

**EMILY ZIMMERMAN, PH.D., CCC-SLP**

DEPARTMENT OF COMMUNICATION SCIENCES & DISORDERS

NORTHEASTERN UNIVERSITY

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**EDUCATION**

- 2011-2013 Postdoctoral Fellow  
Newborn Medicine  
Brigham and Women's Hospital  
Harvard Medical School
- 2007-2011 Ph.D., Developmental Speech Physiology, Neuroscience  
University of Kansas  
Dissertation: The Effects of Vestibular Stimulation Rate and Magnitude of Acceleration on Central Pattern Generation for Chest-Wall Kinematics in Preterm Infants
- 2005-2007 M.A., Speech-Language Pathology  
University of Kansas  
Master's Thesis: Pacifier Stiffness Alters the Dynamics of the Suck Central Pattern Generator
- 2001-2005 B.A., Speech-Language-Hearing Sciences & Disorders  
University of Kansas

**ACADEMIC APPOINTMENTS**

- 2021-present Affiliated Faculty  
Institute for Experiential AI (IEAI)  
Northeastern University, Boston, MA
- 2021-present Associate Chair for Research and Innovation  
Department of Communication Sciences & Disorders  
Northeastern University, Boston, MA
- 2020-present Associate Professor  
Department of Communication Sciences & Disorders  
Northeastern University, Boston, MA
- 2017-present Affiliated Faculty  
Social Science Environmental Health Research Institute  
Northeastern University, Boston, MA
- 2017-present Affiliated Faculty  
Doctoral Program in Neuromotor and Rehabilitation Sciences  
Northeastern University, Boston, MA

- 2017-present Affiliated Faculty  
Doctoral Program in Personal Health Informatics  
Northeastern University, Boston, MA
- 2015-present Affiliated Faculty  
Department of Bioengineering  
Northeastern University, Boston, MA
- 2013-present Assistant Professor  
Department of Communication Sciences & Disorders  
Northeastern University, Boston, MA

#### **HONORS & AWARDS**

- 2019 Bouvé Kenerson Faculty Award, \$3,000
- 2018 National Institute of Environmental Health Sciences' and Environmental Protection Agency's Children's Environmental Health Center Travel Scholarship, \$1,500
- 2016 ADInstruments' Science Hero
- 2015 American Speech-Language-Hearing Association's (ASHA's) Advancing Academic-Research Career Award, \$5,000
- 2014 Integration of Oral Health/Primary Care Curricular Innovation Award: DentaQuest Foundation, \$2,000
- 2014 Competitively selected to attend 2014 National Institute of Health's mHealth Online Training Institute
- 2013 Competitively selected to attend ASHA's Pathways Program
- 2011 Competitively selected for ASHA's Student Research Travel Award, \$400.00
- 2011 Passed Dissertation Oral Defense with Honors at the University of Kansas (KU)
- 2011 Competitively selected for the Margaret C. Byrne Saricks Graduate Research Award (KU)
- 2010 Competitively selected for the AMBUCS Scholarship, \$500.00
- 2009 Competitively selected for the Friends of the Life Span Institute Graduate Research Award (KU), \$1,500
- 2009 Competitively selected for the American Speech-Language-Hearing Foundation's New Century Scholars Doctoral Scholarship, \$10,000
- 2009 Passed Comprehensive Exams with Honors (KU)
- 2009 Awarded one of the Top 10 cited papers (2006-2008) published in the *Journal of Neonatal Nursing*
- 2009 Competitively selected for the AMBUCS Scholarship, \$500.00
- 2008 Competitively selected for ASHA's Student Research Travel Award, \$500.00
- 2008 Competitively selected for the AMBUCS Scholarship, \$500.00
- 2008 Santa Clara Valley Medical Center: VMC Foundation Honorarium, \$500.00
- 2007 Competitively selected for the Graduate Student Scholarship Award (KU), \$400.00
- 2007 Competitively selected for ASHA's Student Research Travel Award, \$400.00
- 2007 Competitively selected for the Margaret C. Byrne Saricks Graduate Research Award (KU)
- 2006 Stormont-Vail Regional Health Center Foundation, \$500.00

**RESEARCH & SCHOLARSHIP**

**Peer-Reviewed Journal Articles** (\*: Co-authored with student/trainee)

***Under Review (n=1)***

1. Rodgers, R., Hines, M.\*, Martens, A.\*, & **Zimmerman, E.** Impact of Maternal Disordered Eating on Early Infant Feeding Regulation: A Cross-sectional and Correlational Study. *BMC Pregnancy and Childbirth*, currently under review.

***Accepted/Published (n=38)***

38. Hines, M.\*, Hardy, N.\*, Martens, A.\*, & **Zimmerman, E.** Birth Order Effects on Breastfeeding Self-Efficacy, Parent report of Problematic Feeding and Infant Feeding Abilities. *Journal of Neonatal Nursing*, in press.
37. Martens, A\*. & **Zimmerman, E.** Bronchopulmonary Dysplasia: New Research Insights on Infant Sucking and Feeding Development. *Special Interest Group 13: Swallowing and Swallowing Disorders*, in press.
36. Morton, S., Honda, T., **Zimmerman, E.**, Kirwa, K., Huerta-Montanez, G., Martens, A., Hines, M., Eum, K., Cordero, J., Alshawabekeh, A., Suh, H. (2021). Non-Nutritive Suck and Airborne Metal Exposures Among Puerto Rican Infants. *Science of the Total Environment*, 789, 148008.
35. Heller Murray, E., Lewis, J\*., & **Zimmerman, E.** (2021). Non-Nutritive Suck and Voice Onset Time: Examining Infant Oromotor Coordination. *PLoS ONE*, 16(4): e0250529.
34. **Zimmerman, E.**, Watkins, D., Huerta-Montanez, G., Rosario Pabon, Z., Feric, Z., Manjourides, J., Velez-Vega, C., Figueroa, A., Hines, M., Martens, A., Cordero, J., Alshawabekeh, A., Meeker, J. (2021). An Examination of Gestational Phthalate Exposure in relation to infant Non-Nutritive Suck in a Birth Cohort in Puerto Rico. *Environmental International*, 152, 106480.
33. Martens, A.\*, Hines, M.\*, & **Zimmerman, E.** (2020). Changes in non-nutritive suck between 3 and 12 months. *Early Human Development*, 149, 105141.
32. Manjourides J., **Zimmerman, E.**, , Watkins D., Carpenito, T., Vélez-Vega, C., Huerta-Montañez, G., Rosario, Z., Ayala, I., Vergara, C., Zlatan, F., Suh, H., Gu A., Brown, P., Cordero, J.F., Meeker J.D., Alshawabkeh, A. (2020). Cohort profile: Center for Research on Early Childhood Exposures in Puerto Rico (CRECE). *BMJ Open*, 10:e036389.
31. **Zimmerman, E.**, Carpenito, T.\*, & Martens, A. (2020). Changes in Infant Suck Function throughout a Suck Sample. *PLOS ONE*, 15(7): e0235741.
30. **Zimmerman, E.**, Carnaby, G., Lazarus, C., & Malandraki, G. (2020). Motor Learning, Neuroplasticity, Strength and Skill Training: Moving from Compensation to Retraining in Behavioral Management of Dysphagia. *American Journal of Speech-Language Pathology*, 29, 1065-1077.

