

Julie P. Avery, Ph.D.
(Formerly J.P. Richmond)
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EDUCATION

- 2004 – 2008 University of Connecticut, College of Agriculture and Natural Resources, Storrs CT
Ph.D. in Animal Science, August 2008
Dissertation: Evaluation of the somatotropic axis in two marine mammal species with diverse early life history strategies: Influence of physiologic age and nutrition on growth of Harbor seals (*Phoca vitulina*) and Steller sea lions (*Eumetopias jubatus*)
Advisor: Steven A. Zinn
- 2001 – 2004 University of Alaska Anchorage, Department of Biological Sciences, Anchorage AK
M.S. in Biological Sciences, August 2004
Thesis: Ontogeny of total body oxygen stores and aerobic dive potential in the Steller sea lion (*Eumetopias jubatus*)
Advisor: Jennifer M. Burns
- 1997 – 2000 University of Central Florida, Department of Biological Sciences, Orlando FL
B.S. in Biological Sciences, August 2000

RESEARCH EXPERIENCE & PROFESSIONAL POSITIONS

- 2016 – present Research Assistant Professor, Institute of Northern Engineering, University of Alaska Fairbanks, Fairbanks AK. Conservation physiology research investigating health of Alaskan mammals.
- 2016 – present Faculty Affiliate, University of Alaska Fairbanks & Colorado State University, Veterinary Medicine Program. Teaching faculty for first year Veterinary Physiology and Histology.
- 2016 Research Professional, Institute of Northern Engineering, University of Alaska Fairbanks, Fairbanks AK. Research investigating mercury toxicity in Alaskan Pinnipeds.
- 2015 – present Research Faculty, Department of Biological Sciences, University of North Florida, Jacksonville FL. Research investigating nutrient and endocrine regulation of post-natal growth and development of wildlife species.

- 2010 – 2015 Assistant Professor, Department of Biological Sciences, University of North Florida, Jacksonville FL. Research investigating nutrient and endocrine regulation of post-natal growth and development of wildlife species.
- 2008 – 2010 Postdoctoral Research Associate, University of Connecticut, Storrs CT. Evaluated species differences in the response of metabolic hormones to nutritional stress.
- 2004 – 2008 Graduate Research Assistant, Department of Animal Science, University of Connecticut, Storrs CT. Investigated changes in components of the somatotropic axis due to age and nutritional status in marine and terrestrial mammals.
- 2001 – 2004 Graduate Research Assistant, Department of Biological Sciences, University of Alaska Anchorage, Anchorage AK. Completed research investigating the development of dive physiology in Steller sea lions (*Eumetopias jubatus*).
- 2001 – 2004 Graduate Intern and Wildlife Technician, Alaska Department of Fish and Game, Division of Wildlife Conservation, Anchorage AK. Evaluation of health status of endangered Steller sea lion (*Eumetopias jubatus*) populations.
- 1999 – 2001 Research Assistant and Volunteer, Hubbs-Sea World Research Institute, Orlando FL. Assisted with behavioral research of manatee fishing-gear entanglement.
- 1999 – 2001 Undergraduate Research Assistant, Department of Biological Sciences, University of Central Florida, Orlando FL. Conducted research on the fasting physiology of various pinniped (sea and sea lion) species.
- 1999 – 2000 Research Intern Undergraduate, Florida Space Grant Consortium, Kennedy Space Center, Cape Canaveral FL. Investigated the stability of microbial systems for long term space flight.

RESEARCH EXPEDITIONS AND FIELD EXPERIENCE

- 2013 Collaborative research expedition with University of Alaska to McMurdo Research Station Antarctica. Investigation of the physiologic trade-offs of critical life history events that influence reproductive success of Weddell seals (*Leptonychotes weddellii*).
- 2012 NOAA, NMFS, research and sampling trip to the far western Aleutian Islands, AK. Research trip initiated at Attu Island and followed an easterly route to end in Dutch Harbor AK. Purpose was to count pups on all rookeries and conduct health assessments of pups at three rookeries in this declining population of endangered Steller sea lions.
- 2010 – present Developed a field research program to investigate behavioral ecology, physiological ecology, and population health monitoring of Atlantic bottlenose dolphins in the St. John's River, Jacksonville Florida. (Co-PI with Dr. Quincy Gibson)
- 2007 Alaska Department of Fish and Game, Juvenile Steller sea lion captures in Prince William

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Sound Alaska.

- 2006 NOAA, NMFS, Steller sea lion research sampling and marking trip to the Kamchatka Peninsula, Russia and the Commander Islands.
- 2005 NOAA, NMFS, National Marine Mammal Laboratory (NMML), Polar Ecosystems Program research and sampling trip for harbor seals in Cook Inlet Alaska.
- 2003 NOAA, NMFS, National Marine Mammal Laboratory (NMML), Alaska Fisheries Science Center, juvenile Steller sea lion captures in the Western Gulf of Alaska and Eastern Aleutian Islands.
- 2001 -2005 Alaska Department of Fish and Game, juvenile Steller sea lion captures. In this five year period I participated in six juvenile capture trips and four pup marking trips in Southeast Alaska.

