

# Philip J. Bergmann

Department of Biology  
Clark University  
950 Main Street  
Worcester, MA 01610  
United States  
e-mail: [pbergmann@clarku.edu](mailto:pbergmann@clarku.edu)  
web: <http://www.clarku.edu/faculty/pbergmann/>

## **Academic Positions & Education**

- **Professor**, Department of Biology, Clark University. 2022-Present.
  - **Mary Despina Lekas Endowed Chair in Biology**. 2020-Present.
- **Associate Professor**, Department of Biology, Clark University. 2016-2022.
- **Assistant Professor**, Department of Biology, Clark University. 2011-2016.
- **G.G. Simpson Postdoctoral Fellow**. University of Arizona. 2008-2010.
- **Ph.D. in Ecology and Evolutionary Biology**. University of Massachusetts Amherst. Dissertation: "A Phylogenetic & Functional Approach to the Study of the Evolution of Body Shape in Lizards", Advisor: D.J. Irschick. 2004-2008.
- **M.Sc. in Biology**, specializing in Systematics and Biogeography. University of Calgary. Thesis: "Systematics & Biogeography of a Neotropical Lizard", Advisor: A.P. Russell. 2000-2003.
- **B.Sc., double major in Ecology and Zoology**. University of Calgary. 1995-1999.

## **Teaching Experience**

- **Comparative and Human Anatomy** (Biol111). Clark University. Spring 2011-2018, 2020, 2022.
- **Advanced Biostatistics** (Biol206/306). Clark University. Fall 2012, 2015, 2016, 2020, 2021.
- **Herpetology** (Biol119). Clark University. Fall 2011, 2013, 2019, 2022 (Also taught at University of Arizona during Spring 2009, 2010).
- **Science Careers & Effective Practice** (Biol290/390). Clark University. Spring 2014, 2016, 2018, 2020, 2022.
- **Animal Locomotion** (Biol233/333). Clark University. Spring 2013, 2015, 2017, 2021.
- **Seminar in Evolution** (Biol243/343). Clark University. Spring 2012.
- **Teaching Assistant Experience**
  - **Diversity of Life** (EEB111): Four times, 2004-2006 at Tulane University.
  - **Comparative Anatomy** (Zool377): Three times, 2001-2003 at University of Calgary.

- **Embryology (Zool471):** Three times, 2000-2002 at University of Calgary.

## **Student Mentoring**

### • **Undergraduate students in research**

- 46 at Clark University: V. Adam (2012), I. Alvarracin (2021), M. Azeez (2015-16), C. Alonso (2014), J. Beebe (2021-Pres), D. Berry (2015-18), N. Bickford (2021-2022), S. Charles (2020), E. Cobert (2019), M. Crockett (2014-15), H. Diebboll (2013-14), D. Dulak (2020), B. Gayman (2021), K. Giedymin (2012), K. Glennie (2017-18), H. Guss (2019-22), B. Hare (2022-Pres), M. Hare-Drubka (2011-13), F. Harwell (2014-15), R. Holden (2015), S. Kaufman (2014-15), L. Le (2017-18), M. Leslie (2022-Pres), J. Liebow (2022-Pres), J. Majka (2016-18), S. Mann (2017-18), B. McEvoy (2018-2020), E. McLellan (2021-Pres), A. Mitchell (2011-13), M. Molloy (2016), D. Opp (2011), S. Palladino (2011-12), K. Pettinelli (2012-14), L. Prosterman (2013-14), M. Provost (2013-15), D. Rabinowicz (2011-12), S. Reed (2017-2018), K. Richer (2012-13), R. Rood-Goldman (2013-14), E. Roth (2012-13), E. Schaper (2014-18), S. Schnurr (2012-13), L. Siegel-Reamer (2012-14), I. Tonelli-Sippel (2018-21), M. Torres Zelaya (2020-22), and A. Zelck (2011-12), V. Zhou (2015).
- Two at University of Arizona: C. Frost and C. Berk (2009-2010).
- Five at University of Massachusetts Amherst: A. Trombecky, H. Li, H. Kim (2007-2008), S. Miner and S. Robinson (2007).
- Two at Tulane: J. Wu (2004-06) and J. Fontain (2004).
- Seven at the University of Calgary: S. Lessard, A. Hobbs, M. Kavalench (2001), A. Melin, M. Quarterro (2002), C. Staley and M. Johnson (2003).

