

CURRICULUM VITAE

NAME: Rachel A. Scheperle
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UNIVERSITY (COLLEGE) APPOINTMENTS

September 1, 2016 to present – Assistant Professor, Department of Communication Sciences and Disorders, Montclair State University.

EDUCATION

Postdoctoral

University of Iowa, Iowa City, IA, Human and Cochlear Implant Electrophysiological Laboratories. Director: Carolyn Brown, August 2015 – July 2016.

Boys Town National Research Hospital, Omaha, NE, Cochlear Implant Research Laboratory. Director: Michelle Hughes, January 2014 – July 2015.

Visiting Scholar

University of Washington, Seattle, WA, Cochlear Implant Psychophysics Laboratory. Director: Julie Arenberg Bierer, October 2013.

Graduate

Doctor of Philosophy in Hearing Science, University of Iowa, Iowa City, IA, Mentor: Paul Abbas, awarded December 2013.

Doctor of Audiology, Missouri State University, Springfield, MO, awarded May 2009.

Undergraduate

Bachelor of Science, Major: Communication Disorders, Minor: Music, Truman State University, Kirksville, MO, awarded May, 2005.

HONORS / AWARDS

Mentored Student Travel Award from the National Institutes of Health and the American Auditory Society (\$1000), March, 2014.

Student Presenter Travel Award from the Conference on Implantable Auditory Prostheses. July, 2013.

Resident and Graduate Student Poster Session Grant from the National Institutes of Health and the American Auditory Society. March, 2011

Mechanics of Hearing: Honorable Mention Scholarship (\$300). 2011.

T35 Student Travel Award Grant from the National Institutes of Health and the American Auditory Society. March, 2008

William F. Austin Scholarship (\$10,000). 2006

Outstanding Undergraduate Student in Communication Disorders Award. May, 2005.

M. Barbara Klein Humanitarian Award in Communication Disorders. May, 2005.

William F. Hall Foundation Scholarship, 2004.

SOCIETY MEMBERSHIPS / CERTIFICATIONS / LICENSURE

American Auditory Society

Certificate of Clinical Competence-American Speech-Language-Hearing Association (Audiology)

New Jersey License in Audiology

PRACTICE / PROFESSIONAL EXPERIENCE

Dominican Pediatric ENT Mission, Santiago, Dominican Republic, October 6-10, 2014.

UI~Safe: Sound Awareness for the Community, Iowa City, IA, 2012.

4TH-year Audiology Externship, Boys Town National Research Hospital, Omaha, NE, June 2008 – May 2009.

Newborn Hearing Screener, Bergan Mercy Hospital, Omaha, NE, June 2008 – May 2009.

Fee-Basis Audiologist, Center for Disabilities and Development, Iowa City, IA, 2009 – 2013.

TEACHING EXPERIENCE

Semester	Course number – name	# Students	Credit
Fa 2016-	CSND 701 – Auditory Anatomy and Physiology	14-16	3
Fa 2016-	CSND 621 – Implantable Devices for the Remediation of Hearing Loss	11-14	3
Sp 2017	CSND 545 – Diagnostic Procedures / Audiology II	14	3
Sp 2017	CSND 702 – Clinical Instrumentation	12	3
Sp, Fa 2017-	CSND 835 – Practicum in University Teaching	3 tot	1 per
Su, Fa 2017	CSND 850 – Directed Research I	1	1 per

RESEARCH MENTORSHIP

Primary Advisor: AuD Capstone

Talin Afarian, *Exploring measurements sensitive to early signs of sound overexposure*
defense date: TBD

Committee Member: AuD Capstone

Mary Shannon Carroll, *The effect of microphone directionality on speech understanding in noise in school-aged listeners with severe-profound unilateral hearing loss.*
defense date: TBD

Amanda Futernik, *The interaction of vision and hearing loss on audio-visual speech perception*
defense date: TBD

Caitlin Parys, *Effects of semantic priming and Lombard speech presented in noise in listeners with a simulated high frequency hearing loss*
defense date: TBD

Kimberly Szabo, *The effects of directional processing in personal sound amplification products on speech understanding in noise and listening effort in middle-aged adults*
Defense date: TBD

PROFESSIONAL DEVELOPMENT

Mentoring Academic-Research Careers, American Speech-Language Hearing Association, Mentor: Wafaa Kaf, Professor, Missouri State University, 2016 – 2017.