29. Bartolome, R.\*, Kaneko-Tarui, T., Maron, J. L., & **Zimmerman, E.** (2020). The Utility of Speech-Language Biomarkers to Predict Oral Feeding Outcomes in the Premature Newborn. *American Journal of Speech-Language Pathology*, 29, 1022–1029
28. Thompson, K.\*, & **Zimmerman, E.** (2019). Pediatric Speech-Language Pathologists' use of mHealth: A Questionnaire Study. *JMIR Rehabilitation and Assistive Technologies*, 6(2):e13966.
27. Stroustrup, A., Bragg, J., Spear, E., Aguiar, A., **Zimmerman, E.**, Isler, J., Busgang, S., Curtin, P., Gennings, C., Andra, S., & Arora, M. (2019). The Neonatal Intensive Care Unit Hospital Exposures and Long-Term Health (NICU-HEALTH) Cohort: Study Protocol of a Prospective Longitudinal Preterm Birth Cohort with an Environmental Health Focus. *BMJ Open*, in press. *BMJ Open*, 9:e032758. doi:10.1136.
26. **Zimmerman, E.**, Connaghan, K., Hoover, J., Alu, D.\*, & Peters, J.\* (2019). Is Feeding the New Play? Examination of the Maternal Language and Prosody used during Infant Feeding. *Infant Behavioral Development*, 54 (2019), 120–132. PMID: 30743164
25. **Zimmerman, E.**, & Thompson, K.\* (2018). The Evidence Surrounding Recent Technologies Used in Neonatal Intensive Care Units to Assess and Treat Feeding Development in Premature Infants, *Perspectives of the ASHA Special Interest Group* 13, 3 (part 4).
24. **Zimmerman, E.**, Rodgers, R. F., O'Flynn, J.\*, & Bourdeau, A. (2018). Weight-related Concerns as Barriers to Exclusive Breastfeeding at 6 Months. *Journal of Human Lactation*, 35(2), 285–291.
23. **Zimmerman, E.**, & DeSousa, C.\* (2018). Social Visual Stimuli Increase Infants Suck Response. *PLOS ONE*, 13(11): e0207230. PMID: 30412610
22. **Zimmerman, E.**, & Rosner, A.\* (2018). Feeding Swallowing Difficulties in the First Three Years of Life: A Preterm and Full-term Infant Comparison. *Journal of Neonatal Nursing*, 24, 331–335.
21. **Zimmerman, E.**, Borkowski, C.\*, Clark, S.\*, & Brown, P. (2018). Educating Speech-Language Pathologists Working in Early Intervention on Environmental Health. *BMC Medical Education*, 18(155), 1–6. PMID: 29970068
20. Rodgers, R. F., O'Flynn, J.\*, Bourdeau, A., & **Zimmerman, E.** (2018). A Biopsychosocial Model of Body Image, Disordered Eating, and Breastfeeding among Postpartum Women. *Appetite*, 126, 163–168. PMID: 29649515
19. **Zimmerman, E.** (2017). Do Infants Born Very Premature and Who Have Very Low Birth Weight Catch Up with Their Full-Term Peers in Their Language Abilities by Early School Age? *Journal of Speech, Language, Hearing Research*, 61, 53–65. PMID: 29255846
18. **Zimmerman, E.**, Forlano, J.\*, & Gouldstone, A. (2017). Not All Pacifiers are Created Equal: A Mechanical Examination of Pacifiers and their Influence on Suck Patterning. *American Journal of Speech-Language Pathology*, 26, 1202–1212. PMID: 29114844
17. **Zimmerman, E.**, & Foran, M.\* (2017). Patterned Auditory Stimulation and Suck Dynamics in Full-Term Infants. *Acta Paediatrica*, 106(5), 727–732. PMID: 28118488
16. **Zimmerman, E.**, & Lau, C. (2017). The Development of the Mother-Infant Mutualism Screening Scale. *Journal of Pediatrics and Mother Care*, 2(1), 109–114. PMID: 28868529

15. **Zimmerman, E.** (2016). Pediatric Dysphagia: A Rise in Preterm Infants and a Need for More Formal Training for Speech-Language Pathologists. *International Journal of Gynecology, Obstetrics and Neonatal Care*, 3(1), 15–20.
14. **Zimmerman, E., & Thompson, K.\*** (2016). A Pilot Study: The Role of the Autonomic Nervous System in Cardiorespiratory Regulation in Infant Feeding. *Acta Paediatrica*, 105(3), 286–91. PMID: 26613548
13. **Zimmerman, E. & Maron, J. L.** (2016). *FOXP2* Gene Deletion and Infant Feeding Difficulties: A Case Report. *Cold Spring Harbor Molecular Case Studies*, 2: a000547. PMID: 27148578
12. **Zimmerman, E., Maki, M.\*, & Maron, J. L.** (2016). Salivary *FOXP2* Gene Expression and Oral Feeding Success in Premature Infants. *Cold Spring Harbor Molecular Case Studies*, 2: a000554. PMID: 27148579
11. **Zimmerman, E.** (2015). Integration of Oral Health and Primary Care Practice: An Interprofessional Approach. *MedEdPORTAL Publications*, Available from: <https://www.mededportal.org/publication/10252>
10. **Zimmerman, E., & Thompson, K.\*** (2015). Clarifying Nipple Confusion. *Journal of Perinatology*, 35(11), 895–899. PMID: 26181720
9. **Zimmerman, E.** (2013). Limited Evidence Suggests That Ad Libitum or Demand/Semi Demand Feeding Allows for Earlier Hospital Discharge Compared to Scheduled Feeds for Preterm Infants. *Evidenced-Based Communication Assessment and Intervention*, 7(2), 63–67.
8. **Zimmerman, E., Keunen, K.\*, Norton, M.\*, & Lahav, A.** (2013). Weight Gain Velocity in Very Low-Birth-Weight Infants: Effects of Exposure to Biological Maternal Sounds. *American Journal of Perinatology*, 30(10), 863–870. PMID: 23381908
7. **Zimmerman, E., & Lahav, A.** (2013). Ototoxicity in Preterm Infants: Effects of Genetics, Aminoglycosides, and Loud Environmental Noise. *Journal of Perinatology*, 33(1), 3–8. PMID: 22878560
6. **Zimmerman, E., McMahon, E.\*, Doheny, L., Levine, P., & Lahav, A.** (2012). Transmission of Biological Maternal Sounds does not Interfere with Routine NICU Care: Assessment of Dose Variability in Very Low Birth Weight Infants. *Journal of Pediatric Neonatology Individual Medicine*, 1(1), 73–80.
5. Barlow, S. M., Urish, M., Venkatesan, L., Harold, M., & **Zimmerman, E.** (2012). Frequency Modulation and Spatiotemporal Stability of the sCPG in Preterm Infants with RDS. *International Journal of Pediatrics*, 581538, 1–9. PMID: 22888359
4. **Zimmerman, E., & Lahav, A.** (2012). The Multisensory Brain and its Ability to Learn Music. *Annals of the New York Academy of Science*, 1252, 179–184. PMID: 22524357
3. **Zimmerman, E., & Barlow, S. M.** (2011). The Effects of Vestibular Stimulation Rate and Magnitude of Acceleration on Central Pattern Generation for Chest Wall Kinematics in Preterm Infants. *Journal of Perinatology*, 32(8), 614–20. PMID: 22157627
2. Poore, M., **Zimmerman, E., Barlow, S. M., Wang, J., & Gu, F.** (2008). Patterned Orocutaneous Therapy Improves Sucking and Oral Feeding in Preterm Infants. *Acta Paediatrica*, 97(7), 920–927. PMID: 18462468

1. **Zimmerman, E., & Barlow, S. M. (2008).** Pacifier Stiffness Alters the Dynamics of the Suck Central Pattern Generator. *Journal of Neonatal Nursing*, 14(3), 79–86. PMID: 19492006 (Editor's Choice Award)

#### **Peer-Reviewed Conference Publication (n=1)**

1. Huang, X.\*, Martens, A., **Zimmerman, E.**, & Ostadabbas, S. (June, 2019). Infant Contact-less Non-Nutritive Sucking Pattern Quantification via Facial Gesture Analysis. *Conference on Computer Vision and Pattern Recognition, Workshop on Augmented Human (VUHCS2019)*, Long Beach, CA.

#### **Non-Refereed Articles (n=3)**

3. **Zimmerman, E. (2018).** Pacifier and Bottle Nipples: The Targets for Poor Breastfeeding Outcomes [invited editorial]. *Journal de Pediatria*, 94(6), 571–573. PMID: 29452072
2. **Zimmerman, E., & Barlow, S. M. (2009).** The Complexity of Transitioning to Oral Feeds in Preterm Infants. *Perspectives of the ASHA Special Interest Group 5*, 19(1), 52–57.
1. Barlow, S. M., Poore, M., **Zimmerman, E.**, & Finan, D.S. (2008). Synthetic Orocutaneous Stimulation Entrains Suck in Preterm Infants with Feeding Difficulties. *Neonatology Today*, 3(4), (ISSN: print 1932–7129; online 1932–7137).

