

— Curriculum Vitae —

**1. Name:**

Susan E. Voss (née Susan E. Lawser)

**2. Office Address:**

Picker Engineering Program  
 Ford Hall  
 Smith College  
 Northampton, MA 01063  
 413-585-7008 FAX: 413-585-7001

**Home Address:**

89 Ridgewood Terrace  
 Northampton, MA 01060  
 413-584-1184

**3. Education:**

Ph.D. 1998 Harvard-MIT Division of Health Sciences and Technology (HST)  
 Massachusetts Institute of Technology  
 Thesis: Effects of tympanic-membrane perforations on middle-ear sound transmission: measurements, mechanisms, and models.  
 Thesis supervisors: John J. Rosowski and William T. Peake

M.S. 1995 Electrical Engineering and Computer Science  
 Massachusetts Institute of Technology

B.S. 1991 Engineering, *magna cum laude*  
 Brown University

**4. Awards and Honors:**

2002 Frontiers in Education New Faculty Fellow

1995 Morris Joseph Levin Award for Best Masterworks Oral Thesis Presentation

1992-1998 AT&T Graduate Research Program for Women grant

1991 Tau Beta Pi National Laureate Award

1991 Sigma Xi Society

1990 Tau Beta Pi Society

1990 U.S. Olympic Committee Tuition Assistance Grant

**5. Employment and Appointment History:**

2017-present	Achilles Professor of Engineering	Smith College
2012-2017	Professor of Engineering	Smith College
2013-2016	Director of Engineering	Smith College
2007-2012	Associate Professor of Engineering	Smith College
2006-2012	Scientist, Neurology Service	Massachusetts General Hospital
2001-2007	Assistant Professor of Engineering	Smith College
2001-2015	Lecturer, Otology and Laryngology	Harvard Medical School
2000	Instructor, Otology and Laryngology	Harvard Medical School

2000	Research Scientist Research Laboratory of Electronics	Massachusetts Institute of Technology
1999-2015	Research Associate, Otolaryngology	Massachusetts Eye and Ear Infirmary
1998–2000	Postdoctoral Associate. Research Laboratory of Electronics	Massachusetts Institute of Technology
1998	Recitation and Laboratory Instructor Electrical Engineering & Computer Science	Massachusetts Institute of Technology
1992 (summer)	Senior Technical Associate Acoustics Research Group	AT&T Bell Laboratories

## 6. Grants Received and Consulting Work:

### Grants

2014-2018	PI NIH 1 R15DC014129-01 (\$334,817 ) “Development of a normative database for wide-band acoustic immittance measures”
2012-2015	National Space Biomedical Research Institute (\$35,582) Co-PI “Comparison of Continuous Non-Invasive Intracranial Pressure Measurement”
2007-2013	National Science Foundation CAREER Award (\$400,000) PI “CAREER: Acoustic energy flow through normal and abnormal middle ears”
2007	Subcontract from Mimosa Acoustics, NIH SBIR (\$36,617) “Non-invasive instrument for monitoring changes in intracranial pressure”
2005-2009	PI NIH 1 R15 DC007615-01 (\$191,157) “Middle-ear assessment via reflectance measurements”
2001	InterMath MiniGrant (NSF DUE-9555414) through the Consortium for Mathematics and Its Applications (\$3000).
1999	Harvard Medical School 50th Anniversary Scholars in Medicine Fellowships (\$25,000)

### Consulting

2010	Consultant to Hearium Labs
2004-2005	Consultant to Natus Medical, Inc., San Carlos, CA.
2004	Consultant to SonaMed Corp., Waltham, MA.
2001-2005	Consultant on NIH R01 Grant Understanding Otoacoustic Emissions, PI Christopher Shera

