

Christopher J Mayerl

Assistant Professor

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EDUCATION

- Ph.D., Biological Sciences. Clemson University. 2018
Advisor: Richard Blob
The functional significance of structural novelty in the locomotor apparatus of turtles
- M.S., Biology. Vrije Universiteit Brussel. 2013
Advisor: Raoul Van Damme (University of Antwerp)
The impact of elevation on the biology and ecology of the Tyrrhenian Wall Lizard (Podarcis tiliguerta).
- B.S., Zoology. Humboldt State University 2011

PROFESSIONAL APPOINTMENTS

- Assistant Professor. Northern Arizona University (NAU) 2022 - Present
- Postdoctoral fellow. Northeast Ohio Medical University (NEOMED) 2018 – 2022
Mentor: Rebecca German

PEER REVIEWED PUBLICATIONS

Underline = Trainee coauthor, * = shared first authorship

48. Kaczmarek EB, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith AE, Wallace SM, Kennedy ME, Velasco AB, Stroud TH, Blilie ME, **Mayerl CJ**. A ducted, biomimetic nipple replicates breastfeeding mechanics through ontogeny in an infant animal model. *Bioinspiration and Biomimetics*, *In prep*.
47. Sarmet M, Kaczmarek EB, Fauvaeu 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*, *In review*
46. **Mayerl CJ**, Capano JG, van Meer NMME, Weller HI, Kaczmarek EB, Chadam M, Blob RW, Brainerd EL, Wyneken J. Turtle girdles: Comparing the relationships between environment and behavior on forelimb function in loggerhead sea turtles (*Caretta caretta*) and river cooters (*Pseudemys concinna*). *Journal of Morphology*, *Accepted*.
45. **Mayerl CJ**, Kaczmarek EB, Smith AE, Shideler HE, Blilie ME, Edmonds CE, Steer KE, Adjerid K, Howe S, Johnson ML, Danos N, and German RZ. Chronic use of a ducted bottle nipple improves feeding outcomes in an infant animal model. *Dysphagia*, *Accepted*

Christopher Mayerl

44. Edmonds CE, Robbins K, Dvorak E, Howe SP, Sheldon S, **Mayerl CJ**, Owairu B, Young B, German RZ. The Effects of Simulated Gastroesophageal Reflux on Infant Pig Oropharyngeal Feeding Physiology. *American Journal of Physiology-Gastrointestinal and Liver Physiology*, **327**, G105-G116.
43. Iijima M, **Mayerl CJ**, Munteanu VD, Blob RW. Forelimb muscle activation patterns in American alligators: Insights into the evolution of limb posture and powered flight in archosaurs. *Journal of Anatomy*, **244**, 943-958.
42. Steer KE, Johnson ML, Edmonds CE, Adjerid K, Bond LE, German RZ, **Mayerl CJ**. 2024. The Impact of Varying Nipple properties on Infant Feeding Physiology and Performance Throughout Ontogeny in a validated animal model. *Dysphagia*, **39**, 460-467.
41. Howe SP, Steer KE, Johnson ML, Adjerid K, Edmonds CE, German RZ, **Mayerl CJ**. 2023. Exploring the Interaction of Viscosity and Nipple Design on Feeding Performance in an Infant Pig Model. *Journal of Texture Studies*, **54**, 936-946.
40. **Mayerl CJ** and German RZ. 2023. Evolution, diversification, and function of the maternal-infant dyad in mammalian feeding. *Philosophical Transactions B*, **378**, 20220554.
39. Gould FDH, **Mayerl CJ**, Adjerid K, Edmonds CE, Charles N, Johnson ML, German RZ. 2023. Impact of volume and rate of milk delivery on coordination of respiration and swallowing in infant pigs. *Journal of Experimental Zoology A*. 339, 1052-1058.
38. Johnson ML, Steer KE, Edmonds CE, Adjerid K, German RZ, **Mayerl CJ**. 2023. Nipple Properties Affect Sensorimotor Integration During Bottle Feeding in an Infant Pig Model. *Journal of Experimental Zoology A*. **339**, 767-776.
37. Young JW, **Mayerl CJ**, Mannava A, Lewis C, Fan T, Nair M, Mamone C, Schapker NM, Mossor AM, German RZ. 2023. Evaluating the Precocial-altricial Axis of Motor Skill at Birth in a Preterm Pig Model. *Integrative and Comparative Biology*, **63**, 625-640.
36. **Mayerl CJ**, Dial TR, Mainwaring MC, Heers AM, German RZ. 2023. Birth and the pathway to adulthood: Integration across development, environment, and evolution. *Integrative and Comparative Biology*, **63**, 548-556.
35. Steer KE, Johnson ML, Adjerid K, Bond LE, Howe SP, Khalif A, Nkachukwu KC, Edmonds CE, German RZ, **Mayerl CJ**. 2023. The Function of the mammal extrinsic tongue musculature in the transition from Suckling to Drinking. *Integrative and Comparative Biology*, **63**, 641-652.
34. **Mayerl CJ**, Gould FDH, Adjerid K, Edmonds CE, German RZ. 2023. The Pathway from Anatomy and Physiology to Diagnosis: A Developmental Perspective on Deglutition. *Dysphagia*, **38**, 33-41.
33. Keeffe RM, Blob RW, Blackburn DC, **Mayerl CJ**. 2022. XROMM Analysis of Feeding Mechanics in Toads: Interactions of the Tongue, Hyoid, and Pectoral Girdle. *Integrative Organismal Biology*, **4**, obac045.
32. **Mayerl CJ**, Adjerid KA, Edmonds CE, Gould FDH, Johnson ML, Steer KE, Bond LE, German RZ. 2022. Regional variation in contractile patterns and muscle activity in infant pig feeding. *Integrative Organismal Biology*, **4**, abac046.

