

Christopher J Mayerl

Postdoctoral Fellow

Email: cmayerl@neomed.edu

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 = Student coauthor, * = shared first authorship

33. **Mayerl CJ**, Adjerid KA, Edmonds CE, Gould FDH, Johnson ML, Steer KE, Bond LE, German RZ. Regional variation in contractile patterns and muscle activity in infant pig feeding. *In Review*
32. Adjerid K, **Mayerl CJ**, Gould FDH, Edmonds CE, Steer KE, Bond LE and German RZ. The Effects of Varying Milk Delivery Parameters on Infant Pig Swallowing Behavior. *In Review*
31. **Mayerl CJ**, Gould FDH, Adjerid K, Edmonds CE, German RZ. The Pathway from Anatomy and Physiology to Diagnosis: A Developmental Perspective on Deglutition. *In Press*
30. Edmonds CE, German RZ, Bond LE and **Mayerl CJ**. 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.

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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**, Myrta 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, Myrta 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 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**, Myrta 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.

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15. **Mayerl CJ**, Capano JG, Moreno AA, Wyneken 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 Linnaean 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 Linnaean 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.
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

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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

NIH - 1K99HD105922-01 "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 - 2026
NIH - R21 - "The impact of a biomimetic nipple on infant performance during breast and bottle feeding" Eunice Kennedy Shriver National Institute of Child Health And Human Development Role: Principal Investigator	In Review
Company of Biologists – Scientific Meeting grant - Biology at birth: the role of infancy in providing the foundation for lifetime success Role: Principal Investigator.	In Review
NIH – R13 - Biology at birth: the role of infancy in providing the foundation for lifetime success Role: Co-Investigator.	In Review

FELLOWSHIPS

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

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
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, Northeast Ohio Medical University Integrative Musculoskeletal Biology (Graduate course) Duties: Construct and deliver lectures and laboratory assignments, create, administer and grade assignments and exams.	Jan 2021 – June 2021
Instructor of Record, Clemson University Comparative Vertebrate Morphology Duties: Construct and deliver lectures and lab assignments, create, administer, and grade assignments, quizzes, exams, practicals.	Jan 2017 – May 2017
Creative Inquiry Mentor, Clemson University, Duties: Integrate undergraduate students into scientific research (4-7 per semester). Organized weekly meetings for students to analyze scientific literature and develop projects. Taught a semester long course on analyzing and graphing data in R.	August 2014 – May 2018

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Taught a semester long course on writing scientific manuscripts.
Trained students and managed animal care. Instituted a lab blog ([link](#)).

Graduate Teaching Assistant (GTA), Clemson University, August 2013 – August 2017

Vertebrate Biology, Lead Vertebrate Biology Lab Teaching Assistant
Duties: supervise/train graduate TA's (7); prepare/edit lab handouts; coordinate with museum curators for specimen and facility use; prepare introductory presentations, quiz banks, practice exams, and lab practical exams; run weekly labs; set up lab material; organize undergraduate TA evaluation process and wrote summary evaluations; and grade term paper, quizzes and practical exams.

Behavioral Ecology Jan 2016 - May 2016

Duties: prepare and edit lab handouts, prepare introductory presentations, grade lab reports.

Principles of Biology Jan 2014 - May 2014

Duties: prepare and grade weekly quizzes, grade lab practical exams, prepare introductory presentations

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), "Aquatic locomotion with a rigid body"	2015
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

Allesandro Elementary School, CA, 2nd grade (2 classes) science Fall 2020 - current

Taught weekly courses to two 2nd grade classes over google meet for the academic year and created, assigned, and graded homework sheets for classes, focused on vertebrate diversity. 98% of students attending Allesandro Elementary School come from underrepresented groups in science, and receive little to no exposure to science.

Masters in Anatomical Sciences (MAS) Mentor Fall 2020 – current

The MAS program at NEOMED was created to increase access to medical school for

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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.

High school guest lectures in rural South Carolina Fall 2013 – Spring 2018
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

ACADEMIC SERVICE

Assistant Editor, <i>Integrative and Comparative Biology</i>	Begin
Symposium Organizer – Biology at Birth: the role of infancy in providing the foundation for lifetime success. Society for Integrative and Comparative Biology annual meeting	2023
Session Chair – Tongues, Teeth and Jaws (Session 82) Society for Integrative and Comparative Biology annual meeting	2022
Society for Integrative and Comparative Biology Division of Vertebrate Morphology Student/postdoc representative	2017-2019
Session Chair – Aquatic Locomotion, it is a fluke (session 134) Society for Integrative and Comparative Biology annual meeting	2018
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
Session Chair – Locomotion 4, International Congress for Vertebrate Morphology	2016
Judge, Clemson University Biological Sciences Annual Student Symposium	2015-2017
Judge, Clemson University Focus on Creative Inquiry Poster Forum	2015-2017
Clemson University Introductory Biology “The possibilities of graduate school”	2015
Vice President, Biological Sciences Graduate Student Association, Clemson University	2014-2015

PROFESSIONAL TRAINING

Digital Particle Image Velocimetry (DPIV) for Experimental Biology: Principles, Implementation, and a Hands-on session Workshop on incorporating DPIV techniques into research to understand force production in fluids.	2019
Human Anatomy, Northeast Ohio Medical University Audited medical student gross anatomy lab.	2018

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- 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

PROFESSIONAL SOCIETIES

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

INVITED SEMINARS

- Northern Arizona University Dept of Mechanical Engineering 2022
“Sensorimotor integration in infant feeding: the black box of fluid dynamics”

PRESENTATIONS

Underline = Student

- 2022 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 Performance. Dysphagia Research Society (DRS) Annual Meeting. San Juan, Puerto Rico. (Poster presentation).

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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).

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).

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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).

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).

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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, Myrta 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).

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).

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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](#)).

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).

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- 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**, Pruett 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**, Pruett 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).
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