## 7. Publications:

\*\* Denotes undergraduate author

### Refereed Publications

1. **Voss SE**, Herrmann, B. S., Horton, N. J., Amadei, E. A.\*\* , Kujawa, S. G. “Reflectance Measurements on Normal and Fluid-Filled Newborn Ears” *Ear and Hearing*. 2016; 37(5):560-71.
2. Williams MA, Malm J, Eklund A, Horton NJ and **Voss SE**. “Distortion product otoacoustic emissions and intracranial pressure during CSF infusion testing” *Aerospace Medicine and Human Performance*. 2016; 87(10):844-851.
3. Bershad EM, Urfy MZ, Pechacek\*\* A, McGrath\*\* M, Calvillo E, Horton NJ and **Voss SE**. “Intracranial pressure modulates distortion product otoacoustic emissions: A proof of principle study” *Neurosurgery*. 2014; 75:445-455.
4. Abur D.\*\* , Horton NJ, **Voss SE**. “Intra-subject variability in power reflectance” *Journal of the American Academy of Audiology*. 2014; 25:441-448.
5. **Voss SE**, Stenfelt S, Neely, ST, Rosowski, JJ. “Factors That Introduce Intrasubject Variability Into Ear-Canal Absorbance Measurements.” *Ear and Hearing*. 2013; 34:60s-64s.
6. Nakajima HH, Rosowski, JJ, Shahnaz, N, **Voss SE**. “Assessment of Ear Disorders Using Power Reflectance .” *Ear and Hearing*. 2013; 34:48s-53s.
7. **Voss SE**, Merchant\*\* GR, Horton, NJ . “Effects of middle-ear disorders on power reflectance measured in cadaveric ear canals”. *Ear and Hearing*. 2012; 33:195-208.
8. Merchant\*\* GR, Horton, NJ, **Voss SE**. “Normative reflectance and transmittance measurements on healthy newborn and one-month old infants”. *Ear and Hearing*. 2010; 31:746-754.
9. **Voss SE**, Adegoke\*\* MF, Horton, NJ, Sheth KN, Rosand J, Shera CA. “Posture systematically alters ear-canal reflectance and DPOAE properties.” *Hearing Research*. 2010; 263:43-51.
10. **Voss SE**, Horton NJ, Woodbury RR\*\* , Sheffield KN\*\* . “Sources of variability in reflectance measurements on normal cadaver ears.” *Ear and Hearing*. 2008; 29:651-665.
11. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. “Non-ossicular signal transmission in human middle ears: Experimental assessment of the acoustic route with perforated tympanic membranes” *J. Acoust. Soc. Am*. 2007; 122:2135-2153.
12. **Voss SE**, Horton NJ, Woodbury RR\*\* , Shea CA\*\* , Smith AH\*\* . “Sources of variability in reflectance measurements on normal human ears.” In: Huber A. and Eiber A., editor. *Proceedings of the 4<sup>TH</sup> International Symposium on Middle Ear Mechanics in Research and Otolary*; 2006 July 27-30, Zurich, Switzerland. World Scientific; 2007. p. 78-86.
13. **Voss SE**, Horton NJ, Tabucchi\*\* THP, Folowosele\*\* F, Shera CA. “Posture-induced changes in distortion-product otoacoustic emissions and the potential for noninvasive monitoring of changes in intracranial pressure” *Neurocritical Care* 2006; 04:251-257.

14. Mehta RP, Rosowski JJ, **Voss SE**, O'Neil E, Merchant SN. "Determinants of hearing loss in perforations of the tympanic membrane" *Otology and Neurotology* 2006; 27:136-143.
15. **Voss SE**, Herrmann, BS. "How does the sound pressure generated by circumaural, supraaural, and insert earphones differ for adult and infant ears?" *Ear and Hearing* 2005; 26:636-650.
16. Stepp\*\* CE, **Voss SE**. "Acoustics of the human middle-ear air space" *J. Acoust. Soc. Am.* 2005; 118: 861-871.
17. **Voss SE**, Shera CA. "Simultaneous measurement of middle-ear input impedance and forward/reverse transmission in cat" *J. Acoust. Soc. Am.* 2004; 116:2187-2198.
18. **Voss SE**, Ellis, GW. "Applying learner-centered pedagogy to an engineering circuit-theory class at Smith College", *Proceedings of Frontiers in Education (FIE)* 2002.
19. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. "Middle-ear function with tympanic-membrane perforations. I. Measurements and mechanisms." *J. Acoust. Soc. Am.* 2001; 110:1432-1444.
20. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. "Middle-ear function with tympanic-membrane perforations. II. A simple model." *J. Acoust. Soc. Am.* 2001; 110:1445-1452.
21. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. "How do tympanic-membrane perforations affect human middle-ear sound transmission?" *Acta Otolaryngol.* 2001; 121:169-173.
22. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. "Acoustic responses of the human middle ear." *Hearing Research.* 2000; 150:43-69.
23. **Voss SE**, Rosowski JJ, Merchant, S.N., Thronton, A.R., Shera CA, Peake WT. "Middle-ear pathology can affect the ear-canal sound pressure generated by audiologic earphones." *Ear and Hearing.* 2000; 21:265-274.
24. **Voss SE**, Rosowski JJ, Shera CA, Peake WT. "Acoustic mechanisms that determine the ear-canal sound pressures generated by earphones." *J. Acoust. Soc. Am.* 2000; 107:1548-1565.
25. Merchant SN, Ravicz ME, **Voss SE**, Peake WT, Rosowski JJ. "Middle ear mechanics in normal, diseased and reconstructed ears." *Journal of Laryngology and Otology.* 1998; 112:715-731.
26. Merchant SN, Ravicz ME, Puria S, **Voss SE**, Whittemore KR, Peake WT, Rosowski JJ. "Analysis of middle-ear mechanics and application to diseased and reconstructed ears." *Am. J. Otol.* 1997; 18:139-154.
27. **Voss SE**, Rosowski JJ, Peake WT. "Is the pressure difference between the oval and round windows the effective acoustic stimulus for the cochlea?" *J. Acoust. Soc. Am.* 1996; 100:1602-1616.
28. **Voss SE**, Allen J. "Measurement of acoustic impedance and reflectance in the human ear canal." *J. Acoust. Soc. Am.* 1994; 95:372-384.

