

MARESSA KENNEDY

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EDUCATION

University of Arizona

August 2025-Present

Pursuing PhD in Speech, Language, and Hearing Sciences
Mentor: Dr. Darling-White

Northern Arizona University (NAU)

Graduated December 2024

Pursuing B.S in Biomedical Sciences with a minor in Psychology
Member of Honors College
Current Cumulative GPA-4.0

RESEARCH EXPERIENCE

Undergraduate Research Assistant

August 2022 – July 2025

Mentor: Christopher Mayerl

- Develop and lead my own independent project investigating sensorimotor integration using a soft robotic nipple that can change flow rate and nipple stiffness while infant mammals are feeding.
- Perform sterile surgeries, including making an incision, identifying muscles with blunt dissection, inserting bipolar electrodes and radiopaque markers, and suturing.
- Administer and maintain anesthesia and properly monitor infant mammals during sterile surgery.
- Perform husbandry for infant mammals, including feeding, administering medication, and keeping proper medical records.
- Sterilize surgical supplies and tools through the usage of gas and steam sterilization methods.
- Participate in data collection with biplane high-speed X-ray video, synchronized with electromyography, respiratory patterns, and intraTalk pressure generation.
- Process and analyze data using R, 3D Slicer, Lab Chart, ilastik, ImageJ, and XMALab.

WORK EXPERIENCE

Animal Technician

January 2024 – July 2025

- Ensure the variety of animals housed in vivarium are healthy by doing daily health checks, providing food and water, and cleaning their cages.
- Provide proper medication to animals that are under a treatment plan.
- Take inventory of supplies, check expiration dates, and restock as needed.
- Sanitize cages using a cage wash and steam sterilization.

PUBLICATIONS

*Indicates equal contribution

- Kennedy ME***, Smith AE*, Kaczmarek EB, Velasco AB, Hamm M, Wacker Z, Steer KE, Sarmet M, Fauveau AM, Shideler HE, Wallace SM, Stroud TH, Blilie ME, Ceja-Navarro J, Mayerl CJ. Impact of chronic consumption of thickened milk on infant feeding physiology in an animal model. In prep.
- Smith AE, Kaczmarek EB, **Kennedy ME**, Wallace SM, Volpe EC, Anderson DJ, Smith HI, Shideler HE, Stroud TS, Mayerl CJ. Fluid flow and feeding performance in infant mammals: Evaluating the impact of nipple design. *Journal of Experimental Biology*. doi: ___
- Kennedy ME**, Kaczmarek EB, Smith AE, Volpe EC, Anderson DJ, Wallace SM, Shideler HE, Smith HI, Stroud TH, Mayerl CJ. 2025. Infant pigs demonstrate motor adaptation across multiple physiologic functions during feeding in response to dynamic changes in milk flow rate. *Journal of Applied Physiology*. doi: 10.1152/jappphysiol.00552.2025
- Kaczmarek EB*, Shideler HE*, Wallace SM, Anderson DJ, Volpe EC, **Kennedy ME**, Smith HI, Smith AE, Stroud TH, Mayerl CJ. 2025. Evaluating the impact of nipple design on tongue function in infant feeding using a dynamic endocast. *Integrative and Comparative Biology*, icaf130. doi: 10.1093/icb/icaf130
- Kaczmarek EB, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith AE, Wallace SM, **Kennedy ME**, Velasco AB, Stroud TS, Blilie ME, Mayerl CJ. 2025. A ducted, biomimetic nipple replicates breastfeeding mechanics through ontogeny in an infant animal model. *Pediatric Research*. doi: 10.1038/s41390-025-04358-6
- Mayerl CJ, Kaczmarek EB, **Kennedy ME**, Shideler HE, Smith AE, German RZ. 2025. Regional heterogeneity in the electromyography activity of extrinsic tongue muscles is critical to tongue function. *Integrative and Comparative Biology*, icafo29. doi: 10.1093/icb/icafo29
- Sarmet M, Kaczmarek E, Fauveau A, Steer KE, Velasco A, Smith A, **Kennedy M**, Shideler H, Wallace S, Stroud T, Blilie M, Mayerl CJ. A machine learning pipeline for automated bolus segmentation and area measurement in swallowing videofluoroscopy images of an animal model. *Dysphagia*, *Accepted*.

