

Curriculum Vitae

Name: Karl Kandler

Home Address: 118 Hidden Ridge
Pittsburgh, PA 15238

Work Address: University of Pittsburgh
Biomedical Science Tower 3
3501 Fifth Avenue, Rm. 10016
Pittsburgh, PA 15261

E-Mail Address: kkarl@pitt.edu

Business Phone: 412-624-8398

EDUCATION

1979-1982 University of Regensburg, Germany. Major Subjects: Pharmacology, Biology

1985-1986 Exchange student at the University of Colorado, Boulder. Work in the laboratories of Dr. Robert Eaton (Neuroethology) and Dr. David Chiszar (Ethology).

1989 Diploma (German equivalent to M.S.), Eberhard Karls Universität Tübingen, Germany

1993 Ph.D., "summa cum laude", Physiology, Eberhard Karls Universität Tübingen University of Tübingen, Germany

APPOINTMENTS AND POSITIONS

Non -Academic:

1979-1980 Military service, German Air Force

1985 Laboratory Technician, Friedrich Bonhoeffer, Max Planck Institute for Developmental Neurobiology, Tübingen.

1987-1989 Research Assistant, Department of Animal Physiology, University of Tübingen, Germany. Advisor: J. Ostwald

1989 - 1990 Research Assistant, Department of Animal Physiology, University of Tübingen, Germany. Advisor: H. Herbert,

1990-1993 Graduate Student, Department of Animal Physiology, University of Tübingen, Germany. Advisor: E. Friauf

Academic:

1993 – 1997	Howard Hughes Medical Institute and Dept. Neurobiology Duke University Medical Center, Durham, North Carolina. Advisor: L.C. Katz	Post-doctoral Fellow
1998 – 2004	University of Pittsburgh School of Medicine Department of Neurobiology	Assistant Professor
2000 – present	Center for the Neural Basis of Cognition	Faculty member
2004 – 2007	University of Pittsburgh School of Medicine Department of Neurobiology	Associate Professor
2006 – Present	Carnegie Mellon University Department of Biology	Adjunct Faculty
2007 – 2017	University of Pittsburgh School of Medicine Department of Otolaryngology	Associate Professor, Director for Auditory Research
2007 – 2017	University of Pittsburgh School of Medicine Department of Neurobiology,	Associate Professor secondary appointment
2010 – 2017	University of Pittsburgh School of Medicine Department of Otolaryngology	Professor
2010 – 2017	University of Pittsburgh School of Medicine Department of Neurobiology	Professor, secondary appointment
2014 – Present	University of Pittsburgh Swanson School of Engineering, Department of Bioengineering	Professor, secondary appointment
2015- 2017	University of Pittsburgh School of Medicine	UPMC Endowed Chair for Auditory Development and Plasticity
2017-present	University of Pittsburgh School of Medicine Department of Neurobiology	Professor
2017-present	University of Pittsburgh School of Medicine Department of Otolaryngology University of Pittsburgh Swanson School of Engineering, Department of Bioengineering	Professor secondary appointment secondary appointment

HONORS/AWARDS

1983-1988	Scholar of the German National Scholarship Foundation (“Studienstiftung des Deutschen Volkes”)
1985-1986	Student-exchange-scholarship from the University of Tübingen, Germany
1990-1992	Predoctoral Fellow “Graduiertenkolleg Neurobiologie”, University of Tübingen, Germany
1993	Doctoral thesis: “ <i>summa cum laude</i> ”
1993-1994	Postdoctoral fellowship from the NATO and DAAD (“German Academic Exchange Service”)
1994-1995	Feodor-Lynen-Fellow of the Alexander von Humboldt - Stiftung
1999-2001	Alfred P. Sloan research fellow
2000	Presidential Early Career Award in Science and Engineering (PECASE) awarded by President Bill Clinton and presented in White House
2001	Finalist John Merck Fund Scholars Program in Neurobiology
2001-2003	Scientific Organizing Committee “German-American Frontiers of Science” Symposium Series, National Academy of Science
2004	Institutional Nominee for Howard Hughes Medical Institute competition
2008	Founder and first Chair, Gordon Research Conference “The Auditory System”
2011-2012	Chair NIH AUD study section
2011	Visiting Professor, The Institute of Neuroscience of 'Castilla y Leon', University of Salamanca, Salamanca, Spain
2013	Board of Scientific Counselors (ad hoc), National Institute on Deafness and other Communication Disorders
2015	Finalist Distinguished Mentor Award, Biomedical Graduate Student Association
2015	UPMC Endowed Chair for Auditory Development and Plasticity
2016	Finalist Distinguished Mentor Award, Biomedical Graduate Student Association

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Alexander von Humboldt Association of America
Association for Research in Otolaryngology (ARO)
American Association for the Advance of Science
Society for Neuroscience

Publications

Peer-refereed Research Articles

1. **Kandler K** and Chiszar D (1986) Spatial orientation by prairie rattlesnakes (*Crotalus viridis*) following the predatory strike. Bull Psychonom Soc 24:169-170.
2. Chiszar D and **Kandler K** (1986) Adjustment of brown tree snakes to a reversed light circle. Bull Md Herp Soc 22:171-174.
3. Cruz E, Gibson S, **Kandler K**, Sanchez G, and Chiszar D (1987) Strike-induced chemosensory searching in rattlesnakes: A rodent specialist (*Crotalus viridis*) differs from a lizard specialist (*Crotalus pricei*). Bull Psychonom Soc 25:136-138.
4. Chiszar D, **Kandler K**, and Smith HM (1988) Stimulus control of predatory attack in the brown tree snake (*Boiga irregularis*). I. Effects of visual cues arising from prey. The Snake 20:151-155.
5. Chiszar D, **Kandler K**, Lee R, and Smith HM (1988) Stimulus control of predatory attack in the brown tree snake (*Boiga irregularis*). II. Use of chemical cues during foraging. Amphibia-Reptilia 9:77-88.
6. Melzer T, **Kandler K**, and Chiszar D (1988) Effects of novel chemical cues on predatory responses of rodent-specializing rattlesnakes. Bull Psychonom Soc 26:580-582.
7. Friauf F and **Kandler K** (1990) Auditory projections to the inferior colliculus are present by birth. Neurosci.Lett. 120:58-61.
8. **Kandler K** and Herbert H (1991) Auditory projections from the cochlear nucleus to pontine and mesencephalic reticular nuclei in the rat. Brain Res. 562:230-242.
9. **Kandler K** and Friauf E (1993) Pre- and postnatal development of efferent connections of the cochlear nucleus in the rat. J. Comp. Neurol. 328:161-184.
10. **Kandler K** and Friauf E (1995) Development of electrical membrane properties and discharge characteristics of superior olivary complex neurons in fetal and prenatal rats. Eur. J. Neurosci. 7:1773-1790.
11. **Kandler K** and Friauf E (1995) Development of glycinergic and glutamatergic transmission in the auditory brainstem of perinatal rats. J. Neurosci. 15 (10):6890-6904.

