

LIN BIAN

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EDUCATION

- 1995 - 2000 Ph.D. in Audiology
University of Kansas, Lawrence, KS
Major: Audiology
- 1981 - 1987 M.D.
Beijing Medical University, Beijing, China
Major: Medicine

PROFESSIONAL EXPERIENCES

- 2005 - present Assistant Professor
Dept. of Speech & Hearing Science, College of Liberal Arts and Science
Arizona State University, Tempe, AZ
- 2003 - 2005 Research Assistant Professor
Dept. of Hearing & Speech, School of Allied Health
Univ. of Kansas Medical Center, Kansas City, KS
- 2000 - 2002 Research Associate
Dept. of Hearing & Speech, School of Allied Health
Univ. of Kansas Medical Center, Kansas City, KS
- 1997 - 1999 Research Assistant
Dept. of Hearing & Speech, School of Allied Health
Univ. of Kansas Medical Center, Kansas City, KS
- 1995 – 1997 Research Assistant
Dept. of Otolaryngology Head-Neck Surgery, School of Medicine
Univ. of Kansas Medical Center, Kansas City, KS
- 1988 - 1994 Resident and Lecturer, Otolaryngology
First Teaching Hospital of Lanzhou Medical College, Lanzhou, China
- 1987 - 1988 Intern, general medicine
People's Hospital of Beijing Medical University, Beijing, China

RESESRCH FUNDING

NIH/NIDCD
2003 – 2007

Principal investigator (PI): R03 DC 006165.
Total budget: \$222,000.
Topic: Clinical assessment of cochlear transducer function using distortion product otoacoustic emissions.

COURSES TAUGHT (*Credit hours, Number of students enrolled*)

2007 Fall	SHS 520 Neuro-otologic Applications in Audiology	(3, 7).
2007 Fall	SHS 513 Neurophysiology of Auditory System	(3, 14).
2007 Spring	SHS 552 Physiologic Measures of Auditory System	(3, 4).
2006 Fall	SHS 520 Neuro-otologic Applications in Audiology	(3, 8).
2006 Fall	SHS 513 Neurophysiology of Auditory System,	(3, 5).
2006 Spring	SHS 552 Physiologic Measures of Auditory System	(3, 7).
2005 Fall	SHS 513 Neurophysiology of Auditory System	(3, 8).
2005 Spring	AUD 811 Hearing disorders	(3, 9).

GRADUATE COMMITTEE (*ASU students are underlined*)Chair

2007-present	<u>Shixiong Chen</u> , Ph.D., Hearing Science
2003-2004	Erin E. Linhardt, M.S. in Audiology, University of Kansas Medical Center

Member

2007-present	<u>Eric Carmichel</u> , Ph.D., Hearing Science
2007-present	Louise Loiselle, Ph.D., Hearing Science and Audiology (expected 2008)
2007-present	<u>Nicole M. Scherrer</u> , Ph.D., Hearing Science and Audiology
2006-present	<u>Erica Williams</u> , Ph.D., Hearing Science, (expected 2008)
2006	<u>Ashley Sundin</u> , undergraduate honor thesis (completed Spring, 2006)
2001-2002	Emily Miller, M.S. in Audiology, University of Kansas Medical Center

Advisor

2006-present	<u>Kelly L. Watts</u> , Doctor of Audiology (Au.D.), (expected 2008)
2007-present	<u>Kurt Kramer</u> , Au.D., (expected 2010)
2008-present	<u>Danna Wilhite</u> , Au.D., (expected 2010)

AWARDS

1998	Gold medal, Student Research Forum, University of Kansas Medical Center, April, 1998.
2005	Faculty Domestic/International Travel Award, University of Kansas Medical Center, May, 2005.
2006	Investigator Incentive Award, Arizona State University, March, 2006.