GRANT FUNDING

Hooper Undergraduate Research Award (2024 - 2025): "Unveiling the Neurophysiologic Underpinnings of Infant Feeding: A Comparative Study Utilizing a Robotic-Nipple System"
Northern Arizona University Office of Undergraduate Research and Creative Activity **\$5000**

AWARDS AND CERTIFICATIONS

- University Fellowship, University of Arizona (Fall 2025, Spring 2025)
- Golden Axe Award (Fall 2024)
- Distinguished Senior of the College of the Environment, Forestry, and Natural Sciences (Fall 2024)
- Outstanding Senior of Biological Sciences (Fall 2024)
- Dean's List (Fall 2021, Spring 2021, Fall 2022, Spring 2022, Fall 2023)
- Phi Kappa Phi Honors Society (Spring 2023)
- Level 1 Certified Tutor – Northern Arizona University (Spring 2023)
- Lumberjack Scholarship (Fall 2021, Spring 2021, Fall 2022, Spring 2022, Fall 2023, Spring 2023, Fall 2024)

TEACHING EXPERIENCE

Academic Success Center Tutor

August 2022 - May 2023

- Individually tutor students, as well as facilitate group tutoring sessions during drop-in tutoring in a variety of subjects, including Chemistry, Statistics, Biology, Anatomy, and Genetics.
- Help students succeed by explaining material in a thorough manner that differs depending on what each student's needs are.
- Prepare lessons for students who explain what they need help in before the tutoring session.
- Assess student's current level of understanding for a class and promote achievement of goals by providing good study habits.

Microbiology Lab Teaching Assistant

August 2022 - December 2022

- Assisted graduate student with lectures, demonstrations, and answering questions that students had throughout the lab period.
- Set up weekly supplies for lab activities before class began.
- Maintained student bacterial cultures weekly.
- Became proficient in using a microscope, preparing microscope slides using various staining methods, efficient in using sterile technique, pipettes, gel electrophoresis & thermocycler.

PRESENTATIONS

* Indicates co-first authorship

Mayerl CJ, Smith HI, Pradhan CE, Callis HR, **Kennedy ME**, Shideler HE, Anderson DJ, Smith AE, Stroud TH, Kaczmarek EB. Size matters: Smaller bottle nipple dimensions improve preterm Infant feeding performance and aerodigestive function through ontogeny (Talk).

Dysphagia Research Society Annual Meeting, Aurora, CO.

March 2026

Pradhan CE, Kaczmarek EB, Smith AE, **Kennedy ME**, Smith HI, Callis HR, Anderson DJ, Shideler HE, Stroud TH, Mayerl CJ. The impact of nipple size and ontogeny on suckling mechanics and coordination in preterm infant pigs (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Kaczmarek EB, Smith HI, Smith AE, Anderson DJ, **Kennedy ME**, Shideler HE, Wallace SM, Stroud TH, Mayerl CJ. Linking mechanics to performance in infant mammalian suckling (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Smith HI, Kaczmarek EB, Callis HR, Pradhan CE, Smith AE, **Kennedy ME**, Shideler HE, Anderson DJ, Stroud TH, Mayerl CJ. Size Matters: Smaller Bottle Nipple Dimensions Improve Preterm Infant Feeding Performance (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Callis HR, Kaczmarek EB, Smith AE, Smith HI, Pradhan CE, **Kennedy ME**, Shideler HE, Anderson DJ, Stroud TH, Mayerl CJ. Implications of nipple size on aerodigestive physiology in premature infant pigs (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Anderson DJ, Schneider NG, Brady AI, Shideler HE, Callis HR, Smith AE, **Kennedy ME**, Smith HI, Pradhan CE, Stroud TH, Kaczmarek EB, Manafzadeh AR, Gignac PM, Anderson CV, Mayerl CJ. Flexible tongue, constrained hyoid: Bearded dragon hyolingual kinematics vary with prey size (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Brady AI, Anderson DJ, Schneider NG, Shideler HE, Callis HR, Smith AE, **Kennedy ME**, Smith HI, Pradhan CE, Stroud TH, Kaczmarek EB, Manafzadeh AR, Gignac PM, Anderson CV, Mayerl CJ. One system, two tasks: hyolingual mechanics of eating and drinking in bearded dragons (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Portland, OR. January 2026

Kennedy ME, Smith AE, Stroud TH, Volpe E, Andersen DA, Smith HI, Wallace SM, Shideler HE, Yazzie SA, Sabato HC, Kaczmarek EB, Mayerl CJ. Unraveling the Neuromotor Responses to Dynamic Variation in Milk Flow Rate During Infant Pig Feeding (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Southwest Regional Meeting of Organismal Biologists, Fullerton, CA. October 2024

Smith AE, **Kennedy ME**, Stroud TH, Volpe E, Andersen DJ, Smith HI, Wallace SM, Shideler HE, Yazzie SA, Sabato HC, Kaczmarek EB, Mayerl CJ. Fluid Dynamics and Feeding Performance in Infant Mammals: Evaluating the Impact of Nipple Design (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Southwest Regional Meeting of Organismal Biologists, Fullerton, CA. October 2024

