Curriculum Vitae

Yi Zhou

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Associate Professor of Speech and Hearing Science
College of Health Solutions
Arizona State University
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https://isearch.asu.edu/profile/2014889
https://scholar.google.com/citations?user=RVM1Pr8AAAAJ&hl=en&oi=ao

EDUCATION

2005	**Ph.D.**	Biomedical Engineering	Boston University
1999	**M.S.**	Biomedical Engineering	Tsinghua University, PR China
1996	**B.S.**	Biomedical Engineering	Zhejiang University, PR China

ACADEMIC APPOINTMENTS

2020 – present	**Associate Professor**, College of Health Solutions, Arizona State University
2012 – 2020	**Assistant Professor**, College of Health Solutions, Arizona State University
2012 – present	**Graduate Faculty**, School of Biological and Health Systems Engineering, Arizona State University
2012 – present	**Graduate Faculty**, School of Life Sciences Interdisciplinary Neuroscience Program, Arizona State University
2011 – 2012	**Research Associate Scientist**, Dept. of Biomedical Engineering, Johns Hopkins University
2005 – 2011	**Postdoctoral Fellow**, Dept. of Biomedical Engineering, Johns Hopkins University
1999 – 2005	**Graduate Research Assistant**, Dept. of Biomedical Engineering, Boston University

RESEARCH INTERESTS

- Neural mechanisms of sound source identification and segregation in multi-source, multi-sensory environments;
- Computational models of spatial hearing;
- Multisensory spatial perception (animal models and humans);

RESEARCH FUNDING

Current

Title: CRCNS: Visual Modulation of Panoramic Auditory Spatial Processing
Sponsor: National Institutes of Health – National Institute on Deafness and Other Communication Disorders (NIH R01DC019278)

PIs: Yi Zhou (PI), Sharon Crook (co-I, ASU)
Proposal Budget: $1,484,453
Performance Period: 7/1/2020 – 6/30/2024

Synopsis: This proposal aims to investigate how visual information modulates auditory encoding of 360-degree, panoramic space in auditory cortex using an integrated approach based on neurophysiology, mechanistic computational modeling, and predictive statistical modeling.

Title: Plastic Synaptic Interconnections Between Principal Cells of the Ventral Cochlear Nucleus
Sponsor: National Institutes of Health – National Institute on Deafness and Other Communication Disorders (NIH R01DC016861)
PIs: Donata Oertel (PI, University of Wisconsin), Yi Zhou (subcontract, site-PI, ASU), Gai Yan (subcontract, site-PI, Saint Louis University)
Total Award: $2,735,135
Total Award to ASU: $107,614.
Performance Period: 3/15/2018 – 2/28/2023

Synopsis: This proposal aims to investigate the neural mechanisms of synaptic plasticity of T stellate cells in brainstem. The ASU site (Zhou) will conduct modeling studies to test the mechanisms of synaptic plasticity in normal and hearing loss conditions.

Completed

Title: Collaborative Research: Neural-Cognitive Analysis of Spatial Scenes with Competing Dynamic Sound Sources
Sponsor: National Science Foundation (NSF-BCS-1539376)
PIs: Yi Zhou (PI)
Total Award to ASU: $337,759. [*Additional $335,598 awarded to Rensselaer Polytechnic Institute for this collaborative project. RPI-PI, Jonas Braasch (NSF-BCS-1539276).]*
Performance Period: 9/1/2015 – 8/31/2019

Synopsis: This proposal investigates the auditory system's ability to discriminate objects embedded within a complex scene. This collaborative research was awarded to two institutions for a parallel investigation in humans (RPI) and marmoset monkeys (ASU).

Title: Towards an understanding of the neural basis of communication sound perception
Sponsor: ASU Institute for Social Science Research – Seed Grant
PIs: Yi Zhou (PI)
Proposal Budget: $7,890
Performance Period: 7/1/2020 – 6/30/2021

Synopsis: This proposal aims to establish a marmoset vocalization database, construct a phenomenological model for caller identification, and obtain neural data in response to animal vocalization in the primary auditory cortex.

Title: Multisensory Circuitry and Functions in Auditory Cortex
Sponsor: ASU College of Health Solutions Jumpstart Grant – Pilot Research
PIs: Yi Zhou (PI), Jason Newbern (co-PI)
Total Award: $10,000
Performance Period: 1/1/2019 – 6/30/2020

Synopsis: This proposal seeks to identify the structural and functional evidence that supports

vision's role in auditory spatial processing in the auditory cortex of marmoset monkeys.

PUBLICATIONS

Peer-Reviewed Journal Publications:

**graduate or undergraduate students I supervised; underlined is the corresponding/lead author*

Published (JPR):

After employment at ASU

[JPR 13] Pastore M, Natale S, *Clayton C, Dorman M, Yost W & **Zhou Y.** (2020)
Head movements allow single-sided deaf listeners to resolve front-back reversals with and without a cochlear implant in the deaf ear. *Ear and Hearing.* Nov/Dec 2020;41(6):1660-1674. DOI: 10.1097/AUD.0000000000000882.