EXTERMURAL GRANTS AND CONTRACTS

- 2015 Hubbs Sea World Research Institute, Contract. "Evaluation of the somatotropic axis in California sea lions pups rescued and rehabilitated during the 2013 Unusual Mortality Event" \$5,000
- 2014 University of British Columbia, Contract. "Seasonal changes in concentrations of leptin and ghrelin associated with intake and body condition of captive Northern Fur Seals" \$6,395
- 2013 Mazuri Exotic Animal Nutrition Research Grant. "Milk vs. Formula: Examination of Metabolic Hormone Profile in Common Pinniped Rehabilitation Formulas" \$4,700
- 2012 University of British Columbia Sub-Contract. "Evaluation of the response of metabolic hormones to seasonal changes in intake and body condition of captive Steller sea lions" \$13,153
- 2012 The Elizabeth Ordway Dunn Foundation Grant. "St. John's River Bottlenose Dolphin Population Monitoring" (Co-Pi Quincy Gibson, University of North Florida) \$20,000
- 2011 Alaska Department of Fish & Game Co-operative Agreement. "Growth Under Uncertainty: Investigation of Growth Hormone Receptor (GHR) in Steller Sea lion Muscle" \$29, 100
- 2008 The Sounds Conservancy Grants Program, QLF/Atlantic Center for the Environment awarded a grant to study, "Using the somatotropic axis as a model to predict nutritional status in free-ranging harbor seal pups in southern New England"

INTERMURAL FUNDING

- 2013 UNF Academic Affairs Summer Research Grant (Summer 2014), "Evaluation of the endocrine response to nutritional stress in multiple phocid (true seal) species" \$7,500

- 2012 UNF Faculty Development Grant for Proposal Development (Summer 2013), "The Cost of a New Fur Coat: Endocrine Regulation of Nutrient Allocation for Hair Growth versus Reproduction in an Antarctic Seal Species" \$7500
- 2010 UNF Faculty Development Grant for New Course Development (Summer 2011), "Implementation of a Marine Mammal Biology Lecture Course" \$7,500
- 2010 University of North Florida Environmental Seed Grant, "Atlantic bottlenose dolphin photo identification in Northeast Florida" \$3000
- 2008 University of Connecticut, Center for Environmental Sciences and Engineering, Multidisciplinary Environmental Research Award for research entitled "Fasting vs. Starvation: Development of a novel method to evaluate nutritional stress in an Endangered marine mammal species"
- 2007 University of Connecticut, Center for Environmental Sciences and Engineering, Multidisciplinary Environmental Research Award for research entitled "Effect of nutrient availability on the somatotropic axis in free-ranging moose"

AWARDS AND FELLOWSHIPS

- 2015 University of North Florida, College of Arts and Sciences, Research Enhancement Plan 2014 (January 1, 2015- June 30, 2015). FAT OR FIT: Energetic Tradeoffs of Nutrient Partitioning in an Extreme Environment, Spring course release
- 2012 Dean's Leadership Council Faculty Fellowship (January 1, 2013- June 30, 2013). Northeast Florida bottlenose dolphin abundance and movement. (Co-Pi Quincy Gibson, University of North Florida), \$3900 and Spring course release
- 2010 Charlotte Mangum Travel Grant, to attend the annual meeting of the Society for Integrative and Comparative Biology (SICB), \$500
- 2009 Post-Doctoral Scholar, Faculty Institutes for Reforming Science Teaching (FIRST-IV), Smithsonian Environmental Research Center (SERC)
- 2009 International Association of Aquatic Animal Medicine, Orlando FL. Student Travel Award, \$500
- 2008 Malcolm Ramsey Memorial Scholarship to recognize student research in field animals presented by the Comparative Nutrition Society, \$1,000
- 2007 Eastern States Exposition Graduate Scholarship, \$3,000
- 2007 International Association of Aquatic Animal Medicine, Orlando FL. First Place Graduate Student Presentation Competition, \$250 and Student Travel Award, \$500
- 2006 Comparative Nutrition Society, Outstanding Oral Presentation Award, First Place Graduate Student Competition, \$500
- 2006 University of Connecticut, Doctoral Dissertation Fellowship, \$1,000
- 2006 University of Connecticut, Summer Graduate Research Fellowship, \$1,000
- 2005 University of Connecticut, Summer Graduate Research Fellowship, \$1,000
- 2004 EPSCoR Travel Award to attend the AAAS Conference, \$500
- 2000 American Physiological Society Travel Award, \$500

