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## **EDUCATION**

- 2008-2011 Post doctoral research fellow, cochlear implants, University of Michigan-Ann Arbor. Ann Arbor, Michigan. Mentor: Dr. Pfingst, Bryan.
- 2003 - 2007 Ph.D. Audiology/physiology, University of Wisconsin-Madison, Madison, Wisconsin. Mentor: Dr. Litovsky, Ruth.
- 2000 - 2002 M.S. Audiology, University of Wisconsin-Madison, Madison, WI.
- 1994 - 1998 B.A. English language and literature, Yarmouk University, Jordan.

## **RESEARCH EXPERIENCE**

*Psychophysics in cochlear implant users:* The long term objective of these experiments is to improve speech recognition and quality of life for cochlear implant recipients by optimizing the function of auditory prostheses. The focus of these studies was to identify differences in patterns of electrically-elicited perceptions across sites of stimulation and to use these differences to reconstruct patient's speech processor by selecting optimal sites and to avoid stimulation at the suboptimal sites.

*Cochlear implant simulation in normal hearing adult listeners:* The general goal of these experiments was to examine the role of different potential variables in limiting the overall benefits from bilateral implantation. The contribution of signal processing as well as other factors such as neural loss to these limitations was examined under binaural and monaural stimulations using CI vocoder.

*Spatial hearing in normal hearing preschool children:* These experiments were aimed at investigating the developmental ontogeny of sound source segregation in young children ages 3 through 5 years. As an outcome of these studies, a new speech test (CRISP-Jr.) was developed and currently being used by several clinical and research institutions in order to examine speech intelligibility in young children with cochlear prostheses.

## **PUBLICATIONS**

1. Garadat, S., Litovsky, R. (2007). "Speech intelligibility in free field: Spatial unmasking in preschool children," *Journal of the Acoustical Society of America*. 121, 1047-1055.
2. Garadat, S., Litovsky, R., Yu, G., Zeng, F-G. (2009). "Role of binaural hearing in speech intelligibility and spatial release from masking using vocoded speech," *Journal of the Acoustical Society of America*. 126, 2522-2535.

3. Garadat, S., Litovsky, R., Zeng, F-G. (2010). "Effect of simulated spectral holes on speech intelligibility and spatial release from masking under binaural and monaural listening" *Journal of the Acoustical Society of America*. 127, 977-989.
4. Garadat, S., Pfingst, B. (2011). "Relationship between gap detection thresholds and loudness growth in cochlear implant users," *Hearing Research*. 275, 130-138.
5. Pfingst, B., Bowling, S., Colesa, D., Garadat, S., Raphael, Y., Shibata, S., Strahl, S., Su, G., Zhou, N. (2011). "Cochlear infrastructure for electrical hearing". *Hearing Research*. 281, 65-73.
6. Garadat, S., Zwolan, T., Pfingst, B. (2012). "Across-site patterns of modulation detection: relation to speech recognition" *Journal of the Acoustical Society of America*. 131, 4030-4041.
7. Litovsky, R., Goupell, M., Godor, S., Grieco-Calub, T., Jones, G., Garadat, S., Agrawal, S., Kan, A. Todd, A., Hess, C., Misurelli, S. (2012). "Studies on bilateral cochlear implants at the University of Wisconsin's Binaural Hearing and Speech Laboratory". *Journal of the American Academy of Audiology*. 23(6), 476-94.
8. Garadat, S., Litovsky, R., Yu, G., Zeng, F-G. "Cochlear implant modeling: Effect of spectral holes on speech intelligibility and spatial release from masking" (submitted, in revision).
9. Garadat, S., Zwolan, T., Pfingst, B. Speech recognition in cochlear implant users: Selection of sites of stimulation based on temporal modulation sensitivity (submitted).

*In preparation:*

10. Garadat, S., Thompson, C. Pfingst, B. Gap detection for pulsatile electrical stimulation: effect of carrier rate and stimulus level.
11. Yu, G., Garadat, S., Litovsky, R., Zeng, F-G. Localization and Precedence Effect in Normal Hearing Listeners Using a Vocoder Cochlear Implant Simulation.

**RESEARCH ABSTRACTS:**

1. Garadat, S., Zwolan, T., Pfingst, B. Speech recognition in cochlear implant users: Selection of sites of stimulation based on temporal modulation sensitivity. 2011. Conference on Implantable Auditory Prostheses.
2. Garadat, S., Zwolan, T., Pfingst, B. Across-site patterns of modulation detection: relation to speech recognition. Association for Research in Otolaryngology. Abs. 213.
3. Garadat, S., Thompson, C, Pfingst, B., 2010. Gap detection for pulsatile electrical stimulation: effect of carrier rate and stimulus level. Association for Research in Otolaryngology. Abs. 374.
4. Garadat, S., Pfingst, B. Relation between temporal acuity and loudness growth in cochlear implant users. 2009. Conference on Implantable Auditory Prostheses. abs. A19.
5. Garadat, S., Litovsky, R., Yu, G., Zeng, F-G., 2009. Effect of simulated spectral holes on speech intelligibility and spatial release from masking under binaural and monaural listening. Association for Research in Otolaryngology. Abs. 463.