[JPR 12] *Pandey S, *Simhadri S, & **Zhou Y.** (2020)
Rapid head movements in marmoset monkeys. *iScience*. 23(2):100837. doi: 10.1016/j.isci.2020.100837

[JPR 11] *Venskytis EJ, *Clayton C, *Montagne C, & **Zhou Y.** (2019)
Audiovisual interactions in stereo sound localization for individuals with unilateral hearing loss. *Trends in Hearing,* 23:1-17.
[SJR: 0.83; H Index= 41; Tier 1 journal in Otorhinolaryngology]

[JPR 10] Yost WA, Pastore M, & **Zhou Y.** (2019)
Discrimination of changes in spatial configuration for multiple, simultaneously presented sounds. *The Journal of the Acoustical Society of America,* 145(4): EL310-316.
[SJR: 0.7; H Index= 158; Tier 1 journal in Acoustics and Ultrasonics]

[JPR 9] **Zhou Y**, *Balderas L, *Venskytis EJ. (2018)
Binaural ambiguity amplifies visual bias in sound source localization. *The Journal of the Acoustical Society of America,* 144(6):3118-3123. PubMed PMID: 30599662.
[SJR: 1.04; H Index= 158; Tier 1 journal in Acoustics and Ultrasonics]

[JPR 8] *Montagne C, **Zhou Y**. (2018)
Audiovisual interactions in front and rear space. *Frontiers in Psychology*, (9) Article 713. PubMed PMID: 29867678.
[SJR: 0.7; H Index= 66; Tier 1 journal in Psychology (miscellaneous)]

[JPR 7] *Montagne C, **Zhou Y**. (2016)
Visual capture of a stereo sound: Interactions between cue reliability, sound localization variability, and cross-modal bias. *The Journal of the Acoustical Society of America,* 140(1):471–485. PubMed PMID: 27475171.
[SJR: 1.04; H Index= 158; Tier 1 journal in Acoustics and Ultrasonics]

[JPR 6] **Zhou Y**, Wang X. (2014)
Spatially extended forward suppression in primate auditory cortex. *European Journal of Neuroscience*,39(6):919–933. PubMed PMID: 24372934.
[SJR: 1.76; H Index= 185; Tier 1 journal in Neuroscience]

Before employment at ASU

[JPR 5] **Zhou Y**, Wang X. (2012)
Level dependence of spatial processing in the primate auditory cortex. *Journal of Neurophysiology,* 108(3):810–826. PubMed PMID: 22592309.
[SJR: 1.65; H Index= 220; Tier 1 journal in Neuroscience; Tier 1 journal in Physiology (miscellaneous)]

[JPR 4] **Zhou Y**, Wang X. (2010)
Cortical processing of dynamic sound envelope transitions. *Journal of Neuroscience,* 30(49):16741–16754. PubMed PMID: 21148013.
[SJR: 4.47; H Index= 409; Tier 1 journal in Neuroscience]

[JPR 3] **Zhou Y**, Colburn HS. (2010)
A modeling study of the effects of membrane afterhyperpolarization on spike interval statistics and on ILD encoding in the lateral superior olive. *Journal of Neurophysiology,* 103(5):2355-2371. PubMed PMID: 20107123.
[SJR: 1.65; H Index= 220; Tier 1 journal in Neuroscience; Tier 1 journal in Physiology (miscellaneous)

[JPR 2] Colburn HS, Chung Y, **Zhou Y**, Brughera A. (2009)
Models of brainstem responses to bilateral electrical stimulation. *Journal of the Association for Research in Otolaryngology,* 10(1):91–110. PubMed PMID: 18941838.
[SJR: 1.21; H Index= 62; Tier 1 journal in Otorhinolaryngology; Tier 2 journal in Sensory Systems

[JPR 1] **Zhou Y**, Carney LH, Colburn HS. (2005)
A model for interaural time difference sensitivity in the medial superior olive: interaction of excitatory and inhibitory synaptic inputs, channel dynamics, and cellular morphology. *Journal of Neuroscience,* 25(12):3046–3058. PubMed PMID: 15788761.
[SJR: 4.47; H Index= 409; Tier 1 journal in Neuroscience]

Book Chapters (BC):

[BC 5] Colburn HS, **Zhou Y**. "Central Auditory System." In: Springer Handbook of Auditory Research (SHAR) - History of Hearing Discoveries. Ketten and Popper (Ed.). **Invited.** *Under editorial review.*

[BC 4] Yost WA, Pastore M, **Zhou Y** (2021). "Sound Source Localization is a Multisystem Process." In: Springer Handbook of Auditory Research (SHAR) - Binaural Hearing. Litovsky and Goupell (Ed.), Springer (Berlin & Heidelberg).

[BC 3] Pastore M, **Zhou Y**, Yost WA, (2020). "Cross-modal and Cognitive Processes in Sound Localization." In: The Technology of Binaural Understanding. Blauert and Braasch (Ed.), Springer Cham.

[BC 2] Colburn HS, Chung Y, **Zhou Y**, Brughera A (2007) "Models of neural responses to bilateral electrical stimulation." In: Hearing – From Sensory Processing to Perception, Springer Berlin Heidelberg, pp 495–504.