EDITORIAL (PEER-REVIEW) APPOINTMENTS

Ear and Hearing – Manuscript Reviewer

Journal of the Acoustical Society of America – Manuscript Reviewer

American Journal of Audiology – Manuscript Reviewer

International Journal of Audiology – Manuscript Reviewer

DEPARTMENTAL COMMITTEES

2017- Graduate Admissions (AuD and PhD)
2017- AuD Curriculum Updates: Counseling
2017- PhD Manual

INVITED LECTURES

City University of New York, New York, NY. Delayed hearing loss in Hybrid™ cochlear implant users. May 17, 2017.

New Jersey Speech-Language and Hearing Association. Delayed hearing loss in Hybrid™ cochlear implant users. April 28, 2017.

City University of New York, New York, NY. Exploring neural excitation patterns underlying perception in cochlear implant users. September 28, 2016.

New York University, New York, NY. Toward understanding auditory function in cochlear implant recipients. August 24, 2016.

Western Illinois University, Macomb, IL. Cochlear Implants: An Overview. Fall, 2015.

AWARDED GRANTS

FY2018 Separately Budgeted Research Internal Award, Wideband Energy Reflectance in Cochlear Implant Recipients. (\$5000), Montclair State University, July 1, 2017 – June 30, 2018.

National Institutes of Health (NIDCD) Institutional Research Training Grant (5 T32 DC000013-34), Boys Town National Research Hospital, Jan, 2014 – June, 2015.

F31 Predoctoral Training Fellowship, NIH/NIDCD, Contributions of peripheral spatial resolution to speech perception in CI users. F31DC013202. (\$29,528). January 2013 – December 2013.

National Institutes of Health (NIDCD) Institutional Research Training Grant (5 T32 DC007366-03), Department of Communication Sciences and Disorders, University of Iowa, August 2009 – May 2011.

National Institutes of Health (NIDCD) Short-term Research Training Grant (1 T35 DC008757-01), Boys Town National Research Hospital, May 2007 – August 2007.

GRANT APPLICATIONS

F32 Postdoctoral Training Fellowship, NIH/NIDCD, Peripheral contributions to loudness in cochlear implants: Spread of excitation. F32DC014613. (scored-31; not funded), 2012.

Executive Council of Graduate and Professional Students, Contributions of peripheral spatial resolution to speech perception in cochlear implant (CI) users. (subject payment request; not funded), 2012.

Student Research Grant in Audiology, ASHF, Comparing test/retest reliability of extended high-frequency distortion-product and transient-evoked otoacoustic emissions in children. (not funded), 2010.

PEER-REVIEWED JOURNAL ARTICLES

Scheperle, R.A., Tejani, V.D., Omtvedt, J.K., Brown, C.J., Abbas, P.J., Hansen, M.R., Gantz, B.J., Oleson, J.J., Ozanne, M.V. (2017). Delayed changes in auditory status in cochlear implant users with preserved acoustic hearing. *Hear Res*, 350, 45-57.

Abbas, P.J., Tejani, V.D., **Scheperle, R.A.**, Brown, C.J. (2017). Using neural response telemetry to monitor physiological responses to acoustic stimulation in hybrid cochlear implant users. *Ear Hear*. 38(4): 409-425. doi: 10.1097/AUD.0000000000000400

Scheperle, R.A. (2017). Suprathreshold compound action potential amplitude as a measure of auditory function

in cochlear implant users. *J. Otol.* <http://dx.doi.org/10.1016/j.joto.2017.01.001>

Kashio, A., Tejani, V., **Scheperle, R.**, Brown, C., Abbas, P., (2016). Exploring the source of neural responses of different latency obtained from different recording electrodes in cochlear implant users. *Audiol Neurotol.* 21(3):141-149. doi: 10.1159/000444739.

DeVries, L.A., **Scheperle, R.A.**, Bierer, J.A. (2016). Assessing the electrode-neuron interface with the electrically evoked compound action potential, electrode position, and behavioral thresholds. *J. Assoc. Res. Otolaryng.* 17(3):237-252. doi: 10.1007/s10162-016-0557-9.