Mayerl CJ, Kaczmarek EB, **Kennedy ME**, Smith AE, Wallace SM, Shideler HE, Volpe EC, Anderson DJ, Stroud TH, Smith HI, Sabato HC, Yazzie SA, Sheldon S, Hieronymus T and German RZ. Regional heterogeneity in the EMG activity of extrinsic tongue muscles is critical to tongue function (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Volpe EC, Kaczmarek EB, Anderson, DJ, **Kennedy, ME**, Sabato, HC Shideler, HE, Smith, AE, Smith, HI, Stroud, TH, Wallace, SM, Yazzie, SA, Mayerl, CJ. Mechanisms driving differences in suction generation during feeding in infant and preterm pigs (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Southwest Regional Meeting of Organismal Biologists, Fullerton, CA. October 2024

Kaczmarek EB, Yazzie SA, Anderson DJ, **Kennedy ME**, Smith AE, Shideler HE, Wallace SM, Stroud TH, Sabato HC, Smith HI, Volpe E, Mayerl CJ. Evaluating the role of the tongue in the coordination of sucking and breathing in infant feeding (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Southwest Regional Meeting of Organismal Biologists, Fullerton, CA. October 2024

Smith HI, Kaczmarek EB, Smith AE, **Kennedy ME**, Wallace SM, Shideler HE, Volpe E, Anderson DJ, Sabato HC, Yazzie SA, Stroud TH, Mayerl CJ. Impact of Nipple Design on Feeding Biomechanics in Term and Preterm Piglets (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Anderson DJ, Smith AE, Stroud TH, Volpe E, **Kennedy ME**, Smith HI, Wallace SM, Shideler HE, Yazzie SA, Sabato HC, Kaczmarek EB, Mayerl CJ. Coordination in the fourth dimension: Impacts of gestational age at birth and nipple type on Suck-swallow-breath coordination during infant feeding (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Shideler HE, Stroud TH, Volpe E, Anderson DJ, Wallace SM, **Kennedy ME**, Smith AE, Sabato HC, Smith HI, Yazzie SA, Kaczmarek EB, Mayerl CJ. Unveiling the Tongue's Dynamic Role: A Novel Approach to Investigating the Relationship Between Tongue Movement and Suckling Performance in Mammalian Infants (Talk).

Society for Integrative and Comparative Biology Annual Meeting, Atlanta, GA. January 2025

Kennedy ME, Kaczmarek EB, Sarmet M, Steer KE, Stroud TH, Fauveau AM, Smith AE, Shideler HE, Velasco AB, Wallace SM, Blilie ME, Mayerl CJ. Impact of Chronic Use of Viscous Milk on Infant Feeding Physiology: Swallowing (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA. January 2024

Northern Arizona University Biological Sciences Symposium, Flagstaff, AZ. February 2024

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Smith AE, Kaczmarek EB, Sarmet M, Steer KE, Stroud TH, Fauveau AM, **Kennedy ME**, Shideler HE, Velasco AB, Wallace SM, Blilie ME, Mayerl CJ. Impact of Chronic Use of Viscous Milk on Infant Feeding Physiology: Sucking. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA. January 2024

Northern Arizona University Biological Sciences Symposium, Flagstaff, AZ. February 2024

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Yazzie SA, Kaczmarek EB, Smith AE, Shideler HE, **Kennedy ME**, Wallace SM, Stroud TH, Anderson DJ, Smith HI, Sabato HC, Mayerl CJ. The Relationship Between Respiration and Oropharyngeal Muscle Activity During Sleeping and Feeding in an Infant Mammal (Poster).

Northern Arizona University Summer Research Programs Ceremony July 2024

Sandoval L, Kaczmarek EB, Sarmet M, Steer KE, Stroud TH, Fauveau AM, Smith AE, **Kennedy ME**, Shideler HE, Velasco AB, Wallace SM, Blilie ME, Mayerl CJ. Enhancing Swallow-Breath Coordination in Infant Feeding Using a Biomimetic Bottle Nipple (Poster).

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Mayerl CJ, Kaczmarek EK, Sarmet M, Steer KE, Stroud T, Fauveau AM, Smith AE, Wallace SM, **Kennedy ME**, Velasco AB, Hamm Mia, Wacker Zailey, Ceja-Navarro J. Chronic Use of Thickened Fluids in Infant Feeding Impacts Growth, Physiology, and Performance in an Animal Model (Talk).

Dysphagia Research Society Annual Meeting, San Juan, Puerto Rico. March 2024

Sarmet M, Fauveau AM, Steer KE, Velasco AB, Smith AE, **Kennedy ME**, Shideler HE, Wallace SM, Stroud T, Blilie ME, Kaczmarek EK*, Mayerl CJ. A machine learning pipeline for automated bolus identification, segmentation, and area measurement in swallowing videofluoroscopy images of an animal model (Poster).

Dysphagia Research Society Annual Meeting, San Juan, Puerto Rico. March 2024

Kaczmarek EK, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith AE, Wallace S, **Kennedy ME**, Velasco AB, Stroud T, Blilie ME, Mayerl CJ. A biomimetic bottle nipple impacts infant feeding performance, biomechanics, and physiology in an animal mode (Talk).