6. Garadat, S.; Litovsky, R., Zeng, F-G, 2008. Cochlear implant modeling: Effect of spectral holes on speech intelligibility and spatial release from masking. Association for Research in Otolaryngology. Abs. 287.
7. Garadat, S., Litovsky, R., Yu, G., Zeng, F-G., 2007. Effect of spectral holes on speech intelligibility and spatial release from masking. Conference on Implantable Auditory Prostheses (CIAP), Abs. 33.
8. Garadat, S., Litovsky, R., Yu, G., Neader, S., Zeng, F-G., 2006. Speech recognition and spatial release from masking under binaural and monaural vocoder simulations with variable number of frequency bands. Association for Research in Otolaryngology. Abs. 715.
9. Yu, G., Litovsky, R., Garadat, S., Vidal, C., Holmberg, R., Zeng, F-G., 2006. Localization and precedence effect in normal hearing listeners using a vocoder cochlear implant simulation. Association for Research in Otolaryngology. Abs. 660.
10. Garadat, S., Litovsky, R., 2005. Methods for evaluating bilateral advantages in children with cochlear implants and/or hearing aids. Conference on Implantable Auditory Prostheses (CIAP), Abs. 18.
11. Garadat, S., Litovsky, R., 2005. Speech unmasking in free field in preschool children. Association for Research in Otolaryngology. Abs. 754.
12. O'Brien, M., Garadat, S., Litovsky, R., 2004. Auditory function in children in noisy environments. Presented in the Undergraduate Research Symposium at UW-Madison.

#### **GRANTS AND FELLOWSHIPS**

- 2009-2011 Ruth L. Kirschstein National Research Service Award Individual Fellowship (F32) DC010310-01 "Across-site patterns of modulation detection: relation to speech recognition".
- 2008-2009 Ruth L. Kirschstein National Research Service Award Institutional Research Training Grant (T32) DC00011.

#### **TEACHING**

- Instructor for Communicative Disorders 851 (Hearing Science II: advanced topics in hearing and balance).
- Guest lecturer at several Au.D classes.
- Co-monitor for several undergraduate and Au.D. students.

#### **INVITED TALKS/PRESENTATIONS**

- Conference on Implantable Auditory Prostheses, Pacific Grove, CA. (2011). "Selection of sites of stimulation based on temporal modulation sensitivity", invited speaker.
- University of Utah, Salt Lake City, Utah. "Across-site patterns of modulation detection: relation to speech recognition", invited speaker.
- Lawrence Hawkins lectures, University of Michigan-Ann Arbor.
- Hearing, Balance, and Chemical Senses Forum, University of Michigan-Ann Arbor

- Communicative disorders professional seminar, University of Wisconsin-Madison.
- Hearing and Donuts seminar/physiology department, University of Wisconsin-Madison.

#### **AWARDS**

- 2011 ASHA lessons for Success, Developing the Emerging Scientist, Baltimore, MD.
- 2011 Travel award, The Association for Research in Otolaryngology, Baltimore, MD.
- 2007 Travel award, The Association for Research in Otolaryngology, Baltimore, MD.
- 2007 Vilas travel fellowship, University of Wisconsin-Madison.
- 2007 Scholarship, Conference on Implantable Auditory Prostheses, Lake Tahoe, California.
- 2006 Vilas travel fellowship, University of Wisconsin-Madison.
- 2006 Frederic A. Gruber Memorial Scholarship, Communicative Disorders Department/ University of Wisconsin-Madison.
- 2005 Vilas travel fellowship, University of Wisconsin-Madison.
- 2005 Scholarship, Conference on Implantable Auditory Prostheses, Pacific Grove-California.

#### **CLINICAL EXPERIENCE**

- 5/02-12/02 Intern, Dean Medical Center/Madison-Wisconsin: provided audiological evaluation; fitted and verified hearing aids.
- 9/01-4/02 Intern, Waisman Center/Central Wisconsin Center/UW clinic: Provided audiological evaluation (pure tone and otoacoustic emissions) for special need adult and pediatric populations.
- 12/00-5/01 Intern, Deaf Hearing and Sign Language Center/Detroit, MI: provided audiological evaluation; performed real ear measurements; fitted and verified hearing aids; and participated in community hearing screening and counseling.

#### **PROFESSIONAL ACTIVITIES**

- Ad-hoc reviewer for Hearing Research Journal, Ear and Hearing, and the International Journal of Audiology.
- Panel reviewer, University of Wisconsin-Madison Vilas Award, 2006.

#### **PROFESSIONAL SOCIETIES**

Member, Association for Research in Otolaryngology (2004-present).

#### **CITIZENSHIP: Jordan, USA**