PEER REVIEWED PUBLICATIONS

Symbol denotes mentored *undergraduate or †graduate student

1. †Dailey, R.E., C. Fontaine, **J.P. Avery**. 2016. Development of fasting adaptation and the endocrine response to realimentation in young Northern elephant seals (*Mirounga angustirostris*). *General and Comparative Endocrinology*. 235(1):130-135. [doi:10.1016/j.ygcen.2016.06.009](https://doi.org/10.1016/j.ygcen.2016.06.009)
2. Rea, L.D., S.D. Farley, **J.P. Avery**, W.S. Dunlap-Harding, V.K. Stegall, C.A.B. Eischens, B.S. Fadely, T.S. Gelatt, K.W. Pitcher. 2016. Percent total body lipid content increases in Steller sea lion (*Eumetopias jubatus*) pups throughout the first year of life in a similar pattern to other otariid pups. *Marine Mammal Science*. DOI: 10.1111/mms.12327
3. †Cimino, R.L., R.K. Bonde, **J.P. Avery**. 2016. The Seasonal Response of Ghrelin, Growth Hormone, and Insulin-like Growth Factor I in the Free-ranging Florida Manatee (*Trichechus manatus latirostris*). *Mammalian Biology*. 81(3): 247-254. <http://dx.doi.org/10.1016/j.mambio.2016.02.006>
4. Shero, M.R., *R.T. Krotz, D.P. Costa, **J.P. Avery**, J.M. Burns. 2015. Overwinter changes in Weddell seal body condition and hormone profiles: Implications for pregnancy? *Functional Ecology*. 29(10): 1278–1291 doi: 10.1111/1365-2435.12434 <http://onlinelibrary.wiley.com/doi/10.1111/1365-2435.12434/pdf>
5. Gibson, Q., Howells, E., Lambert, J., Mazzoil, M., **Richmond, J.** 2013. The Ranging Patterns of Female Bottlenose Dolphins (*Tursiops truncatus*) with Respect to Reproductive Status: Testing the Concept of Nursery Areas. *Journal of Experimental Marine Biology and Ecology*. 445:53-60
6. Mazzaro, L.M., **J.P. Richmond**, M. Kluever, J. Morgan, J.L. Dunn, S.A. Zinn, E.A. Koutsos. 2011. Evaluation of an alternative to feeding whole frozen fish in Beluga Whales (*Delphinapterus leucas*). *Zoo Biology*. 30: 32-51. doi: 10.1002/zoo.20319
7. **Richmond, J.P.**, T. Jeanniard du Dot, D.A.S. Rosen, S.A. Zinn. 2010. Seasonal influence on the response of the somatotrophic axis to nutrient restriction and re-alimentation in captive Steller sea lions (*Eumetopias jubatus*). *Journal of Experimental Zoology*. 313A:144-156. doi: 10.1002/jez.584
8. **Richmond, J.P.**, T. Norris, S.A. Zinn. 2010. Re-alimentation in harbor seal pups: Effects on the somatotrophic axis and growth rate. *General and Comparative Endocrinology*. 165: 286-292. [doi:10.1016/j.ygcen.2009.07.007](https://doi.org/10.1016/j.ygcen.2009.07.007)
9. **Richmond, J.P.** and S.A. Zinn. 2009. Validation of radioimmunoassays (RIA) for growth hormone (GH) and insulin-like growth factor (IGF)-I in phocid, otariid, and cetacean species. *Aquatic Mammals*. 35(1):19-31. doi: 10.1578/AM.35.1.2009.19
10. Jeanniard du Dot, T., D.A.S. Rosen, **J.P. Richmond**, S.A. Zinn, A.S. Kitaysky, A.W. Trites. 2009. Changes in glucocorticoid, IGF-I, and thyroid hormones as indicators of nutritional stress and subsequent re-feeding in Steller sea lions (*Eumetopias jubatus*). *Comparative Biochemistry and Physiology A*. 152(4):

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524-534. <http://dx.doi.org/10.1016/j.cbpa.2008.12.010>

11. **Richmond, J.P.**, J. Skinner, J. Gilbert, L.M. Mazzaro, S.A. Zinn. 2008. Comparison of the Somatotrophic Axis in Free-ranging and Rehabilitated Harbor Seal Pups (*Phoca vitulina*). *Journal of Zoo and Wildlife Medicine*. 39(3):342-348. doi: 10.1638/2007-0076.1
12. **Richmond, J.P.**, J.M. Burns, L.D. Rea. 2006. Ontogeny of total body oxygen stores and aerobic dive potential in Steller sea lions (*Eumetopias jubatus*). *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology*. 176:535-545. <http://dx.doi.org/10.1007/s00360-006-0076-9>
13. **Richmond, J.P.**, J.M. Burns, L.D. Rea, K. Mashburn. 2005. Postnatal ontogeny of Erythropoietin and hematology in free-ranging Steller sea lions (*Eumetopias jubatus*). *General and Comparative Endocrinology*. 141: 240-247. <http://dx.doi.org/10.1016/j.ygcen.2005.01.004>
14. Burns, J.M., C.A. Clark, **J.P. Richmond**. 2004. The impact of lactation strategy on physiological development of juvenile marine mammals: implications for the transition to independent foraging. *International Congress Series*. 1275: 341-350. <http://dx.doi.org/10.1016/j.ics.2004.09.032>

MANUSCRIPTS IN PREPARATION

Symbol denotes mentored *undergraduate or †graduate student

15. **Avery, J.P.**, *C.E. Anderson, *S. Parker, *K.D. Hebert, J. Schuh, J. M. Burns, S. A. Zinn. In Co-Author Review. Comparison of the somatotrophic axis of two precocious free-ranging ice seal species: harp (*Phoca groenlandica*) and hooded (*Cystophora cristata*).
16. **Avery, J.P.**, J. Richard, and S.A. Zinn. In Preparation. Seasonal changes in body condition and components of the somatotrophic axis in beluga whales (*Delphinapterus leucas*). Anticipated submission to *Marine Mammal Science*.
17. †R.E. Dailey, *K.N. Smith, **J.P. Avery**. In Preparation. Evaluating the physiologic response to an alternative feeding mechanism: Metabolic hormones in remote-fed versus gavage-fed harbor seal (*Phoca vitulina*) pups. Anticipated submission to *Research in Veterinary Science*.