12. Weliky M, **Kandler K**, Fitzpatrick D and Katz LC (1995). Patterns of excitation and inhibition evoked by horizontal connections in visual cortex share a common relationship to orientation columns. Neuron, 15:541-552.
13. **Kandler K**, Katz LC, and Kauer JA (1998) Focal photolysis of caged glutamate reveals an entirely postsynaptic form of hippocampal long-term depression. Nature Neuroscience, 2: 119-123
** highlighted by a News and Views article by Malenka RC, Nicoll RA. (2008) Long-term depression with a flash. News and Views Nature Neurosci. 1:89-90*
14. **Kandler K** and Katz LC (1998) Coordination of Neuronal Activity in Developing Visual Cortex by Gap Junction-Mediated Biochemical Communication. J. Neurosci. 18: 1419-1427.
15. **Kandler K** and Katz LC (1998) Relationship between dye coupling and spontaneous activity in developing visual cortex. Develop. Neurosci. 20: 59-64.
16. Conrad PG, Givens RS, Weber JFW, **Kandler K**, (2000) New Phototriggers: Extending the p-Hydroxyphenacyl π - π absorption range. Organic Letters 2: 1545-1547.
17. Leszkiweicz DN, **Kandler K**, Aizenman E (2000) Enhancement of NMDA receptor-mediated currents by light in rat neurons *in vitro*. J. Physiol. (Lond.) 524: 365-374.
18. Kullmann PHM and **Kandler K** (2001) Glycinergic/GABAergic synapses in the lateral superior olive are excitatory in neonatal C57Bl/6J mice. Dev Brain Res. 131:143-147.
19. Kullmann PHM, Ene A, **Kandler K** (2002) Glycinergic and GABAergic calcium responses in the developing lateral superior olive. Europ. J. Neuroscience, 15:1093-1104.
20. Land PW and **Kandler K** (2002) Somatotopic organization of rat thalamocortical slices. J. Neurosci. Meth. 119: 15-21.
21. Kim G and **Kandler K** (2003) Elimination and strengthening of inhibitory synapse during establishment of a tonotopic map. Nature Neuroscience. 6:282-290
** highlighted by Research Focus Article by N. P. Issa (2003) Inhibitory circuits in sensory maps develop through excitation. Trends in Neurosciences, 26: 456-45.*
22. Ene FA, Kullmann, PA, Gillespie DC, **Kandler K**, (2003) Glutamatergic calcium responses in the developing lateral superior olive: Receptor types and their specific activation by synaptic activity patterns. J. Neurophys. 90: 2581-2591.
23. Cürten B, Kullmann PHM, Bier ME, **Kandler K**, and Schmidt BF (2005) Synthesis, Photophysical, Photochemical and Biological Properties of Caged GABA, 4-[[[(2H-1-Benzopyran-2-one-7-amino-4-methoxy) carbonyl] amino] Butanoic Acid.

Photochemistry and Photobiology, 8:1641-648.

24. Lee H, Chen C X-Q, Liu Y-J, Aizenman E, and **Kandler K** (2005) KCC2 expression in immature rat cortical neurons is sufficient to switch the polarity of GABA responses. Europ. J. Neurosci. 21(9):2593-2599
25. Gillespie DC, Kim G, **Kandler K** (2005) Inhibitory synapses in the developing auditory system are glutamatergic. Nature Neuroscience, 8: 332-**338**
** highlighted by cover illustration and News & Views article by J. A. Kauer (2005) Inhibitory synapses turn exciting, Nature Neuroscience 8, 257-258*
26. Ene A, Kalmbach A, and **Kandler K** (2007) Metabotropic glutamate receptors in the lateral superior olive activate TRP-like channels: Age and experience-dependent regulation. J Neurophysiol. 97: 3365–3375.
27. Knoch ME, Hartnett KA, Hara H, **Kandler K**, Aizenman E, (2008) Microglia induce neurotoxicity via intraneuronal Zn²⁺ release and a K⁺ current surge. Glia, 56:89-96.
28. Seal RP, Akil O, Yi E, Weber CM, Grant L, Yoo J, Clause A, **Kandler K**, Noebels JL, Glowatzki E, Lustig LR, Edwards RH. (2008) Sensorineural deafness and seizures in mice lacking vesicular glutamate transporter 3. Neuron 57:263-75.
** Selected by Faculty 1000 as “must read”*
** highlighted by cover image and Preview by Ahnert-Hilger and Jahn (2008) Into Great Silence without VGLUT3. Neuron, 57: 174*
29. Kullmann PHM and **Kandler K** (2008) Dendritic Ca²⁺ responses in neonatal LSO neurons elicited by glycinergic/GABAergic synapses and action potentials. Neuroscience, 12;154(1):338-45.
30. Hershinkel M, **Kandler K**, Knoch M, Dagan-Rabin M, Aras M, Abramovitch-Dahan C, Sekler I, Aizenman E (2009) Intracellular zinc inhibits KCC2 transporter activity. Nature Neuroscience, 12(6): 725 – 727.
31. Aras M, Hara H, Hartnett K, **Kandler K**, Aizenman E (2009) PKC regulation of intracellular zinc mediates neuronal survival during preconditioning, J. Neurochemistry, 110:106-17.
** Selected by Faculty 1000 as “must read”*
32. Stensrud K, Noh J, **Kandler K**, Wirz J, Heger D, Givens RS (2009) Competing Pathways in the Photo-Favorskii Rearrangement and Release of Esters: Studies on Fluorinated p-Hydroxyphenacyl-Caged GABA and Glutamate Phototriggers. The Journal of Organic Chemistry, 74:5219-27
33. Noh J, Seal RP, Garver JA, Edwards RH, **Kandler K** (2010) Glutamate co-release at GABA/glycinergic synapses is crucial for the refinement of an inhibitory map. Nature Neuroscience, 13:232-8.