[BC 1] Colburn HS, **Zhou Y**, Dasika V (2005) “Inhibition in models of coincidence detection.” In: Auditory Signal Processing: Physiology, Psychoacoustics, and Models. Springer New York, pp 355–361.

Conference Proceedings Publications (CP)

[CP 4] Pastore MT, **Zhou Y**, Yost WA (2021). Modeling sound-source localization of two independent noises sinusoidally amplitude-modulated out of phase in a sound field. Vol 43. The 180th Meeting of the Acoustical Society of America. Virtual. doi: 10.1121/2.0001438

[CP 3] **Zhou Y,** *Clayton C (2019) Reaction times in multisensory localization tasks. ***Invited paper***. The 23nd International Congress on Acoustics. ICA2019. Aachen, Germany.

[CP 2] Braasch L, Pastore MT, **Zhou Y** (2019). Modeling binaural detection of a Gaussian noise target in the presence of a lead/lag masker. ***Invited paper***, The 23nd International Congress on Acoustics. ICA2019. Aachen, Germany.

[CP 1] **Zhou Y,** *Pandey S, & *Labban K (2016) Saccade-like head movements in non-human primates and implications of the binaural "acoustic flow” on spatial hearing. ***Invited paper***, The 22nd International Congress on Acoustics. ICA2016-525. Buenos Aires, Argentina.

Conference Abstracts (CA)

After employment at ASU

[CA 40] **Zhou Y** (2021) “Hemispherical Tuning Oversimplifies the Diversity of Single-Unit Spatial Responses in the Auditory Cortex.” The Joint Conference on Binaural and Spatial Hearing (BASH) – *Live Talks*

[CA 39] Pastore M, **Zhou Y**, Yost W (2021) “Differences in sound-source localization in reverberant environments that depend on stimulus-type and mode of presentation.” 181st Acoustical Society of America Conference, December, Seattle.

[CA 38] Pastore M, **Zhou Y**, Yost W (2021) “Modeling sound-source localization of two sinusoidally amplitude-modulated noises in a sound field.” 180th Acoustical Society of America Conference, June, Virtual.

[CA 37] *Clayton C, **Zhou Y** (2021) “Comparison of Motor Response Outcomes Between Eye Saccades and Button Pushing in Multisensory Localization Tasks.” 44th Annual MidWinter of the Association for Research in Otolaryngology, Virtual – *Poster Presentation*

[CA 36] *Haynes V, **Zhou Y**, Crook S (2021) “A simulation-based machine learning approach to demixing EAP sources for extracellular morphological characterization”, 2021 INCF Assembly (Introduction to data analysis and neural coding), Virtual -- *Poster Presentation*

[CA 35] **Zhou Y** (2020) “Visual Influences in Auditory Localization.” The Joint Conference on Binaural and Spatial Hearing (BASH) – *Live Talks.*

[CA 34] **Zhou Y** (2020) "The WAY to lead – reflections on the contributions of Dr. William A. Yost to the Speech and Hearing Science Program at ASU." *Acoustics Virtually Everywhere* - The 179th Meeting of the Acoustical Society of America. ***Invited*** – *Live talks.*

[CA 33] Braasch J, Blauert Jens, Pastore M, **Zhou Y** (2020) "Modeling the advantage of head-movements in judging elevation." *Acoustics Virtually Everywhere* - The 179th Meeting of the Acoustical Society of America. – *Live Talks.*

[CA 32] **Zhou Y**, Braasch J (2019) "Neural evidence of location constancy for auditory spectral processing in marmoset auditory cortex." *Annual Meeting of the Society for Neuroscience*, San Diego. – *Poster Presentation.*

[CA 31] **Zhou Y.** (2019) "Visual influences on auditory spatial processing." 177th Meeting of the Acoustical Society of America, Louisville. ***Invited.*** – *Podium Presentation.*

[CA 30] **Zhou Y.** (2019) "Prevalence of front-back confused responses in the marmoset auditory cortex". Association for Research in Otolaryngology. 42nd Annual Midwinter meeting, Baltimore. – *Poster Presentation.*

[CA 29] **Zhou Y**, Braasch J. (2018) "Investigate what makes it "new" in the old-plus-new strategy of auditory scene analysis in the auditory cortex of marmoset monkeys". Society for Neuroscience, 48th annual meeting, San Diego. – *Poster Presentation*

[CA 28] **Zhou Y**, *Pandey S, *Labban K. (2017) "Saccade-like head movements in non-human primates and their implications on spatial hearing". Primate Neuroscience: Perception, Cognition & Disease Models. Suzhou, China. – *Podium Presentation*

[CA 27] *Clayton C, *Balderas L, **Zhou Y**. (2017) "The source and effects of binaural cue ambiguity in free-field stereo sound localization – behavioral testing." 172nd Meeting of the Acoustical Society of America, Boston. – *Poster Presentation*

