome	K. Elaine Ritter*(1), Sloane M. Lynch(2), Ashley M. Gorris(2), Lisa A. Beyer(3), Lisa L. Kabara(3), Yehoash Raphael(3), Donna M. Martin(1,4)	1.Department of Pediatrics; 2.College of Literature, Science and Art; 3.Department of Otolaryngology, Kresge Hearing Research Institute; 4.Department of Human Genetics, University of Michigan
24	Hypomyelination reduces parvalbumin-expressing interneuron density and auditory cortex inhibitory function	Beatriz de Carvalho Borges*(1), Xiangying Meng(2, 3), Patrick Long(1), Patrick Oliver Kanold(2, 3), Gabriel Corfas(1)	1.Kresge Hearing Research Institute, University of Michigan; 2. Department of Biomedical Engineering, Johns Hopkins University; 3. Department of Biology, University of Maryland
25	Inducing tinnitus in guinea pigs through long-term potentiation of fusiform cells in the dorsal cochlear nucleus	Michael Selesko, Calvin Wu, Adam Hockley, David Martel, Susan E. Shore	Kresge Hearing Research Institute, University of Michigan
26	Innovative approaches to studying and diagnosing endolymphatic hydrops	Jeffery T. Lichtenhan, John J. Guinan Jr., Victoria A. Sanchez, and Shawn S. Goodman	University of South Florida, Eaton-Peabody Laboratories, University of South Florida, University of Iowa
27	Integration of sound and locomotion information by auditory cortical neuronal ensembles	Carlos Arturo Vivaldo, Joonyeup Lee, MaryClaire Shorkey, Ajay Keerthy, Gideon Rothschild	Department of Psychology, NGP; Kresge Hearing Research Institute, University of Michigan



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29	Loss of afferent synapses in the cochlear nucleus following cochlear synaptopathy	J. Haely *, A. Hockley, L.R. Cassinotti LR, G. Corfas, S.E. Shore	Kresge Hearing Research Institute, Department of Otolaryngology, University of Michigan
30	Loss of strial phenotype in genetically recovered lpr (Lupus) mouse model	Kevin K. Ohlemiller (1), Jaclynn M. Lett (1), Mackenzie L. Mills *(2), Robert H. Withnell (2)	1.Washington University School of Medicine; 2.Indiana University
31	Mechanisms of secondary injury and auditory deficits following mild blast induced trauma	Joseph Fernandez*(1,3), Emily Han(2), Edward Bartlett(1,2), Riyi Shi(1,3)	1.Weldon School of Biomedical Engineering, Purdue University; 2.Department of Biological Sciences, Purdue University; 3.Department of Basic Medical Sciences, Purdue University
32	Modeling top-down and bottom-up mechanisms for robust auditory categorization in noise and in reverberation	Satyabrata Parida*,(1), Shi Tong Liu, (2) Srivatsun Sadagopan, (1,2,3)	1.Department of Neurobiology, 2.Department of Bioengineering, 3.Department of Communication Science and Disorders, University of Pittsburgh
33	Multiple sources and overlapping terminations of cholinergic innervation of auditory brainstem nuclei	Brett R Schofield*, Nichole L. Beebe, William A. Noftz	Northeast Ohio Medical University
34	Myosin 15 is dispensable for the activity-driven plasticity of the auditory stereocilia cytoskeleton	Ana I. López-Porras*, Desislava A. Marinkova, Anna K. Miller, A. Catalina Vélez-Ortega	Department of Physiology, University of Kentucky
35	NIH Toolbox-cognition performance of older persons with normal hearing, cochlear implant candidates, and cochlear implant users	Cameron K. Perrin*, Joseph M. Levin, Kara C. Schwartz-Leyzac, Gabrielle S. Watson, Bruno Giordani, and Bryan E. Pflugst	Michigan Medicine, Medical University of South Carolina, University of Michigan
36	nNos+ neurons of the shell inferior colliculus	Pierre F. Apostolides*, Jordyn Czarny, Alexander N. Ford, Anokhi Pawar, Hannah M. Oberle, Michael T. Roberts	Kresge Hearing Research Institute, University of Michigan
37	Non-auditory activity of auditory corticocollicular neurons supports discriminative auditory learning	Jordyn E. Czarny*, Alexander N. Ford, Meike M. Rogalla, Gunnar L. Quass, Pierre F. Apostolides	Kresge Hearing Research Institute, University of Michigan
38	Investigations on a Possible Mechanism for High-frequency Electromechanical Conversion of Outer Hair Cells	Wen Cai*, Karl Grosh	University of Michigan