PROFESSIONAL CONFERENCE PRESENTATIONS

Symbol denotes mentored *undergraduate or †graduate student

Abstracts 45-79 encompass the years 2000-2009. The following list begins with 2010.

1. **Avery, J.P.**, T. Lamken, T.M. O'Hara, J. London, H. Ziel, and L.D. Rea. 2017. Regional differences in total mercury content of Aleutian harbor seal fur. *Alaska Marine Science Symposium*, January 16-20, 2017.
2. Castellini, J.M., **J.P. Avery**, T.M. O'Hara, T. Bouta, L.D. Rea. 2017. Tissue distribution of total mercury, monomethylmercury, and selenium in Alaskan Steller sea lions. *Alaska Marine Science Symposium*, January 16-20, 2017.

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3. Harding, J., **J.P. Avery**, T.M. O'Hara, and L.D. Rea. 2017. Can Fur Predict the Total Mercury Concentration of Muscle in Steller sea lions? Alaska Marine Science Symposium, January 16-20, 2017.
4. **Avery, J.P.** 2015. Milk vs. Formula: Examination of Metabolic Hormone Profile in Common Pinniped Rehabilitation Formulas. Conference on the Biology of Marine Mammals, San Francisco CA. December 13-18, 2015.
5. *Ruben, C.A., M. Diaz Gomez, D.A.S. Rosen, **J.P. Avery**. 2015. Nutritional and Dietary Influences on metabolic hormones in Northern Fur Seals (*Callorhinus ursinus*). Conference on the Biology of Marine Mammals, San Francisco CA. December 13-18, 2015.
6. *Alvarez, G.A., †R.L. Cimino, R.K. Bonde, **J.P. Avery**. 2015. Investigating nutritional status of the West Indian Manatee (*Trichechus manatus*). Southeast and Mid-Atlantic Marine Mammal Symposium. Virginia Beach, VA. March 27-29, 2015.
7. *Tortolero, A., J. Schuh, A.D. Tuttle, **J.P. Avery**. 2015. Growth hormone and Insulin-like Growth Factor-I response to realimentation in rehabilitated gray seals (*Halichoerus grypus*). Southeast and Mid-Atlantic Marine Mammal Symposium. Virginia Beach, VA. March 27-29, 2015.
8. †Schumacher E.S., *W. Aris, **J.P. Avery**. 2015. Validation of ghrelin, growth hormone, and insulin-like growth factor-I radioimmunoassays to determine hormone concentrations in human formula and common pinniped rehabilitation formula. Southeast and Mid-Atlantic Marine Mammal Symposium. Virginia Beach, VA. March 27-29, 2015.
9. Emery K.Q., K.J. O'Connell, A.R. Kompelli, J.L. Dearolf, **J.P. Avery**. 2015. Morphology of a neonatal guinea pig accessory ventilatory muscle. Society for Integrative and Comparative Biology. West Palm Beach, FL. January 3-7 2015.
10. Mills W.B., M.R. Butler, J.L. Dearolf, **J.P. Avery**. 2015. Morphology of the neonatal guinea pig scalenus muscle. Society for Integrative and Comparative Biology. West Palm Beach, FL. January 3-7 2015.
11. O'Connell K.J., K.A. McGrail, J.N. LaVergne, L.A. Riley, R.A. Walker, J.L. Dearolf, **J.P. Avery**. 2015. Fatigue properties of the neonatal guinea pig diaphragm. Society for Integrative and Comparative Biology. West Palm Beach, FL. January 3-7 2015.
12. †Sirman, A.E., **J.P. Avery**, W.R. Hood. 2015. The effects of the developmental environment on reproductive effort and insulin-like growth factor 1 in the house mouse (*Mus musculus*). Society for Integrative and Comparative Biology. West Palm Beach, FL. January 3-7 2015.
13. Shero, M.R., R.T. Krotz, D.P. Costa, **J.P. Avery**, J.M. Burns. 2014. Overwinter changes in Weddell seal body condition and hormone profiles: Implications for pregnancy? American Physiological Society, San Diego CA. October 5-8, 2014.
14. †Pelon, K. and **J.P. Avery**. 2014. Developmental pattern of muscle growth hormone receptor expression in Steller sea lions (*Eumetopias jubatus*). UNF Biology Chemistry & Physics Poster Session. Jacksonville FL, October 24, 2014.