## Invited Publications

1. **Voss SE**, Nakajima, HH, Huber, AM, Shera, CA. “Function and acoustics of the normal and diseased middle ear”. In: Puria, S., Fay, R.R., Popper, A.N., editors. Springer Handbook of Auditory Research, The Middle Ear Science, Otosurgery, and Technology; 2013.

## Other Publications

1. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. “Correlation of impedance at the TM with stapes velocity? Reply to the letter of D. H. Keefe.” Letter to the Editor, Hearing Research. 2001; 159:153-154.
2. Merchant SN, Ravicz ME, **Voss SE**, Puria S, Peake WT, Rosowski JJ. “Middle ear mechanics in normal, diseased and reconstructed ears.” In: Huttenbrink KB, editor. Proceedings of the International Workshop on Middle Ear Mechanics in Research and Otosurgery; 1996 Sept 19-22; Dresden, Germany. Dresden University of Technology; 1997. p. 175-182.
3. Rosowski JJ, Merchant SN, Ravicz ME, **Voss SE**, Caradonna D, Cunningham MJ, Peake WT. “Analysis of Acoustic Mechanisms in Middle-Ear Pathology and Reconstruction.” In: Huttenbrink KB, editor. Proceedings of the International Workshop on Middle Ear Mechanics in Research and Otosurgery; 1996 Sept 19-22; Dresden, Germany. Dresden University of Technology; 1997. p. 183-190.

## Conference Abstracts

1. **Voss SE**, Girardin K, Zhang, Y\*\*, Xia L\*\*, Nei. J\*\*, Horton NJ. “Wideband Acoustic Immittance: Effects of Measurement Equipment, Age, Gender, and Ear-Canal Area ”, American Auditory Society Abs. 2017.
2. Yarrington T\*\*, Horton NJ, **Voss SE**. “Publicly Accessible Database for Wideband Acoustic Immittance Measures”, American Auditory Society Abs. 2017.
3. Williams MA, **Voss SE**, Horton NJ, Malm, J, Eklund, A. “Comparison of Invasive ICP Measurements to Distortion Product Otoacoustic Emissions (DPOAE) in Adults During Infusion Testing for INPH”, International Society for Hydrocephalus and CSF Disorders. Banff. September 2015.
4. Pontes MAB\*\*, Horton NJ, **Voss SE**. “Development of a database for wideband acoustic immittance (WAI) measures”, American Auditory Society Abs. 2015.
5. **Voss SE**, Abur D\*\*, Kassaye H\*\*, Horton NJ. “Comparisons of reflectance measurements across measurements sessions, instruments and ages”, Spring meeting of the Acoustical Society of America, 2014.
6. Williams MA, Malm J, Eklund A, **Voss SE**, Hamilton DR, Ebert D, Levine BD, “Comparison of Continuous Non-Invasive and Invasive Intracranial Pressure Measurements”, NASA Human Research Program Investigators’ Workshop, Galveston, TX. 2014.
7. Heidary G, Hollander JN, Milliren CE, Zhou GW, Fayad M, Voss SE. “Non-invasive Assessment of Intracranial Pressure Using Otoacoustic Emissions in Pediatric Patients with Idiopathic Intracranial Hypertension”, American Association for Pediatric Ophthalmology and Strabismus Meeting, Palm Springs, CA. 2014.

8. Urfy MZ, **Voss SE**, Rao CPV, Suarez JI, Calvillo E, Pechacek A.\*\*\*, McGrath M\*\*, Fong A, Georgiadis AL, Bershada, EM. “Distortion Product Otoacoustic Emissions for Non-Invasive Intracranial Pressure Assessment”, Neurocritical Care Society Meeting, Philadelphia, PA, 2013.
9. **Voss SE**, Abur D.\*\*\*, Horton, N. “Intra-subject Variability in Power Reflectance”, Eastern Auditory Retreat, Massachusetts Eye and Ear Infirmary, 2013.
10. Abur D.\*\*\*, Horton NJ, **Voss SE**. “Exploring intersubject and intrasubject variability in absorbance”, American Auditory Society Abs. 2013.
11. **Voss SE**, Herrmann, B.S., Horton, NJ, Amadei, EA\*\*, Parson, J\*\*, Kujawa SG. “Reflectance measurements on normal and fluid-filled newborn ears”, American Auditory Society Abs. 2012.
12. Parson J\*\*, Herrmann, BS, Horton NJ, Kujawa SG, **Voss SE**. “Update on reflectance measurements on normal and fluid-filled newborn ears”, Eastern Auditory Retreat, Yale University, 2011.
13. **Voss SE**, Merchant GR\*\*, Horton NJ. “Effects of middle-ear disorders on ear-canal reflectance measures in human cadaver ears”, Spring meeting of the Acoustical Society of America, 2010
14. Amadei EA\*\*, Herrmann, BS, Horton NJ, Gibbons S, Theisen M, Vidal C, Kujawa SG, **Voss SE**. “Reflectance Measurements on Newborn Ears with Fluid”, American Auditory Society Abs. 2010.
15. **Voss SE**, Adegoke\*\* MF, Sheth KN, Horton, NJ, Rosand J, Shera CA. “Detecting changes in intracranial pressure using reflectance and otoacoustic emissions” Middle-Ear Mechanics in Research and Otology, Fifth International Symposium, Stanford University, June 2009.
16. Merchant GR\*\*, **Voss SE**, Horton NJ. “Normative reflectance measurements on healthy newborn and one-month old infants”, American Auditory Society Abs. 2009.
17. **Voss SE**, Moonshiram D\*\*, Horton NJ. “Effects of middle-ear pathologies on energy reflectance measurements”, American Auditory Society Abs. 2008.
18. Adegoke MF\*\*, **Voss SE**, Horton NJ, Raza Y\*\*, Shera CA. “DPOAE measurement analysis in the complex plane”, American Auditory Society Abs. 2008.
19. Sheth KN, Horton N, Shera C, Rosand J, **Voss SE** “Detecting changes in intracranial pressure non-invasively using oto-acoustic emissions”. Intracranial Pressure Conference. July 2007.
20. **Voss SE**, Horton NJ, Woodbury RR\*\*, Sheffield, KN\*\*. “Sources of variability in reflectance measurements on normal cadaver ears”, American Auditory Society Abs. 2007.
21. Lim CM\*\*, Bauer JT\*\*, Horton NJ, **Voss SE**. “Investigation of parameters that maximize low-frequency DPOAEs”, American Auditory Society Abs. 2007.
22. **Voss SE**, Horton NJ, Woodbury RR\*\*, Shea CA\*\*, “Sources of variability in reflectance measurements on normal human ears”, Middle-Ear Mechanics in Research and Otology, Fourth International Symposium, University Hospital Zurich, July 2006.