PROFESSIONAL MEMBERSHIPS

2000-present	Association for Research in Otolaryngology
2003-present	Acoustical Society of America
2005-present	American Auditory Society
2005-present	Institute of Electrical and Electronics Engineers

PROFESSIONAL SERVICE

Assistant Editor	Journal of the American Academy of Audiology
Reviewer	Journal of the Acoustical Society of America
Junior Reviewer	American Speech-Language-Hearing Association (ASHA) Foundation Grant review Panel for New Century Scholars and New Investigators awards (2007)

UNIVERSITY SERVICE

Member	Ph.D. Admissions and Program Committee, Dept. of Speech & Hearing Sci., College of Liberal Arts and Sciences, Arizona State University
Coordinator	Colloquium, Dept. of Speech & Hearing Sci., College of Liberal Arts and Sciences, Arizona State University
Compliance Officer	Dept. of Environmental Health & Safety, Arizona State University

PRESENTATIONS

1. "Similar hearing, different pathophysiology," Sigma Xi, Univ. of Kansas Medical Center, May, 1998.
2. "A new technique to quantify cochlear mechano-electric transduction," Otolaryngology Alumni, University of Kansas, June, 1999.
3. "Noninvasive estimates of cochlear transducer nonlinearity," Joint Meeting between Boys Town National Research Hospital and Dept. of Hearing and Speech, University of Kansas, Omaha NE, May 2005.
4. "Modulation patterns and hysteresis: Probing cochlear dynamics with a bias tone," The Ninth International "Mechanics of Hearing" Symposium, Portland OR, July 2005.
5. "Low-frequency biasing: Probing into the inner ear," Seminar presented in the Dept. of Speech and Hearing Sciences at the University of Arizona, Tucson, AZ, Oct., 2007.

PUBLICATIONS (*ASU students are underlined*)**MANUSCRIPTS IN PREPRATION**

5. **Bian L**, and **Chen S** (2008). "Time-frequency analysis of transient evoked otoacoustic emissions," J. Acoust. Soc. Am. (in prepration).
4. **Chen S**, and **Bian L** (2008). "Optimal signal conditions for recording quadratic distortion product otoacoustic emission," J. Acoust. Soc. Am. (in prepration).

3. **Bian L**, and **Watts KL** (2008). "Distortion product otoacoustic emissions are low-frequency modulated stimulus frequency emissions," J. Acoust. Soc. Am. (in preparation).
2. Choi C-H, **Bian L**, and Chertoff ME (2007). "Constructing a cochlear transducer function from low-frequency modulated cochlear microphonic," J. Acad. Aud. Am. (in preparation).
1. **Bian L** (2008). "Effects of low-frequency biasing on spontaneous otoacoustic emissions: Frequency modulation," J. Acoust. Soc. Am. (in preparation).

PEER-REVIEWED JOURNALS

12. **Bian L**, and **Watts KL** (2008). "Effects of low-frequency biasing on spontaneous otoacoustic emissions: Amplitude modulation," J. Acoust. Soc. Am. **123**, (in press).
11. **Bian L**, and **Scherrer NM** (2007). "Low-frequency modulation of distortion product otoacoustic emissions in humans," J. Acoust. Soc. Am. **122**, 1681-1692.
10. **Bian L** (2006). "Spectral fine-structure of low-frequency modulated distortion product otoacoustic emissions," J. Acoust. Soc. Am. **119** 3872-3885.
9. **Bian L** (2004). "Cochlear compression: Effects of low-frequency biasing on quadratic distortion product otoacoustic emission," J. Acoust. Soc. Am. **116** 3559-3562.
8. Choi C-H, Chertoff ME, **Bian L**, and Lerner D (2004). "Constructing a cochlear transducer function from the summing potential using a low-frequency bias tone," J. Acoust. Soc. Am. **116**, 2996-3007.
7. **Bian L**, Linhardt EE, and Chertoff ME (2004). "Cochlear hysteresis: Observation with low-frequency modulated distortion product otoacoustic emissions," J. Acoust. Soc. Am. **115**, 2159-2172.
6. **Bian L**, Chertoff ME, and Miller E (2002). "Deriving a cochlear transducer function from low-frequency modulation of distortion product otoacoustic emissions," J. Acoust. Soc. Am. **112**, 198-210.
5. Chertoff ME, Miller E, and **Bian L** (2001). "Properties and quantification of linear and nonlinear systems," Semin. Hear. **22**, 325-338.
4. **Bian L**, and Chertoff ME (2001). "Distinguishing cochlear pathophysiology in 4-aminopyridine and furosemide treated ears using a nonlinear systems identification technique," J. Acoust. Soc. Am. **109**, 671-685.
3. **Bian L**, and Chertoff ME (1998). "Differentiation of cochlear pathophysiology in ears damaged by salicylate or a pure tone using a nonlinear systems identification technique," J. Acoust. Soc. Am. **104**, 2261-2271.
2. Chertoff ME, Steele TC, and **Bian L** (1997). "Characterizing cochlear mechano-electric transduction in ears damaged with pure tones," J. Acoust. Soc. Am. **102**, 441-450.
1. Chertoff ME, Steele T, Ator GA, and **Bian L** (1996). "Characterizing cochlear mechano-electric transduction using a nonlinear system identification procedure," J. Acoust. Soc. Am. **100**, 3741-3753.