* Recommended by Faculty 1000

34. Kalmbach A, Kullmann P, **Kandler K** (2010) NMDAR-mediated calcium transients elicited by glutamate co-release at developing inhibitory synapses. Frontiers in Synaptic Neuroscience, Front. Syn. Neurosci. 2:27. doi: 10.3389/fnsyn.2010.00027
35. Kim G and **Kandler K** (2010) Synaptic changes underlying the strengthening of GABA/glycinergic connections in the developing lateral superior olive. Neuroscience, 171(3):924-33.
36. Clause A, Nguyen T, **Kandler K**. (2011) An acoustic startle-based method of assessing frequency discrimination in mice. J Neurosci Methods. 200(1):63-7.
37. Kim G, **Kandler K**. (2011) Paired recordings from distant inhibitory neuron pairs by a sequential scanning approach. J Neurosci . Methods. 200(2):185-9.
38. Saadi RA, He K, Hartnett KA, **Kandler K**, Hershinkel M, Aizenman E. (2012) SNARE-dependent upregulation of potassium chloride co-transporter 2 activity after metabotropic zinc receptor activation in rat cortical neurons in vitro. Neuroscience. 210:38-46.
39. Chi DH and **Kandler K** (2012) Cannabinoid receptor expression at the MNTB-LSO synapse in developing rats. Neurosci Lett. 509(2):96-100.
40. Nguyen TD, Wirblich C, Aizenman E, Schnell MJ, Strick PL, **Kandler K**. (2012) Targeted single-neuron infection with rabies virus for transneuronal multisynaptic tracing. J Neurosci Methods. 2012 Jun 26;209(2):367-370
41. Clause A, Kim G, Sonntag M, Weisz CJC, Vetter DE, Rübbsamen D, **Kandler K** (2014) The precise temporal pattern of pre-hearing spontaneous activity is necessary for tonotopic map refinement. Neuron, 82:822-35.
* *Commentary in The Hearing Review, Mai 2014 "Rhythmic Bursts of Electrical Activity from Cells in Ear Teach Brain How To Hear"*
42. Sturm J, Nguyen TD, **Kandler K** (2014) Development of intrinsic connectivity in the central nucleus of the mouse inferior colliculus. J. Neuroscience, 34:15032-46
43. Weisz CJC, Rubio ME, Givens RS, and **Kandler K** (2016). Excitation by axon terminal GABA spillover in a sound localization circuit. Journal of Neuroscience, 36(3):911-925.
44. Lee H, Bach E, Noh J, Delpire E, **Kandler K** (2016). Hyperpolarization -independent maturation and refinement of GABA/glycinergic connections in the auditory brainstem. Journal of Neurophysiology 2016 Mar 1;115(3):1170-82

45. Clause A, Lauer AM, **Kandler K**, (2017) Mice lacking the alpha9 subunit of the nicotinic acetylcholine receptor exhibit deficits in frequency difference limens and sound localization. Front Cell Neurosci. 2017 Jun 15;11:167.
46. Sturm JS, Zhang-Hooks Y-Z, Roos H, Nguyen T, and **Kandler K**, Noise trauma induced behavioral gap detection deficits correlate with reorganization of excitatory and inhibitory local circuits in the inferior colliculus and are prevented by acoustic enrichment. J Neurosci. 37(26):6314-6330.
* *Highlighted by Research Highlight "White noise lowers tinnitus risk", Nature 546, 330* <https://www.nature.com/articles/d41586-017-00575-0>
* *recommended by Recommended by F1000 Prime*
https://f1000.com/prime/727690374?subscriptioncode=5a7563ce-59e6-4166-b877-30e9bbde606b&utm_medium=email&utm_source=prime_ypp
47. FM Antunes, ME Rubio, **Kandler K**, (2020) Role of GluA3 AMPA Receptor Subunits in the Presynaptic and Postsynaptic Maturation of Synaptic Transmission and Plasticity of Endbulb– Bushy Cell Synapses in the Cochlear Nucleus. Journal of Neuroscience 40 (12), 2471-2484
48. Bach EC, **Kandler K**, (2020) Long-term potentiation of glycinergic synapses by semi-natural stimulation patterns during tonotopic map refinement Sci Rep. 10(1):16899. doi: 10.1038/s41598-020-73050-y, PMID: 33037263, PMCID: PMC7547119
49. Weisz CJC, Williams SG, Eckard CS, Divito CB, Ferreira DW, Fantetti KN, Dettwyler SA, Cai HM, Rubio ME, **Kandler K**, Seal RP. (2021) Outer Hair Cell Glutamate Signaling through Type II Spiral Ganglion Afferents Activates Neurons in the Cochlear Nucleus in Response to Nondamaging Sounds. J Neurosci. 41(13):2930-2943. doi: 10.1523/JNEUROSCI.0619-20.2021. PMID: 33574178, PMCID: PMC801889

Peer-refereed Reviews

50. **Kandler K** and Katz LC (1995) Neuronal coupling and uncoupling in the developing nervous system. Curr. Opin. Neurobiol. 5:98-105.
51. **Kandler K** (2004) Activity-dependent organization of inhibitory circuits: lessons from the auditory system. Curr. Opin. Neurobiol. 14: 96-104.
52. **Kandler, K** and Gillespie, DC (2005) Developmental refinement of inhibitory sound-localization circuits. Trends in Neuroscience 28: 290-296.
53. **Kandler K**, Clause A, Noh J (2009) Tonotopic reorganization of developing auditory brainstem circuits, Nature Neuroscience, 12(6):711-717.

Invited Reviews and Book Chapters (editorial review):