15. †Schumacher, E., *W. Aris, **J.P. Avery**. 2014. Examination of Ghrelin and Growth Hormone Concentrations in Common Pinniped Rehabilitation Formulas. UNF Biology Chemistry & Physics Poster Session. Jacksonville FL, October 24, 2014.
16. Hood, W., †A. Sirman, **J.P. Avery**. 2014. Maternal diet, metabolism, and reproductive effort in the house mouse. Comparative Nutrition Society Proceedings. Flat Rock, NC. August 2014.
17. *Smith, K.N., †R.E. Dailey, **J.P. Richmond**. 2014. Different Feeding Methods Have Limited Effects on Cortisol Concentrations in Harbor Seal (*Phoca vitulina*) Pups Undergoing Rehabilitation. Southeast and Mid-Atlantic marine Mammal Symposium. Wilmington, NC. March 28-30, 2014.
18. Amatuli, K.C., D.A.S. Rosen, **J.P. Richmond**. 2014. Seasonality of metabolic hormones in a seasonal carnivore, the Steller sea lion *Eumetopias jubatus*. Society for Integrative and Comparative Biology. Austin TX, January 3-7 2014.
19. *Butler, M.R., A. Chughtai, L.A. Riley, R.A. Walker, J.L. Dearolf, **J.P. Richmond**. 2014. Effects of prenatal glucocorticoids on the fetal guinea pig scalenus muscle. Society for Integrative and Comparative Biology. Austin TX, January 3-7 2014.
20. *Krotz, R.T., M.R. Shero, D.P. Costa, J.M. Burns, **J.P. Richmond**. 2014. Linking metabolic hormones to nutritional status in Weddell seals (*Leptonychotes weddellii*). Society for Integrative and Comparative Biology. Austin TX, January 3-7 2014.
21. *O'Connell, K.J., J.L. Dearolf, **J.P. Richmond**. 2014. Effect of prenatal steroids on the citrate synthase activity of the guinea pig external abdominal oblique. Society for Integrative and Comparative Biology. Austin TX, January 3-7 2014.
22. †Dailey, R.E., **J.P. Richmond**. 2013. Effect of age on the endocrine response to changes in nutritional status in young Northern elephant seals (*Mirounga angustirostris*). Conference on the Biology of Marine Mammals, Dunedin, New Zealand. November 2013.
23. *Amin, M., **J.P. Richmond**. 2013. Age related changes in growth hormone and insulin-like growth factor I free-ranging Steller sea lions (*Eumetopias jubatus*). Southeast and Mid-Atlantic marine Mammal Symposium. Jacksonville FL. March 22-24, 2013.
24. Anderson, B., **J. Richmond**, T. Pitchford, J. Gelsleichter. 2013. Observations of shark scavenging on North Atlantic Right Whale (*Eubalaena glacialis*) carcass in Northeast Florida. Southeast and Mid-Atlantic marine Mammal Symposium. Jacksonville FL. March 22-24, 2013.
25. †Cimino, R.L., **J.P. Richmond**. 2013. Seasonal variations in growth hormone, insulin-like growth factor-I, and ghrelin in the free-ranging manatee (*Trichechus manatus latirostris*). Southeast and Mid-Atlantic marine Mammal Symposium. Jacksonville FL. March 22-24, 2013.
26. †Dailey, R.E., **J.P. Richmond**. 2013. Impact of age and nutritional status on ghrelin and the somatotrophic axis in Northern elephant seals (*Mirounga angustirostris*). Southeast and Mid-Atlantic marine Mammal Symposium. Jacksonville FL. March 22-24, 2013.

27. *Seenath, S., **J. Richmond**. 2013. Endocrine evaluation of nutritional status of Steller sea lion (*Eumetopias jubatus*) pups in the Western Aleutian Islands, Alaska. Southeast and Mid-Atlantic marine Mammal Symposium. Jacksonville FL. March 22-24, 2013.
28. *Butler M.R.; Dearolf, J.L.; **Richmond, J.P.** 2013. The effect of prenatal steroids on citrate synthase activity in the fetal guinea pig scalenus muscle. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
29. †Cimino, R.L., **J.P. Richmond**. Manatee. Assessing seasonality of the free-ranging Florida Manatee (*Trichechus manatus latirostris*). Society for Integrative and Comparative Biology. San Francisco, January 3-7 2013.
30. †Dailey, R.E., **J.P. Richmond**. Impact of nutritional status on ghrelin and growth hormone in phocid seal pups. Society for Integrative and Comparative Biology. San Francisco, January 3-7 2013.
31. Gibson, Q.A., E.M. Howells, J.D. Lambert, M.M. Mazzoil, G. O’Cory-Crowe, **J.P. Richmond**. Impact of Reproductive Status on Ranging Patterns of Female Bottlenose Dolphins. Society for Integrative and Comparative Biology. San Francisco, January 3-7 2013.
32. *Kompelli, AR; Dearolf, JL; **Richmond, JP**. 2013. The effect of betamethasone on the citrate synthase activity in fetal guinea pig rectus abdominus. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
33. *McGrail, KA; Dearolf, JL; Walker, RA; **Richmond, JP**. 2013. Effects of prenatal steroids on the citrate synthase activity of the fetal guinea pig (*Cavia porcellus*) diaphragm. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
34. *McKinney, M.L.; Walker, R.A.; Dearolf, J.L.; **Richmond, J.P.** 2013. The scalenus and diaphragm muscles’ contributions to inspiration in the bottlenose dolphin (*Tursiops truncatus*). Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
35. †Nekolny, S.; Gibson, Q.; ‡Ermak, J.; **J.P. Richmond**. 2013. Don’t Bite Your Mother: Seasonality and Sex Differences in Bottlenose dolphin Aggression. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
36. *Unser, A.J.; Dearolf, J.L.; **Richmond, J.P.** 2013. Investigating the presence of a venous sphincter in the bottlenose dolphin (*Tursiops truncatus*) diaphragm. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
37. *Walker, R.A.; Dearolf, J.L.; **Richmond, J.P.** 2013. Assessment of the oxidative capacity of the rectus thoracis muscle in betamethasone treated fetuses. Society for Integrative and Comparative Biology. San Francisco CA. January 3-7, 2013.
38. †Dailey, R.E., **J. P. Richmond**. 2012. Satiety hormone response from nutritional nadir through realimentation in rehabilitated seal pups. Comparative Nutrition Society Proceedings. Monterey CA.