#### **Book Chapters (n=3)**

3. Brown, P., Clark, S.\*, **Zimmerman, E.**, Valenti, M., & Miller, M. (2018). Health Professionals' Environmental Health Literacy. In S. Finn, L. O'Fallon (Eds). *Environmental Health Literacy*, (pp.19–227). Medford, MA: Springer International Publishing.
2. Lahav, A., & **Zimmerman, E. (2012).** Pharmacotoxic Effects of Aminoglycosides and Loud Environmental Noise: An Overlooked Risk for Hearing Loss in Preterm Infant. In J. V. Arnada, V. Fanos, J. N. van den Anker (Eds). *Perinatal Pharmacology: Individualized Neonatal Therapy*, (pp.105–113). Cagliari, Italy: Hygeia Press di Corridori Marinella.
1. Barlow, S. M., Poore, M., & **Zimmerman, E. (2011).** Oromotor Entrainment Therapy to Develop Feeding Skills in the Preterm Infant. In S. Chabon, E. Cohn (Eds.) *Communication Disorders: A Case-Based Approach: Stories from the Front Line*, (pp.52–62). Upper Saddle River, New Jersey: Pearson Education, Inc.

#### **RESEARCH GRANTS AND FUNDING**

##### **Funded (External)**

NIH-UGH (UH3OD023251)                      Alshawabkeh (PI)                      09/21/2016–08/31/2023  
Environmental Influences on Child Health Outcomes (ECHO)

##### ***Environmental Influences on Child Health Outcomes in Puerto Rico (ECHO-PRO)***

Role: Co-investigator

Grant Total \$13,217,535, Direct Amount \$11,551,971, Indirect \$1,665,564, Percent Effort (PE) 25%

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NIH-P50 (3P50ES026049-04S1) Alshawabkeh (PI) 09/20/2018–06/30/2019  
Center for Research on Early Childhood Exposure and Development in Puerto Rico (CRECE)  
Supplement

***Environmental Influences on Infants with Zika Infection in Utero–Infants Follow up***

Role: Co-investigator

Grant Total \$725,489, Direct \$710,645, Indirect \$14,844, PE 6.25%

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NIH-R21 (HD095321) Zimmerman (PI) 09/21/2018–NCE 12/31/2020  
National Institute on Child and Human Development (NICHD)

***Examining Feeding and Cardiorespiratory Patterning in Zika-Exposed Infants in Puerto Rico***

Role: PI

Grant Total \$431,729, Direct Amount \$275,000, Indirect \$156,749, PE 10%

\*Note this grant was scored in the 1<sup>st</sup> Percentile

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NIH-UG3 (UG3OD023251) Alshawabkeh (PI) 09/21/2016–08/31/2018  
Environmental Influences on Child Health Outcomes (ECHO) Pediatric Cohorts

***Environmental Influences on Child Health Outcomes in Puerto Rico (ECHO-PRO)***

Role: Co-investigator

Grant Total \$3,161,679, Direct Amount \$2,616,843, Indirect \$544,836, PE 8.33%

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NIH-U2 (U2COD023375) Benjamin, D; Newby, K; Smith, B (MPIs) 09/1/2016–08/31/2023  
Environmental influences on Child Health Outcomes (ECHO)

Opportunities for Infrastructure Fund (OIF) Zimmerman (PI) 04/1/2018–NCE 01/31/2021

***Integration of Non-Nutritive Suck and Eye Tracking as markers for Infant Neurodevelopment Across Five ECHO Cohorts.***

Pilot project sponsored by Duke University under the umbrella parent grant number

Role: PI for OIF Award

Grant Total \$200,000, Direct \$127,128, Indirect \$72,870, PE 10.37%

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NIH-R21 (DC016030) Zimmerman (PI) 12/1/2017–11/30/2020  
National Institute on Deafness and other Communication Disorders

***Examining the Interplay of Sucking, Feeding, and Vocal Development in the First Year of Life***

Role: PI

Grant Total \$471,00, Direct \$314,000, Indirect \$171,000, PE 25%

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NIH-P50 (P50ES026049/83615501) Alshawabkeh (PI) 09/1/2015–08/31/2020  
National Institute of Environmental Health Science/Environmental Protection Agency

***Center for Research on Early Childhood Exposure and Development in Puerto Rico (CRECE)***

Role: Co-investigator on R01 Project 1/ Human Subject Core/ Community Engagement Core/  
Career Development Investigator

Grant Total \$7,850,000, Direct \$5,000,000 (Includes 3 R01 Projects & 3 Cores), Indirect \$2,850,000, PE 37.50%

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NIH-UL (UL1TR001064) Selker (PI) 05/1/2016–04/30/2017  
 National Center for Advancing Translational Sciences  
 Tufts Clinical and Translational Science Institute (Tufts CTSI)  
**Pilot Study: FOXP2 Gene Expression Levels: A Noninvasive Biomarker to Predict both Oral Feeding and Speech-Language Success**  
 Role: **Zimmerman PI** for Pilot Study  
 Grant Total \$42,000, Direct \$42,000, Indirect \$0, PE 12.70%

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NIH P42ES017198-S Alshawabkeh (PI) 12/1/2014–11/30/2015  
 National Institute of Environmental Health Science  
 Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) Supplement  
**Exploring the Role of Early-Life Exposure to Phthalates on Child Development,**  
 Role: Co-investigator  
 Grant Total \$89,242, Direct \$67,507, Indirect \$21,735, PE 6%

**Pending (External)**

NSF DARE Ostadabbas (PI) 01/1/2021 – 12/31/2023  
**Collaborative Research: An AI-guided infant facial pose tracking platform to identify sucking patterns across disabilities**  
 Role: Co-PI

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NIH R01 (NIDCD) Zimmerman (PI) 4/2/2021- 3/31/2026  
**Maternal SARS-CoV-2: The impact on infant sucking, speech production and language acquisition**

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NIH R01 (NIDCD) Zimmerman (PI) 9/1/2021- 8/31/2026  
**Using Infant Non-Nutritive Suck as a Measure of Future Speech Function**

**Mentored Student Funding**

PEAK Summit Award  
 Hannah Phillips and Amrita Suresh (\$3000) 2/1/2021-4/30/2021

PEAK Summit Award  
 Lauren Maldonado (\$900) 9/25/2020-4/30/2021

PEAK Experiences Ascent Award  
 Student: Alison Cox (\$1,000) 1/22/2020-4/30/2020



Provost's Undergraduate Advanced Research and Creative Endeavor Award

Student: Morgan Hines (\$2,935)	01/3/2019-04/30/2019
Student: Julie Peters (\$875)	09/5/2017-04/31/2018
Student: Courtney DeSousa (\$960)	04/12/2016-03/31/2017

**Awarded Gift Donations**

ADInstruments, Hero Campaign (PowerLab 4/25, \$5,000)	Zimmerman	Fall 2015
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**INVITED LECTURES & PRESENTATIONS (n=27)**

27. **Zimmerman, E.** (2021, April). *Examining the Association between Maternal Prenatal Stress and Infant Non-Nutritive Suck*. Session Raising Environmental Influences of Child Health Outcomes (ECHO)-wide Cohort Research presented at the ECHO Steering Committee, Virtual Conference.
26. **Zimmerman, E.** (2021, April). *Oral Feeding Development: Examining the Genetic and Sensory Implications*. Session 2.2 Presented at the Indiana Speech and Hearing Association, Virtual Conference.
25. **Zimmerman, E.** (2021, March). *The Influence of Maternal Psychosocial Factors on Infant Feeding*. Breakout 3.2: Psychosocial Impact and Caregiver Burden Presented at the Dysphagia Research Society, Virtual Conference.
24. **Zimmerman, E.** (moderator), Pados, B., Van den Engel-Hoek, L., McGrattan, K. Madhoun, L. (2021, March). Breakout 2.2 – Feeding and Swallowing Disorders in Pediatric Special Populations. Presented at the Dysphagia Research Society, Virtual Conference.
23. **Zimmerman, E.** (2020, February). *New Research Insights on Infant Feeding: Assessment and Treatment*. Presented Virtually at the University of Florida Hegland Lab Medical SLP rounds/seminar series Grand Rounds Series, Gainesville, Florida
22. **Zimmerman, E.,** Greenwood, K., Bedoni, K., Dunn, K. (2020, Aug). *A View from the Frontlines of Post-COVID Rehabilitation*. Presented at the Webinar Series Women Who Inspire at the Forefront of Healthcare, Virtual Meeting.
21. **Zimmerman, E.** (2020, May). *Factors that Influence Infant Non-Nutritive Suck Patterning*. Presented at the Speech-Language & Audiology Canada (SAC) Conference, Ottawa, ON, Canada.
20. **Zimmerman, E.** (2020, March). *Neonatal Assessment: New Research Insights*. Presented at the Dysphagia Research Society, San Juan, Puerto Rico, USA.
19. **Zimmerman, E.** (2020, March). *Leveraging Sensory Stimulation to Enhance Feeding Outcomes*. Presented at the Dysphagia Research Society, San Juan, Puerto Rico, USA.
18. **Zimmerman, E.** (2020, February). *Infant Feeding: New Research Insights*. Presented at the UNH Communication Sciences and Disorders Grand Rounds Series, Durham, NH, USA.
17. **Zimmerman, E.,** McFarland, D., Barkmeier-Kraemer, J., & Paydarfar, D. (2018, July). *Cross-System Functions – What Other Systems Impact Swallowing Function, Impairment and Rehabilitation*. Presented at the Charleston Swallowing Conference, Evanston, IL, USA.
16. **Zimmerman, E.,** & Humbert, I. (2018, July). *Motor Learning and Neural Plasticity*. Presented at the Charleston Swallowing Conference, Evanston, IL, USA.