[CA 26] **Zhou Y**, *Montagne C, *Clayton C (2017) "The source and effects of binaural cue ambiguity in free-field stereo sound localization – modeling simulation." 172th Meeting of the Acoustical Society of America, Boston. – *Poster Presentation*

[CA 25] *Venskytis E, *Montagne C, **Zhou Y**. (2017) "Comparison of visual influence on timing-based summing localization among listeners with normal hearing, symmetric and asymmetric HL. Association for Research in Otolaryngology." 40th Annual Midwinter meeting, Baltimore. – *Podium Presentation*

[CA 24] *McAndrew R, *Horeczko H, *Montagne C, *Labban K, **Zhou Y** (2017) "Visual and auditory localization tasks in marmosets: a preliminary report." Association for Research in Otolaryngology. 40th Annual Midwinter meeting, Baltimore. – *Poster Presentation*

[CA 23] *Venskytis E, *Montagne C, **Zhou Y**. (2016) "Cross-modal interaction in auditory localization of individuals with hearing loss." American Academy of Audiology, AudiologyNOW!, Phoenix, AZ. – *Poster Presentation*

[CA 22] *Montagne C, **Zhou Y**. (2016) "Interactions between front-back confusion and visual capture in summing localization." 171st Meeting of the Acoustical Society of America, Salt Lake City. – *Poster Presentation*

[CA 21] *Montagne C, **Zhou Y**. (2015) "Interactions between visual capture and front-back confusions in sound localization." Society for Neuroscience, 45th annual meeting, Chicago. – *Poster Presentation*

[CA 20] **Zhou Y**. (2015) "Neuronal ensemble representation of competing sounds in auditory cortex." Young Investigator Symposium, 38th Annual Midwinter Meeting, Association for Research in Otolaryngology. Baltimore. – *Podium Presentation*

[CA 19] *Montagne C, **Zhou Y**. (2015) "Investigating compensatory mechanisms for sound localization: visual cue integration and the precedence effect." 38th Annual Midwinter Meeting, Association for Research in Otolaryngology. Baltimore. – *Poster Presentation*

[CA 18] *Pandey S, *Simhadri S, **Zhou Y**. (2015) "A method to detect and analyze head movements of marmosets in response to auditory stimuli." 38th Annual Midwinter Meeting, Association for Research in Otolaryngology. Baltimore. – *Podium Presentation*

[CA 17] *Venskytis E, *Montagne C, **Zhou Y**. (2015) "Visual Influences on sound localization in subjects with asymmetric hearing loss." American Academy of Audiology, AudiologyNOW! San Antonio. – *Poster Presentation*

[CA 16] **Zhou Y**. (2015) "Visual capture of a stereo image." 169th Meeting of the Acoustical Society of America, Pittsburg. **Invited**. – *Podium Presentation*

[CA 15] **Zhou Y**, *Simhadri S. (2014) "A modeling study of dynamic response patterns of cortical neurons during fast head turns of marmoset monkeys." 37th Annual Midwinter Meeting, Association for Research in Otolaryngology. San Diego. – *Podium Presentation*

[CA 14] **Zhou Y**, Wang XQ. (2013) "Strategies for encoding competing acoustic events by single neurons in primate auditory cortex." 10th annual meeting of Computational and Systems Neuroscience (COSYNE), Salt Lake City. – *Poster Presentation*

[CA 13] **Zhou Y**, Wang XQ. (2013) "The effect of sound source location on multi-peak frequency tuning in the primary auditory cortex of marmoset monkeys." Association for Research in Otolaryngology. 36th Annual Midwinter meeting, Baltimore. – *Poster Presentation*

Before employment at ASU

[CA 12] **Zhou Y**, Wang XQ. (2011) "Spatial and non-spatial sound processing in the primary auditory cortex of awake marmoset." Association for Research in Otolaryngology. 34th Midwinter meeting. Baltimore. – *Poster Presentation*

[CA 11] **Zhou Y**, Wang XQ. (2010) "The structure of spatial receptive fields of neurons in the primary auditory cortex of awake marmoset." Society for Neuroscience, 40th annual meeting, San Diego. – *Poster Presentation*

[CA 10] **Zhou Y**, Wang XQ (2010) "The structure of spatial receptive fields of neurons in the primary auditory cortex of awake marmoset." Gordon Research Conference on Sensory Coding & the Natural Environment. Bates College. Lewiston, ME.

[CA 9] **Zhou Y**, Wang XQ (2010) "Neural Processing of Competing Sounds in Auditory Cortex." 33th Annual Midwinter Meeting, Association for Research in Otolaryngology. Anaheim, CA. – *Podium Presentation*.

[CA 8] **Zhou Y**, Wang XQ. (2009) "Time-intensity encoding of sound envelope in auditory cortex. Society for Neuroscience." 39th annual meeting, Chicago.

[CA 7] **Zhou Y**, Wang XQ. (2009) "Cortical processing of sounds from multiple spatial locations." Association for Research in Otolaryngology. 32th Midwinter meeting, Baltimore, MD.

[CA 6] **Zhou Y**, Wang XQ. (2008) "Envelope representation in background noise by auditory cortex neurons." Society for Neuroscience, 38th annual meeting, Washington DC.