Christopher Mayerl

31. Adjerid K, Johnson ML, Edmonds CE, Steer KS, Gould FDH, German RZ and **Mayerl CJ**. 2022. The effect of stiffness and Hole size on nipple compression in infant suckling. *Journal of Experimental Zoology A*, **339**, 92-100.
30. Edmonds CE, German RZ, Bond LE and **Mayerl CJ**. 2022. Oropharyngeal Capsaicin Exposure Improves Infant Feeding Performance in an Animal Model of Superior Laryngeal Nerve Damage. *Journal of Neurophysiology*, **128**: 339-349.
29. **Mayerl CJ**, Edmonds CE, Gould FDH and German RZ. 2021. Increased viscosity of milk during infant feeding improves swallow safety through modifying sucking. *Journal of Texture Studies*, **52**, 603-611.
28. **Mayerl CJ**, Steer KE, Chava AM, Bond LE, Edmonds CE, Gould FDH, Stricklen BM, Hieronymous TL, Vinyard CJ and German RZ. 2021. Anatomical and physiological variation of the hyoid musculature during swallowing in infant pigs. *Journal of Experimental Biology*, **224**, jeb243075.
27. **Mayerl CJ**, Steer KE, Chava AM, Bond LE, Edmonds CE, Gould FDH, Stricklen BM, Hieronymous TL and German RZ. 2021. The contractile patterns, anatomy, and physiology of the hyoid musculature change longitudinally through infancy. *Proceedings of the Royal Society, Biological Sciences*, **288**, 20210052.
26. Adjerid K, **Mayerl CJ**, Gould FDH, Edmonds CE, Stricklen BM, Bond LE and German RZ. 2021. Does birth weight affect neonatal body weight, growth, and physiology in an animal model? *PLoS ONE*, **16**(2): e0246954.
25. Stevens M, **Mayerl CJ**, Bond LE, German RZ and Barkmeier-Kraemer JM. 2021. Pathophysiology of aspiration in a unilateral SLN lesion model using quantitative analysis of VFSS. *International Journal of Pediatric Otorhinolaryngology*. **140**, 110518.
24. **Mayerl CJ**, Myrla AM, Gould FDH, Bond LE, Stricklen BM and German RZ. 2021. Bolus volume, not preterm birth or recurrent laryngeal nerve lesion impacts swallow safety during infant feeding. *Dysphagia*, **36**, 120-129.
23. **Mayerl CJ**, Edmonds CE, Catchpole EA, Myrla AM, Gould FDH, Bond LE, Stricklen BM and German RZ. 2020. Sucking vs Swallowing coordination, integration and performance in preterm and term infants. *Journal of Applied Physiology*, **129**, 1383-1392.
22. Gould FDH, Lammers AR, **Mayerl CJ** and German RZ. 2020. Muscle activity and kinematics show different responses to recurrent laryngeal nerve lesion in mammal swallowing. *Journal of Neurophysiology*, **124**, 1743-1753.
21. Edmonds CE, Catchpole EA, Gould FDH, Bond LE, Stricklen BM, German RZ and **Mayerl CJ**. 2020. Preterm birth impacts the timing and excursion of oropharyngeal structures during infant feeding. *Integrative Organismal Biology*. **2**, 1, obaa028.
20. Stricklen BM, Bond LE, Gould FDH, German RZ and **Mayerl CJ**. 2020. Swallow safety in infant pigs with and without recurrent laryngeal nerve lesion. *Dysphagia*, **35**, 978-984.
19. **Mayerl CJ**, Catchpole EA, Edmonds CE, Gould FDH, McGrattan KE, Bond LE, Stricklen BM and German RZ. 2020. The effect of preterm birth, recurrent laryngeal nerve lesion and postnatal

Christopher Mayerl

- maturation on hyoid and thyroid movements, and their coordination in infant feeding. *Journal of Biomechanics*. **105**: 109786
18. Bond LE*, **Mayerl CJ***, Stricklen BM, German RZ and Gould FDH. 2020. Changes in the coordination between respiration and swallowing from suckling through weaning. *Biology Letters*, **16**: 20190942
 17. Catchpole E, Bond LE, German RZ, **Mayerl CJ**, Stricklen BM and Gould FDH. 2020. Reduced coordination of hyolaryngeal elevation and bolus movement in preterm infant swallowing. *Dysphagia*. **35**: 334-342.
 16. **Mayerl CJ**, Myrla AM, Bond LE, Stricklen BM, German RZ and Gould FDH. 2020. Premature birth impacts changes in bolus size and shape through nursing in infant pigs. *Pediatric Research, Nature Publishing Group*. **87**: 656-661.
 15. **Mayerl CJ**, Capano JG, Moreno AA, Wynneken J, Blob RW and Brainerd EL. 2019. Pectoral and pelvic girdle rotations during walking and swimming in turtles: testing functional role and constraint. *Journal of Experimental Biology*, **222**: jeb212688.
 14. **Mayerl CJ**, Gould FDH, Bond LE, Stricklen BM, Buddington RK and German RZ. 2019. Preterm birth disrupts the development of feeding and breathing coordination. *Journal of Applied Physiology*, **126**: 1681-1686.
 13. Gould FDH, Lammers AR, **Mayerl CJ** and German RZ. 2019. Specific vagus nerve lesions have distinctive physiologic mechanisms of dysphagia. *Frontiers in Neurology*, **10**:1301.
 12. **Mayerl CJ**, Hicks KE and Blob RW. 2019. Differences in kinematic plasticity between freshwater turtle species underlie differences in swimming performance in response to varying flow conditions. *Biological Journal of the Linnean Society*, **127**: 762-770.
 11. **Mayerl CJ**, Sansone AM, Stevens LM, Hall GJ, Porter MM, Rivera G and Blob RW. 2019. The hydrodynamic role of accessory structures as keels and rudders in turtles and their potential as models for biomimetic design. *Bioinspiration and Biomimetics*, **14**: 016002.
 10. **Mayerl CJ**, Youngblood JP, Rivera G, Vance JT and Blob RW. 2019. Variation in morphology and behavior allows turtles to circumvent functional tradeoffs during swimming. *Integrative Organismal Biology*, **1**: 1-12
 9. Stevens LM, Blob RW and **Mayerl CJ**. 2018. Ontogeny, morphology, and performance: changes in swimming stability and turning performance in the freshwater pleurodire turtle, *Emydura subglobosa*. *Biological Journal of the Linnean Society*, **125**: 718-729.
 8. Rubin AM, Blob RW and **Mayerl CJ**. 2018. Biomechanical factors influencing successful self-righting in the pleurodire turtle, *Emydura subglobosa*. *Journal of Experimental Biology*, **221**, jeb182642.
 7. **Mayerl CJ** and Blob RW. 2017. A novel, bounding gait in swimming turtles: implications for aquatic locomotor diversity. *Journal of Experimental Biology*, **220**: 3611-3615.
 6. **Mayerl CJ**, Pruett JE, Summerlin MN, Rivera ARV and Blob RW. 2017. Hindlimb muscle function in turtles: is novel skeletal design correlated with novel muscle function? *Journal of Experimental Biology*, **220**: 2554-2562.