23. Woodbury\*\* RR, Horton NJ, **Voss SE**. “Effect of measurement location on reflectance measurements in human cadaver ears”, American Auditory Society Abs. 2006.
24. **Voss SE**, Horton NJ, Tabucchi THP\*\*, Folowosele F\*\*, Shera CA. “Noninvasive Detection of Changes in Intra-Cranial Pressure Using Distortion-Product Otoacoustic Emissions”, Assoc. Res. Otolaryngol. Abs. 2006.
25. Miller A, Shera CA, **Voss SE**, “Analysis of a Technique for Measuring the Transmission Matrix of the Middle Ear”, Assoc. Res. Otolaryngol. Abs. 2006.
26. **Voss SE**, Herrmann BS. “Sound pressures generated by earphones: Adult versus infant ears”, American Auditory Society Abs. 2005.
27. Stepp\*\* CE, **Voss SE**. “Acoustics of the middle-ear air space in human ears”, American Auditory Society Abs. 2004.
28. **Voss SE**, Shera CA. “Simultaneous measurement of DPOAEs, middle-ear input impedance, and forward/reverse middle-ear transmission in cat”, Assoc. Res. Otolaryngol. Abs. 2002; 585:153.
29. Shea\*\* CA, **Voss SE**. “Inter-subject vs. intra-subject variability in ear-canal impedance and reflectance of living human ears.”, Assoc. Res. Otolaryngol. Abs. 2002; 589:154.
30. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. “How do tympanic-membrane perforations affect human middle-ear sound transmission?” Collegium Otorhinolaryngologicum Amicitiae Sacrum Abstracts 2000; 7:55.
31. **Voss SE**, Rosowski JJ, Merchant SN, Thornton AR, Peake WT. “How do middle-ear pathologies affect sound pressures generated by earphones?” Assoc. Res. Otolaryngol. Abs. 1999; 802:202.
32. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. “How do tympanic membrane perforations cause conductive hearing loss?” Assoc. Res. Otolaryngol. Abs. 1998; 263:66.
33. **Voss SE**, Rosowski JJ, Merchant SN, Peake WT. “How do tympanic membrane perforations affect human middle-ear sound transmission?” Assoc. Res. Otolaryngol. Abs. 1997; 194:49.
34. Ravicz ME, **Voss SE**, Merchant SN, Rosowski JJ. “An upper bound on human-cochlea compressibility.” Assoc. Res. Otolaryngol. Abs. 1996; 227:57.
35. **Voss SE**, Rosowski JJ, and Peake WT. “Is the pressure difference between the oval and round windows the stimulus for cochlear responses?” Assoc. Res. Otolaryngol. Abs. 1994; 347:87.