### • **Graduate students**

- Maxwell Olson. PhD student (August 2021-Present)
- Achyuthan Srikanthan. PhD student (January 2021-Present)
- Amy Cheu. PhD student (Aug 2015-Apr 2022)
- Gen Morinaga. PhD student (Aug 2012-Dec 2018)
- Julia Beebe. MS student (Jan 2021-Present)
- Quincy Milton III. MS student (March 2020-July 2021)
- Isabel Tonelli-Sippel. MS student (Sept 2018-June 2021)
- Sarah Mann. MS student (May 2019-May 2020)
- Samantha Reed. MS student (May 2019-June 2020)
- Marian Crockett. MS student (May 2014-Dec 2017)
- Robert Holden. MS student (May 2015-May 2017)
- Faye Harwell. MS student (May 2014-Jul 2016)
- Cynthia Alonso. MS student (Jan 2014-Jul 2015)
- Kyle Pettinelli. MS student (May 2012-Dec 2015)
- Hannah Diebboll. MS student (May 2013-May 2015)
- Allegra Mitchell. MA student (2011-Apr 2014)
- Mandy Gaudreau. PhD student (Jan 2012-Apr 2013)
- Natasha Tchamitchian. MA student (2011-Apr 2013)

## **Other Experience**

- **Diversity & Inclusion Certificate Program**, Clark University, 2020-2021.
- **Building Your Student Engagement Toolkit** webinar series, Clark University, 2021.
- **Teaching using Different Modalities** course, Clark University, 2020.

- **Inclusion & Diversity in STEM** workshop, Society for Integr. & Comparative Biology, 2020.
- **Workshop on Inclusive Teaching**, Society for Integrative & Comparative Biology, 2019.
- **IACUC 101 & 201 Workshop**, Rochester, New York. 2014.
- **Howard Hughes Entering Mentoring Seminar**, Univ. of Massachusetts Amherst. 2008.
- **Model based inference in the life sciences workshop**. SUNY, Syracuse. 2007.
- **Applied Phylogenetics Workshop**. University of California, Davis. 2001.
- **Research Assistant** at University of Calgary for A.P. Russell and M.R. Lein. 1998-2000.

### **Honors, Awards and Grants**

- **Mary Despina Lekas Endowed Chair in Biology** from Clark University. 2020-2023.
- **Academic Innovation Fund** from Clark University. 2022. \$20,000. N.A. Ahlgren & J.F. Tabima, co-PIs. Microbial Community, amphibian populations and water health in Worcester.
- **Grant Incentive Award** from Clark University. 2020-21.
- **Faculty Development Fund** from Clark University. 2020. \$2850.
- **Faculty Development Fund** from Clark University. 2017. \$3500.
- **Hodgkins Junior Faculty Fellowship** from Clark University. 2014-15.
- **Collaborative Research: Developmental & Functional Mechanisms of Complex Trait Re-evolution: Limb Loss & Gain in Skink Lizards** from NSF. 2014-19. PI, with Co-PIs: C. Siler, G. Wagner, D. Irschick. \$153,158 (\$665,963 total).
- **Faculty Development Fund** from Clark University. 2014. \$1500.
- **LEEP Course Development Grant** for Science Careers & Effective Practice. 2013. \$2000.
- **LEEP Course Development Grant** for Advanced Biostatistics. 2012. \$2000.
- **LEEP Course Revision Grant** for Comparative & Human Anatomy Lab. 2011. \$500.
- **Natural Sciences and Engineering Research Council of Canada** Postdoctoral Fellowship. 2010-12. \$80,000. Declined.
- **G.G. Simpson Postdoctoral Fellowship**, University of Arizona. 2008-10. \$37,500/yr.
- **Natural Sciences and Engineering Research Council of Canada** Postdoctoral Fellowship. 2009-10. \$80,000. Declined.
- **Graduate School Fellowship** from Univ. of Massachusetts Amherst. 2007-08. \$11,250.
- **Hall Award** from Canadian Society of Zoologists for best student presentation in comparative morphology and development. 2007. \$300.
- **American Society of Ichthyologists and Herpetologists Gaige Award**. 2006. \$500.
- **Society for Integrative & Comparative Biology Grant in Aid of Research**. 2006. \$1000.
- **Natural Sciences and Engineering Research Council of Canada** Post Graduate Studies – Doctoral award. 2004-05. \$42,000.
- **Outstanding Contribution to Teaching** award from the Faculty of Graduate Studies, University of Calgary. 2003. \$500.
- **Sharon Wilkens Graduate Scholarship** for research and teaching excellence. 2003. \$700.
- **Province of Alberta Graduate Scholarship**. 2002/03. \$9300.
- **Alberta Heritage Fund Scholarship**. 2001. \$2000.
- **Jake Duerksen Memorial Scholarship** from the University of Calgary. 2001. \$2000.
- **University of Calgary Thesis Research Grant**. 2001. \$1000.