54. Friauf F and **Kandler K** (1993) Cell birth, formation of efferent connections, and establishment of tonotopic order in the rat cochlear nucleus. In: MA Merchan, JM Juiz, DA Godfrey, and E Mugnaini (eds). The Mammalian Cochlear Nuclei: Organization and Function. NATO ASI Series. New York: Plenum. p19-28.
55. Friauf E, **Kandler K**, Lohmann C, and Kungel M (1997) Inhibitory and excitatory brainstem connections involved in sound localization: How do they develop? In: Syka (ed), Acoustical Signal Processing in the Central Auditory System, Plenum Press, NY
56. **Kandler K** (1997) Coordination of neuronal activity by gap junctions in the developing neocortex. Sem. Cell & Develop. Biol., 8: 43-51.
57. **Kandler K**, Givens R, and Katz LC (1999) Photostimulation with caged glutamate. In: Yuste R, Lanni F, and Konnerth A (eds.), Imaging Neurons: A laboratory manual, Cold Spring Harbor Laboratory Press. Chapter 27.
58. **Kandler K**, Kullmann PHM, Ene FA, and Kim G (2002) Excitatory action of an immature glycinergic/ GABAergic sound localization pathway, Physiol&Behav. 77:583-587.
60. Kim G, Schmidt B, and **Kandler K** (2004) An economical fiber-cased uncaging system: assembly and use. Chapter 52. In: Yuste R, Konnerth A, editors. Imaging Neurons. Cold Spring Harbor: Cold Spring Harbor Laboratory Press.
61. Gillespie, DC, Kim G, and **Kandler, K** (2006) Caged neurotransmitters for probing neuronal circuits, neuronal integration and synaptic plasticity. pp 232-251. In: R. Givens and M. Goeldner (eds) Dynamic Studies in Biology: Phototriggers, Photoswitches, and Caged Biomolecules. Wiley-VCH.
62. **Kandler, K** and Thiels, E (2005) Flipping the switch from electrical to chemical communication. Nat Neurosci. 8(12):1633-1634.
63. Gillespie, DC and **Kandler K** (2008) GABA, glycine and glutamate co-release at developing inhibitory synapses. In: Rafael Gutierrez (ed.): Co-Existence and Co-Release of Classical Neurotransmitters: Ex uno plures. Springer NY.
64. Castro JB, and **Kandler K** (2010) Changing tune in auditory cortex. Nat Neurosci. 2010 13:271-3.
65. **Kandler K**, Nguyen T, Noh J, Givens RS (2013) An optical fiber-based uncaging system. In: Konnerth A, Helmchen F, Yuste (eds) Cold Spring Harb Protoc. 2013 Feb 1;2013(2):118-21.

66. Clause A, Sturm J, Altieri SC, Maricich SM, **Kandler K**, (2014) “Development of Mammalian Primary Sound Localization Circuits” in *Development of the Auditory and Vestibular Systems*, edited by Raymond Romand. Academic Press.
67. Sturm JJ, Nguyen T, **Kandler K**. (2016) Mapping Auditory Synaptic Circuits with Photostimulation of Caged Glutamate. *Methods Mol Biol.* 2016;1427:525-37. doi: 10.1007/978-1-4939-3615-1_30.
68. Kandler K. (2018) And the Band Keeps Marching On. *Neuron.* 99(3):427-429. doi: 10.1016/j.neuron.2018.07.043.
69. **Kandler K**, Lee J., Pecka, M. 2020. The Superior Olivary Complex. In: Fritzsche, B. (Ed.) and Grothe, B. (Volume Editor), *The Senses: A Comprehensive Reference*, vol. 2 Elsevier, Academic Press, pp. 533–556.

Books

70. **Karl Kandler** (editor), (2019) *The Oxford Handbook of the Auditory Brainstem*. Oxford Neuroscience Handbook Series (Chief Editor, Gordon Shepherd). 2019

Abstracts (not listed here):

Between 2-6 poster abstracts/year at national and international meetings

Invited Research Seminars:

- 1991 University of Wisconsin, Madison
- 1995 Max Planck Institute for Brain Research and University of Frankfurt and, Germany
- 1995 Bowman Gray School of Medicine, Wake Forest University, Winston Salem, NC
- 1995 University of Regensburg, Bavaria, Germany
- 1996 University of Utah School of Medicine, Salt Lake City, UT
- 1997 University of California at Los Angeles, Los Angeles, CA
- 2000 University of West Virginia, Morgantown, WV,
- 2001 University of Pittsburgh, Department of Otolaryngology, Pittsburgh, PA
- 2001 University of Pittsburgh School of Medicine, Senior Vice Chancellor’s Research Seminar
- 2002 University of Kaiserslautern, Kaiserslautern, Germany
- 2002 University of Salamanca, Instituto de Neurociencias de Castilla Y Leon, Spain
- 2002 Max Planck Institute for Neurobiology, Martinsried, Munich, Germany

- 2002 University of California at Irvine, Dept. Anatomy and Neurobiology, Irvine, CA
- 2002 Carnegie Mellon University, Department of Biological Sciences, Pittsburgh, PA
- 2002 John F. Kennedy Center for Research on Human Development, Vanderbilt University, TN
- 2003 University of Pennsylvania, Department of Neuroscience, Philadelphia, PA
- 2003 Harvard Medical School, Department of Neurobiology, Boston, MA
- 2004 Cold Spring Harbor Laboratories, Cold Spring Harbor, NY
- 2005 University of Colorado Health Sciences Center, Department of Otolaryngology, Denver, CO
- 2005 Johns Hopkins University, Department of Otolaryngology – Head and Neck Surgery, Baltimore, MA
- 2006 University of Pittsburgh, Department of Otolaryngology, Pittsburgh, PA
- 2006 Carnegie Mellon University, Department of Biology, Pittsburgh, PA
- 2006 Northwestern Ohio Universities Colleague of Medicine, Department of Neurobiology, Rootstown, OH
- 2006 Institute of Neuroscience, Chinese Academy of Science, Shanghai, China
- 2006 National Institute for Physiological Sciences, Dean's lecture, Okazaki, Japan
- 2007 University of Texas at Austin, Section of Neurobiology, Austin, TX
- 2007 Emory University School of Medicine, Department of Physiology, Atlanta, GA
- 2008 University of Kansas, Department of Chemistry, Lawrence, KS
- 2008 University of Connecticut Health Center, Department of Physiology, Farmington, CT
- 2008 University of Washington, Virginia Merrill Bloedel Hearing Research Center, Bloedel Lecture Series, Seattle, WA
- 2008 Harvard Medical School, Eaton-Peabody Laboratory, MEEI, Departments of Otolaryngology and Neurobiology, Boston MA
- 2008 University of Southern California, Zilkha Neurogenetic Institute, Los Angeles, CA
- 2009 Brown University, Department of Neuroscience, Providence, RI
- 2009 NIH Neuroscience Seminar Series, National Institutes of Health / NIND, Bethesda, MD
- 2009 Johns Hopkins University School of Medicine, Department of Biomedical Engineering and Department of Otolaryngology, Baltimore, MD 21205
- 2010 Vollum Institute and Oregon Hear and Science University, Portland, Oregon
- 2010 Brandeis University, M.R. Bauer Foundation Colloquium Series.
- 2011 University of Kaiserslautern, Dept. Biology, Kaiserslautern, Germany
- 2011 Ludwig Maximilians University Munich, Dept. Neurobiology, Munich, Germany