[CA 5] **Zhou Y**, Wang XQ (2007) "Neural representations of slowly-modulated stimulus contours in auditory cortex." Society for Neuroscience, 37th annual meeting, San Diego.

[CA 4] **Zhou Y**, Colburn HS (2005) "A model study of the effect of afterhyperpolarization on the sound-level sensitivity of the LSO chopper units." Association for Research in Otolaryngology. 28th Midwinter meeting.

[CA 3] **Zhou Y**, Carney LH, Colburn HS (2004) "A model for ITD sensitivity in the MSO: Interaction of excitatory and inhibitory synaptic inputs, channel dynamics, and cellular morphology." Association for Research in Otolaryngology. 27th Midwinter meeting.

[CA 2] **Zhou Y**, Colburn HS (2003) "A model study of an MSO neuron. Association for Research in Otolaryngology." 26th Midwinter meeting.

[CA 1] **Zhou Y**, Colburn HS (2002) "A neural model for binaural coincidence detection using both excitation and inhibition." Association for Research in Otolaryngology. 25th Midwinter meeting.

Invited Colloquia (CO): *Presented by Zhou*

After employment at ASU

[CO 28] "Neurobiology of Spatial Hearing." Winter Course on Machine Intelligence and Brain Research organized by the Center for Computational Brain Research at the Indian Institute of Technology-Madras, Chennai, India. January 2020.

[CO 27] "Neural evidence of location constancy for auditory spectral processing in marmoset auditory cortex." Marmoset Bioscience Symposium in Chicago, IL. October 2019.

[CO 26] "Neurobiology of Spatial Hearing." Winter Course on Machine Intelligence and Brain Research organized by the Center for Computational Brain Research at the Indian Institute of Technology-Madras, Chennai, India. January 2019.

[CO 25] "Auditory Perception – Space Coding in Primates." Binaural Bash Meeting at Boston University. October 2018.

[CO 24] "Auditory Perception (Space, Time, & Primates)." Marmoset PI meeting, Denver, Colorado. Organized by Salk Institute for Biological Studies, September 2018.

[CO 23] "Binaural Cues in Free-field 'Summing Localization' and Their Effects on Visual Capture." Binaural Bash Meeting at Boston University. November 2016.

[CO 22] "Use the Marmoset Model to Investigate the Neural Basis of Auditory Scene Analysis." Janelia Farm – Marmoset Conference. June 2016

[CO 21] "Measuring Saccade-Like Head Movements in Marmoset Monkeys." 10th Auditory Cognitive Neuroscience Society meeting, Tucson, AZ. Jan 2016.

[CO 20] "Dynamics of Marmoset Head Movement." Binaural Bash Meeting at Boston University. November 2015.

[CO 19] "Auditory Spatial Processing in Primates." Seminar at Barrow Neurological Institute, Phoenix, AZ. March 2015

[CO 18] "Visual Capture of a Stereo Image." 5th ASU-BNI Neuroscience Symposium, Tempe, AZ. Jan 2015.

[CO 17] "Visual Capture of a Stereo Image." 9th Auditory Cognitive Neuroscience Society meeting, Tucson, AZ. Jan 2015.

[CO 16] "Sound Coding Strategies in Primate Auditory Cortex." SLHS Colloquium, University of Arizona. Sept 2014.

[CO 15] "Sound Coding Strategies in Primate Auditory Cortex." Program of Neuroscience Seminar, ASU. Sept 2014.

[CO 14] "Use The Marmoset Model to Study Sound Processing Strategies in Primate Auditory Cortex". ASU-BSHRI Neuroscience Workshop. Jun 2014.

[CO 13] "Neuronal Representation of Sound Location in the Auditory Cortex of Marmoset Monkeys." Basic Medical Sciences Seminar at University of Arizona – College of Medicine. Mar 2014.

[CO 12] "Stability and Variability: Sound analysis from the perspective of single neurons in the primate auditory cortex." Seminar at the Department of Psychology. ASU. Mar 2014.

[CO 11] "Untangle the Knot – Sound Encoding in N>1 Dimensions." 8th Auditory Cognitive Neuroscience Society meeting, Tucson, AZ. Jan 2014.

[CO 10] "Sound Processing Strategies in The Auditory Cortex." Seminar at Program in Architectural Acoustics, Rensselaer Polytechnic Institute, Troy, NY. Sep 2013.

[CO 9] "Sound Processing Strategies by Neurons in Auditory Cortex." Seminar at Cognitive Neural Systems Group, University of California, San Diego. Feb 2013.

[CO 8] "Strategies for Encoding Competing Acoustic Events by Single Neurons in Primate Auditory Cortex." Auditory Cognitive Neuroscience Society. 7th Annual meeting, Tucson, AZ. Jan 2013.

Before employment at ASU

[CO 7] "Summing Localization: Does It Happen in Auditory Cortex?" Binaural Bash Meeting at Boston University, Boston University. Nov 2011.

[CO 6] "The Cocktail-Party Phenomenon – Sound Analysis from The Perspective of Single Neurons." Seminar at the Department of Physiology and Biophysics, University of Washington, Seattle. Mar 2011.

