

BIOGRAPHICAL SKETCH

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NAME: Rosner, Austin Oder

eRA COMMONS USER NAME (credential, e.g., agency login): austinoder

POSITION TITLE: Pre-doctoral researcher

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Kansas	B.A.	05/2009	Speech-Language-Hearing
University of Kansas	A.B.D.	10/2013	Speech-Language-Hearing
University of Nebraska-Lincoln	Ph.D.	12/2015	Communication Disorders & Neuroscience

A. Personal Statement

Austin Oder Rosner began her doctoral study at the University of Kansas, and transferred to the University of Nebraska in 2014 as part of the Barlow laboratory move. She successfully completed her PhD qualifying exams (Dr. Barlow-mentor) and resumed study at UNL as a doctoral candidate in communication disorders, and neuroplasticity and cortical hemodynamics in adult and pediatric populations. Her primary research interests include development of oromotor coordination and sensorimotor integration in healthy and disordered full term and preterm infants. Her dissertation research focuses on the neural substrates underlying somatosensory and motor experiences across the lifespan, the effects of such experiences on cortical hemodynamics as measured with functional near-infrared spectroscopy (fNIRS), and how this directly translates to clinical applications.

B. Positions and Honors**Positions and Employment**

2007-2008	Undergraduate Research Assistant, Language Development Disorders and Intervention Studies Laboratory, University of Kansas, Lawrence, KS.
2008-2009	Undergraduate Honors Research Assistant, Speech Acoustics and Perception Laboratory, University of Kansas, Lawrence, KS.
2008-2010	Graduate Research Assistant, Language and Reading Disorders Laboratory, University of Kansas, Lawrence, KS.
2009-2013	Graduate Research Assistant, Communication Neuroscience Laboratories, University of Kansas, Lawrence, KS.
2014-present	Graduate Research Assistant, Communication Neuroscience Laboratories, University of Nebraska, Lincoln, NE.

Other Experience and Professional Memberships

2007-2009	Member, KU Student Speech-Language-Hearing Association
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- 2010-2013 Speech-Language-Hearing & Child Language Program Graduate Student Organization—President (2011-2012; 2013), Vice President (2013), Treasurer (2012-2013), Member (2010-2013)
- 2010-2013 Graduate Student Representative, Speech-Language-Hearing Faculty Meetings, University of Kansas
- 2011- Member, National Student Speech-Language-Hearing Association (NSSLHA)
- 2011- Affiliate, American Speech-Language-Hearing Association (ASHA) Special Interest Group 5: Speech Science and Orofacial Disorders
- 2013- Student Member, Society for Neuroscience (SfN)
- 2013- Sigma Xi, University of Kansas-Lawrence chapter
- 2014- Member, Society for Functional Near-Infrared Spectroscopy (SfNIRS)

Honors

- 2008 University of Kansas Undergraduate Research Award, University of Kansas Honors Program
- 2009 Margaret C. Byrne Saricks Undergraduate Research Award, University of Kansas Department of Speech-Language-Hearing—“Effects of dialect on vowel acoustics and intelligibility.”
- 2009 Departmental Honors in Speech-Language-Hearing, University of Kansas Department of Speech-Language-Hearing
- 2013 KU Graduate Student Research Award
- 2013 Margaret C. Byrne Saricks Graduate Research Award, University of Kansas Department of Speech-Language-Hearing
- 2013 KU Sigma Xi Research Competition Award, 1st place for early graduate students
- 2014 Travel Award to Society for fNIRS conference, University of Nebraska Department of Special Education & Communication Disorders
- 2014 New Century Scholars Doctoral Scholarship, American Speech-Language-Hearing Foundation
- 2015 Travel Award to Society for Neuroscience conference, University of Nebraska Department of Special Education & Communication Disorders