Scheperle, R.A. & Abbas, P.J. (2015) Peripheral and central contributions to cortical responses in cochlear implant users. *Ear Hear.* 36(4), 430-440.

Scheperle, R.A. & Abbas, P.J. (2015) Relationships among peripheral and central electrophysiological measures of spatial and spectral selectivity and speech perception in cochlear implant users. *Ear Hear.* 36(4), 441-453.

Scheperle, R.A., Goodman, S.S. & Neely, S.T. (2011). Further assessment of forward pressure level for *in situ* calibration. *J. Acoust. Soc. Am.* 130(6), 3882-3892. [PMCID: PMC3257756]

Scheperle, R.A., Neely, S.T., Kopun, J.G. & Gorga, M.P. (2008). Influence of in-situ sound level calibration on distortion product otoacoustic emission variability. *J. Acoust. Soc. Am.* 124(1), 288-300. [PMCID: PMC2562746]

CONFERENCE PROCEEDINGS / PUBLISHED ABSTRACTS

DeVries, L., **Scheperle, R.**, Bierer, J. (2017). Electrode Position and Physiological and Behavioral Measures of Channel Interaction in Cochlear Implant Listeners. Association for Research in Otolaryngology 40th MidWinter Meeting, Baltimore, MD, February 14.

Cosentino, S., DeVries, L., **Scheperle R.**, Bierer, J., Deeks, J., Carlyon, R. (2016). Dual-state algorithm to identify channels with poor electrode-to-neuron interface in cochlear implant users. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). doi: 10.1109/ICASSP.2016.7471792

Scheperle, R.A. & Hughes, M.L. (2015). Peripheral Contributions to Loudness for Cochlear Implants. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July 14.

DeVries, L., **Scheperle, R.**, Bierer, J.A. (2015). The Electrically Evoked Compound Action Potential Peak Amplitude as a Potential Measure of Behavioral Thresholds and Speech Perception. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July 15.

Hughes, M.L., **Scheperle, R.A.**, Goehring, J. L. (2015). What can ECAP Polarity Sensitivity Tell Us About Auditory Nerve Survival? Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July 15.

Scheperle, R.A., Hughes, M.L., Baudhuin, J.L., Goehring, J.L. (2015). Exploring Peripheral Contributions to Loudness for Cochlear Implants. American Auditory Society meeting, Scottsdale, AZ, March 6.

Hughes, M.L. **Scheperle, R.A.**, Baudhuin, J.L., Goehring, J.L. (2015). Can ECAP Polarity Sensitivity Be Used to Estimate Neural Health? American Auditory Society meeting, Scottsdale, AZ, March 6.

Scheperle, R.A., Hughes, M.L., Baudhuin, J. L., Goehring, J.L. (2014). Variability Across Single-Trial ECAPs and the Relation to Speech Perception. Objective Measures in Auditory Implants—8th International Symposium, Toronto, Canada, October 16 - 18.

DeVries, L., **Scheperle, R.**, Bierer, J. (2014). Exploring the Electrode-Neuron Interface Using the Electrically Evoked Compound Action Potential, Computerized Tomography, and Behavioral Measures. Objective Measures in Auditory Implants—8th International Symposium, Toronto, Canada, October 16 - 18.

Scheperle, R.A., Abbas, P.J., Bierer, J.A. (2014). Exploring Relationships Among Electrophysiological Measures, Behavioral Thresholds, and Electrode Position. American Auditory Society meeting, Scottsdale, AZ, March 7. (NIH Mentored Student sponsored poster).

Kashio, A., Tejani, V., **Scheperle, R.**, Brown, C., Abbas, P. (2014). Exploring the source of neural responses in cochlear implant users. American Auditory Society meeting, Scottsdale, AZ, March 7.

Goodman, S.S., Mertes, I.B., & **Scheperle, R.A.** (2011). Delays and growth rates of multiple TEOAE components. in *What fire is in mine ears: Progress in auditory biomechanics: Proceedings of the 11th International Mechanics of Hearing Workshop*. eds Shera, C.A. & Olson, E.S., Williamstown, MA. July 16 – 22, pg 279-285.