## **Publications**

### *Peer-Reviewed publications*

\* Undergraduate student coauthors

\*\* Graduate student coauthors

45. **Bergmann, PJ**, Ahlgren, NA, Torres Stone, RA. In Review. Temporal progression of COVID-19 cases and deaths through the United States by race, demography, health, and socioeconomic characteristics. Public Library of Science Global Public Health.
44. Torres Stone, RA, Ahlgren, NA, **Bergmann, PJ**. In Review. Multiple measures of structural racism as predictors of county-level COVID-19 cases and deaths across counties in the United States. Journal of Racial and Ethnic Health Disparities.
  - **Press Coverage:** [Worcester Magazine](#).
43. Chong, B\*\*, Wang, T\*\*, Erickson E\*, **Bergmann, PJ**, Goldman, DI. In Press. Coordinating tiny limbs and long bodies: Geometric mechanics of diverse undulatory lizard locomotion. Proceedings of the National Academy of Sciences of the USA.
42. Cheu, AY\*\*, **Bergmann, PJ**. In Press. Performance and kinematic differences between terrestrial and aquatic running in *Anolis sagrei*. Integrative & Comparative Biology.
41. Higham, TE, Ferry, LA, Schmitz, L, Irschick, DJ, Starko, S, Anderson, PSL, **Bergmann, PJ**, Jamniczky, HA, Monteiro, LR, Navon, D, Messier, J, Carrington, E, Farina, SC, Feilich, KL, Hernandez, LP, Johnson, MA, Kawano, SM, Law, CJ, Longo, SJ, Martin, CH, Martone, PT, Rico-Guevara, A, Santana, SE, Niklas, KJ. 2021. Linking ecomechanical models and functional traits to understand phenotypic diversity. Trends in Ecology & Evolution 36: 860-873.
40. **Bergmann, PJ**, Berry, D.S.\* 2021. How head shape and substrate particle size affect fossorial locomotion in lizards. Journal of Experimental Biology 224: jeb224244.
39. **Bergmann, PJ**, Morinaga, G\*\*, Freitas, ES\*\*, Irschick, DJ, Wagner, GP, Siler, CD. 2020. Locomotion and palaeoclimate explain the re-evolution of quadrupedal body form in *Brachymeles* lizards. Proceedings of the Royal Society B 287: 20201994.
  - **Press Coverage:** [The New York Times](#), [New Scientist](#), [The Independent](#), [IFLScience](#), [SyFyWire](#), [Phys.org](#), and [ClarkNow](#).
38. Sur, A\*\*, Renfro, A\*, **Bergmann, PJ**, Meyer, NP. 2020. Investigating cellular and molecular mechanisms of neurogenesis in *Capitella teleta* sheds light on the ancestor of Annelida. BMC Evolutionary Biology 20: 84.
37. **Bergmann, PJ**, Mann, SDW\*\*, Morinaga, G\*\*, Freitas, ES\*\*, Siler, CD. 2020. Convergent evolution of elongate forms in craniates and of locomotion in elongate squamate reptiles. Integrative & Comparative Biology 60: 190-201.
36. Morinaga, G\*\*, **Bergmann, PJ**. 2020. The evolution of fossorial locomotion in the transition from tetrapod to snake-like in lizards. Proceedings of the Royal Society B 287: 20200192.
35. DeLorenzo, L\*, Vander Linden, A, **Bergmann, PJ**, Wagner, GP, Siler, CD, Irschick, DJ. 2020. Using 3D-digital photogrammetry to examine scaling of the body axis in burrowing skinks. Journal of Morphology 281: 1382-1390.
34. **Bergmann, PJ**, Morinaga, G\*\*. 2019. The convergent evolution of snake-like forms by divergent evolutionary pathways in squamate reptiles. Evolution 73:481-496.