[CO 5] "Spatial and Spectral Processing In the Primary Auditory Cortex of Awake Primate." Seminar at Hearing Research Center, Department of Biomedical Engineering, Boston University. Jan 2011.

[CO 4] "Responses of Cortical Neurons to Concurrent/Sequential Sounds from Multiple Spatial Locations." Binaural Bash Meeting at Boston University, Boston University. 2008.

[CO 3] "Heterogeneity in Responses of MSO and LSO Model Neurons to AM Sounds." Binaural Bash Meeting at Boston University, Boston University. 2007.

[CO 2] "Coincidence Detection in the MSO Revisited." Special workshop in: Quantitative Approaches to Central Auditory Processing: From reverse-correlation to information theoretic analysis. The 2nd international meeting on Computational and Systems Neuroscience (COSYNE). Snowbird, Utah. 2005.

[CO 1] "A Neural Model for an MSO Neuron." Special workshop in Mathematical Neuroscience. Mathematical Biosciences Institute. Ohio State University. 2003.

TEACHING

Courses Taught

Student Evaluation is based on the average score of responses to Instructor Questions in ASU Teaching Survey Report. The ratings reflected student responses using the following scales:

- 2014 – Present (5 being the most positive evaluation)
  Strongly Disagree=1; Disagree=2; Neither Agree nor Disagree=3; Agree=4; Strongly Agree=5
- 2012 – 2013 (*1 being the most positive evaluation)
  *Strongly Agree=*1; Agree=*2; Disagree=*3; Strongly Disagree=*4*

SHS 311: Hearing Science

(3 credits Undergraduate Course)

The objective of this course is to provide SHS undergraduate students with a broad understanding of sound and how it is processed by the human auditory system. *This course is the first of three required courses in hearing and audiology for the Speech and Hearing Science BS degree (SHS 311, 401, 496).*

	Semester/Year	Number of Students	Student Evaluation (Mean)
	Fall 2021	57	4.15
	Spring 2021	71	4.05
	Spring 2020	22	3.52
	Spring 2019	48	3.60
	Spring 2017	44	4.09
	Fall 2014	94	3.57

SHS 513 Neurophysiology of the Auditory System

(3 credits Graduate Course)

I developed this course to provide Doctoral students in Audiology (AuD) and other neuroscience-related majors with fundamental knowledge of hearing. *SHS 511 and SHS 513 provide the basic-science content required for the AuD degree.*

	Semester/Year	Number of Students	Student Evaluation (Mean)
	Fall 2021	17	4.77
	Spring 2021	15	4.12
	Fall 2019	19	4.34
	Fall 2018	13	4.7
	Fall 2017	14	4.23
	Fall 2016	13	4.42
	Fall 2015	14	4.54

	Spring 2015	17	3.63
	Fall 2013	14	*1.31
	Fall 2012	11	*1.62

SHS 511: Auditory Perception of Hearing Impaired

(3 credits Graduate Course)

The goal of this course is to prepare AuD students to become better clinicians, equipped with advanced skills and knowledge in addressing hearing-related health issues. *SHS 511 and SHS 513 provide the basic-science content required for the AuD degree.*

	Semester/Year	**Number of Students**	**Student Evaluation (Mean)**
	Spring 2020	17	4.42
	Spring 2019	14	4.25
	Spring 2018	25	3.9
	Spring 2016	15	4.38
	Spring 2014	17	4.35

SHS 542: Applied Research Methods in Auditory and Language Neuroscience

(3 credit Graduate Course)

Team-taught course covering fundamental topics of experiment design and their applications in auditory and language neuroscience. Students learn about the fundamentals of experimental design, and their application in psychoacoustics, EEG, ERP and MRI. A series of hands-on activities require that students analyze existing experiments and a final project requires that students design a new experiment.

	Semester/Year	**Number of Students**	**Student Evaluation (Mean)**
	Fall 2019	6	4.28

SHS 790/701/702: Scientific Writing & Presentation Part I or Part II

(1 credit Graduate Course)

These two-part doctoral pro-seminars are designed to help PhD students succeed in conducting an independent research project (first year project), which is also the preliminary exam required for their PhD candidacy.

	Semester/Year	**Number of Students**	**Student Evaluation (Mean)**
	Fall 2021	5	NA
	Fall 2018	2	4.95
	Fall 2015	4	4.6
	Spring 2015	3	Not available
	Fall 2014	4	4.82

Recurring Guest Lectures in Other Departments at the ASU

2013 – Present "The Auditory System And Neural Coding Of Sound."
The undergraduate-level course in Neurobiology (BIO 467) at the School of Life Sciences, ASU.

2013 – Present "The Auditory System."
The graduate-level course in Human Systems Neuroscience (NEU 556) at the College of Liberal Arts and Sciences, ASU.