15. **Zimmerman, E., & Shah, M.** (2018, July). *Extremes of the Lifespan: Preterm Infant*. Presented at the Charleston Swallowing Conference, Evanston, IL, USA.
14. **Zimmerman, E., & Maron, J. L.** (2018, July). *Mimicking Prenatal Development in the Postnatal Course: Understanding the Evidence for Sensorimotor Intervention*. Presented at the Charleston Swallowing Conference, Evanston, IL, USA.
13. **Zimmerman, E.** (2018, June). *Non-Nutritive Suck: New Research and Clinical Insights*. Presented at SLP Grand Rounds, Northwestern University, Evanston, IL, USA.
12. **Zimmerman, E.** (2016, April). *Non-Nutritive Suck Development and Pacifier Types: Why it Matters*. Presented at the Pediatric Dysphagia Group of the Northeast, Boston, MA, USA.
11. **Zimmerman, E.** (panelist). (2016, October). *Guiding Principles: How to be a Quick-Start Professor*. Presented at the Harvard Path of Professorship Workshop, Boston, MA, USA.
10. **Zimmerman, E.** (2015, March). *The Nurturing Womb: How This Environment can be Leveraged to Optimize Sucking, Feeding, and Growth in Premature Infants*, Presented at the 8<sup>th</sup> Annual Leadership Conference, Speech-Language Pathology & Audiology: Research to Practice, University of Massachusetts, Amherst, MA, USA.
9. **Zimmerman, E., & Maron, J. L.** (2015, October). *Salivary FOXP2 Expression in Speech Emergence & Oral Feeding Readiness in Preterm Infants*. Presented at the Mother-Infant Research Institute, Tufts Medical Center, Boston, MA, USA.
8. **Zimmerman, E., & Maron, J. L.** (2015, October). *Examining the Role of Salivary FOXP2 Gene Expression and Oral Feeding Readiness in Preterm Infants*. Presented at the Continuing Education Event Clinical Research in the CSD Department, Northeastern University, Boston, MA, USA.
7. **Zimmerman, E.** (2014, March). *Exploring FOXP2 Expression in the Human Neonate*, Presented at Tufts Medical Center Genetics Rounds, Boston, MA, USA.
6. **Zimmerman, E.** (2014, May). *Multisensory Processing & Oromotor Development in the Preterm Infant*. Presented at the Rehabilitation Science Seminar, Massachusetts General Hospital, Boston, MA, USA.
5. **Zimmerman, E.** (2014, August). *Benefits of Non-Nutritive Suck*, Presented at University of Massachusetts Memorial Healthcare, Worcester, MA, USA.
4. Green, J., Rousseau, B., Spencer, K., & **Zimmerman, E.** (panelist). (2014, November). *Thinking about a PhD? Informative Session for Prospective Doctoral Students*. Presented at the American Speech-Language-Hearing Association Convention, Orlando, FL, USA.
3. **Zimmerman, E.** (panelist). (2014, June) *Academic/Teaching Career Panel*. Presented at Brigham and Women's Hospital, Boston, MA, USA.
2. **Zimmerman, E.** (2011, March). *The Effects of Physiologically-Based Vestibular and Auditory Stimulation on Respiratory, Feeding, and Growth Outcomes in Premature Infants*. Presented at the Department of Continuing Education at Harvard Medical School Newborn Medicine Grand Rounds, Boston, MA, USA.
1. **Zimmerman, E.** (2007, October). *Orocutaneous Patterns for the Premature Brain: A New Approach Towards Developing Oromotor Feeding Skills In-Service* Presented at Wake Medical Center, Raleigh, NC, USA.

**REFEREED PRESENTATIONS** (\*: Co-authored with student/trainee)

**International Presentations (n=20)**

20. **Zimmerman, E.** (session co-chair), Barlow, S., Pados, B., & McGratten, K. (2021, May). *Neonatal Feeding Club: (1) Elucidating Feeding Correlates Among Healthy Non-Dysphagic Infants to Guide Diagnostic Thresholds and Aspiration Risks and (2) Factors Related to Problematic Feeding in the First 7 Months of Life*. Neonatal Feeding Club presented virtually at the Pediatric Academic Societies.
19. Hines, M.\*, & **Zimmerman, E.** (2021, March). Relationship between scores on the Child Oral and Motor Proficiency Scale at 12 months and Non-Nutritive Sucking at 3 months. Poster presented at the Dysphagia Research Society Conference, Virtual Meeting.
18. Martens, A.\*, & **Zimmerman, E.** (2021, March). Does a Greater Diversity in Feeding Diet Relate to Communicative Development at 18-months? Poster presented at the Dysphagia Research Society Conference, Virtual Meeting.
17. Connor NP, † Brodsky MB, † Desai, R., † and **Zimmerman E.** † (2020, Oct). *COVID-19: US Perspective. Dysphagia Management across Lifespan, New State-of-the-Art post Covid-19*. Paper presented at the 10<sup>th</sup> Congress of the European Society of Swallowing Disorders, †All authors contributed equally to this presentation on behalf of the Dysphagia Research Society.
16. Hines, M., Martens, A., & **Zimmerman, E.** (2020, June). *Changes in Infant Suck Function at 3 and 12 Months*. Poster presented at the Dysphagia Research Society Annual Meeting, Virtual Poster Hall.
15. Martens, A., Hines, M., & **Zimmerman, E.** (2020, June). The Influence of Artificial Nipple Exposure on Infant Non-Nutritive Suck and Oral Feeding. Poster presented at the Dysphagia Research Society Annual Meeting, Virtual Poster Hall.
14. Wilson, E., Martens, A., Hines, M., & **Zimmerman, E.** (2020, June). An Examination of the Relationship between Infant Suck and Masticatory Behaviors. Poster presented at the Dysphagia Research Society Annual Meeting, Virtual Poster Hall.
13. Watkins, D.J., **Zimmerman, E.**, Manjourides, J., Hines, M\*, Huerta- Montañez, G., Rosario-Pabón, Z., Vélez-Vega, C.M., Cordero, J.F., Meeker, J.D., & Alshawabkeh, A. (2019, August). *Associations between in utero phthalate exposure and non-nutritive suck: a measure of early neurodevelopment*. Poster presentation at the International Society for Environmental Epidemiology, Utrecht, Netherlands.
12. **Zimmerman, E.** (2019, May). *Infant Feeding Skills as a Biomarker of Communication Abilities*. Paper presented at the Pediatric Academic Societies, Baltimore, MD, USA.
11. **Zimmerman, E.**, Watkins, D., Hines, M.\*, Huerta-Montañez, G., Pabón, Z., Manjourides, J., Vélez Vega, C., Acosta Rodriguez, A., Cordero, J., Meeker, J., & Alshawabkeh, A. (2019, March). *An Examination of Non-Nutritive Suck in Relation to Prenatal Environmental Exposures and Subsequent Neurodevelopment*. Paper presented at the Society for Research in Child Development, Baltimore, MD, USA.
10. **Zimmerman, E.**, Thompson, K.\*, Hines, M.\*, & Martens, A. (2019, March). *Assessing Infant Feeding: A Physiological and Parental Report Comparison*. Poster presented at the Dysphagia Research Society Conference, San Diego, CA.