Christopher Mayerl

5. Blob RW, **Mayerl CJ**, Rivera ARV, Rivera G and Young VKH. 2016. "On the fence" versus "all in": insights from turtles for the evolution of aquatic locomotor specializations and habitat transitions in tetrapod vertebrates. *Integrative and Comparative Biology*, **56**: 1310-1322.
4. **Mayerl CJ**, Brainerd EL and Blob RW. 2016. Pelvic girdle mobility of cryptodire and pleurodire turtles during walking and swimming. *Journal of Experimental Biology*, **219**: 2650-2658.
3. **Mayerl CJ**, Baeckens S and Van Damme R. 2015. Evolution and role of the follicular epidermal gland system in non-ophidian squamates. *Amphibia-Reptilia*, **36**: 185-206.
2. Sabino-Pinto JS, **Mayerl CJ**, Meilink WRM, Grasso D, Raaijmakers T, Russo VG, Segal M, Stegen G, Clegg J, Srikanthan AN, Glaw F and Vences M. 2014. Descriptions of the advertisement calls of three sympatric frog species in the subgenus *Vatomantis* (genus *Gephyromantis*) from Madagascar. *Herpetology Notes*, **7**: 67-73.
1. Meilink WM, Clegg J, **Mayerl CJ**, Sabino-Pinto JS, Grasso D, Stegen G, Segal M, and Kok PJR. 2013. Confirmation of the presence of the sphaerodactylid lizard *Gonatodes vittatus* in Guyana, and an indication of a reproductively active population in Georgetown. *Salamandra*, **49**: 59-62.

GRANT FUNDING

- | | |
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| NIH – R01 HD119100 – “Evaluating the impact of chronic use of thickened fluids on the neurophysiology and microbiome of term and preterm infants
Eunice Kennedy Shriver National Institute of Child Health
And Human Development
Role: Principal Investigator
\$3,415,448 | <i>In Review</i> |
| NIH – R01 HD115987 – “Beyond compensation: leveraging sensorimotor integration through varying nipple and milk properties to improve feeding outcomes in preterm infants”
Eunice Kennedy Shriver National Institute of Child Health
And Human Development
Role: Principal Investigator
\$2,481,969 | <i>In Review</i> |
| NIH – R00 HD205922 - “The impact of sensory intervention on motor output and feeding performance in term and preterm infants
Eunice Kennedy Shriver National Institute of Child Health
And Human Development
Role: Principal Investigator (\$114,032 in year one, \$250,000 per year in years two - five). | 2021 - 2025 |

Christopher Mayerl

NIH - R21 HD105294 - "The impact of a biomimetic nipple on infant performance during breast and bottle feeding" **2022-2024**
Eunice Kennedy Shriver National Institute of Child Health And Human Development
Role: Co-Principle Investigator (**\$234,000 over two years**), **205,777 to NAU**

NIH – R13 HD111225 - Biology at birth: the role of infancy in providing the foundation for lifetime success **2023**
Role: Co-Investigator. (**\$10,000**)

FELLOWSHIPS

NAU Hooper Undergraduate Research Fellowship Mentor (**\$15,000**, 3 students) 2024-2024
NAU Technology and Research initiative fund (TRIF) (**\$5,000, PI**) 2023-2024
NAU Technology and Research initiative fund (TRIF) (**\$5,000, Co-PI**) 2022-2023
American Association of Anatomists Postdoctoral Fellowship (**\$20,000**). 2019
Clemson University Dissertation Completion Fellowship (**\$6,250**). 2017
Clemson University Creative inquiry fellowship for undergraduate travel to conferences (**\$6,500**). 2015 - 2017
Sigma Xi Grants in Aid of Research Grant (**\$400**). 2015
Company Biologists Travel Grant (**£250 ≈ \$375**). 2015
Clemson University Professional Enrichment Grants (~**\$5,300**). 2014 - 2016
Society for Experimental Biology Travel grant (**£230 ≈ \$350**). 2014
Clemson Biological Sciences Graduate Student travel Award (**\$581**). 2014 - 2017
Clemson University Alumni Fellowship (**\$8,000**). 2013

AWARDS AND HONORS

Interns 2 Scholars Mentor of the year 2024
Best student presentation, Society for Integrative and Comparative Biology (SICB) Division of Vertebrate Morphology (**\$150**) 2019
Phil and Mary Bradley Award for Graduate Student Mentoring in creative inquiry (**\$1,000**). 2018
Dr. Harry Findley '71 and Catherine T. Findley Student Assistance Endowment for graduate education in biology or microbiology (**\$1,200**). 2018
Herpetologist league student calendar best student photograph award winner. 2016, 2017
Carl Gans Collections and Charitable Trust Travel grant (**\$500**). 2016
Alfred "Hap" Wheeler Distinguished Biological Sciences Graduate Student Association Member Award. 2016

Christopher Mayerl

Clemson Biological Sciences Annual Student Symposium (CBASS) Best Oral Presentation.	2014, 2016
Clemson University Focus on Creative Inquiry Poster forum Best Poster Presentation.	2016, 2017
Society of Integrative and Comparative Biology Grant in Aid of Research (\$1,000).	2016
NACTA (North American Colleges and Teachers of Agriculture) Graduate Teaching Award of Merit.	2015
Clemson University Outstanding Graduate Teaching Assistant Award (\$750).	2015
Clemson University College of Agriculture, Forestry, and Life Sciences Outstanding Graduate Student Teaching Award (\$1,000).	2015
Society for Experimental Biology best poster (Biomechanics Section), 3rd place.	2014

TEACHING EXPERIENCE

Instructor of Record

Northern Arizona University

Vertebrate Zoology, BIO 323 and BIO 323 Lab

Spring 2023- Present

Independent study, BIO 497 and 497C

Spring 2024-Present

Undergraduate Research, BIO 485, 485H, 485HC

Spring 2023 – Present

Clemson University

Comparative Vertebrate Morphology

Spring 2017

Instructor,

Northeast Ohio Medical University

Integrative Musculoskeletal Biology (Graduate course)