39	On the emerging fields of perceptual and cognitive 1H-magnetic resonance spectroscopy (MRS) in blast-induced hearing loss and tinnitus	Anthony T. Cacace*, John L. Woodard	Wayne State University, Departments of Communication Sciences & Disorders, and Department of Psychology
40	Origins and termination patterns of cholinergic axons in the mouse inferior colliculus	William A Noftz*, Pooyan Mirjalili, Nichole L. Beebe, Brett R. Schofield	Department of Anatomy and Neurobiology, Hearing Research Group, Northeast Ohio Medical University, Rootstown, OH
41	Physiological and anatomical properties of utricular hair cells and afferents in Gpr156del/del mice lacking a mirror-image hair cell organization	Kazuya Ono*(1), Omar López Ramírez(1), Basile Tarchini(2), Ruth Anne Eatock(1)	1. Department of Neurobiology, University of Chicago; 2. The Jackson Laboratory, Bar Harbor, Maine
42	Population coding of temporally modulated sounds in the non-lemniscal inferior colliculus	Kaiwen Shi*, Gunnar Lennart Quass, Pierre François Apostolides	Kresge Hearing Research Institute, University of Michigan Medicine
43	Postsynaptic responses of IC neurons in unanesthetized mice reveals the importance of temporal integration of excitatory and inhibitory inputs for sound processing	Chun-Jen Hsiao* and Alexander V. Galazyuk	Northeast Ohio Medical University, Department of Anatomy and Neurobiology

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45	Recording high-frequency transient evoked otoacoustic emissions in humans	Sebnem Dundar*, Jonathan H. Siegel	Northwestern University, Hugh Knowles Center, Roxelyn and Richard Pepper Department of Communication Sciences and Disorders
46	Recurrent circuits amplify corticofugal signals and drive feed-forward inhibition in the inferior colliculus	Hannah M. Oberle*, Alexander N. Ford, Pierre F. Apostolides	Kresge Hearing Research Institute, Department of Otolaryngology - Head & Neck Surgery, Neuroscience Graduate Program, and Molecular and Integrative Physiology, University of Michigan
47	Regulation of synaptic transmission by mGluR5 in mouse LSO neurons	Tasmuna T. Tanmy *, Huimei Wang, Yong Lu	Northeast Ohio Medical University
48	Representation of auditory space in the shell of the inferior colliculus	Meike M. Rogalla*, Gunnar L. Quass, Deepak Dileepkumar, Günseli Wallace, Harry V. Yardley, Alexander F. Ford, Pierre F. Apostolides	Kresge Hearing Research Institute, University of Michigan
49	Resurgent and persistent sodium currents enhance spiking excitability in mouse vestibular ganglion neurons	Selina Baeza-Loya*, Ruth Anne Eatock	Dept of Neurobiology, University of Chicago
50	Retinoic acid regulates the efficiency and the anterior-posterior fate of inner ear organoids	Liqian Liu, Moe Moyer, R. Keith Duncan*	Department of Otolaryngology-Head & Neck Surgery, University of Michigan
51	Role of neuron-oligodendrocyte interaction in temporal fidelity of action potential at the nerve terminal in the auditory brainstem	Wan-Chen Wu*, Kaila Nip, Han-Gyu Bae, and Jun Hee Kim	University of Texas Health San Antonio
52	Somatic maneuvers and their effect on tinnitus	Gerilyn Jones*, Travis Riffle, David T. Martel, Emily Stucken, Greg J. Basura, Jacqueline Souter, Susan E. Shore	Kresge Hearing Research Institute, University of Michigan
53	SOX11 and CHD7 act in the same gene regulatory network to promote inner ear development	Jelka Cimerman(1)*, Ethan D. Sperry(4,5), Ronus Hojjati(5), Donald L. Swiderski(3), Yehoash Raphael(3), and Donna M. Martin(1,2,3)	1. Departments of Pediatrics, 2. Human Genetics, 3. Otolaryngology – Head and Neck Surgery and 4. Medical Scientist Training Program , 5. College of Literature, Science, and the Arts , University of Michigan
54	SOX2 and CHD7 cooperate to regulate development of the inner ear	Jingxia Gao*, Jelka Cimerman, K. Elaine Ritter, Jennifer M. Skidmore, Donna M. Martin	Departments of Pediatrics and Human Genetics, University of Michigan
55	Synapse-specific enhancement of AMPA receptor function by synaptically released zinc in mouse auditory cortex	Philip T.R. Bender*, Mason McCollum, Benjamin Z. Mendelson, Charles T. Anderson	West Virginia University School of Medicine, Department of Neuroscience, Rockefeller Neuroscience Institute
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