## 8. Concerts, Performances, and Exhibitions:

None

## 9. Scholarly Lectures and Other Professional Presentations:

### Invited Major Presentations

1. 2016 Keynote Speaker at the AALAC Workshop on Engineering Connections in the Liberal Arts College Environment, “Bridging the humanities & sciences: The story of engineering at Smith College”. May 2016. Macalester College.
2. 2015 Presenter for CEU seminar “Wide Band Reflectance: Technical Aspects and Clinical Applications”. June 1, 2015. Syracuse University, Syracuse, NY.
3. 2013 Invited Young Investigator Talk at the American Auditory Society Meeting: “Translational Research: Engineering, clinical relevance, and the liberal arts.” Scottsdale, Az.
4. 2010 Massachusetts Eye and Ear Infirmary Audiology Department Continuing Education Unit: “Ear-canal based energy reflectance: The detection of fluid in newborn ears.” Boston, Ma.
5. 2008 Massachusetts Eye and Ear Infirmary Audiology Department Continuing Education Unit: “Ear-canal based energy reflectance: Can we detect fluid in newborn ears?” Boston, Ma.
6. 2007 CIMIT Forum (Center for Integration of Medicine & Innovative Technology) “Detecting Changes in Intracranial Pressure Using Emissions from the Inner Ear”. Massachusetts General Hospital, Boston, MA
7. 2005 HST (r)evolution: Celebrating 35 years of bench to bedside: HST Impact – Translational Education: From Boston to Beyond. Harvard Medical School, Boston, Ma.
8. 2001 American Speech-Language-Hearing Association “Earphone calibration: A problem in the assessment of hearing in pathological ears”. Presented by Dr. John J. Rosowski
9. 2000 Collegium Oto-rhino-laryngologicum Amicitiae Sacrum Meeting “How do tympanic-membrane perforations affect human middle-ear sound transmission?” Washington D.C.
10. 1999 The Second International Symposium on Middle-ear Mechanics in Research and Otorrhinology: “Mechanisms of hearing loss in tympanic membrane perforations” Sponsored by the Harvard Medical School Department of Continuing Education and the Massachusetts Eye and Ear Infirmary Department of Otolaryngology.
11. 1999 The Second International Symposium on Middle-ear Mechanics in Research and Otorrhinology: “Earphone calibration: a potential problem in the assessment of hearing in post-surgical ears” Sponsored by the Harvard Medical School Department of Continuing Education and the Massachusetts Eye and Ear Infirmary Department of Otolaryngology.
12. 1997 The International Otopathology Society, Boston, Massachusetts “How do tympanic-membrane perforations cause conductive hearing loss?”



## Seminars and Colloquia

- 2013 Invited Seminar on Auditory Physiology at the Eaton Peabody Lab of the Massachusetts Eye and Ear Infirmary:  
“Detection of changes in intracranial pressure using DPOAEs”
- 2013 Liberal Arts Luncheon Talk at Smith College:  
“Newborn Hearing Screening: Why are there so many false positives?”
- 2012 Invited talk at the 2012 Eriksholm Workshop on Wideband Absorbance Measures of the Middle Ear (Portland, OR):  
“Factors that introduce intrasubject variability into ear-canal reflectance measurements”
- 2011 Invited Hearing Research Seminar at Boston University:  
“Update on reflectance measurements on normal and fluid-filled newborn ears”
- 2010 City University of New York Hearing Science Laboratory  
“Reflectance measures on human cadaver ears: Sources of variability and effects of middle-ear disorders”
- 2008 Johns Hopkins University Center for Hearing and Balance Seminar:  
“Using otoacoustic emissions to monitor changes in intracranial pressure”
- 2007 MIT Speech Communication Group Seminar:  
“Detecting changes in intra-cranial pressure using otoacoustic emissions from the ear”
- 2007 Liberal Arts Luncheon Talk at Smith College:  
“It’s not exactly brain surgery: Monitoring intracranial pressure through the ear”
- 2005 Grand Rounds Talk at Children’s Hospital, Boston, Ma  
“Detecting changes in intra-cranial pressure using emissions from the inner ear”
- 2005 Sigma Xi Talk at Smith College:  
“Detecting changes in intra-cranial pressure using emissions from the inner ear”
- 2005 Massachusetts Eye and Ear Infirmary Eaton Peabody Laboratory  
Work in Progress Seminar:  
“Auditory-Based Detection of Changes in Intra-cranial Pressure with DPOAEs”
- 2004 Massachusetts Eye and Ear Infirmary Audiology Department Seminar:  
“Earphone calibration: A problem in the assessment of hearing in pathological ears”
- 2004 New Haven Smith College Alumnae Club:  
“Engineering and the Liberal Arts at Smith College”
- 2001 Physics Colloquium at Mount Holyoke College:  
“Did Horton Hear the Who?”
- 2001 Sigma Xi Talk at Smith College:  
“How Horton Heard the Who”
- 2000 Invited Talk at Smith College:  
“Anchoring Engineering Science at Smith College”
- 2000 Invited Talk at Smith College:  
“Better Hearing through Engineering”

- 2000 Invited Hearing Research Seminar at Boston University:  
“Effects of tympanic-membrane perforations on middle-ear sound transmission: Measurements, mechanisms, and models”
- 1998 HST Biomedical engineering seminar (HST 590):  
“Effects of tympanic-membrane perforations on middle-ear sound transmission”
- 1996 Invited Lecture at MIT’s Electrical Engineering and Computer Science program:  
“How to Write Your Master’s Thesis”
- 1994 HST Biomedical engineering seminar (HST 590):  
“Is the pressure difference between the oval and round windows of the cat cochlea the stimulus for cochlear response?”