Dysphagia Research Society Annual Meeting, San Juan, Puerto Rico. March 2024

Shideler HE, Kaczmarek EK, Sarmet M, Steer KE, Stroud T, Fauveau AM, Smith AE, Wallace SM, **Kennedy ME**, Velasco AB, Blilie ME, Mayerl CJ. Impact of dynamic changes in flow rate on infant feeding function in an animal model. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA. January 2024

Northern Arizona University Biological Sciences Symposium, Flagstaff, AZ. February 2024

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Velasco AB, Kaczmarek EK, Sarmet M, Steer KE, Stroud T, Fauveau AM, **Kennedy ME**, Smith AE, Shideler HE, Wallace SM, Blilie ME, Mayerl CJ. Consequences of chronic consumption of thickened milk on infants in an animal model. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA. January 2024

Northern Arizona University Biological Sciences Symposium, Flagstaff, AZ. February 2024

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Wallace SM, Kaczmarek EK, Sarmet M, Steer KE, Smith AE, Shideler HE, **Kennedy ME**, Velasco AB, Stroud TH, Fauveau AM, Blilie ME, Mayerl CJ. Impact of a biomimetic, ducted nipple on infant feeding function through ontogeny in an animal model. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Poster).

Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA. January 2024

Northern Arizona University Biological Sciences Symposium, Flagstaff, AZ. February 2024

Kaczmarek EK, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith AE, Wallace S, **Kennedy ME**, Velasco AB, Stroud T, Blilie ME, Mayerl CJ. Feeding biomechanics and physiology of infant pigs raised on standard and biomimetic bottle nipples (Talk).

Southwest Organismal Biology Annual Meeting, Claremont, CA.

November 2023

Cecilia Altenbach*, Lauren Fennell*, **Maressa Kennedy***, Katrina Nguyen*. Understanding Pancreatic Cancer: Early Detection, Treatment Options, and Future Directions (Poster).

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2024

Brady Henderson*, Aidan Ramsey*, **Maressa Kennedy***. Investigating Effective Diversion Programs for Emerging Adults in Flagstaff (Poster).

Community Research and Engagement Symposium, Flagstaff, AZ.

December 2024

Haydn Halfacre*, Ryan Joel*, **Maressa Kennedy***, Nathan Langley*. The Importance of Emotional Intelligence in Family Members and Education (Poster).

Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ. April 2023

ACADEMIC SERVICE

Global Medical Brigades

Fall 2023 – December 2024

Treasurer

- Participate as a student volunteer working alongside medical professionals in order to implement sustainable health systems in communities with limited health care access.
- Create a variety of fundraisers for our medical brigade in Honduras.

Student Health Advocacy Club

Spring 2023 - December 2024

Wellness on Wheels initiative leader

- Act as a liaison between student and administration on all health-related topics.
- Ensure the safety of pedestrians and bikers by making brochures and hosting talks addressing wheel safety.

Blue Key Honor Society

Fall 2022 - December 2024

Service Chair

- Connect to the Flagstaff community by completing community service work throughout Flagstaff every Saturday.
- Organize the NAU homecoming parade and a Spring event that benefits a local non-profit organization.
- Utilize excellent communication skills as service chair while planning the community service that the club partakes in every weekend.

American Medical Student Association

Spring 2022 - December 2024

- Listen to an array of speakers that correlate to the medical field in some aspect (medical school students, professors, doctors, and many more).

COMMUNITY OUTREACH

Honduras Medical Brigade

August 2024

- Partake in a rural clinic by assisting intake, triage, and consultation of individuals that have limited access to healthcare.
- Became proficient in utilizing electronic medical system records.
- Led a health education workshop for children in Honduras on how to maintain proper hand hygiene.

Flagstaff Medical Center

Spring 2024 - Present

- Complete two hours of service in the Special Care Nursery (SCN) weekly.
- Ensure a clean and safe environment for the babies being cared for.

Community University Public Inquiry - Health Equity

Fall 2023

- Research diversion programs that are available in Flagstaff compared to similar geographical areas in the United States, focusing on the health benefits that these programs have.
- Participate in ride alongs with probation officers in order to understand the criminal system in Flagstaff.
- Interview and present my findings to individuals who run the diversion program in Flagstaff in order to promote changes.

Valleywise Health Hospital

Summer 2022 & Summer 2023

- Completed 50 hours of volunteer service in the Pediatrics clinic assisting advisors, stocking medical supplies, and interacting with patients.
- Completed 50 hours of volunteer service in the Pre-Op surgery area assisting nurses, communicating with patients & family members, bringing patients back to Pre-Op, stocking medical supplies in Pre-Op and Post-Anesthesia Care Unit