Jan 2021 – June 2021

Creative Inquiry Mentor, Clemson University,

August 2014 – May 2018

Graduate Teaching Assistant (GTA),

Clemson University,

Vertebrate Biology, Lead TA

Fall 2013 – Fall 2017

Behavioral Ecology

Spring 2016

Principles of Biology

Spring 2014

Guest lectures

University of San Diego Vertebrate Biology, "Turtle Evolution and Ecology"

2020

Masters of Anatomical Science Bootcamp instructor

2020

Clemson University Equine Exercise Physiology, "Principles of Biomechanics"

2014-2017

Clemson University Vertebrate Biology, "Water to land transition"

2016

Clemson University Bioinspired Design (Mechanical Engineering),

2015

"Aquatic locomotion with a rigid body"

Christopher Mayerl

Clemson University Vertebrate Biology, "Reptile diversity"	2015
Clemson University Vertebrate Biology, "Bird diversity"	2014
Clemson University Vertebrate Biology, "Bird evolution"	2014
Clemson University Comparative Physiology, "Freeze tolerance and avoidance in animals"	2013

DEI ACTIVITIES

NAU Stem Faculty Academy, An Equity Oriented Anti-Racist Community of Practice.	2023-Present
Allesandro Elementary School, CA, 2 nd grade (2 classes) science Either taught weekly zoom classes on science throughout the academic year (2020-2022) or lead a half-day in person intensive science class about animal evolution and biomechanics (2022-current).	Fall 2020 - current
Masters in Anatomical Sciences (MAS) Mentor The MAS program at NEOMED was created to increase access to medical school for underrepresented groups in medicine. As a mentor for students in this program, I have crafted and guided students through the completion of a masters capstone research project needed for their degree.	Fall 2020 – 2022
High school guest lectures in rural South Carolina Gave guest lectures and designed activities for high school students at multiple schools in rural South Carolina to enhance appreciation for science and inspire students to attend college	Fall 2013 – Spring 2018

DEPARTMENTAL AND UNIVERSITY SERVICE

At Northern Arizona University

Biological Sciences Student Symposium Committee (Chair)	2023-Present
Evolutionary Botanist Search Committee	2023-Present
Annual Biological Sciences Student Symposium Committee (Chair)	2023-Present
Marketing and Development Committee	2023-Present
Academic Excellence Committee	2022-2023

Prior to Northern Arizona University

Founder and Chair, Biological Sciences Graduate student writers guild.	2016-2018
Member, Biological Sciences graduate student seminar speaker committee	2016-2018
Chair, graduate student committee on faculty hiring search	2016-2017
Judge, Clemson University Biological Sciences Annual Student Symposium	2015-2017
Judge, Clemson University Focus on Creative Inquiry Poster Forum	2015-2017

Christopher Mayerl

Clemson University Introductory Biology “The possibilities of graduate school” 2015
Vice President, Biological Sciences Graduate Student Association, 2014-2015
Clemson University

ACADEMIC SERVICE

Assistant Editor, *Integrative and Comparative Biology* 2023- Present
Symposium Organizer – Biology at Birth: the role of infancy in 2023
providing the foundation for lifetime success.
Society for Integrative and Comparative Biology annual meeting
Session Chair – Tongues, Teeth and Jaws (Session 82) 2022
Society for Integrative and Comparative Biology annual meeting
Society for Integrative and Comparative Biology Division of Vertebrate 2017-2019
Morphology Student/postdoc representative
Session Chair – Aquatic Locomotion, it is a fluke (session 134) 2018
Society for Integrative and Comparative Biology annual meeting
Session Chair – Locomotion 4, International Congress for Vertebrate Morphology 2016

PROFESSIONAL TRAINING

Digital Particle Image Velocimetry (DPIV) for Experimental Biology: Principles, 2019
Implementation, and a Hands-on session
Workshop on incorporating DPIV techniques into research to understand
force production in fluids.
Human Anatomy, Northeast Ohio Medical University 2018
Audited medical student gross anatomy lab.
XROMM short course; Brown University 2016
Learned the XROMM work flow and developed skillsets to perform XROMM surgery, data
collection and analysis.
Evolutionary Quantitative Genetics Tutorial; NIMBioS. 2015
Organizers: Stevan Arnold and Joe Felsenstein. August 10 – 15, 2015.

REVIEWER FOR THE FOLLOWING JOURNALS

*Proceedings of the Royal Society B, Integrative and Comparative Biology, Journal of Experimental
Biology, Neurogastroenterology and Motility, Integrative Organismal Biology, Nature Pediatric Research,
Dysphagia, Scientific Reports, Philosophical Transactions of the Royal Society B*

PROFESSIONAL SOCIETIES

Christopher Mayerl

Sigma Xi, Society for Integrative and Comparative Biology, American Society of Ichthyologists and Herpetologists, Society for Experimental Biology, American Association for Anatomy

INVITED SEMINARS

Dysphagia Research Society webinar	2025
“Preparing Your Presentations for DRS 2025”	
Society for Integrative and Comparative Biology	2025
Invited presentation for a symposium <i>Fleshing it out: recent advances in form, function and motor control of biological hydrostats</i> : “Regional heterogeneity in the EMG activity of extrinsic tongue muscles is critical to tongue function”	
Dysphagia Research Society Education webinar	2024
“Developmental Physiology of Chewing: Research Background and Future Clinical Focus”	
Society for the Study of Amphibians and Reptiles	2024
“Uncovering hidden functions in commonly studied behaviors”	
Dysphagia Research Society, Puerto Rico,	2024
“How Understanding Motor Responses to Sensory Perturbations During Infant Feeding Can Impact our Design of Clinical Interventions”	
California State University, San Bernardino, Vertebrate Zoology	2023
“Links between morphology, physiology, and performance in an environment. Examples in locomotor and feeding function”	
Society for Integrative and Comparative Biology	2023
Invited presentation for a symposium <i>Biology at Birth</i> : “The function of the mammalian extrinsic tongue musculature in the transition from suckling to drinking”	
Northern Arizona University Dept of Mechanical Engineering	2022
“Sensorimotor integration in infant feeding: the black box of fluid dynamics”	

PRESENTATIONS

Underline = Student, * = Postdoc

2025 Smith AE, Kennedy ME, Stroud TH, Volpe E, Anderson DJ, Smith HI, Wallace SM, Yazzie S, Sabato H, Kaczmarek EK*, **Mayerl CJ**. Fluid Dynamics and feeding performance in infant mammals: evaluating the impact of nipple design Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Christopher Mayerl

Volpe E, Kaczmarek EB*, Anderson DJ, Kennedy ME, Sabato H, Shideler HE, Smith AE, Stroud TH, Wallace SM, Yazzie S, Smith HI, Mayerl CJ. Mechanisms driving differences in suction generation during feeding in infant term and preterm pigs. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Poster).