33. Morinaga, G\*\*, **Bergmann, PJ**. 2019. Angles and waves: Intervertebral joint angles and axial kinematics of limbed lizards, limbless lizards, and snakes. *Zoology* 134: 16-26.
32. Wagner, GP, Griffith, OW, **Bergmann, PJ**, Bello-Hellegouarch, G, Kohlsdorf, T, Bhullar, A, Siler, CD. 2018. Are there general laws for digit evolution in squamates? The loss and re-evolution of digits in a clade of fossorial lizards (*Brachymeles*, Scincinae). *Journal of Morphology*: doi:10.1002/jmor.20834.
31. Schaper, EG\*, **Bergmann, PJ**, Morinaga, G\*\*, Fernandez, J, Freitas, ES\*\*, Siler, CD. 2018. *Brachymeles bonitae*. Geographic range. *Herpetological Review* 49: 503.
30. Schaper, EG\*, **Bergmann, PJ**, Morinaga, G\*\*, Fernandez, J, Smith, SN\*, Ellsworth, ED\*, Siler, CD. 2018. *Brachymeles bicolor*. Diet. *Herpetological Review* 49: 740.
29. **Bergmann, PJ**, Pettinelli, KJ\*, Crockett, ME\*, Schaper, EG\*. 2017. It's just sand between the toes: How particle size and shape variation affect running performance and kinematics in a generalist lizard. *Journal of Experimental Biology* 220: 3706-3716.
28. Morinaga, G\*\*, **Bergmann, PJ**. 2017. Convergent body shapes have evolved via deterministic and historically contingent pathways in *Lerista* lizards. *Biological Journal of the Linnean Society* 121: 858-875.
27. Nagy, LG., Riley, R, **Bergmann, PJ**, Krizsan, K, Martin, FM, Grigoriev, IV, Cullen, D, Hibbett, DS. 2016. Genetic bases of fungal white rot wood decay predicted by phylogenomic analysis of correlated gene-phenotype evolution. *Molecular Biology & Evolution*: 34: 35-44.
26. Mitchell, A\*\*, **Bergmann, PJ**. 2016. Thermal and moisture habitat preferences do not maximize jumping performance in frogs. *Functional Ecology* 30: 733-742.
25. Huron, NA\*\*, Realubit, NDC, Cobb, KA\*\*, Brown, JC, **Bergmann, PJ**, Morinaga, G\*\*, Diesmos, AC, Diesmos, ML, Brown, RM, Siler, CD. 2016. Discovery of new island populations of the recently described False Geckos (*Pseudogecko pungkayipinit* and *Pseudogecko ditoy*): Conservation implications for the Eastern Philippines. *Herpetological Review* 47: 1-4.
24. Realubit, NDC, Diesmos, ML, Lorenzo II, A, de Layola, LA, Diesmos, AC, Brown, JC, Brown, RM, Cobb, KA, **Bergmann, PJ**, Morinaga, G, Siler, CD, Huron, NA, Siler, JM. 2015. Geographic range note on *Draco mindanensis*. *Herpetological Review* 46: 216.
23. Sanguila, MB, Realubit, NDC, Diesmos, ML, Lorenzo II, A, de Layola, LA, Brown, JC, Cobb, KA, **Bergmann, PJ**, Morinaga, G\*\*, Freitas, E, Huron, NA\*\*, Watters, JL. 2015. Geographic distribution note on *Pelophryne lighti*. *Herpetological Review* 46: 380.
22. Davis, DR, Sanguila, MB, Realubit, NDC, Diesmos, ML, Lorenzo II, A, de Layola, LA, Diesmos, AC, Brown, JC, Brown, RM, Cobb, KA, **Bergmann, PJ**, Morinaga, G, Siler, JM, Huron, NA, Siler, CD. 2015. Natural history notes on sex characteristics for female *Pseudogecko ditoy*. *Herpetological Review* 46: 634-635.
21. **Bergmann, PJ**, Hare-Drubka, M\*. 2015. Hindlimb muscle anatomical mechanical advantage differs among joints and stride phases in basilisk lizards. *Zoology* 118: 291-298.
20. **Bergmann, PJ**. 2015. Convergent evolution of body shape in squamate reptiles. Pp. 245-278 in: Bininda-Emonds, O.R.P., Powell, G.L., Jamniczky, H.A., Bauer, A.M., and Theodor, J. (eds.), *All Animals are Interesting: A Festschrift in Honour of Anthony P. Russell*. BIS Verlag, Oldenburg, Germany.