C. Contribution to Science

1. My early graduate work examined the role that the oral sensory environment plays on oral motor development early in life. There is a large clinical need for improving sucking and oral feeding skills in preterm infants, as unresolved feeding problems may manifest as oral aversion and long-term feeding difficulties, as well as lead to further delays in babbling and speech-language production. Sensory experiences early in infancy are critical for shaping neural circuits and supporting appropriate oral motor development. My first publication utilized custom-designed silicone pacifiers that varied in their texturing to determine if pacifier texture provides an enhanced sensory experience to orofacial structures in healthy term infants. I found that any texture on a pacifier, regardless of density or location of texturing, degrades infants' sucking skills across an age range of 1 to 4 months. This study was the first of its kind, and provides new insight into infant oral motor control as a function of the somatosensory environment. I served as the graduate student primary investigator.
 - a. Oder, A., Stalling, D., & Barlow, S.M. (2013). Short-term effects of pacifier texture on NNS in neurotypical infants. *International Journal of Pediatrics*. Article ID 168459, 8 pages. <http://dx.doi.org/10.1155/2013/168459>
 - b. Barlow, S.M., & Rosner, A.O. (2015). Oral sensorimotor development: research and treatment. In R.H. Bahr & E.R. Silliman (Eds.), Handbook of Communication Disorders (pp 103-113). London: Routledge.

2. I have also been involved in my doctoral mentor's research investigating the neurobiology of the preterm infant, and the effect that patterned oral somatosensory stimulation has on oral feeding and brain development. These studies utilized EEG techniques to study neural modulation associated with oral stimulation, and examined suck and feeding skills among a variety of preterm infant populations. This body of work suggests that appropriate oral stimulation during a critical period of development not only promotes

the maturation of oral feeding skills among preterm infants, but also modulates electrocortical activity to elicit more mature neural patterns.

- a. Barlow, S.M., Jegatheesan, P., Weiss, S., Govindaswami, B., Wang, J., Lee, J., Oder, A., & Song, D. (2014). Amplitude-integrated EEG and range-EEG modulation associated with pneumatic orocutaneous stimulation in preterm infants. *Journal of Perinatology*, 34(3), 213-219.
- b. Song, D., Jegatheesan, P., Weiss, S., Govindaswami, B., Wang, J., Lee, J., Oder, A., & Barlow, S.M. (2014). Modulation of EEG spectral edge frequency during patterned pneumatic oral stimulation in preterm infants. *Pediatric Research*, 75(1), 85-92.
- c. Barlow, S.M., Lee, J., Wang, J., Oder, A., Hall, S., Knox, K., Weatherstone, K. & Thompson, D. (2014). Frequency-modulated orocutaneous stimulation promotes non-nutritive suck development in preterm infants with respiratory distress syndrome or chronic lung disease. *Journal of Perinatology*, 34(2), 136-142.
- d. Barlow, S.M., Lee, J., Wang, J., Oder, A., Oh, H., Hall, S., Knox, K., Weatherstone, K., & Thompson, D. (2014). Effects of oral stimulus frequency spectra on the development of non-nutritive suck in preterm infants with respiratory distress syndrome or chronic lung disease, and preterm infants of diabetic mothers. *Journal of Neonatal Nursing*, 20(4), 178-188.

3. My dissertation research will examine the hemodynamic changes and adaptation patterns in different cortical locations during motor and somatosensory experiences in the face and hand in healthy adults and children using functional near-infrared spectroscopy (fNIRS). This study is designed to investigate age-related changes in sensorimotor cortical hemodynamics, with the hope of gaining insight into the changes in neuronal processing of somatosensory and motor information resulting from cortical maturation. I serve as the graduate student primary investigator.

- a. Oder, A., Custead, R., Oh, H., Barlow, S.M. (2014). Hemodynamic changes in cortical sensorimotor systems following hand and orofacial motor tasks and pulsed orocutaneous stimulation. *fNIRS 2014*, Montreal, Quebec, Canada.
- b. Rosner, A.O., Barlow, S.M. (2015). Hemodynamic changes in sensorimotor cortex following hand and orofacial motor tasks and pulsed cutaneous stimulation. Technical clinical/technical research oral session at the annual meeting for the American Speech-Language-Hearing Association, Denver, CO.
- c. Rosner, A.O., Barlow, S.M., (2015). Sensorimotor cortical hemodynamics following hand and orofacial motor tasks and pulsed cutaneous stimulation. *Nanosymposium on Oral Motor and Speech* at the annual meeting for the Society for Neuroscience, Chicago, IL.
- d. Rosner, A.O., Barlow, S.M. (2016). Sensorimotor cortical hemodynamics following hand and orofacial motor tasks and pulsed cutaneous stimulation. *International Motor Speech Conference*, Newport Beach, CA.

D. Research Support

N/A