PUBLISHED ABSTRACTS

17. **Bian L** and **Watts KL** (2007). "Low-frequency modulation of spontaneous otoacoustic emissions," Am. Aud. Soc. Bulletin **32**, 43.
16. **Bian L**, **Watts KL**, and **Scherrer NM** (2007). "Low-frequency modulation of DPOAEs in the humans," Abst. Assoc. Res. Otolaryngol. **30**, 175-176.

15. **Bian L (2006)**. "Amplitude modulation of DPOAEs by biasing cochlear partition," *Am. Aud. Soc. Bulletin* **31**, 42.
14. **Bian L (2006)**. "Modulation contours of low-frequency biased DPOAEs," *Abst. Assoc. Res. Otolaryngol.* **29**, 20.
13. Choi C-H, Chertoff ME and **Bian L (2006)**. "Comparison of cochlear transducer functions derived from cochlear microphonic and summing potential," *Abst. Assoc. Res. Otolaryngol.* **29**, 130.
12. **Bian L**, and Chertoff ME (2005). "Spectral features of low-frequency modulation of DPOAEs," *Abst. Assoc. Res. Otolaryngol.* **28**, 112.
11. **Bian L (2005)**. "Low-frequency biasing of quadratic DPOAE," *Abst. Assoc. Res. Otolaryngol.* **28**, 120.
10. **Bian L**, and Chertoff ME (2004). "Double modulation pattern of DPOAEs due to low-frequency biasing," *Abst. Assoc. Res. Otolaryngol.* **27**, 35-36.
9. **Bian L**, and Chertoff ME (2003). "Hysteresis in cochlear transduction observed from low-frequency modulation of DPOAEs," *Abst. Assoc. Res. Otolaryngol.* **26**, 26.
8. Choi C-H, Chertoff ME and **Bian L (2003)**. "Deriving a cochlear transducer function using the summing potential," *Abst. Assoc. Res. Otolaryngol.* **26**, 28.
7. **Bian L**, and Chertoff ME (2002). "Constructing a cochlear transduction curve from DPOAEs," *Abst. Assoc. Res. Otolaryngol.* **25**, 241.
6. **Bian L**, and Chertoff ME (2000). "Examining the specificity of cochlear transduction indices by blocking K^+ current with 4-aminopyridine and furosemide," *Abst. Assoc. Res. Otolaryngol.* **23**, 260.
5. **Bian L**, and Chertoff ME (1999). "Place specificity of the broadband noise evoked cochlear microphonic as seen from the round window," *Abst. Assoc. Res. Otolaryngol.* **22**, 209.
4. **Bian L**, and Chertoff ME (1998). "Similar hearing loss, different physiology: Characterizing cochlear transduction in pure tone and salicylate damaged ears," *Abst. Assoc. Res. Otolaryngol.* **21**, 84.
3. Chertoff ME, and **Bian L (1998)**. "Effects of signal level on cochlear mechano-electric transduction," *Abst. Assoc. Res. Otolaryngol.* **21**, 20.
2. **Bian L**, Chertoff ME, and Steele TC (1997). "Predicting two-tone cochlear microphonic distortion products using a nonlinear system identification technique," *Abst. Assoc. Res. Otolaryngol.* **20**, 110.
1. Ator GA, Chertoff ME, and **Bian L (1997)**. "Cochlear mechano-electric transduction in endolymphatic hydrops," *Abst. Assoc. Res. Otolaryngol.* **20**, 110.

PROCEEDINGS AND BOOK CHAPTERS

1. **Bian L**, and Chertoff ME (2006). "Modulation patterns and hysteresis: Probing cochlear dynamics with a bias tone," in *Auditory Mechanisms: Processes and Models*, Nuttall AL, Ren T, Gillespie P, Grosh K and de Boer E (Eds.), World Scientific, Singapore, pp. 93-100.