July 2012.

39. *Mello, M, Q.A. Gibson, Z. McKenna, **J.P. Richmond**. 2011. Body Coverage and Severity of Tooth Rake Marks: A Comparison Between Two Neighboring Populations of Bottlenose dolphins (*Tursiops truncatus*). Conference on the Biology of Marine Mammals, Tampa, FL. November 2011.
40. Gibson, Q.A., E.M. Howells, J.D. Lambert, M.M. Mazzoil, G. O’Cory-Crowe, **J.P. Richmond**. 2011. The Ranging Patterns of Female Bottlenose Dolphins (*Tursiops truncatus*) with Respect to Reproductive Status: Testing the Concept of Nursery Areas. Conference on the Biology of Marine Mammals, Tampa, FL. November 2011.
41. *Parker, S., J.M. Burns, J. Schuh, S.A. Zinn, **J.P. Richmond**. 2011. Comparison of the somatotropic axis between free-range vs. rehabilitated ice seal species. Conference on the Biology of Marine Mammals, Tampa, FL. November 2011.
42. Caldwell, M., Q. A. Gibson, **J.P. Richmond**, R. Burks, M. Mazzoil, R. Borkowski. 2011. Post Unusual Mortality Event Survey Data Provide Evidence for Long-term Habitat Use and Possible Range Extension of Bottlenose Dolphins (*Tursiops truncatus*) in Jacksonville, FL. Conference on the Biology of Marine Mammals, Tampa, FL. November 2011.
43. *Hebert K. D., **J.P. Richmond**, L. D. Rea, S. A. Zinn. 2011. Longitudinal Assessment of the Somatotropic Axis in Free-Ranging, Juvenile Steller Sea Lions. Journal of Animal Science. New Orleans, LA. July 10-14.
44. *Anderson, C.E., **J. P. Richmond**, J. M. Burns, S. A. Zinn. 2010. Comparison of the somatotropic axis of two precocious free-ranging ice seal species: harp (*Phoca groenlandica*) and hooded (*Cystophora cristata*). Journal of Animal Science. Denver, CO. July 11-15.
45. †Parillo, A., **J. P. Richmond**, K.S. White, J. Crouse, B.W. Dale, S. A. Zinn. 2010. The Effect of Forage Availability on the Somatotropic Axis in Free-Ranging Alaskan Moose. Journal of Animal Science. Denver, CO. July 11-15.
46. Richmond, J.P., M. Keogh, S. Atkinson, S.A. Zinn. 2010. Seasonal changes in leptin and ghrelin concentrations associated with intake and body condition of captive Steller sea lions. Integrative and Comparative Biology. Seattle, WA January 3-7.
47. Richmond, J.P., L.D. Rea, S.A. Zinn. 2010. Steller sea lion (*Eumetopias jubatus*) leptin cDNA Sequence Homology. Integrative and Comparative Biology. Seattle, WA January 3-7.
48. Burns, J.M., P.J. Reiser, K. Lestyk, J.P. Richmond, J.S. Prewitt, M.O. Hammill. Structural correlates of immature muscle biochemistry in young pinnipeds. Conference on the Biology of Marine Mammals, Quebec City, Quebec, Canada. October 2009.
49. *Carey, K.A., J.P. Richmond, J. Schuh, H. Medic, L.M. Mazzaro, S.A. Zinn. Re-alimentation of four phocid species: Response of the somatotropic axis, growth rate, and body condition. Conference on the Biology of Marine Mammals, Quebec City, Quebec, Canada. October 2009.

50. Richmond, J.P., L.D. Rea, J.E. Mellish, S.A. Zinn. Ontogeny of the somatotrophic axis in free-ranging Steller sea lions (*Eumetopias jubatus*). Conference on the Biology of Marine Mammals, Quebec City, Quebec, Canada. October 2009.
51. *Comeau, G.A., S. McCusker, J.P. Richmond, L.A. Shipley, E.A. Koutsos, S.A. Zinn. Response of the somatotrophic axis and growth rate in mule deer (*Odocoileus hemionus*) fed three different diets from birth to 68 weeks of age. American Society for Animal Science. Montreal, Quebec, Canada. July 12-16, 2009.

INVITED PRESENTATIONS

October 21, 2016 – University of Alaska Fairbanks, Institute of Northern Engineering, Fairbanks AK. Conservation Physiology: Comparative Growth Physiology On the Land and In the Sea

September 19, 2016 – University of Alaska Fairbanks, Department of Veterinary Medicine, One Health Seminar, Fairbanks AK. “Wildlife Growth Physiology: An Example of Conservation Physiology and One Health Connection”.

February 25, 2015 - University of Florida College of Veterinary Medicine, Aquatic Animal Health Program, Gainesville FL. “Nature, Nutrition, and the Environment: The ecophysiology of differential growth strategies among phocids”. <http://aquatic.vetmed.ufl.edu/education/events/seminars/>

February 22, 2013 – University of North Florida, Department of Biological Sciences, Jacksonville FL. “Growing Seasons: Endocrine Regulation of Growth Physiology”

July 8-12, 2013 - American Dairy Science Association-American Society of Animal Science Joint Annual Meeting, Indianapolis, ID. Special session on Companion Animals: Comparative Animal Nutrition. “Comparative Growth Physiology On the Land and In the Sea: Animal Science to Marine Mammal Biology”.