9. **Zimmerman, E.**, Hines, M.\*, Martens, A., & Thompson, K.\* (2019, March). *Changes in Infant Suck Function throughout a Suck Sample*. Paper presented at the Dysphagia Research Society Conference, San Diego, CA.
8. **Zimmerman, E.** (2018, May). *Examining the Interplay of Sucking, Feeding, and Vocal Development at 3 Months: A Preterm and Full-Term Infant Comparison*. Paper presented at the Pediatric Academic Societies, Toronto, ON, CA.
7. Bartolome, R.\*, Kaneko-Tarui, T., Ruthazer, R., Maron, J. L., & **Zimmerman, E.** (2018, May). *Salivary FOXP2 and CNTNAP2 Expression Levels Serve as Noninvasive Biomarkers to Predict Oral Feeding and Speech Outcomes in the Premature Newborn*. Poster presented at the Pediatric Academic Societies, Toronto, Canada.
6. Rodgers, R. F., O'Flynn, J.\*, Bourdeau, A., & **Zimmerman, E.** (2018, April). *Breastfeeding Self-Efficacy and Eating Disorder Symptoms after Childbirth: The Role of Body Dissatisfaction*. Poster presented at the International Conference on Eating Disorders, Chicago, IL, USA.
5. **Zimmerman, E.**, & DeSousa, C. \*(2017, May). *Non-Nutritive Suck: An Examination of Maternal Scent and Visual Preferences*. Poster presented at the Pediatric Academic Societies, San Francisco, CA, USA.
4. **Zimmerman, E.** (2014, May). *Multisensory Processing & Oromotor Development in the Preterm Infant*. Paper presented at the Pediatric Academic Societies, Vancouver, BC, Canada.
3. Lahav, A., Norton, M.\*, & **Zimmerman, E.** (2012, January). *Mono Twins are Better in Stereo: Effects of Biological Maternal Sounds on Cardiorespiratory and Growth Outcomes in Extremely Premature Infants*. Poster presented at the 14<sup>th</sup> International Congress on Twin Studies and the 2<sup>nd</sup> World Congress on Twin Pregnancy, Florence, Italy.
2. **Zimmerman, E.**, Barlow, S. M., Kieweg, D., & Wang, J. (2011, March). *Vestibular Stimulation Alters Sensorimotor Integration of the Respiratory and Orofacial Central Pattern Generators in Preterm Infants*. Paper presented at the Pediatric Academic Society, Denver, CO, USA.
1. Barlow, S. M., Finan, D.S., Vantipalli, R., Seibel, L., Chu, S., Poore, M., Urish, M., **Zimmerman, E.**, & Estep, M. (2006, May). *Patterned Oromechanosensory Inputs Are Effective in Developing the Non-Nutritive Suck in Premature Infants*. Poster presented at the Society for Pediatric Research, San Francisco, CA, USA.

#### **National Presentations (n=43)**

43. **Zimmerman, E.**, Aguiar, A., Aung, M., Geiger, S., Hines, M., Woodbury, M., Martens, A., Huerta-Montanez, G., Cordero, J., Meeker, J., Schantz, S., Alshawabkeh, A. Examining the Association between Maternal Prenatal Stress and Infant Non-Nutritive Suck. Paper presented virtually at the Developments in Neurobehavioral Teratology.
42. Lewis, J., Heller Murray, E., **Zimmerman, E.** (2020, November). 11347: Non-Nutritive Suck and Voice Onset Time: Examining Infant Motor Speech Coordination. Proposal accepted at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

41. Martens, A., & **Zimmerman, E.** (2020, November). 11576: Does a Greater Diversity in Feeding Diet Relate to Communicative Development at 18-months? Proposal accepted at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).
40. Hines, M, \* **Zimmerman, E.**, Huerta-Montañez, G, Rosario-Pabón, Z, Vélez-Vega, C, Cordero, J, Alshawabkeh, A (2020, November). 12598: Examining Relation between Non-Nutritive Suck and Ages and Stages Questionnaire in a Puerto Rican Cohort. Proposal accepted at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).
39. **Zimmerman, E.**, & Watkins, D. (2019, November). *Environmental Health: What Speech-Language Pathologists Need to Know*. Paper presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.
38. Martens, A., **Zimmerman, E.**, Hines, M. (2019, November). *Exposure to Artificial Nipples' Influence on Non-Nutritive Suck, Oral Feeding, & Breastfeeding Self-Efficacy*. Poster presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.
37. Hardy, N., **Zimmerman, E.**, Martens, A. (2019, November). *Birth Order Effects on Breastfeeding Self-Efficacy & Infant Feeding Abilities*. Poster presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.
36. Aspinwall, B., **Zimmerman, E.**, Martens, A. (2019, November). *Examining the Interaction Between Early Speech-Language Exposure, the Home Environment, & Infant Feeding Development*. Poster presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.
35. Hines, M., **Zimmerman, E.**, Aguiar, A., Watkins, D., Huerta-Montañez, G., Rosario-Pabón, Z., Manjourides, J., Vélez-Vega, C., Cordero, J., Meeker, J., Alshawabkeh, A. (2019, September). *Infant Non-Nutritive Suck and its Relation to Prenatal Exposures to Parabens and Parental Stress*. Paper presentation presented at the U.S. Developmental Origins of Health and Disease Society Annual Meeting, Chapel Hill, NC.
32. **Zimmerman, E.**, & Thompson, K.\*(2018, November). *Emerging Evidence Surrounding the Interplay of Sucking, Feeding & Vocal Development at Three Months*. Paper presented at the American Speech-Language-Hearing Association Convention, Boston, MA.
31. **Zimmerman, E.**, Alu, D.\*, Peters, J.\*, Hoover, J., & Connaghan, K. (2018, November). *Is Feeding the New Play? Examining the Maternal Language & Prosody Used During Infant Feeding*. Paper presented at the American Speech-Language-Hearing Association Convention, Boston, MA.
30. Thompson, K.\*, & **Zimmerman, E.** (2018, November). *Mobile Health Applications & Speech-Language Pathologists: A Pediatric Focus*. Poster presented at the American Speech-Language-Hearing Association Convention, Boston, MA.
29. Thompson, K.\*, & **Zimmerman, E.** (2018, November). *The Evidence Surrounding Recent NICU Technologies to Assess & Treat Feeding Development in Premature Infants*. Poster presented at the American Speech-Language-Hearing Association Convention, Boston, MA.

28. Hines, M.\*, **Zimmerman, E.**, Thompson, K.\*, Huerta-Montañez, G., Vélez Vega, C., Cordero, J., Rosario Pabon, Z., Meeker, J., & Alshawabkeh, A. (2018, November). *Examining the Relation between Non-Nutritive Suck and the Battelle Developmental Inventory in a Puerto Rican Cohort*. Poster presented at the American Speech-Language-Hearing Association Convention, Boston, MA.
27. **Zimmerman, E.**, Watkins, D., Hines, M.\*, Huerta-Montañez, G., Rosario Pabon, Z., Feric, Z., Manjourides, J., Vélez Vega, C., Acosta Rodriguez, A., Figueroa Navedo, A., Cordero, J., Meeker, J., & Alshawabkeh, A. (2018, October). *An Examination of Non-Nutritive Suck in Relation to Prenatal Environmental Exposures in a Puerto-Rican Cohort*. Poster presented at the NIEHS/EPA Children's Environmental Health Centers Annual Meeting, Research Triangle Park, NC.
26. **Zimmerman, E.**, Aguiar, A., Schantz, S. L., Glass, H., Stroustrup, A., Dzwilewski, K., Wright, R., Meeker, J., Vélez Vega, C., Huerta-Montañez, G., Cordero, J., & Alshawabkeh, A. (2018, October). *Integration of Non-Nutritive Suck and Eye Tracking as Markers of Neurodevelopment*. Poster presented at the NIEHS/EPA Children's Environmental Health Center's Annual Meeting, Research Triangle Park, NC.
25. **Zimmerman, E.**, Alu, D.\*, & Connaghan, K. (2018, February). *Exploring the Relation between Infant Oromotor Behaviors and Maternal Prosody of Speech*. Poster presented at Motor Speech Conference, Savannah, GA.
24. **Zimmerman, E.** Bartolome, R.\*, & Maron, J.L. (2018, February). *Determining the Associations between Neonatal Salivary FOXP2 Levels, Oral Feeding, and Early Vocalizations*. Poster presented at Motor Speech Conference, Savannah, GA.
23. Rodgers, R.F., O'Flynn, J. L.\*, Bourdeau, A., & **Zimmerman, E.** (2018, April). *The Role of Anxiety, Depression, and Body Image Concerns in Breastfeeding*. Anxiety and Depression Association of America, 38th Annual Conference, Arlington, VA.
22. Bartolome, R.\*, Kaneko-Tarui, T., Ruthazer, R., Maron, J.L., & **Zimmerman, E.** (2018, March). *Salivary FOXP2 and CNTNAP2 Expression Levels Serve as Noninvasive Biomarkers to Predict Oral Feeding and Speech Outcomes in the Premature Newborn*. Paper presentation at the Eastern Society for Pediatric Research, Philadelphia, PA.
21. Bartolome, R.\*, Tomoko, K., Ruthazer, R., Maron, J. L. & **Zimmerman, E.** (2018, March). *Salivary FOXP2 and CNTNAP2 Expression Levels Serve as Noninvasive Biomarkers to Predict Oral Feeding and Speech Outcomes in the Premature Newborn*. Paper presented at the 42<sup>nd</sup> Annual New England Perinatal Society Meeting, Newport, RI.
20. **Zimmerman, E.**, & Pados, B.F. (2017, November). *Pacifier Properties & Nipple Flow Rates: New Research Insights*. Poster presented at the American Speech-Language-Hearing Association Convention, Los Angeles, CA.
19. Peters, J.\*, **Zimmerman, E.**, & Hoover, J. (2017, November). *The Maternal Language of Infant Feeding & Play*. Poster presented at the American Speech-Language-Hearing Association Convention, Los Angeles, CA.
18. Alu, D.\*, **Zimmerman, E.**, & Connaghan, K. (2017, November). *Maternal Speech Modulation across Feeding & Play Conditions*. Poster presented at the American Speech-Language-Hearing Association Convention, Los Angeles, CA.