Anderson DJ, Kaczmarek EB*, Smith AE, Stroud TH, Volpe E, Kennedy ME, Smith HI, Wallace SM, Shideler HE, Sabato H, Yazzie S, Mayerl CJ. Impact of premature birth and nipple type on suck-swallow-breath coordination in infant feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting Atlanta, GA (Poster).

Smith HI, Kaczmarek EB*, Smith AE, Kennedy ME, Wallace SM, Shideler HE, Volpe E, Anderson DJ, Sabato H, Yazzie S, Stroud TH, Mayerl CJ. Impact of Nipple design on feeding biomechanics in term and preterm piglets. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Kennedy ME, Smith AE, Stroud TH, Volpe E, Anderson DJ, Smith HI, Wallace SM, Shideler HE, Yazzie S, Sabato H, Kaczmarek EB*, Mayerl CJ. Unraveling the neuromotor responses to dynamic variation in milk flow rate during infant pig feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Stroud TH, Steer KE, Edmonds CE, Gao J, Adjerid K, Kerkvliet K, German RZ and Mayerl CJ. Neuromuscular control of feeding in the red-footed tortoise (*Chelonoidis carbonarius*). Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Iijima M, **Mayerl CJ**, Munteanu VD, Blob RW. Forelimb muscle activity in alligators and the evolution of limb posture and powered flight. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Struble M, Gamel K, Mayerl CJ, Gibb A. Locomotor strategies in terrestrial and aquatic life stages of *Notophthalmus viridescens*. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta GA (Oral).

Shideler HE, Stroud TH, Volpe E, Anderson DJ, Wallace SM, Kennedy ME, Smith AE, Sabato H, Yazzie S, Smith HI, Kaczmarek EB*, Mayerl CJ. Using a digital endocast to evaluate feeding performance during suckling in mammalian infants. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

Mayerl CJ, Kaczmarek EB*, Kennedy ME, Smith AE, Wallace SM, Shideler HE, Volpe E, Anderson DJ, Stroud TH, Smith HI, Sabato H, Yazzie S, Sheldon S, Hieronymus T, German RZ. Regional heterogeneity in the EMG activity of extrinsic tongue muscles is critical to tongue function. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral, invited seminar).

Kaczmarek EB*, Yazzie S, Anderson DJ, Kennedy ME, Smith AE, Shideler HE, Wallace SM, Stroud TH, Sabato H, Smith HI, Volpe E, Mayerl CJ. Evaluating the role of the tongue in the coordination

Christopher Mayerl

of sucking and breathing in infant feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Atlanta, GA (Oral).

2024 Volpe EC and **Mayerl CJ**. Mechanisms driving differences in suction generation during feeding in infant term and preterm pigs. Southwest Regional Organismal Biology, Cal State, Fullerton, Fullerton, CA (Oral).

Kennedy ME and **Mayerl CJ**. Unraveling the neuromotor responses to dynamic variation in milk flow rate during infant pig feeding. Southwest Regional Organismal Biology, Cal State, Fullerton, Fullerton, CA (Oral).

Kaczmarek EB* and **Mayerl CJ**. Evaluating the role of the tongue in the coordination of sucking and breathing in infant feeding. Southwest Regional Organismal Biology, Cal State, Fullerton, Fullerton, CA (Oral).

Smith AS and **Mayerl CJ**. Fluid dynamics and feeding performance in infant mammals: evaluating the impact of nipple design. Southwest Regional Organismal Biology, Cal State, Fullerton, Fullerton, CA (Oral).

Shideler HE, Kaczmarek EB*, 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. Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ (Poster).

Velasco AB, Kaczmarek EB*, 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. Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ (Poster).

Wallace SM, Kaczmarek EB*, 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 Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ (Poster).

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. Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ (Poster).

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

Christopher Mayerl

Mayerl CJ, Kaczmarek EB*, 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. Dysphagia Research Society Annual Meeting, San Juan, Puerto Rico, (Oral).

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

Kaczmarek EB*, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith A, 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 model. Dysphagia Research Society Annual Meeting, San Juan, Puerto Rico, (Oral).

Shideler HE, Kaczmarek EB*, 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. Annual Biological Sciences Student Symposium, Flagstaff, AZ (Poster).

Velasco AB, Kaczmarek EB*, 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. Annual Biological Sciences Student Symposium, Flagstaff, AZ (Poster).

Wallace SM, Kaczmarek EB*, 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. Annual Biological Sciences Student Symposium, Flagstaff, AZ (Poster).

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. Annual Biological Sciences Student Symposium, Flagstaff, AZ (Poster).

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. Annual Biological Sciences Student Symposium, Flagstaff, AZ (Poster).

Kaczmarek EB*, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith A, 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. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Oral)

Christopher Mayerl

Stroud T, Steer KE, Edmonds CE, Adjerid K, Gao J, Kerkvleit K, German RZ, **Mayerl CJ**. Feeding mechanics in the red-footed tortoise, *Chelonoidis carbonarius*. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Oral)

German RZ and **Mayerl CJ**. Evolution of Infant Feeding in Mammals. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Oral)

Shideler HE, Kaczmarek EB*, 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).

Velasco AB, Kaczmarek EB*, 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).

Wallace SM, Kaczmarek EB*, 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).

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).

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. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA (Poster).

2023 Kaczmarek EB*, Steer KE, Sarmet M, Shideler HE, Fauveau AM, Smith A, 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. Southwest Organismal Biology Annual Meeting, Claremont, CA (Talk)

Mayerl CJ, Stroud T, Steer KE, Edmonds CE, Adjerid K, Gao J, Kerkvleit K, German RZ. Feeding mechanics in the red-footed tortoise, *Chelonoidis carbonarius*. Southwest Organismal Biology Annual Meeting, Claremont, CA (Talk).