January 2, 2013 - The Marine Mammal Center, Sausalito CA. “Fasting and Re-alimentation of phocids: All seals are not created equal”

January 25, 2013 - Auburn University, Auburn AL. “Feast or Fast: Endocrine regulation of differential growth strategies in diverse marine mammal species”

June 17, 2010 - Conservation Research: The importance of captive studies to assess nutritional status of free-ranging populations of marine mammals. Mystic Aquarium & Institute for Exploration (MAIFE), Mystic, CT.

February 19, 2010. Nutrition, Growth and Development: Using metabolic hormones as a tool to assess nutritional status of marine mammal populations. University of North Florida, Jacksonville FL.

January 7, 2010. Nutritional status of free-ranging Steller sea lions: The utility of metabolic hormones to identify nutritional stress. NOAA, National Marine Mammal Laboratory, Alaska Fisheries Science Center, Seattle WA.

September 15, 2009. Nutrition, Growth, and Development: The role of the somatotrophic axis. University of Connecticut, Department of Molecular and Cellular Biology, Storrs, CT.

September 2007. Using captive animals to develop a model of nutritional stress for evaluation of nutritional status in free-ranging pinnipeds. Presentation at workshop entitled “Marine Mammals in the Lab: Tools for

J. P. Avery
(Formerly J.P. Richmond)

Conservation and Science". Marine Mammal Research Consortium, Vancouver, British Columbia.

September 2007. Fasting and Re-alimentation: Changes in the somatotrophic axis of marine mammals under nutritional stress. University of Alaska Anchorage, Anchorage AK.

May 2007. Assessing the nutritional status of rehabilitated harbor seals. MAIFE, Mystic, CT.

March 2007. Nutrition, Growth and Development: Using the somatotrophic axis as a tool to assess nutritional status in marine species. Department of Biology, Northeastern Illinois University, Chicago IL.

June 2005. The somatotrophic axis on land and in the sea. MAIFE, Mystic, CT.

June 2004. Examination of blood and muscle development in the Steller sea lion (*Eumetopias jubatus*): Implications for Diving and Foraging Ability. MAIFE, Mystic, CT.

May 2004. Ontogeny of total body oxygen stores and aerobic dive potential in the Steller sea lion (*Eumetopias jubatus*). Scripps Institution of Oceanography, La Jolla, CA.

TEACHING EXPERIENCE

2016 – present Faculty Affiliate, Joint Doctorate of Veterinary Medicine Program at Colorado State University, College of Veterinary Medical Sciences, Ft. Collins Colorado and University of Alaska Fairbanks, Department of Veterinary Medicine, Fairbanks Alaska.
Veterinary Physiology and Histology (DVM 618) Teaching faculty and Course Coordinator (9 credit course).

2010 – 2015 Assistant Professor, Department of Biological Sciences, University of North Florida, Jacksonville FL.*
General Biology (BSC 1010C); Human Anatomy and Physiology I Lecture & Laboratory (BSC 2085C); Human Anatomy and Physiology II Laboratory (BSC 2086C); *Biology of Marine Mammals and Laboratory (ZOO 4485, ZOO 4485L)*; *Advanced Biology of Marine Mammals (ZOO 5487C)*; Senior Seminar Preparation (BSC 4842); Senior Seminar Practicum (BSC 4947); *Comparative Nutrition (BSC 4930)*; *Advanced Comparative Nutrition (BSC 5936)*. (*New Courses Developed identified with italics*)
*Typical teaching load three classes per semester. For example, Fall 2014: General Biology Lecture (189 students), Human Anatomy and Physiology I Lecture (173 students), and Senior Seminar Practicum (11 students); or Spring 2014: Human Anatomy and Physiology I Lecture (144 students) and Biology of Marine Mammals (43 students) with laboratory (21 students).

- 2010 Adjunct Professor, Manchester Community College, Manchester CT
General Biology I (BIO 121)
- 2009 Co-Instructor, University of Connecticut, Storrs CT
Principles of Biology I, (BIOL 1107)
- 2005 – 2009 Teaching Assistant, Department of Animal Science, University of Connecticut, Storrs CT
Reproductive Physiology (ANSC 3122); Growth and Metabolism of Domestic Animals
(ANSC 3313); Writing in Growth and Metabolism of Domestic Animals (ANSC 3314W).

OTHER TEACHING EXPERIENCE

Graduate Student Committees Current (UNF, unless otherwise noted)

2014- Member, M.S. Olivia Scheffler

Graduate Student Committees Completed

2011-2015 Member, M.S. Brenda Anderson
 2013-2015 Member, M.S. Amanda Brown
 2012-2015 Member, M.S. Jessica Frank (University of South Alabama)
 2012-2014 Member, M.S. Jessica Ermak
 2012-2014 Member, M.S. Rasheda Likely
 2012-2014 Member, M.S. Samantha Nekolny
 2012-2014 Member, M.S. Maria Peterson
 2012-2014 Member, M.S. Aubrey Sirman (Auburn University)
 2011-2013 Chair, M.S. Rachel Cimino
 2011-2013 Chair, M.S. Rachael Dailey
 2008-2010 Member M.S. Amanda Parillo (University of Connecticut, Animal Science)

Graduate Student Committees Not Completed

2014-2015 Chair, M.S. Kathryn Pelon. Student left graduate school.
 2014-2015 Chair, M.S. Elizabeth Schumacher. Student left graduate school.
 2011-2013 Member, M.S. Zach McKenna. Switched to MA program.