17. **Zimmerman, E.** (2017, March). *How Common are Feeding-Swallowing Difficulties in Early Childhood?* Poster presented at the Dysphagia Research Society, Portland, OR.
16. Borkowski, C.\*, **Zimmerman, E.**, Clark, S.\*, & Brown, P. (2016, December). *Expanding Environmental Health Knowledge of Health Specialists to Facilitate Home Visits Education of Clients.* Poster presented at the Environmental Health FEST, Durham, NC.
15. Alshawabkeh, A., Cordero, J., Brown, P., Huerta-Montañez, G., Manjourides, J., Meeker, J., Rosario Pabón, Z., Suh, H., Vélez-Vega, C., & **Zimmerman, E.** (2016, December). *Center for Research of Early Childhood Exposure and Development (CRECE).* Poster presented at the Environmental Health FEST, Durham, NC.
14. **Zimmerman, E.** (2016, November). *Do Children Born Prematurely Catch Up in Their Speech-Language Abilities at School-Age?* Paper presented at the American Speech-Language-Hearing Association Convention, Philadelphia, PA.
13. Borkowski, C.\*, **Zimmerman, E.**, & Brown, P. (2016, November). *Educating Speech-Language Pathologists Working in Early Intervention on Environment Health.* Poster presented at the American Speech-Language-Hearing Association Convention, Philadelphia, PA.
12. DeSousa, C.\*, & **Zimmerman, E.** (2016, November). *An Examination of Visual Stimuli & Their Influence on Suck Patterning in Infants.* Poster presented at the American Speech-Language-Hearing Association Convention, Philadelphia, PA.
11. **Zimmerman, E.**, Liu, A., & Maron, J.L. (2016, March). *Examining the Role of FOXP2 Gene Expression in Oral Feeding Success and Speech Development in Infants Born Prematurely.* Motor Speech Conference, Newport Beach, CA.
10. **Zimmerman, E.**, Maki, M.\*, & Maron, J.L. (2015, November). *FOXP2 Gene Expression & Oral Feeding in the Preterm Infant.* Paper presented at the American Speech-Language-Hearing Association Convention, Denver, CO.
9. Foran, M.\*, & **Zimmerman, E.** (2015, November). *Patterned Auditory Stimulation & Suck Dynamics in Full-term Infants.* Poster presented at the American Speech-Language-Hearing Association Convention, Denver, CO.
8. Forlano, J.\*, & **Zimmerman, E.** (2015, November). *Not all Pacifiers are Created Equal: An Examination of Pacifier Types and Their Influence on Suck Patterning in Infants.* Poster presented at the American Speech-Language-Hearing Association Convention, Denver, CO.
7. **Zimmerman, E.**, & Lau, C. (2015, November). *Infant Feeding: The Development of the Mother-Infant Mutualism Scale.* Paper presented at the American Speech-Language-Hearing Association Convention, Denver, CO.
6. **Zimmerman, E.** (session chair/panelist), Lau, C., & McGratten, K. (2015, November). *Unveiling the Scientific Foundations to Support NICU Dysphagia Management Strategies: A Review of the Facts, Physiology & Functions.* Symposium presented at the American Speech-Language-Hearing Association Convention, Denver, CO.
5. Thompson, K.\*, & **Zimmerman, E.** (2014, November). *Decoding Feeding Readiness Cues in Infants.* Poster presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.

4. **Zimmerman, E.** (session chair/panelist), Hoover, J., Adlof, S., Sterling, A., & Brumberg, J. (2014, November). *Tenure Track: The Job Search and Interview Process*. Symposium presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.
3. **Zimmerman, E.**, Norton, M.\*, Lahav, A., Doheny, L., McMahon, E.\*, Arnold, B., & Levine, P. (2012, March). *The Effects of Maternal Voice and Biological Sounds on Respiratory and Nutritional Outcomes in Preterm Infants*. Paper presented at the Graven's Conference, Clearwater Beach, FL.
2. **Zimmerman, E.**, Barlow, S. M., Kieweg, D., & Lee, J. (2011, November). *The Effects of Vestibular Stimulation Rate and Magnitude of Acceleration on Central Pattern Generation for Chest Wall Kinematics in Preterm Infants*. Poster presented at the American Speech-Language-Hearing Association Convention, San Diego, CA.
1. **Zimmerman, E.**, Barlow, S. M., & Lee, J. (2007, November). *Pacifier Stiffness Alters the Infants Suck Central Pattern Generator Dynamics*. Poster presented at the American Speech-Language-Hearing Association Convention, Boston, MA.

#### **Regional/Local Conferences (n=29)**

29. Zimmerman, E., Hayes, M., Ostadabbas, S., Schwartz-Mette, R. (2021, May). Using artificial intelligence to examine the interplay between pacifier use and sudden infant death syndrome. Platform presented at the Collaborative Research Symposium UMaine and Northeastern.
28. Phillips, H\*., Suresh, A\*., Hines, M\*., Martens, A\*., & **Zimmerman, E.** (2021, April). Automated Motion Detecting Feeding Screener. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
27. Maldonado, L\*., Webb, J., Rodgers, R., & **Zimmerman, E.** (2021, April). Examining the Relation Between Disordered Eating and Breastfeeding Among Black Mothers. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
26. Iizuka, A\*., Hines, M\*., **Zimmerman, E.**, Vélez Vega, C., Cordero, J., Huerta Montañez, G., Rosario Pabón, Z., & Alshawabkeh, A. (2021, April). Examining the Pediatric Feeding in Children Potentially Exposed to Zika Virus During Infancy in Puerto Rico. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
25. Martens, A\*., & **Zimmerman, E.** (2021, April). Does a greater diversity in feeding diet relate to communicative development at 18 months? Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
24. Hines, M\*., Martens, A\*., & **Zimmerman, E.** (2021, March). Relationship between scores on the Child Oral and Motor Proficiency Scale at 12 months and Non-Nutritive Sucking at 3 months. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
23. Dean, E\*., Hines, M\*., Martens, A\*., & **Zimmerman, E.** (2021, April). Maternal Weight and Shape Concerns: Influences on Breastfeeding and Dyad Vocalization Outcomes at 3-months. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.