Trail S, **Mayerl CJ**, Capano J, Manafzadeh AR, van Meer N, Blob RW, Wyneken J, Brainerd EL. XROMM analysis of flipper movement during locomotion in loggerhead sea turtles. International Congress of Vertebrate Morphology Meeting, Cairns, Australia (Talk).

Christopher Mayerl

Edmonds CE, Robbins K, **Mayerl CJ**, German RZ. The Impacts of Various Modalities of Esophageal Stimulation on Infant Mammalian Feeding Physiology. International Congress of Vertebrate Morphology Meeting, Cairns, Australia (Talk).

Shideler HE, Smith AE, Blilie MB, **Mayerl CJ**. The impact of a biomimetic nipple on infant feeding function in an animal model. Undergraduate Student Research Symposium at Northern Arizona University, Flagstaff, AZ (Poster).

Mayerl CJ, Edmonds CE, Steer KE, Adjerid K, Johnson M, Howe, SP, and German RZ. The function of the mammalian extrinsic tongue musculature in the transition from suckling to drinking. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Austin, TX, Invited presentation in a symposium (Talk).

Young JW, **Mayerl CJ**, Mannava A, Fan T, Mamome C, Shapker N, Mossor A, and German RZ. Balance development in an infant pig model of preterm birth. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Austin, TX, Invited presentation in a symposium (Talk).

Trail S, **Mayerl CJ**, Capano JG, Manafzadeh AR, Van Meer NMME, Blob RW, Wyneken J, and Brainerd EL. XROMM Analysis of flipper movement during locomotion in loggerhead sea turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Austin, TX, (Talk).

Edmonds CE, Robbins K, Howe SP, Kerkvliet K, German RZ, and **Mayerl CJ**. Rhythmic oral stimulation alters rates of feeding behaviors in infant pigs. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Austin, TX, Invited presentation in a symposium (Poster).

Howe SP, Steer KE, Johnson M, Adjerid K, Edmonds CE, German RZ, and **Mayerl CJ**. Exploring the interaction of Viscosity and Nipple design on feeding performance in infants. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Austin, TX (Talk).

2022 **Mayerl CJ**, The changing function of the mammalian tongue from suckling to drinking. Southwest Organismal Biology annual meeting (Talk).

German RZ and Mayerl CJ. Integration across anatomy and physiology: understanding feeding behavior in mammals. Society for Experimental Biology (SEB) invited presentation in a symposium

Gould FDH, Reibel J, **Mayerl CJ**, Adjerid K, Edmonds CE, Bond LE, and German RZ. Impact of Nipple Properties on Coordination of Respiration and Swallowing in Infant Pigs. Experimental Biology Annual Meeting. Philadelphia, PA. (Oral presentation).

Mayerl CJ, Johnson ML, Steer KE, Edmonds CE, Adjerid K, Bond LE, Gould FDH, and German RZ. The Impact of Nipple Properties on Term and Preterm Infant Feeding Physiology and

Christopher Mayerl

Performance. Dysphagia Research Society (DRS) Annual Meeting. San Juan, Puerto Rico. (Poster presentation).

Gould FDH, **Mayerl CJ**, Adjerid K, Bond LE, Edmonds CE, and German RZ. Impact of volume and rate of milk delivery on coordination of respiration and swallowing in infant pigs. Dysphagia Research Society (DRS) Annual Meeting. San Juan, Puerto Rico. (Oral presentation).

Steer KE, Edmonds CE, Johnson ML, Adjerid K, Bond LE, German RZ, **Mayerl CJ**. The impact of varying nipple stiffness on infant feeding performance and physiology throughout ontogeny. Dysphagia Research Society (DRS) Annual Meeting. San Juan, Puerto Rico. (Poster presentation).

Mayerl CJ, Bond LE, Edmonds CE, Adjerid K, Steer KE, Gould FDH and German RZ. Multifunctional muscles in infant mammalian feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (Talk).

Keefe RM, Blob RW, Blackburn DC, **Mayerl CJ**. XROMM Analysis of Feeding Mechanics in Toads: Interactions of the Tongue, Hyoid Apparatus, and Pectoral Girdle. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (DVM Best Student Presentation Competition Talk).

German RZ, Steer KE, Edmonds CE, Adjerid K, **Mayerl CJ**. Response to variation in nipple properties during infant mammal sucking. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (Talk).

Adjerid K, Johnson M, **Mayerl CJ**, Edmonds CE, Steer KE, Bond LE, Gould FDH and German RZ. The effect of nipple stiffness and hole size on infant sucking behaviors. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (Talk).

Larkins HN, Saunders M, **Mayerl CJ**, Blob RW, Young VKH. Limb bone scaling and shape in pleurodire and semi-aquatic cryptodire turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (Talk).

Capano JG, Kim LN, **Mayerl CJ**, Wyneken J, Blob RW, Brainerd EL. Novel shell pump lung ventilation in cheloniid sea turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix, AZ (Talk).

2021 Edmonds CE, German RZ, Bond LE, Gould FDH, Adjerid K, Steer KE and **Mayerl CJ**. Oropharyngeal capsaicin application alters swallowing kinematics to improve performance. Midwest American Society of Biomechanics Meeting, Cleveland, OH (Talk).

Adjerid K, Edmonds CE, Steer KE, Bond LE, Johnson M, Gould FDH, German RZ and **Mayerl CJ**. The effect of nipple stiffness and hole size on infant sucking behaviors. Midwest American Society of Biomechanics Meeting, Cleveland, OH (Talk).

Christopher Mayerl

Edmonds CE, German RZ, Bond LE, Gould FDH, Adjerid K, Steer KE, and **Mayerl CJ**.

Oropharyngeal Capsaicin Application Alters the Biomechanics of Swallowing to Improve Swallow Safety in Infants. Northeast Ohio Medical University (NEOMED) Student Research Symposium. Rootstown, OH. (Oral presentation).

Mayerl CJ. The effect of preterm birth on the coordination of suck-swallow-breathe kinematics and performance. Dysphagia Research Society Annual Meeting. Virtual 2021 (Invited Talk).