Undergraduate Student Research (UNF Only, since Fall 2010)

*Denotes mentored student with authorship listed in publications

Emily Floore – Undergraduate Research, Growth hormone and insulin-like growth factor in pupping versus skip breeding adult female Weddell seals (*Leptonychotes weddellii*). (Summer 2013 – current)

*Cheyanne Ruben – Undergraduate Research, Influence of diet composition on ghrelin and the somatotrophic axis in Northern fur seals (*Callorinus ursinus*). (Summer 2013 – Current)

Joshua Smith– Undergraduate Research, Insulin-like growth factor binding proteins in pupping versus skip breeding adult female Weddell seals seals (*Leptonychotes weddellii*). (Summer 2015)

- *Gina Alvarez – Undergraduate Research, Insulin-like growth factor-I binding proteins in free-ranging manatee. (Spring 2013 – Summer 2015)
- *Andres Tortolero – Senior Thesis, Endocrine response to re-alimentation in rehabilitated grey seal (*Hylocherus grypus*) pups. (Spring 2014 – Spring 2015)
- Ayla Anderson – NSF REU, Differences in insulin-like growth factor (IGF-I) and Growth Hormone (GH) between four North Atlantic phocid species throughout rehabilitation (Summer 2014)
- *Riley Krotz – Senior Thesis, Linking metabolic hormones to nutritional status in Weddell seals (*Leptonychotes weddellii*). (Summer 2013 – Summer 2014)
- *Wendie Aris – NSF REU, Concentrations of Ghrelin in Human and Common Seal Formulas (Summer 2013)
- *Kacie Smith – Senior Thesis, Different Feeding Methods Have Limited Effects on Cortisol Concentrations in Harbor Seal (*Phoca vitulina*) Pups Undergoing Rehabilitation. (Spring 2013 – Fall 2014)
- *Mansi Amin – Senior Thesis, Age related changes in growth hormone and insulin-like growth factor I free-ranging Steller sea lions (*Eumetopias jubatus*). (Summer 2012 – Spring 2013)
- *Sanjeev Seenath – Senior Thesis, Endocrine evaluation of nutritional status of Steller sea lion (*Eumetopias jubatus*) pups in the Western Aleutian Islands, Alaska. (Summer 2012 – Spring 2013)
- Robin Goyle – Post-Bacc Research, Quantification of Leptin concentrations in Steller sea lion serum and blubber. (Summer 2012 – Fall 2012)
- Dominique Barbosa – Senior Thesis, Seasonal variation of ghrelin, growth hormone and insulin-like growth factor in free ranging harbor seals (Summer 2011 – Spring 2012)
- *Megan Mellow – Senior Thesis, Tooth rake marks and aggression of bottlenose dolphins (*Tursiops truncates*) in Northeast Florida. (Summer 2011 – Spring 2012)
- Jamie Rothaug – Research, Using GPS to identify critical habitat of bottlenose dolphins (*Tursiops truncates*) in the St. Johns River, Florida (Spring 2011 – Summer 2011)
- *Savannah Parker – Senior Thesis, Free-range vs Rehabilitated ice seals: Analysis of components of the somatotrophic axis to assess nutritional status of harp (*Pagophilus groenlandicus*) and hooded seals. (Spring 2011 – Spring 2012)

PROFESSIONAL SERVICE & OUTREACH

Peer Review

Journals: Aquatic Biology, Comparative Biochemistry and Physiology, General and Comparative Endocrinology, Journal of Animal Science, Journal of Experimental Biology, Journal of Wildlife Rehabilitation, Marine Ecology Progress Series, Mammalian Biology, Marine Mammal Science, Physiological and Biochemical Zoology, Research in Veterinary Science. *Research Proposals:* National Science Foundation (designated reviewer 2010 and panelist 2013, 2015), North Pacific Research Board.

Professional Societies

Comparative Nutrition Society, International Association for Aquatic Animal Medicine, Society for Integrative and Comparative Biology, Society for Marine Mammalogy, Sigma XI.

Conference Organization

Organized and hosted the 2013 Southeast and Mid-Atlantic Marine Mammal Symposium (SEAMAMMS) at University of North Florida, March 22-24, 2013. <http://www.unf.edu/coas/biology/SEAMAMMS.aspx>

Community Outreach

Regularly participate in community outreach events such as the Right Whale Festival, Natural Life Festival, and Wild Amelia Nature Festival. Work closely with state and federal management agencies including Alaska Department of Fish & Game, Florida Fish and Wildlife Conservation Commission, National Marine Fisheries Service, and US Fish and Wildlife Service.

University Service

Departmental Service

2010-12 Boat Safety Committee

2010-12 By Laws Committee

2010-12 Internship Committee

2011-12 Long Range Planning Committee

2013-15 Biomedical and Pre-Professional
Advisory Committee

2012-15 Chair, Biology Curriculum Committee

2015 Molecular Cell Biology & Genetics Lecturer
Search Committee

2015 Anatomy and Physiology Lecturer Search
Committee

College & University Service

2010-14 Radiation Safety Committee

2012-14 COAS, Academic Programs Committee

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