Scheperle, R.A., Lewis, J.D., Neely, S.T., Goodman, S.S. (2011). Assessing FPL calibration: Extended high-frequencies and various cavity sizes. American Auditory Society meeting, Scottsdale, AZ, March (NIH sponsored poster).

Silberer A., **Scheperle R.**, Fleener R., Etler C., Brown C., Abbas P., Jeon E.K., Chiou L.K., Kirby B., Mussoi B., O'Brien S. (2010). Cortical auditory evoked responses recorded from cochlear implant users: Data from Iowa. Objective Measures in Auditory Implants—6th International Symposium, St. Louis, MO, September 22-25.

Scheperle, R.A., Neely, S.T., Kopun, J.G. & Gorga, M.P. (2008). Comparison of SPL, SIL and FPL in-situ calibrations using DPOAEs. American Auditory Society meeting, Scottsdale, AZ, March. (NIH/T35 sponsored poster).

PODIUM PRESENTATIONS

Scheperle, R., *Tejani, V., Omtvedt, J., Jeon, E., Brown, C., Abbas, P., CI2016 International, May 11-14, 2016, Toronto, Canada. Longitudinal Changes in Auditory Status for Cochlear Implant Users with Preserved Acoustic Hearing: Psychophysical, Physiological, and Physical Assessment.

Abbas, P., Tejani, V., Brown, C. & **Scheperle, R.** American Auditory Society, March 2016. Scottsdale, AZ. Physiological Responses to Acoustic Stimulation in Cochlear Implant Users.

Scheperle, R.A., DeVries, L.A., Bierer, J.A. Proseminar, September 25, 2015, University of Iowa, Iowa City, IA. Evaluating the Electrically Evoked Compound Action Potential (ECAP) as a Measure of the Electrode-Neuron Interface.

Bierer, J.A., DeVries, L.A., Bierer, S.M., **Scheperle, R.A.** American Cochlear Implant Alliance, Oct 15 – 17, 2015, Washington, D.C. Electrically-Evoked Compound Action Potentials and What They Might Tell Us About the Electrode-Neuron Interface.

Hughes, M.L., Glickman, E., Goehring, J.L., **Scheperle, R.A.** American Cochlear Implant Alliance, Oct 15 – 17, 2015, Washington, D.C. What Can Stimulus Polarity and Interphase Gap Tell Us About Auditory Nerve Function?

Hughes, M.L., Baudhuin, J.L., Goehring, J.L., **Scheperle, R.A.** Objective Measures in Auditory Implants—8th International Symposium, October 16 – 18, Toronto, Canada. Effects of Stimulus Polarity and Artifact Cancellation Method on ECAP Responses.

Hughes, M.L., Goehring, J.L., Baudhuin, J.L., Robinson, S.N., **Scheperle, R.A.** ASHA Convention, 2014, Orlando, FL. Telepractice for Cochlear Implants.

Scheperle, R.A. & Abbas, P.J. Conference on Implantable Auditory Prostheses, July 18, 2013. Relationships Among Peripheral and Central Electrophysiological Measures of Spatial/Spectral Resolution and Speech Perception in Cochlear Implant Users.

Scheperle, R.A. Proseminar, Friday, April 12, 2013, Wendell Johnson Speech, Hearing Center, University of Iowa. Relationships Among Peripheral and Central Electrophysiological Measures of Spatial/Spectral Resolution and Speech Perception in Cochlear Implant Users.

Scheperle, R.A. Proseminar, Friday, March 25, 2011, Wendell Johnson Speech, Hearing Center, University of Iowa. Further Assessment of Forward Pressure Level.

*Goodman, S., *Koehlinger, K., ***Scheperle, R.**, *Mertes, I., *Sheffield, S. Proseminar, Friday, February 19, 2010, Wendell Johnson Speech, Hearing Center, University of Iowa, Measuring the Effects of Efferent Feedback on the Auditory Periphery Using Otoacoustic Emissions (OAEs).

*presenting author; in all other cases the first author was the presenter

BOOK CHAPTERS

Brown, C.J., **Scheperle, R.A.**, Tejani, V.T., Jeon, E.K., Deshpande, S.B., Abbas, P.J. (2016). “Electrically Evoked Auditory Potentials” in *Clinical Management of Children with Cochlear Implants*, ed. Eisenberg, L. Plural Publishing.