## 10. Other Professional Activities:

- 2017 Completed Emerge Massachusetts Candidate Training Program
- 2013-16 Smith College Picker Engineering Program  
Oversaw ABET responsibilities, including successful re-accreditation visit
- 2001-2013 Editor-at-large for *Ear and Hearing*
- 2010, 2011 Smith College Summer Science and Engineering Program (SSEP)  
Developed and taught summer course for high school girls titled  
“Biomedical Engineering: Measuring how your body works”
- 2010 Special Session Co-Organizer for the Joint Meeting 159th Meeting of the  
Acoustical Society of America and NOISE-CON 2010.  
Session title: “Engineering Acoustics and Psychological and Physiological Acoustics:  
Acoustic Impedance of the Ear”
- 2009 Scientific Committee Member for the 5th International  
Middle Ear Mechanics in Research and Otology meeting (Stanford University)
- 2008 Brown University Computer Engineering Advisory Board Member
- 2014, 2007, 2002 AUD Study Section Ad-hoc Member NIDCD/NIH
- 2005 The Institute of Electrical and Electronics Engineers  
Engineering in Medicine and Biology Society Education Committee
- Regular Reviewer: *Journal of the Acoustical Society of America*  
*Ear and Hearing*
- Occasional Reviewer: *Journal of Speech, Language and Hearing Research*,  
*Hearing Research*,  
*Journal of Engineering Education*,  
*BioMed Central Ear, Nose, and Throat Disorders*  
*Medical Engineering & Physics*  
*Journal of Rehabilitation Research and Development*  
*Journal of Applied Physiology*  
*Computer Medical Imaging and Graphics*  
*Journal of the Association for Research in Otolaryngology*  
*Clinical Otolaryngology*  
*International Journal of Audiology*  
*Journal of Biomechanics*

**11. Professional Memberships:**

2002-present	American Auditory Society	Member
2007-present	The Institute of Electrical and Electronics Engineers	Senior Member
2001-2007	The Institute of Electrical and Electronics Engineers	Member
2001-present	American Society for Engineering Education	Member
1999-present	Acoustical Society of America	Member
1999-present	Association for Research in Otolaryngology	Member

**12. Committee Memberships and other College Service:****Smith College**

Search committee member for Senior Class Dean & Associate Dean of the College	2016
Smith College Director of the Picker Engineering Program	2013-2016
Smith College Committee on Academic Priorities (elected)	2011-2014
Smith College Committee on Faculty Compensation and Development (elected)	2007-2010
Smith College Transportation Committee (appointed)	2007-2010
Smith College Grievance Committee (elected)	2006
Quantitative Skills Committee (appointed): Member	2005-2009
Quantitative Skills Committee (appointed): Chair	2008-2009
Molecular Sciences & Engineering Building User's Group Committee (appointed)	2004-2007
Quantitative Skills Committee (appointed)	2001-2002
Science Planning Committee (appointed)	2001-2002

**Picker Engineering Program**

Faculty advisor to National Society of Black Engineers (NSBE)	2013-present
Design Clinic adjunct faculty search committee member	2012-13
Chair: assistant professor search committee	2011-2012
Creator and faculty advisor of Engineering Honor Society Tau Beta Kappa	2003-2010
Chair: Curriculum Operations Committee	2006-2009
Assistant professor search committee member	2007-08
Assistant professor search committee member	2006-07
Laboratory instructor search committee member	2006
Director Search Committee	2004-2005
Clare Boothe Luce Assistant Professor Search Committee	2001-2002

Student Advising	Number Advisees	Pre-major	Major	
Smith College	14	0	18	2016-2017
	18	1	17	2015-2016
	16	2	14	2014-2015
	21	11	10	2013-2014
	15	11	4	2012-2013
	19	12	7	2011-2012

5*(sabbatical)	5	0	2010-2011
4*(sabbatical)	0	4	2009-2010
9	2	7	2008-2009
12	8	4	2007-2008
9	6	3	2006-2007
13	6	7	2005-2006
14	0	14	2004-2005
11	0	11	2003-2004
16	10	6	2002-2003
15	11	4	2001-2002

### Five-College Community

Search committee member, Gupta Chaired Professorship 2006-2007  
University of Massachusetts Electrical and Computer Engineering Department

### Harvard-MIT Division of Health Sciences and Technology (HST)

HST Admissions Committee	2000	Member
HST Admissions Committee	1995	Student Member
Curriculum Committee	1993-1995	Student Member
HST's Speech and Hearing Sciences Program		
Biomedical Engineering and Physical Sciences Committee	1992-1993	Student Member