- 2011 The Institute of Neuroscience of 'Castilla y Leon', University of Salamanca, Auditory Neurophysiology Laboratory, Salamanca, Spain
- 2011 University of Michigan Health System, Kresge Hearing Research Institute, Ann Arbor, MI
- 2012 Wayne State University School of Medicine, Dept. Anatomy/Cell Biology, Detroit, MI
- 2012 University of Colorado Denver, Department of Physiology and Biophysics, Denver, Co
- 2012 University of Michigan Health System, Kresge Hearing Research Institute, Ann Arbor, MI
- 2012 University of Maryland, Neuroscience and Cognitive Science (NACS) Program, College Park, MD 20742
- 2012 University of Michigan Health System, Dept. Otolaryngology Grand Rounds, Ann Arbor, MI
- 2013 Indiana University School of Medicine, Department of Pharmacology & Toxicology, Stark Neurosciences Research Institute, Indianapolis, IN
- 2013 Physiological Society, Karolinska Institute, Sweden.
- 2014 School of Health and Rehabilitation Sciences University of Pittsburgh, Dept. Communication Science and Disorders, Pittsburgh PA
- 2014 Department of Biomedical Science, University of Sheffield, UK
- 2014 Department of Physiology, Seoul National University School of Dentistry, Seoul, Korea
- 2015 Department of Biology, The City University of New York, NY
- 2015 Marine Biology Laboratories, Biology of the Inner Ear course, Woods Hole, MA
- 2015 Dept. of Otolaryngology, Johns Hopkins University, Baltimore, MD
- 2016 Harvard Medical School, Massachusetts Eye and Ear Infirmary, Eaton-Peabody Lab, Boston, MA
- 2016 Dept. Molecular and Integrative Physiology, Beckman Institute and Neuroscience Program, University of Illinois at Urbana-Champaign
- 2017 Department of Cellular and Integrative Physiology, University of Texas Health Science Center, San Antonio, TX
- 2018 National Institute on Deafness and Other Communication Disorders, Speaker Seminar series, June 2018, Bethesda

Invited Speaker at National and International Conferences and Symposia:

- 1996 International Symposium on Gap junctions, Kloster Seeon, Germany
- 2004 Winter Conference on Neural Plasticity, St. Lucia,

- 2004 Symposium on “Molecular Mechanisms in Central Auditory Function, Plasticity and Disorders”, Jackson Hole, WY.
- 2004 Gordon Research Conference “Synaptic Transmission”
- 2004 3rd INMED/TINS Conference “The Multiple Facets of GABAergic Synapses”, La Ciotat, France
- 2005 Winter Conference on Brain Research, panel organizer and speaker in “Gaining insight into synaptic function by listening to specialized synapses”
- 2005 Symposium: “Human Brain Development”, Helsinki, Finland.
- 2005 Plenary Speaker at Pacificchem, Honolulu, Hawaii, “Using caged glutamate to investigate development and plasticity of auditory brain circuits”. (Cancelled due to death of colleague)
- 2006 Winter Conference on Brain Research, Panel organizer of panel “Carving the space-time continuum in the developing auditory system”
- 2006 Science2006, Symposium “Wiring the Developing Brain: Genes, Molecules, and Activity”, Pittsburgh, PA
- 2006 Society for Neuroscience Meeting Symposium: “Co-transmission: how and why do neurons release more than a single type of classical neurotransmitter?” Atlanta, GA
- 2006 Society for Neuroscience Annual Meeting Symposium: “Developmental Plasticity of Inhibitory Circuitry ” Atlanta, GA
- 2006 2nd Shanghai International Congress on Physiological Biophysics, Shanghai, China
- 2007 2nd UC Irvine Hearing Research Symposium, UC Irvine, Irvine, CA
- 2007 Seventh International Workshop on Auditory Processing, Cody, Wyoming
- 2007 Chemistry in Neuroscience Symposium, Janelia Farms Research Campus (HHMI)
- 2008 Science2008—On Our Watch, Pittsburgh
- 2008 From Cochlea to Cortex: Recent Advances in Auditory Neuroscience, Oslo, Norway
- 2008 Center for the Neurobiological Basis of Cognition, Retreat Symposium speaker, Seven Springs, PA
- 2009 Winter Conference on Brain Research, Panel speaker in “Mechanisms of plasticity influencing transmission independently of synaptic strength”
- 2009 8th International Workshop on Auditory Processing, Cody, Wyoming, August 2009
- 2010 Invited speaker and discussion leader, Auditory System Gordon Research Conference, Colby-Sawyer College, NH
- 2011 Winter Conference on Brain Research, Panel Speaker “When is an inhibitory synapse not inhibitory”
- 2011 Symposium Speaker, 9th Göttingen Meeting of the German Neuroscience Society, Göttingen, Germany

- 2011 Ludwig Maximilian University of Munich and Graduierten Kolleg “Orientation and Motion in Space”, Workshop Speaker, Munich, Germany
- 2013 22nd Annual Computational Neuroscience Meeting, Invited speaker at workshop “Advances in Activity-Dependent Synaptic Plasticity”, Paris, France
- 2013 “Modern techniques in auditory and communication sciences”. Co-organized by the Graduate School for Hearing Disabilities in Working Life, Karolinska Institutet and the HEAD Graduate School for Research on Hearing and Deafness, University of Linköping. Stockholm, Sweden
- 2014 “Neural Substrates for Sensory Processing”, Dept. Neurobiology, Univ. of Pittsburgh School of Medicine
- 2014 Symposium speaker, Brain conference 2014, The Korean Society for Brain and Neural Science, Seoul, South Korea
- 2015 Conference speaker, “Auditory Development: From Cochlea to Cognition” University of Washington, Seattle.
- 2016 Conference speaker at 2nd FALAN Congress 2016 symposium “Auditory Processing: From the cochlea to the cortex and back. Title of talk “Reorganization of local synaptic connections in the auditory midbrain during development and disease” Buenos Aires, Argentina.
- 2018 Gordon Research Conference “Auditory System” invited Speaker
- 2020 Invited Speaker at international symposium “Structural and Functional Principles of Auditory and Visual Processing” , April 2020, Martinsried (Munich), Germany, postponed due to COVID-19 pandemic

Panelist at Symposia

- 2005 Podium panelist at symposium: “Human Brain Development”, Helsinki, Finland.
- 2010 Pittsburgh Symphony – Beethoven Project” Invited panelist to discuss Beethoven and his hearing loss and tinnitus to audience at Pittsburgh Symphony

Selection of oral presentations at national and international conferences given by trainees:

Gordon Research Conference Neural Plasticity, 2003, Newport, RI. Title: “Glutamatergic transmission in an immature inhibitory pathway” presented by Deda Gillespie (postdoctoral fellow).