MENTORING

Post-doctoral Fellow (co-Advisor)

Vergil R. Haynes (Applied Math) Spring 2021 – Present

Doctoral students in SHS (Thesis Advisor)

Name	Status	Expected Graduation
Derek Nguyen (BME)	Current	2026
Kimia Habibnejad Arabi (SHS)	Current	2026
Colton Clayton (SHS)	Graduated 2021 (AuD-PhD)	
Christopher Montagne (SHS)	(Fall 2015 – Spring 2018) Medical Withdrawal	

Doctoral students in SHS and other Major or Institution (Thesis Committee Member)

Name	Status	Expected Graduation
Elliot Smith (Applied Math)	Current	2025
Kris Phataraphruk (BME)	Current	2022
David Dahlbom (Architecture Acoustics, RPI)	Graduated 2021	
Russell Jarvis (Neuroscience)	Graduated 2020	
Vergil R. Haynes (Applied Math)	Graduated 2020	
Yishan Jiao (SHS)	Graduated 2019	
Ming Tu (SHS)	Graduated 2018	
Elizabeth Stewart (SHS)	Graduated 2017	
Kristopher Patten (Psychology)	Graduated 2017	
Xuan Zhang (SHS)	Graduated 2015	

Master Thesis Ongoing and Completed (Chair, Thesis Advisor) (MT)

[MT 5] Daniel Bhella (Biomedical Engineering) Dec 2021 - Present
"Building an audio-visual virtual reality interface for auditory research."

[MT 4] Hannah Horeczko (Biomedical Engineering) July 2016
"Echo Threshold in the Common Marmoset Monkeys."
Current Position: Quality Engineer at Becton Dickinson Company

[MT 3] Christopher Montagne (Biomedical Engineering) July 2015
"Investigating Compensatory Mechanisms For Sound Localization: Visual Cue Integration and the Precedence Effect."
Current Position: Research Engineer, National Military Audiology and Speech Center, Walter Reed National Military Medical Center

[MT 2] Swarnima Pandey (Biomedical Engineering) July 2015
"Detect and analyze the 3-D Head Movement Patterns in Marmoset Monkeys using Wireless Tracking System."
Current Position: Mechanical Design Engineer at Medtronic

[MT1] Sravanthi Simhadri (Electrical Engineering) July 2014
"Detection of the fast head movements of marmoset monkeys and its implementation in sound localization."
Current Position: Firmware Engineer at Bossa Nova Robotics

Honors Thesis Ongoing and Completed (Chair or Primary co-Chair, Thesis Advisor) (HT)

[HT5] Anh Tran (Computer information systems, School of Business) August 2021
"Towards an Understanding of Marmoset Vocal Communication."

[HT4] Jessmin Fernandez (Biological Sciences; Psychology) Spring 2019
"Quantitative Analysis of Marmoset Monkey Calls."
Current Position: MD student at University of Arizona

[HT3] Kyle Labban (Biomedical Engineering) Spring 2016
"Tracking sonic flows during fast head movement of marmoset monkeys."
Current Position: MD student at Midwestern University

[HT2] Nancy Flores (Honors College, Speech and Hearing) Spring 2016
"Track eye movement of human listeners in a spatial localization task."
Current Position: Audiologist at Flagstaff Medical Center

[HT1] Leslie Balderas (Honors College, Speech and Hearing) Spring 2016
"The Role of Visual Attention in Auditory Localization."
Current Position: AuD student at ASU

SHS Research Elective (2 registered credits) – SHS 590 or SHS 592 (Mentored Research Experience)

Students in good standing in the AuD program may fulfill their required electives by engaging in research in the AuD program for one or two semesters.

Mentor Responsibilities: It is the responsibility of the mentor to make available the necessary resources and to evaluate student performance throughout the semester. This research option should be considered by the mentor as equivalent to an independent study.

Name and Project	Semester
Elise Wagener "Investigate the effects of visual spatial attention on sound source localization."	Spring 2018 Fall 2017 Summer 2017
Colton Clayton "Investigate the effects of binaural cue coherence on stereo perception." *The research results led to two conference abstracts [CA 26, 27]; manuscripts are in preparation.*	Spring 2018 Fall 2017
Emily Venskytis "Investigate the effects of unilateral hearing loss on cross-modal sensory integration." *The research results led to a peer-reviewed publication [JPR 11].*	Fall 2015 Spring 2015 Fall 2014
Alexander Smith "The unexpected benefit of hearing loss for speech intelligibility in noise."	Summer 2014

SHS Teaching Elective (2 registered credits) – SHS 590 (Topic: Mentored Teaching Elective)

Students in good standing in the AuD program may fulfill the required elective credits by engaging in a comprehensive mentored teaching experience in their third year.

Mentor Responsibilities: 1) make available the necessary resources for a meaningful teaching experience; 2) expose the student to sound teaching practices; 3) involve the student in all aspects of the course; 4) meet with the student regularly at a mutually agreed time.

Name	Semester
Alina Roanne Lasrado	Spring 2019
Madeline Dickson	Spring 2019
Chelsea Freeman	Spring 2017

Undergraduate Research Project (2 registered credits)

SOLUR – The School of Life Sciences Undergraduate Research (BIO495)
The SOLUR program promotes opportunities for undergraduates in the School of Life Sciences to participate in exciting biological research. Working side-by-side with faculty and other mentors, students have opportunities to learn about scientific investigation through hands-on experiences, contributions to current research projects, and research experience, preparing them for a career in life sciences.