22. Lewis, J.\*, Heller Murray, E., & **Zimmerman, E.** (2020, April). Non-Nutritive Suck (NNS) and Voice Onset Time (VOT): Examining Infant Motor Speech Coordination. Poster presented virtually at Northeastern's Research Innovation and Scholarship Expo, Boston, Ma.
21. Martens A.\*, Hines, M.\*, & **Zimmerman, E.** (2020, April). The Influence of Artificial Nipple Exposure on Infant Non-Nutritive Suck and Oral Feeding. Poster presented virtually at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
20. Aspinwall, B.\*, **Zimmerman, E.** & Martens, A. (2020, April). Examining the Interaction Between Early Speech-Language Exposure, the Home Environment, and Infant Feeding Development. Poster presented virtually at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
19. Cox, A.\* & **Zimmerman, E.** (2020, April). The Power of Research: Parental Knowledge of Their Infant's Sucking and Feeding Patterns. Poster presented virtually at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
18. Hines, M. \* & **Zimmerman, E.** (2019, August). *Prenatal Environmental Exposures and its Influence on Early Sucking and Communication Development.* Paper presented at the Speech Motor Control Working Group, Boston, MA.
17. Martens, A., Hines, M.\*, **Zimmerman, E.** (2019, May). *Examining the Relation between Sucking, Feeding and Speech Emergence in the First Year of Life.* Poster presented at the Boston Speech Motor Control Symposium, Boston, MA.
16. Hines, M. \* & **Zimmerman, E.**, Huerta-Montanez, G., Alshawabkeh, A., Velez-Vegas, C., Rosario Pablon, Z. (2019, April). *Non-Nutritive Suck (NNS) and Ano-Genital Distance (AGD): Examining the Developmental Effects of Environmental Exposure in a Puerto Rican Infant Cohort.* Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
15. Campagna, J.\*, Sharma, A., Coburn-Sanderson, A., Runquist, A., Hayes, g., Fiuza, A., **Zimmerman, E.**, & Rodgers, R. (2019, April). *What Does Mom Say? An Exploration of the Resources Needed During the Postpartum Experience.* Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
14. Fisher, L.\*, Rodgers, R., & **Zimmerman, E.** (2019, April). *Examination of Partner Influences on Breastfeeding and Body Image Among Mothers.* Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
13. Bartolome, R.\*, Tomoko, K., Ruthazer, R., Maron, J. L., & **Zimmerman, E.** (2018, May). *Salivary FOXP2 and CNTNAP2 Expression Levels Serve as Noninvasive Biomarkers to Predict Oral Feeding and Speech Outcomes in the Premature Newborn.* Poster presentation at the Harvard Neonatal-Perinatal Medicine Fellows' Poster Symposium, Boston, MA.
12. Peters, J.\*, & **Zimmerman, E.** (2018, April). *An Examination of Maternal Language during Feeding and Play.* Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
11. McCarthy, P.\*, & **Zimmerman, E.** (2018, April). *Non-Nutritive Suck in Healthy Full-Term Infants.* Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.

10. Thompson, K.\*, & Zimmerman, E. (2018, April). *mHealth & SLPs: A Pediatric Focus*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
9. Hines, M.\*, & Zimmerman, E. (2018, April). *Non-Nutritive Suck as a Noninvasive Biomarker of Brain Development in a Puerto Rican Cohort: A Feasibility Study*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
8. Alu, D.\*, & Zimmerman, E. (2018, April). *An Examination of Maternal Prosody in Feeding and Play*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
7. Zimmerman, E., Bartolome, R\*., Ruthazer, R., & Maron, J. L. (2017, November). *FOXP2 and CNTNAP2 Expression Levels: A Noninvasive Biomarker to Predict both Oral Feeding & Speech-Language Success*. Poster presented at Tuft's Translational Research Day, Boston, MA.
6. Bartolome, R.\*, Tomoko, K., Ruthazer, R., Maron, J. L., & Zimmerman, E. (2017, October). *FOXP2 as a Novel Salivary Biomarker to Predict Oral Feeding Success and Speech-Language Outcomes in the Premature Newborn*. Paper presentation at the American Academy of Pediatrics sponsored 43<sup>rd</sup> Annual Northeastern Conference on Perinatal Medicine, Chatham, MA.
5. DeSousa, C.\*, & Zimmerman, E. (2017, March). *Can Visual Stimuli Alter Early Motor Behaviors?* Poster presented at Boston Speech Motor Control Mini-Symposium, Boston, MA.
4. Foran, M.\*, & Zimmerman, E. (2016, April). *Patterned Auditory Stimulation and Suck Dynamics in Full-Term Infants*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
3. Forlano, J.\*, & Zimmerman, E. (2016, April). *Not All Pacifiers Are Created Equal: An Examination of Pacifier Types and Their Influence on Suck Patterning in Infants*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
2. Maki, M.\*, & Zimmerman, E. (2015, April). *FOXP2 Expression as a Predictor of Oral Feed Success*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.
1. Thompson, K.\*, & Zimmerman, E. (2015, April). *Decoding Feeding Readiness Cues in Infants*. Poster presented at Northeastern's Research Innovation and Scholarship Expo, Boston, MA.

## TEACHING & ADVISING

### Courses

#### **Northeastern University, Department of Communication Sciences & Disorders**

Fall 2019	SLPA 5109: Neurology of Communication (n=55, graduate (G))
Fall 2018	SLPA 5109: Neurology of Communication (n=33, G)
Spring 2018	SLPA 1103: Anatomy & Physiology of Speech & Hearing Mechanism (n=9, undergraduate (UG))
Fall 2017	SLPA 5109: Neurology of Communication (n=57, G)
Spring 2017	SLPA 1103: Anatomy & Physiology of Speech & Hearing Mechanism (n=17, UG)

Spring 2017	SLPA 5109: Neurology of Communication ( $n=55$ , G)
Spring 2016	SLPA 1103: Anatomy & Physiology of Speech & Hearing Mechanism ( $n=21$ , UG)
Spring 2016	SLPA 1102: Language Development ( $n=19$ , UG)
Fall 2015	SLPA 5109: Neurology of Communication ( $n=65$ , G)
Spring 2015	SLPA 1103: Anatomy & Physiology of Speech & Hearing Mechanism ( $n=19$ , UG)
Spring 2015	SLPA 1102: Language Development ( $n=19$ , UG)
Fall 2014	SLPA 5109: Neurology of Communication ( $n=59$ , G)
Spring 2014	SLPA 1102: Language Development ( $n=13$ , UG)
Spring 2014	SLPA 1103: Anatomy & Physiology of Speech & Hearing Mechanism ( $n=14$ , UG)

***Guest Lectures***

Spring 2020	“Swallowing: A Pediatric Focus,” SLPA 1101: Introduction to Communication Disorders, Northeastern University
Spring 2020	“An Examination of Non-nutritive Suck in relation to Prenatal Environmental Exposures and Subsequent Neurodevelopment,” PHTH2414: Environmental Health, Northeastern University
Spring 2019	“Swallowing: A Pediatric Focus,” Comm-Dis 415: Speech and Language Disorders, University of Massachusetts
Spring 2019	“Anatomy & Physiology of Communication,” Honors Master Class, Northeastern University
Fall 2016	“Introduction to the Speech & Neurodevelopment Lab,” BIOE 6000: Principles of Bioengineering, Northeastern University
Spring 2015	“Enabling Engineering to Optimize Outcomes for Premature Infants,” EECE 270: Enabling Engineering, Northeastern University
Spring 2014	“Sucking, Feeding & Sensory Development: The role of Health Professions,” HLTH5450: Health Care Research, Northeastern University
Fall 2013	“Sensory Development, Vestibular-Tactile Stimulation and Early Feeding Skills,” Prenatal Experience & Brain Development: Epidemiological Evidence, Harvard School of Public Health
Fall 2013	“Sucking, Feeding & Sensory Development,” COMD 501: Anatomy and Physiology of the Speech and Hearing Mechanism, University of South Carolina (via Google+ Hangout)

**Supervision of Graduate Students**

***Ph.D. Advisor***

2020-	Alaina Martens, Doctoral Program in Human Movement and Rehabilitation Sciences
2017-2018	Kelsey Thompson, Doctoral Program in Personal Health Informatics

***Overseas Reader Evaluation: Ph.D. Confirmation of Candidature Document***

- 2020 Pelithanthrige Nuwani Isuru Dharmarathna (Principal Advisor: Anna Miles), University of Auckland
- 2019 Katherine Sanchez (Principal Advisor: Angela Morgan), University of Melbourne
- 2018 Yashna Sagar (Principal Advisor: Dr. Samudragupta Bora), University of Queensland Faculty of Medicine

***Master's Thesis Advisor***

- 2020-2021 Elizabeth Dean. "Exclusive breastfeeding: Examining the relation between maternal and infant psychosocial and communicative factors." Master's Program in Speech Language Pathology and Audiology
- 2019-2020 Billi Aspinwall. "Examining the Interaction between Early Speech-Language Exposure, the Home Environment, and Infant Feeding." Master's Program in Speech Language Pathology and Audiology
- 2019-2020 Nicole Hardy. "The Effect of Birth Order on Breastfeeding Self-Efficacy and Infant Feeding Abilities." Master's Program in Speech Language Pathology and Audiology
- 2017-2018 Paige McCarthy. "An Examination of Non-Nutritive Suck in Healthy Full-Term Infants." Master's Program in Speech Language Pathology and Audiology
- 2017-2018 Julie Peters. "The Language of Feeding and Play." Accelerated Program in Communication Sciences & Disorders
- 2016-2017 Courtney DeSousa. "The Influence of Visual Stimuli on Suck Dynamics." Accelerated Program in Communication Sciences & Disorders
- 2015-2016 Megan Foran. "Patterned Auditory Stimulation & Suck Dynamics in Full-Term Infants." Accelerated Program in Communication Sciences & Disorders
- 2015-2016 Jaclene Forlano. "Pacifier Types and their Influence on Suck Patterning in Infants." Accelerated Program in Communication Sciences & Disorders
- 2013-2015 Kelsey Thompson. "Decoding Feeding Readiness Cues in Infants." Accelerated Program in Speech Language Pathology and Audiology
- 2014-2015 Monica Maki. "FOXP2 Gene Expression as a Predictor of Oral Feeding." Master's Program in Speech Language Pathology and Audiology