Winter Conference on Brain Research, 2006, Title: “Cholinergic innervation of the cochlea is required for tonotopic sharpening of an auditory brainstem pathway” presented by Gunsoo Kim (graduate student)

Cold Spring Harbor Meeting “The GABAergic System”, 2006, Title: “Development of inhibitory and excitatory auditory circuits without GABA/glycinergic hyperpolarization” presented by Hanmi Lee (graduate student)

Gordon Research Conference “Auditory System”, 2008, Title: “The power of the template” presented by Amanda Clause (graduate student)

Association for Research in Otolaryngology Mid-Winter Meeting, 2009, Title: “Developmental refinement of inhibitory connections in the brainstem depends on cholinergic transmission in the cochlea” presented by Amanda Clause (graduate student)

Annual meeting of the Society for Neuroscience, 2014. Title: “Development of intrinsic connectivity in the central nucleus of the mouse inferior colliculus.” Presented by Joshua Sturm (MSTP student)

Association for Research in Otolaryngology Mid-Winter Meeting, 2015, Titel: ”Developing MNTB neurons excite each other via inter-axonal GABA spillover” Presented by Cat Weisz, PhD (postdoctoral fellow)

Gordon Research Seminar, 2014, 2016 – Cat Weisz, PhD, postdoctoral fellow, Co-chair for the Gordon Research Seminar 2014, and Chair in 2016.

Gordon Research Conference, 2016– Cat Weisz, PhD, former postdoc, presented data from her postdoc training in my lab

Association for Research in Otolaryngology Mid-Winter Meeting, 2017, Titel: “Activity-dependent Refinement of Spiral Ganglion Neuron Dendritic Terminals in the Developing Cochlea” by YingXin Zhang-Hooks.

Teaching Activities (organized by courses/activities):

Graduate students:

1998	Molecular Physiology of Synaptic Transmission, lecturer
1999-2017	Systems Neuroscience: Lecturer (3 - 4 lectures per year), facilitator
1999	Student Journal Club, co-director
1999-2000	Proseminar, co-director
1999-2000	Neurobiology Seminar, director
2000-2008	Systems Neuroscience, Director of course block “sensory systems”
2002	Developmental Neuroscience, lecturer
2002-2004	Molecular and Cellular Neurobiology, 1-2 lectures per year
2005	Student Journal Club, facilitator
2008-2011	Developmental Neuroscience, lecturer

Medical students:

- 1999- 2005 Medical Neuroscience (MS1, MS2), Facilitator, Problem Based Learning Groups (3-4 cases each year, 2 meetings (90 min each) per case
- 1999-present Medical Neuroscience (MS1, MS2), Lecturer (3-6 hours of lectures/year)
- 1999-2000 Medical Neuroscience (MS2), Laboratory facilitator
- 2004 Medical Neuroscience Curriculum Committee Member (MS1)

Other:

- 2001-2014 Discussion leader, case studies in Ethics Workshop (~ every other year)
- 2008 Founder of Gordon Research Seminar "Auditory System". The GRS is a one day symposium preceding the main GRC and is specifically for pre and postdoctoral trainees.
- 2011 'The mammalian central auditory system – organization, development, plasticity, and disease" 6 hours of lectures over the course of one week. The Institute of Neuroscience of 'Castilla y Leon', University of Salamanca, Salamanca, Spain.
- 2011 Workshop presentation "Developmental reorganization of sound localization circuits" Graduierten Kolleg "Orientation and Motion in Space", Ludwig Maximilian University, Germany
- 2011-2017 Co-Director of Institutional Training in Vestibular and Auditory Neuroscience. Organized monthly research seminars, annual retreats with invited speakers.
- 2013 Workshop presentation "Modern techniques to investigate auditory circuits". Co-organized by the Graduate School for Hearing Disabilities in Working Life, Karolinska Institutet and the HEAD Graduate School for Research on Hearing and Deafness, University of Linköping. Stockholm, Sweden
- 2015 Biology of the Inner Ear Course, Marine Biology Laboratories, Woods Hole, MA. Invited guest lecturer
- 2017 Biology of the Inner Ear Course, Marine Biology Laboratories, Woods Hole, MA. Invited guest lecturer

Reprint and comprehensive exam committee (member or chair):

Joyeeta Dutta
Alexandra Gulacsi
Gunsoo Kim
Kyoko Koshibu
Hanmi Lee
Daniel Leskiewicz
Aura Negoita

Daniel Leskiewicz
Sumon Pal
Simona Temereancă
Beth Siegler
Michael Shoykhet
David Laddle
Matt Strahmann
Vivek Khatri
Jason Castro
SooHyun Lee
Soyoun Cho
Kate Cosgrove
Amanda Clause
Jonathan Sager
Amanda Kinnischtzke
Peter Adelman
Joshua Sturm (MSTP)
Matthew Geramita (MSTP)
Jongwon Lee

Thesis committee (students for whom I was the primary mentor [9] not included):

David Laddle
Michael Shoykhet
Daniel Leskiewicz
Simona Temereancă
Jed Harting
Soyoun Cho
Vivek Khatri
SooHyun Lee
David Nauen
Ken Hovis (CMU)
Jason Castro (CMU)
Amanda Kinnischtzke
Kurt Chonko
Shuang Li
Dylan McCreary (CMU)
Shi Tong Lee (BioE)

Mentor/Thesis advisor

Clinical Research Fellows

David Chi, MD (2008-2012), Currently position: Associate Professor, Dept. Of Otolaryngology

Chieri Hayashi, MD (2011-2014), visiting scholar from Juntendo University School of Medicine, Tokyo, Japan. Current position: Associate Director at Astellas Pharma.

Formal Faculty mentoring

Mentoring Committee member for Takashi Kozai, Dept. Bioengineering (2016-present)

Member on mentorship committee (2013-2016) for Steven Maricich, Assistant Professor of Pediatrics, University of Pittsburgh School of Medicine. Richard King Mellon Foundation Institute for Pediatric Research Scholar

Member of Primary Investigator Mentorship Academy (2014-2015). In this position, I mentored and supported grant writing process and preliminary data gathering for an NIH grant submission of Dr. Paul Nealen, PhD, Associate Professor, Dept. Biology, Indiana University of Pennsylvania.