ARES – The Advanced Research Experience Seminar (SHS 498)
Students with strong academic performance can apply for this advanced research seminar. Students enrolled in the seminar have the opportunity to conduct research in one of our SHS

faculty research labs. The students work with faculty and/or PhD students and gain hands-on experience with the research process by completing an independent research project.

Name	Course	Semester
Anh Tran (Honors College, Biological Science) "Marmoset Vocalization Behavior"	BIO495/492 (SOLUR)	Fall 2020 Fall 2019 Spring 2019
Jessmin Fernandez (Honors College, Biological Sciences) "Marmoset Behavior Training For Audio-Visual Tasks."	BIO495 (SOLUR)	Spring 2017 Fall 2016
Leslie Balderas (Honors College, SHS) "Auditory Localization: Interaction Between Cue Ambiguity and Cross-Modal Bias."	SHS 498 (ARES)	Spring 2016 Fall 2015
Kyle Labban (Honors College, Biomedical Engineering) "Marmoset Behavior Training For Audio-Visual Tasks."	BME 394 (Honors Research)	Summer 2014
Nancy Flores (Honors College, SHS) "How spatial contingency between consonant and vowel impacts the manner in which the word is perceived in background noise."	SHS 498 (ARES)	Spring 2015, Fall 2014

Undergraduate Research Projects (credits unregistered)

- Eryk Mejia (Biological Science) 2020 – present
- Marina Barto (Biological Science) 2019 – present
- Kazi Syed (Biological Science) 2019
- Muneeb Mohiuddin (Biological Science) 2015 – 2019
- Kelvin Tran (Health Science, CHS) 2015 – 2020
- Hannah Horeczko (Biomedical Engineering) 2014 – 2017
- Emma Goddery (Honors College, Biomedical Engineering) 2014 –2016
- Tristan Stoutenburg (Honors College, Chemical Engineering) Summer 2014

PROFESSIONAL SERVICE

College and Department Level

2021 – present CHS Lab and Clinical Safety Committee

2021 – present CHS Research Council (CHS)

2021 AuD Clinical Faculty Search Committee (CHS)

2020 – 2021 Oversight Committee for SHS Strategic Planning (SHS)

2020 Personnel Committee (ad hoc Annual Review Tenured/TT faculty)

2018 – 2020 CHS Curriculum Committee (CHS)

2017 – present AuD Admissions and Program Committee (SHS)

2014 – present PhD Admissions and Program Committee (SHS)

2016 – present AuD Assessment and Training Committee (SHS), Chair

2017 – 2018 ad hoc MS Auditory & Language Neuroscience (SHS)

2017 – 2019 ad hoc PHD Auditory & Language Neuroscience (SHS)

2017 Committee of the Committees (CHS)

2014 – 2016 Undergrad Program & Post-Bac Committee (SHS)

2013 Faculty Search Committee (SHS)

University Level

2021 – present Animal Users Advisory Committee (ASU)

2021 Committee for Graduate College's Outstanding Faculty Mentor Awards (ASU)

2021 Committee for Graduate College's Completion Fellowship (ASU)

2013 – 2017 Executive Committee Member, Program in Neuroscience (ASU)

Professional Organization Level

2020 – present Organizer, Neural Recording Technology in Marmosets Working Group

2021 Feb Session Chair, the 44th Midwinter meeting, ARO, Virtual.

2019 – 2021 Diversity and Minority Committee Member for Student, Postdoc and Medical Residents in the Association for Research in Otolaryngology.

2015 Organizer, Young Investigator Symposium, the 38th Midwinter meeting, ARO, Baltimore, MD.

2015 Session Chair, Multisensory Factors Underlying Sensory and Motor Functions. 5th ASU-BNI Neuroscience Symposium, Tempe, AZ.

2008 – 2010 Diversity and Minority Committee Member for Student, Postdoc and Medical Resident in the Association for Research in Otolaryngology.

Reviewer for professional journals

- Journal of the Acoustical Society of America.
- Journal of the Association for Research in Otolaryngology
- Experimental Brain Research
- Frontiers in Neuroscience
- Journal of Neuroscience
- Journal of Neurophysiology

- Scientific Report
- Cell Report
- European Journal of Neuroscience

Panelist for Grant Review Committee
National Science Foundation March 2018, 2021, 2022

AWARDS and HONORS

2010 Travel Assistantship to Gordon Research Conference on Sensory Coding & the Natural Environment
2003 Travel Assistantship to Workshop in Mathematical Neuroscience, Mathematical Biosciences Institute, Ohio State University
2003 Marine Biological Laboratory Summer Course Scholarship
2002 Marine Biological Laboratory Summer Course Scholarship
1999 Dean's Fellowship, Boston University
1996 Excellent Graduate, Zhejiang University

MEMBERSHIPS

Society for Neuroscience
Association for Research in Otolaryngology
Acoustical Society of America