***Thesis Committee Member***

- 2020-2021 Kayla Doherty (Advisor: Kristen Allison). "The Impact of Communication Breakdowns on Social Participation in Children with Cerebral Palsy"
- 2019-2020 Jessica Bren (Advisor: Kristen Allison). "Effects of Automaticity and Melody on Speaking Rate in Preschoolers." Communication Sciences & Disorders, Northeastern University
- 2017-2018 Zachary Kopp (Advisor: Kate Connaghan). "Acoustic-Phonetic Convergence by Typically Developing Adolescent Speakers." Communication Sciences & Disorders, Northeastern University

- 2015-2018 Ruby Bartolome (Advisor: Jill Maron). "FOXP2 as a Novel Salivary Biomarker to Predict Oral Feeding Success and Speech-Language Outcomes in the Premature Newborn." Fellowship Program in Neonatal-Perinatal Medicine, Floating Hospital for Children at Tufts Medical Center
- 2014-2015 Chelsea Wertheim (Advisor: Kate Connaghan). "Attitudes toward Speakers with Dysarthria: A Comparison of Student, Clinician, and Emergency Worker Listener Judgments." Communication Sciences & Disorders, Northeastern University
- 2013-2015 Jessica Davidson (Advisor: Jill Maron). "The Role of Olfactory Stimulation and Development in Successful Oral Feeding in the Premature Newborn." Fellowship Program in Neonatal-Perinatal Medicine, Floating Hospital for Children at Tufts Medical Center

**Academic Advising Graduate Students**

- 2019-2020 1<sup>st</sup> year students ( $n=7$ ) and 2<sup>nd</sup> year students ( $n=6$ ), total,  $n=13$
- 2018-2019 1<sup>st</sup> year students ( $n=5$ ) and 2<sup>nd</sup> year students ( $n=7$ ), total,  $n=12$
- 2017-2018 1<sup>st</sup> year students ( $n=7$ ) and 2<sup>nd</sup> year students ( $n=6$ ), total,  $n=13$
- 2016-2017 1<sup>st</sup> year students ( $n=6$ ) and 2<sup>nd</sup> year students ( $n=7$ ), total,  $n=13$
- 2015-2016 1<sup>st</sup> year students ( $n=7$ ) and 2<sup>nd</sup> year students ( $n=8$ ), total,  $n=15$
- 2014-2015 1<sup>st</sup> year students ( $n=8$ ) and 2<sup>nd</sup> year students ( $n=4$ ), total,  $n=12$
- 2013-2014 1<sup>st</sup> year students ( $n=4$ ) and 2<sup>nd</sup> year students ( $n=0$ ), total,  $n=4$

**Supervision of Undergraduate Students**

**Health Science Capstone Faculty Mentor:**

- 2019-2020: Project Title: *Infant Non-Nutritive Suck and Voice Onset Time*.  
Students: Josie Lewis  
Sponsor: Zimmerman

**Mechanical Engineering Capstone Faculty Mentor:**

- 2017-2018: Project Title: *Infant Mouth Simulator*.  
Students: Adam Zumbado, Sebastian Key, Myles Vilceus, David Johnston, & Craig Conecoff  
Sponsor: Zimmerman, Consultant: Andrew Gouldstone
- 2014-2015: Project Title: *Customized Pacifiers for Non-Nutritive Suck Research\**.  
Students: Nathan Streeter, Hajar Massaadi, Alexa Lee Hunko, Scott Melcher & Paula Santos Shevett  
Sponsor: Zimmerman, Consultant: Andrew Gouldstone  
\*Awarded Biggest Impact

**SERVICE & PROFESSIONAL DEVELOPMENT**

**Service to Northeastern University**

***Department Service***

2021-present CSD Diversity, Equity & Inclusion Committee  
2020-present Search Committee member for one Tenure-Track Faculty Line for SOCRS  
2019-present Search Committee Chair for one Tenure-Track Faculty Line  
2015-present Evidence Based Practice Committee  
2014-present Research Colloquium Committee  
2016-2017 Search Committee for Two Tenure-Track Faculty Lines  
2014, 2021 Admissions Committee  
2013-2017 Curriculum Committee  
2013-2014 PhD Committee

***College Service***

2021-present Bouve Research Task Force  
2019-present Search Committee for Department Chair in Health Sciences, External Committee Member  
2014 Bouvé Living Learning Community Student-Faculty Dinner Presenter. *10 Things to Learn During Undergraduate: Beyond Coursework*, Boston, MA.

***University Service***

2021-present Environment Strategic Group  
2021-present Northeastern Strategic Planning - University Cluster  
2017-present Honors Educational Advisory Committee Meeting  
2015 Faculty Marshal for Northeastern Commencement

**Service to the Profession**

***Journal Editor (Pediatric Feeding/Swallowing)***

2018-present Canadian Journal of Speech-Language Pathology and Audiology

***Journal Editorial Board Member***

2019-present Dysphagia  
2020-present American Journal of Speech-Language Pathology

***NIH's Environmental influences on Child Health Outcomes (ECHO) Program***

2020- publications committee member

***Journal Reviewer***

Nutrients  
PLOS ONE  
Dysphagia  
Journal of Communication Disorders  
Journal of Nature and Science  
Journal of Speech, Language, and Hearing Research  
American Journal of Perinatology  
Acta Paediatrica

Early Human Development  
Frontiers in Cognitive Science  
International Journal of Speech-Language Pathology  
International Journal of Environmental Research and Public Health  
JMIR mHealth and uHealth  
Speech, Language and Hearing

**Book Reviewer**

Plural Publishing: Management of Swallowing and Feeding Disorders in Schools

**External Grant Reviewer**

2018 Maternal, Newborn, Child, and Youth Strategic Clinical Network's (MNCY SCN) *Health Outcomes Improvement Fund II* (HOIF II) Grant competition, PolicyWise for Children & Families, CA

**Dysphagia Research Society (DRS)**

DRS 2021 Program Planning Committee Meeting Member  
DRS 2021 Oral Presentation and Poster session judge

**American Speech and Hearing Association (ASHA)**

- Student to Empowered Professional (S.T.E.P.) Mentoring Program (January-April 2016)
- Students Preparing for Academic Research Career (SPARC) Award, External Award Reviewer (2016)
- PROMoting the next GENERation of Researchers (PROGENY) faculty-researcher partner (2016, 2019)
- Mentoring Academic Research Careers (MARC) Mentoring Program (October 2018-present)
- *Pediatric Normal and Disordered Feeding & Swallowing* Topic Committee member for ASHA 2021

**American Speech-Language Hearing Foundation**

- Graduate Student Scholarship, External Scholarship Reviewer (2018)
- University Giving Program, Ambassador (August, 2019-present)

**NEBEC 2014 Boston: 40<sup>th</sup> Annual Northeast Bioengineering Conference**

Judged the Undergraduate Design Competition

**Service to the Community**

**Zimmerman, E.** (2015, March). Great Expectations – Knowing Your Purpose, Embracing the Challenge, *The First Ladies of Boston Renaissance, Boston Renaissance Charter School*, Boston, MA.

**PROFESSIONAL AFFILIATIONS**

Certified Member, American Speech and Hearing Association  
Member, Dysphagia Research Society  
Member, Massachusetts Speech-Language Hearing Association  
Member, The Society for Neuroscience

**PATENTS**

Barlow, S. M., Kieweg, D., & **Zimmerman, E.** *Medical Device for Therapeutic Stimulation of the Vestibular System.* Patent #9,844,483, Issue Date: 12/19/17

**CLINICAL POSITIONS**

2010-2011 Speech Language Pathologist (Part-time)  
Lawrence Therapy Services, Lawrence, KS  
2007-2011 Speech Language Pathologist (Part-time)  
Premier Therapy Services, Kansas City, MO