Mayerl CJ, Edmonds CE, Myrla AM, Stricklen BM, Catchpole EA, Bond LE, German RZ. Increased Viscosity Improves Swallow Outcomes in Infants Through Altering the Physiology of Tongue Function, But Not Hyoid or Soft Palate Function. Dysphagia Research Society Annual Meeting. Virtual 2021 (Talk).

Edmonds CE, **Mayerl CJ**, Gould FDH, Adjerid K, Steer KE, Bond LE, German RZ. Application of Capsaicin to the Oropharynx Reduces Bolus Size and Improves Swallow Safety in an Infant Animal Model. Dysphagia Research Society Annual Meeting. Virtual 2021 (Talk).

Steer KE, Gould FDH, Edmonds CE, Adjerid K, Bond LE, German RZ, **Mayerl CJ**. The impact of automated milk delivery on infant feeding performance and kinematics. Dysphagia Research Society Annual Meeting. Virtual 2021 (Poster).

Adjerid K, **Mayerl CJ**, Gould FDH, Edmonds CE, Bond LE, Steer KE, German RZ. The effect of automated Milk Delivery on feeding performance in infants. Dysphagia Research Society Annual Meeting. Virtual 2021 (Poster).

Mayerl CJ, Steer KE, Chava AM, Bond LE, Edmonds CE, Gould FDH, Stricklen BM, Hieronymous TL, Vinyard CJ, German RZ. Hyoid movements are correlated with contractile patterns of the hyoid musculature during infant feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Virtual 2021 (Talk).

Steer KE, Edmonds CE, Gould FDH, Adjerid K, Bond LE, German RZ, **Mayerl CJ**. The impact of automated milk delivery on infant feeding performance. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Virtual 2021 (Poster).

Edmonds CE, German RZ, Gould FDH, Steer KE, Adjerid K, Bond LE, **Mayerl CJ**. Capsaicin improves swallow safety during infant feeding. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Virtual 2021 (Talk).

Adjerid K, **Mayerl CJ**, Gould FDH, Edmonds CE, Steer KE, Bond LE, German RZ. How do different feeding delivery parameters affect swallowing behavior in infant pigs? Society for Integrative and Comparative Biology (SICB) Annual Meeting. Virtual 2021 (Talk).

Gould FDH, Lammers AR, **Mayerl CM**, German RZ. Heterogeneity of variance partitioning between kinematics and electromyography (EMG) of swallowing following nerve lesion in pigs. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Virtual 2021 (Talk).

Christopher Mayerl

2020 Kim LN, Capano JG, **Mayerl CJ**, Blob RW, Wyneken J, Brainerd EL. XROMM analysis of pectoral girdle motions during locomotion and ventilation in the loggerhead sea turtle. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Austin, TX (Poster).

Munteanu VD, Diamond KM, **Mayerl CJ**, Blob RW. Humeral strains during climbing in Green Iguanas: Testing biomechanical release as a mechanism promoting morphological transitions in arboreal vertebrates. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Austin, TX (Oral).

Gould FDH, Lammers A, Mayerl CJ, German RZ. Differential effect of superior and recurrent laryngeal nerve lesion on kinematics and performance in mammalian swallowing. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Austin, TX (Poster).

2019 Catchpole EC, Bond LE, Stricklen BM, Gould FH, German RZ, **Mayerl CJ**. Hyoid and Thyroid excursion and timing in infant pigs. NEOMED Summer Fellows Research Forum, Rootstown, OH (Poster).

Mayerl CJ, Myrla AM, Gould FH, Bond LE, Stricklen BM, German RZ. Premature birth impacts feeding performance and airway protection in infant mammals. 12th International Congress of Vertebrate Morphology (ICVM). Prague, Czech Republic (Oral).

German RZ, **Mayerl CJ**, Gould FH, McGratten KE. Development of feeding and airway protection in preterm infant mammals as a model of altricial evolution. 12th International Congress of Vertebrate Morphology (ICVM). Prague, Czech Republic (Oral).

Blob RW, Young VKH, Munteanu VD, Diamond KM, **Mayerl CJ**, Kawano SM. Changes in skeletal loading as a mediator of morphological change across evolutionary transitions in habitat. 12th International Congress of Vertebrate Morphology (ICVM). Prague, Czech Republic (Oral).

Wyneken J, **Mayerl CJ**, Blob RW, Capano J, Brainerd EL. Contrasting musculoskeletal structure of the turtle (Reptilia: Testudines) pectoral apparatus in paddling vs flapping species. 12th International Congress of Vertebrate Morphology (ICVM). Prague, Czech Republic (Oral).

Mayerl CJ, Gould FH, Bond LE, Stricklen BS, and German RZ. The maturation and coordination of respiration and swallowing in preterm infants. Dysphagia Research Society (DRS) annual meeting. San Diego, CA. (Oral).

Wu K, Bond LE, Gould FH, Stricklen BS, German RZ and **Mayerl CJ**. Longitudinal effects of preterm birth on patterns of respiration in infant pigs. Dysphagia Research Society (DRS) annual meeting. San Diego, CA. (Poster).

Catchpole EC, Bond LE, Stricklen BS, **Mayerl CJ**, German RZ and Gould FH. Light video as a means of swallow identification in preterm and term infants. Dysphagia Research Society (DRS) annual meeting. San Diego, CA. (Oral).

Christopher Mayerl

Mayerl CJ. XROMM analyses of differences in pectoral and pelvic girdle rotation between land and water in turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Tampa, FL. (Oral).

Mayerl CJ, Gould FH, Bond LE, Stricklen BM, Buddington RK, and German RZ. Preterm birth disrupts the development of feeding and breathing coordination. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Tampa, FL. (Poster).

2018 Petty CE, **Mayerl CJ,** Blob RW. 2018. The relationship between morphology, behavior, and performance in swimming turtles. Clemson University Focus on Creative Inquiry poster forum. Clemson, SC. ([Poster](#)).

Mayerl CJ and Blob, RW. 2018. How flowing water influences hydrodynamic stability in turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting. San Francisco, CA. (Oral).

Olberding JP, Blob RW, **Mayerl CJ,** Espinoza NR, Deban SM. 2018. Frog hind limb joint contributions to jump energy across scale and temperature. Society for Integrative and Comparative Biology (SICB) Annual Meeting. San Francisco, CA. (Oral).