## 13. Teaching Record:

### Course Teaching, Smith College

2016-17	EGR 220: Circuit Theory and Circuit Theory Laboratory (2 sections)
2015-16	EGR 322: Acoustics
2015-16	EGR 320: Signals and Systems
2014-15	EGR 322: Acoustics
2014-15	EGR 100: Engineering for Everyone (Energy and the Environment)
2014-15	EGR 320: Signals and Systems
2013-14	EGR 320: Signals and Systems
2013-14	Engineering 100: Engineering for Everyone (Energy and the Environment)
2012-13	EGR 220: Circuit Theory and Circuit Theory Laboratory (2 sections)
2012-13	EGR 320: Signals and Systems and Signals and Systems Laboratory (2 sections)
2011-12	EGR 322: Acoustics
2011-12	EGR 220: Circuit Theory and Circuit Theory Laboratory (3 sections)
2010-11	EGR 320: Signals and Systems and Signals and Systems Laboratory (2 sections)
2009-10	Engineering 100: Engineering for Everyone (Introduction to Engineering, 2 sections)
2008-09	EGR 320: Signals and Systems and Signals and Systems Laboratory
2008-09	Engineering 100: Engineering for Everyone (Introduction to Engineering)
2008-09	Engineering 191: Engineering Forum

2007-08	EGR 320: Signals and Systems and Signals and Systems Laboratory
2007-08	Engineering 220: Circuit Theory and Circuit Theory Laboratory
2007-08	Engineering 191: Engineering Forum
2006-07	Engineering 390: Acoustics
2006-07	Engineering 220: Circuit Theory and Circuit Theory Laboratory
2005-06	Engineering 100: Engineering for Everyone
2005-06	Engineering 380: Neuroengineering
2005-06	Engineering 320: Signals and Systems
2005-06	Engineering 321: Digital Signal Processing
2004-05	Engineering 320: Signals and Systems
2003-04	Engineering 220: Circuit Theory
2003-04	Engineering 380: Neuroengineering
2003-04	Engineering 320: Signals and Systems
2003-04	Engineering 400: Digital Signal Processing
2002-03	Engineering 100: Introduction to Engineering
2002-03	Engineering 220: Circuit Theory and Circuit Theory Laboratory
2001-02	Engineering 100: Introduction to Engineering
2001-02	Engineering 320: Signals and Systems
2001	Engineering 220: Circuit Theory and Circuit Theory Laboratory

### Honors Theses Supervised, Smith College

2016-17	Jingping Nie: Wideband Acoustic Immittance Measurements and Time Domain Reflectance
2016-17	Lu Xia: The Effects of Age, Gender, Race and Ear Canal Area on Normative Adult Wideband Acoustic Immittance (WAI) Measures
2015-16	Yezhezi (Michelle) Zhang: Wideband Acoustic Immittance Measurements: Effects of Age, Gender, Race, and Equipment
2015-16	Wendy Jiang: Measurement of the Maximum Sound Pressure Level Generated by the iPhone 6s
2012-13	Mary McGrath: A network model for auditory changes to intracranial pressure
2012-13	Huimin Ji: Design of a portable data acquisition system to measure sound exposure from MP3 headphones
2011-12	Adina-Elena Draghici: Design of a portable system to measure MP3 player sound pressure levels
2009-10	Modupe Adegoke: Novel method of analysis for DPOAE magnitude and phase
2009-10	Elizabeth Amadei: Reflectance Measurements on Newborn Ears with Fluid
2008-09	Gabrielle Merchant: Normative reflectance measurements on healthy newborn babies
2005-06	Rebecca Woodbury: Effect of measurement location on reflectance measurements in human cadaver ears
2005-06	Yamama Raza: Auditory-based detection of changes in intracranial pressure: DPOAE, TEOAE, and impedance measurements
2004-05	Fope Folowosele: Auditory-based detection of changes in intracranial pressure: Control of middle-ear static pressure
2004-05	Taronne Tabucchi: Auditory-based detection of changes in intracranial pressure: Otoacoustic emissions measurements
2004-05	Jie Zheng: Development of a personalized equalizer for people with presbycusis
2003-04	Cara Stepp: The acoustics of the human middle-ear air space
2001-02	Rebecca Segal: Building a data acquisition system for research on the auditory system