Postdoctoral fellows:

Dr. Paul Kullmann (1998-2001)

Current position: Research Assistant Professor, Dept. Neurobiology, University of Pittsburgh

Dr. Deda Gillespie (2001-2005);

Current position: Associate Professor, Dept. of Psychology, McMasters University, Canada

Dr. Seung Cheol Ahn (2004-2005);

Current position: Associate Professor, Dept. of Physiology, College of Medicine, Dankook University, Korea

Dr. Susan Erickson (2003-2005; co-mentored with Dr. P. Land)

Current position: Senior Research Principal, Translational Neuroscience program, University of Pittsburgh

Dr. JiHyuan Noh (2006-2009)

Current position: Associate Professor Dankook University, Yöng-dong, Gyeonggi-do, South Korea

Dr. Tuan Nguyen (2007-2012)

Current position: Associate Professor, Department of Physics, The College of New Jersey

Dr. Jason Castro (2008-2012)

Current position: Assistant Professor, Dept. Psychology, Bates College

Dr. Elisabeth Garcia Pino (2009 – 2012)

Current position: Research Assistant Professor, Department of Biology, Chemistry, Pharmacy, Freie Universität Berlin, Germany

Dr. Catherine Weisz (2011-2015)

Current position: Chief of Section on Neuronal Circuitry, National Institute on Deafness and Other Communication Disorders.

Dr. Kirsten Fantetti (2014-2015), co-mentored with Dr. Rebecca Seal, Neurobiology

Current position: Regulatory Affairs Scientist at Cook MyoSite, Pittsburgh, Pennsylvania

Dr. Eva Bach (2013-2016)

Current position: Postdoctoral fellow (NIH supported) with Dr. Berry Stein, Dept. Neurobiology & Anatomy, Wake Forst School of Medicine, Winston-Salem, NC

Dr. Will Hamlet (2015), deceased

Dr. Wendy Zhang (2015-2016)

Current position: Consultant at McKinsey & Company

PhD students:

Aura Negoita (name-change to Aura Kullmann) (1999-2003)

Current position: Research Assistant Professor, University of Pittsburgh School of Medicine

Gunsoo Kim (2000-2005)

Current position: Research Professor, Institute for Basic Science (IBS) Center for Neuroscience Imaging Research (CNIR), Suwon, Korea

Hanmi Lee (2002-2007)

Current position: Postdoctoral fellow with Dr. C. Shatz, Dept. Neurobiology, Stanford

Abigail Kalmbach (2004-2008, master degree),

Current position: Research Fellow at Columbia University

Amanda Clause, CNUP (2006-2011)

Current position: Staff member at Illumina

Jineta Banerjee, CMU biology graduate program (2009-2014)

Current position: Postdoctoral Research Fellow at Johns Hopkins School of Medicine

Peter Adelman, CNUP, (2010-2013) private industry

Joshua Sturm, MSTP program (2013 - 2015)

Current position: Medical Scientist Program student

Jongwon Lee, CNUP (2014-present)

Maryanna Owoc, MSTP program (2017-present)

Shang Ma, CNUP (2018-present)

Mahmoud Khali (2019-present)

Rotation students (students who performed thesis with me are not included):

Kyoko Koshibu (CNUP)

Adam Halberstadt (CNUP)

Sriram Venneti (CNUP)

Beth Siegler (CNUP)

Simona Temereanca (CNUP)

Matthew Shtrahman (MSTP)

Roger Clem (CMU),

Jonathan Sager (CNUP)

Gil Hoftman (MSTP)

Krishnamurthy Ganapathy Subramanian (CNUP)

Mahmoud Khalil (CNUP)

Xiangya School of Medicine exchange student

Ye Xiuhui (2014-2016)

current postion: Medical student Xiangya School of Medicine

Residents

Mary Ying, ENT resident

Undergraduate students:

Bevan Tandon

Shabnam Rahimdashti

Nate Klett

Mahnoor Moin

Michelle Hayner

Nickolas Blaney

Akshay Ratnani

Hayley Lawton

Grant Support:

Active:

- 2022-2027 NIDCD-RO1 (PI: Kandler) “Development of the intrinsic synaptic circuits of the inferior colliculus”
- 2011-2027 NIDCD T32 (Role PI, Dual PI with Yates), Institutional Training in Vestibular and Auditory Neuroscience
- 2018- 2022 Commonwealth Universal Research Enhancement (CURE) Program Grants (Kandler)

Previous:

- 1999-2021 NIDCD-RO1 (PI: Kandler), “Development of Neuronal Circuits in the Auditory Brainstem”
- 2012-2017 NIDCD-R01 (PI: Tzounopoulos), “Cell-specific Synaptic Plasticity in the Auditory Brain”
- 2015-2016 UPP/UPMC Academic Funding Opportunity, “Auditory midbrain plasticity in a model of noise-induced tinnitus and its prevention by acoustic enrichment”
- 2013-2014 Pennsylvania Lions Hearing Research Foundation (Role: PI) “The cannabinoid system in an animal model of tinnitus.”
- 2010-2013 DOD “Mechanisms Underlying Noise-Induced Tinnitus” (Co-PI; PI: Tzounopoulos)
- 2009-2011 NIDCD American Recovery and Reinvestment Act (ARRA). Two supplements were funded: Accelerating the Science (ACC) and Research Equipment for Advancement of Science (Role: PI)
- 2008-2011 Administrative Research Supplement to Promote Emergence of Independent Otolaryngologist-Investigators (Role: PI)
- 2008-2009 NIDCD/NICHD R13 Auditory System and Graduate Research Seminar (Role: PI)
- 2004-2009 NCRR (PI: Strick, Role: Core Director, 15% effort, Co-PIs. Peter Strick and Patrick Card) “Center for Neuroanatomy with Neurotropic Viruses”
- 2007-2008 Pennsylvania Lions Hearing Research Foundation (Role: PI)
- 2002-2007 NINDS-RO1 (PI: P. Land, Role: Co-PI) “Experience-Dependent Neocortical Development”

2006	US- Japan Brain Research Cooperation Program (BRCP) (Role: PI) “Glutamate co-release from individual glycine/GABAergic synaptic boutons”.
2003-2004	NIDCD (Role: PI), Mutant mouse supplement
2000-2004	NINDS-RO1 (PI: Aizenman, Role: Co-PI), “Modulation of NMDA receptors.”
2000-2002	NIDCD: RO1 (Role: PI) “Administrative Mouse supplement”
1999-2001	Alfred P. Sloan research grant (Role: PI)
1995-1997	NRSA training grant from the NEI
1993-1994	Postdoctoral fellowship from the NATO and DAAD (“German Academic Exchange Service”)
1994-1995	Feodor-Lynen-Fellowship of the Alexander von Humboldt Stiftung