Rubin AR, **Mayerl CJ,** Blob RW. 2018 Biomechanical factors influencing successful self-righting in upside-down pleurodire turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting. San Francisco, CA. (Oral).

Sansone AM, **Mayerl CJ,** Blob RW. 2018 Tails as rudders in swimming turtles: performance implications of sexual dimorphism. Society for Integrative and Comparative Biology (SICB) Annual Meeting. San Francisco, CA. (Poster).

Stevens LM, **Mayerl CJ,** Blob RW. 2018. Ontogeny of swimming stability and turning performance in the freshwater pleurodire turtle, *Emydura subglobosa*. Society for Integrative and Comparative Biology (SICB) Annual Meeting. San Francisco, CA. (poster).

2017 **Mayerl CJ,** Rubin AR, Blob RW. 2017. Force requirements for successful self-righting behavior in upside down turtles. Southeastern Regional Society for Integrative and Comparative Biology (SE rSICB) Annual Meeting. Blacksburg, VA. (Oral).

Mayerl CJ. 2017. DVM student/postdoc rep student outreach ideas. Southeastern Regional Society for Integrative and Comparative Biology (SE rSICB) Annual Meeting. Blacksburg, VA. (Oral).

Stevens LM, **Mayerl CJ,** Hall G, Rivera G, Vance JT, Porter MM, Blob RW. 2017. The effects of keels on stability and maneuverability in aquatic turtles. Clemson University Focus on Creative Inquiry poster forum. Clemson, SC. ([Poster](#)).

Christopher Mayerl

Mayerl CJ, Youngblood JP, Rivera G, Vance JT, Blob RW. 2017. Stability vs maneuverability in freshwater turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting. New Orleans, LA. (Oral).

Stevens LM, Mayerl CJ, Hall G, Rivera G, Vance JT, Porter MM, Blob RW. 2017. Testing the effects of keels on stability and maneuverability in aquatic turtles. Society for Integrative and Comparative Biology (SICB) Annual Meeting. New Orleans, LA. (Poster).

Pruett JE, Mayerl CJ, Summerlin M, Rivera ARV, Blob RW. 2017. Hind limb muscle function in turtles: is novel skeletal design correlated with novel muscle function? Society for Integrative and Comparative Biology (SICB) Annual Meeting. New Orleans, LA. (Oral).

2016 **Mayerl CJ, Pruet JE, Summerlin M, Rivera ARV, Blob RW.** 2016. Hind limb muscle function in turtles: is novel skeletal design correlated with novel muscle function? Southeastern Regional Society for Integrative and Comparative Biology (SE rSICB) Annual Meeting. Duke University, NC. (Oral).

Blob RW, Mayerl CJ, Rivera ARV, Rivera G, Young VKH. 2016. "On the fence" versus "all in": insights from turtles for functional transitions in the aquatic locomotion of amniotes. International Congress of Vertebrate Morphology. Bethesda, MA. (Oral).

Mayerl CJ, Pruet JE, Rivera ARV, Blob RW. 2016. Hind limb muscle function in turtles: is novel skeletal design correlated with novel muscle function? International Congress of Vertebrate Morphology. Bethesda, MA. (Oral).

Mayerl CJ, Brainerd EL, Blob RW. 2016. Pelvic girdle mobility in turtles: implications for locomotion in aquatic and terrestrial environments. Clemson Biological Sciences Annual Student Symposium. Clemson, SC. (Oral).

Pruett JE, Mayerl CJ, Rivera ARV, Blob RW. 2016. Motor patterns of the hind limb muscles of pleurodire vs cryptodire turtles. Clemson Biological Sciences Annual Student Symposium. Clemson, SC. (Poster).

Pruett JE, Mayerl CJ, Rivera ARV, Blob RW. 2016. Motor patterns of the hind limb muscles of pleurodire turtles: correlations between changes in muscle attachments and activity. Clemson University Focus on Creative Inquiry poster forum. Clemson, SC. (Poster).

Mayerl CJ, Brainerd EL, Blob RW. 2016. XROMM Visualization of pelvic girdle mobility in turtles: implications for locomotion in aquatic and terrestrial environments. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Portland, OR. (Oral).

Pruett JE, Mayerl CJ, Rivera ARV, Blob RW. 2016. Motor patterns of the hind limb muscles of pleurodire turtles: correlations between changes in muscle attachments and activity. Society for Integrative and Comparative Biology (SICB) Annual Meeting. Portland, OR. (Poster).

Christopher Mayerl

2015 **Mayerl CJ**, Blob RW, Brainerd EL. 2015. Pelvic girdle mobility in walking turtles. Southeastern Regional Society for Integrative and Comparative Biology (SE rSICB) Annual Meeting. Georgia Tech, GA. (Oral).

Mayerl CJ, Blob RW, Brainerd EL. 2015. Pelvic girdle mobility in turtles: marker implantation. XROMM User Conference. Providence, RI. (Oral).

Hicks K, Pruett J, Youngblood J, Mayerl CJ, and Blob RW. 2015. Effects of flow on the swimming stability of turtles. Clemson University Focus on Creative Inquiry Poster Forum. Clemson, SC. (Poster).

Mayerl CJ, Rivera G, Blob RW. 2015. Hydrodynamic stability in pleurodire turtles. Society for Integrative and Comparative Biology (SICB) Meeting. West Palm Beach, FL. (Oral).

2014 **Mayerl CJ**, Rivera G, Blob RW. 2014. Hydrodynamic stability in pleurodire turtles. Southeastern Regional Society for Integrative and Comparative Biology (SE rSICB) Annual Meeting. University of North Carolina, Chapel Hill, NC. (Oral).

Mayerl CJ, Rivera G, Blob RW. 2014. Swimming function in pleurodire turtles: hydrodynamic stability and a novel gait. Society for Experimental Biology (SEB) Meeting. Manchester, United Kingdom. (Poster).

Mayerl CJ, Blob RW. 2014. The functional significance of the fused pelvis to the plastron in pleurodire turtles. Clemson Biological Sciences Annual Student Symposium (CBASS) (Oral).

Mayerl CJ, Van Damme R. 2014. Thermal ecology of the Tyrrhenian wall lizard (*Podarcis tiliguerta*) across an elevational gradient. Society for Integrative and Comparative Biology (SICB) Meeting. Austin, TX. (Oral).