### Special Studies and Summer (S) Student Projects Supervised, Smith College

- 2016-17 Tinli Yarrington '18 "Development of a database for WAI measurements"
- 2016 (S) Lu Xia '17 "Measurement of ear canal cross sectional area"
- 2016 (S) Jingping Nie '17 "Calculation of time domain reflectance in human ears"
- 2016 (S) Tinli Yarrington '18 "Development of a database for WAI measurements"
- 2016 (S) Melody Owen (Amherst College '17) "Statistical analysis examples from WAI database website"
- 2016 (S) Andrew Kim (Amherst College '18) "Development of Shiny App for WAI measurements website"
- 2015-16 Wendy Jiang '16 "Development of a database for WAI measurements"
- 2015-16 Annie Murillo '16 "Measurement of Ear-Canal reflectance"
- 2015-16 Lu Xia '17 "Measurement and Analysis of Ear-Canal reflectance"
- 2015 (S) Wendy Jiang '16 "Development and population of a database for wai measures"
- 2015 (S) Annie Murillo '16 "WAI measurements: preparing three methods for measurements on subjects"
- 2015 (S) Audrey Ong '16 "WAI measurements: preparing three methods for measurements on subjects"
- 2014-15 Lu Xia '17 "Measurements of wideband acoustic immittance with three methods"
- 2014-15 Yezhezi (Michelle) Zheng '16 "Measurements of wideband acoustic immittance with three methods"
- 2014-15 Melinda Pontes '15 "Development of a data base for wideband acoustic immittance measures"
- 2014 (S) Melinda Pontes '15 "Development of a data base for wideband acoustic immittance measures"
- 2013-14 Hiwot Kassaye '14 "Ear-canal reflectance measures: Effects of canal area"
- 2013-14 Defne Abur '14 '14 "Ear-canal reflectance measures: Effects of measurement instrument"
- 2013 (S) Hiwot Kassaye '14 "Ear-canal reflectance measures"
- 2013 (S) Defne Abur '14 '14 "Ear-canal reflectance measures"
- 2012-13 Defne Abur '14 "Reflectance variability on adult ears"
- 2011-12, (S) Mary McGrath '13 "Measurements of DPOAEs and TM displacement to monitor ICP"
- 2011-12, (S) Alina Pechacek '13 "Measurements of DPOAEs and TM displacement to monitor ICP"
- 2011-12 Defne Abur '14 "Measurements of reflectance to determine intrasubject variability"
- 2011-12 Erika Miquel '15: STRIDE Student: "Measurements of reflectance to determine intrasubject variability"
- 2011 (S) Mary McGrath '13 "Relationships between DPOAEs and ICP"
- 2011 Jenika Parson '13: AMES STUDENT: "Analysis of newborn energy reflectance measures"
- 2011 Defne Abur '14 "Analysis of newborn energy reflectance measures"
- 2011 Jayna Shea '12 "Development of a system to measure MP3-player sound exposure"
- 2011 Hiwot Kassaye '14 "Development of a system to measure MP3-player sound exposure"
- 2010 Sanita Dhaubanjari '13 "Design of a low-cost EKG instrument"
- 2010 Sanita Dhaubanjari '13 "Use of the Parallax Propeller microcontroller within a biomedical engineering course for high school students"
- 2009 Emma Dalton '10 "Independent study in Acoustics"
- 2008 Gabrielle Merchant '09 "Measurements of reflectance on human cadaver ears with middle-ear pathologies"
- 2007-08 Hannah Dym '11: STRIDE STUDENT: "Optimization of a probe for measurement of energy reflectance in newborn ears"
- 2007-08 Modupe Adegoke '10: "Optimization of parameters for low-frequency DPOAE measurements" and "Analysis of DPOAE phase angles related to detection of changes in ICP"
- 2006-2007 Jillian Bauer '09: "Optimization of parameters for low-frequency DPOAE measurements"
- 2007 Modupe Adegoke '10: Auditory-based detection of changes in intracranial pressure: Measurements on hospital ICU patients

- 2007 Jillian Bauer '09: Auditory-based detection of changes in intracranial pressure: Measurements on hospital ICU patients
- 2007 Dooshaye Moonshiram '08: Measurements of reflectance on human cadaver ears with middle-ear pathologies
- 2007 Dooshaye Moonshiram '08 Special Studies: Modeling the middle ear
- 2006 Dooshaye Moonshiram '08 Special Studies: Application of noise-cancellation technologies to ICU DPOAE measurements
- 2006 Ashley Smith '07: Statistical analysis of human auditory responses: Emissions, impedances, and reflectances
- 2006 Kathryn Sheffield '07: Measurements of reflectance on human cadaver ears with middle-ear pathologies
- 2006 Chan Monopisey Lim '08: Auditory-based detection of changes in intracranial pressure: Measurements on hospital ICU patients
- 2006 Diana Chiyangwa '08: Auditory-based detection of changes in intracranial pressure: Measurements on hospital ICU patients
- 2005 Eleanor Ory '06: Calculation of ear-canal area from impedance measurements
- 2005 Elyse Steiner '07: Development of a system to couple sound and static pressure to the ear canal
- 2004-05 Krystal Locke '05: Do air- and bone-conducted stimuli elicit the same cochlear response?
- 2003 Susan Strom '04: Set up of system to measure impedance/reflectance on human cadaver ears
- 2003 Meraia Racule '06: Recording of audiograms via traditional and novel equipment
- 2002 Fatima Toor '04: Development of a novel system to measure hearing thresholds
- 2001-02 Caitlyn Shea '04: Measurement and analysis of reflectance in living human ears
- 2001 Meghan Taugher '04: Measurement of reflectance in living human ears

#### **Course Teaching, MIT Department of Electrical Engineering and Computer Science**

- 1998 Recitation Instructor under Professor Dennis Freeman  
6.021J Quantitative Physiology: Cells and Tissues
- 1994 Teaching Assistant under Professor Jacob White  
6.003 Signals and Systems

#### **Course Teaching, Harvard-MIT Division of Health Sciences & Technology**

- 1999 Instructor with Dr. Christopher Shera  
HST-750 Modeling Issues in Speech and Hearing
- 1994 Teaching Assistant under Professor William Peake  
HST-714J Acoustics of Speech and Hearing