Mentored Grants

2019-2023	F30 training Grant, NIDCD, Maryanna Owoc, MSTP
2015-2017	T32, NIDCD Mentor for Dr. Wendy Zhang
2014-2018	F30 training Grant, NIDCD, Joshua Sturm, MSTP
2014-2016	T32 and DSF Charitable Foundation, Mentors for Dr. Eva Bach
2013-2015	NRSA (F32), Dr. Catherine Weisz
2011-2012	NRSA (F32), Dr. Jason Castro
2009-2012	(T32), NIDCD, Dr. Jason Castro
2008-2010	NSF, IGERT Training grant, Amanda Clause
2007-2009	NRSA (F32), Abigail Kalmbach
2004-2005	NSF, IGERT Training grant, Abigail Kalmbach
2003-2004	NRSA (T32), Dr. Deda Gillespie
2004-2010	K08, NIDCD, Dr. Yael Raz, Dept. Otolaryngology, Univ. Pittsburgh
2001-2003	T32, Dr. Deda Gillespie

Administrative Duties at University of Pittsburgh:

Health Sciences Research Advisory Committee	Member (2001-2011)
Departmental Seminar	Organizer (2001-2005)
Biomedical Science Tower 3 planning advisory committee	Member (2001-2004)
CNUP Retreat Committee	Co-Chair (2000-2001)
Graduate student international admission subcommittee	Member, (2000-2001)
Graduate student international admission subcommittee	Co-Chair (2001-2002)

Neurobiology Faculty Search Committee, member	Member (1999, 2000, 2004, 2005, 2006)
CNUP – MSTP recruitment committee	Member (2004-2007)
CNUP Student evaluation committee	Member (2006-2009)
Tenured Faculty and Promotions Appointments committee	Member (2006-2007)
Auditory Research Group, Dept. of Otolaryngology	Director (2008-present)
Pittsburgh Brain Institute Executive Committee	Member (2015-2018)
Non-Tenured Faculty Promotions and Appointments (NTFPA) committee	Member (2017-2020)

Professional Service/Duties:

Editorial Board

Neural Development

Review Editor

Frontiers in Synaptic Neuroscience

Ad hoc editor:

Plos Genetics

Book editor:

Neuroscience handbook series, Oxford University Press

Ad-hoc Reviewer for Journals:

Brain Research

Cell Reports

Cerebral Cortex

Developmental Neurobiology

Ear and Hearing

Frontiers in Neuroscience

Hearing Research

Hippocampus

J. Association for Research in Otolaryngology

J. Comp. Neurology

J. Neurobiology

J. Neurophysiology

J. Neuroscience

J. Neuroscience Methods

J. Physiology

Neural Plasticity

Nature

Nature Methods
Nature Neuroscience
Nature Communications
Neuron
Neuroscience Letters
Neuropharmacology
Proceedings of the National Academy of Sciences
PLOS Biology
PLOS Genetics
PLOS one
Science
Scientific Reports
The Laryngoscope

Service on Scientific Committees/Councils

National Organization for Hearing Research Foundation, Scientific Review Committee Member (2008-2014)

Association for Research in Otolaryngology, Physician Research Training Committee Member (2009-2011)

Gordon Research Conferences Council (2008-2009)

Board of Scientific Counselors, National Institute on Deafness and other Communication Disorders, ad hoc member (2013)

External Executive Committee for Program Project Grant “Determinants of age-induced hearing loss and reversal strategies”, PI: Dr. E. Yamoah (2016-present)

Geraldine Dietz Fox Young Investigator Award Committee (2014-present)

Pittsburgh Brain Institute, Executive committee member (2015-2018)

Association for Research in Otolaryngology, Awards Committee (2020-2023)

Reviewer for Funding agencies:

Local:

Children’s Hospital Scientific Review Subcommittee

Competitive Medical Research Fund University of Pittsburgh

University of Pittsburgh Technology Transfer Committee

National:

National Science Foundation - ad hoc reviewer (1998, 2005, 2006)

Cure Autisms Now - ad hoc reviewer (2004)

NIH special emphasis study sections - ad hoc reviewer (2003, 2005-2009)

NIH Study Section (AUD) - ad hoc member (2004, 2007, 2008, 2009)
COBRE NIH grant University of Kansas - external reviewer (2007)
NIH Study Section (AUD) - regular member (2009-2011)
NIH Study Section (AUD) - Chair (2011-2012)
NIH Sensorimotor Integration Study Section – ad hoc member (2012)
NIH study section ZRG1 IFCN-T - Chair, 2013
Board of Scientific Counselors, NIDCD - ad hoc member (October 2013)
Special Emphasis Panel/Scientific Review Group 05 ZHD1 DRG-H (AG) (2014)
Air Force Office of Scientific Research - reviewer (2014)
NIH Special Emphasis Panel/Scientific Review Group 10 ZRG1 IFCN-B (02) M (2016)
NIH Hearing and Balance Fellowships Review 10 ZDC1 SRB-R (32) – ad hoc member (2016)
NIH Special Emphasis Panel ZRG1-IFCN-B-02M – ad hoc member (2017)
NIH Communication Disorders Review Committee - regular member (2017-2021)
NIH Hearing and Balance Fellowships Review ZDC1 SRB-K (15) (2018)

International:

Biotechnology and Biological Sciences Research Council (UK) (1999)
Wellcome Trust (UK)
German Science Foundation (Deutsche Forschungsgemeinschaft): Individual Grant Reviews (2010, 2011, 2013)
German Science Foundation (Deutsche Forschungsgemeinschaft): Regular member on Review Panel for Priority Programme SPP1608 “Ultrafast and Temporally Precise Information Processing: Normal and Dysfunctional Hearing“ (2013, 2015)
Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek), Belgium (2014).
German Israeli Foundation for Scientific Research and Development (2015)

Outreach

March 2002 lectures about “The Brain” at Falk primary school (P2 and P3)
2004, 2006 “A morning in the lab – what brain scientists really do”. Lecture and laboratory demonstration for two Middle School classes
2010 Pittsburgh Symphony – Beethoven Project ”Invited panelist to discuss Beethoven and hearing loss to audience at Pittsburgh Symphony
Various Auditory Research and Tinnitus fund raising events in Pittsburgh
2017 Science Fair Judge, Linden Public School, Pittsburgh