19. **Bergmann, PJ**, McElroy, EJ. 2014. Many-to-many mapping of phenotype to performance: An extension of the F-matrix for studying functional complexity. *Evolutionary Biology* 41: 546-560.
18. McElroy, EJ, **Bergmann, PJ**. 2013. Tail autotomy, tail size and locomotor performance in lizards. *Physiological & Biochemical Zoology* 86: 669-679.
17. **Bergman, PJ**, Berk, CP\*. 2012. The evolution of positive allometry of weaponry in horned lizards (*Phrynosoma*). *Evolutionary Biology* 39: 311-323.
16. Frost, CL\*, **Bergmann, PJ**. 2012. Spatial distribution and habitat utilization of the Zebra-tailed Lizard (*Callisaurus draconoides*). *Journal of Herpetology* 46: 203-208.
15. **Bergmann, PJ**, Irschick, DJ. 2012. Vertebral evolution and the diversification of squamate reptiles. *Evolution* 66: 1044-1058.
14. **Bergmann, PJ**, Irschick, DJ. 2010. Alternate pathways of body shape evolution translate into common patterns of locomotor evolution in two clades of lizards. *Evolution* 64: 1569-1582.
13. **Bergmann, PJ**, Meyers, JJ and Irschick, DJ. 2009. Directional evolution of stockiness co-evolves with ecology and locomotion in lizards. *Evolution* 63: 215-227.
12. Lahr, DJG, **Bergmann, PJ**, and Lopes SBGC. 2008. The taxonomic identity in microbial eukaryotes: a practical approach using the testate amoeba *Centropyxis* to resolve conflicts between old and new taxonomic descriptions. *Journal of Eukaryotic Microbiology* 55: 409-416.
11. **Bergmann, PJ** and Russell, AP. 2007. Systematics and biogeography of the widespread Neotropical gekkonid genus *Thecadactylus* (Squamata), with the description of a new cryptic species. *Zoological Journal of the Linnean Society* 149: 339-370.
10. **Bergmann, PJ** and Irschick, DJ. 2006. Effects of temperature on maximum acceleration, deceleration, and power output during vertical running in geckos. *Journal of Experimental Biology* 209: 1404-1412.
9. **Bergmann, PJ**, Melin, AD\* and Russell, AP. 2006. Differential segmental growth of the vertebral column of the rat (*Rattus norvegicus*). *Zoology*: 109: 54-65.
8. **Bergmann, PJ** and Irschick, DJ. 2005. Effects of temperature on maximum clinging ability in a diurnal gecko: evidence for a passive clinging mechanism? *Journal of Experimental Zoology* 303A: 785-791.
7. Melin, AD\*, **Bergmann, PJ** and Russell, AP. 2005. Mammalian postnatal growth estimates: the influence of weaning on the choice of a comparative metric. *Journal of Mammalogy* 86: 1042-1049.
6. Kronauer, DJC, **Bergmann, PJ**, Mercer, JM and Russell, AP. 2005. A phylogeographically distinct and deep divergence in the widespread Neotropical turnip-tailed gecko, *Thecadactylus rapicauda*. *Molecular Phylogenetics and Evolution* 34: 431-437.
5. **Bergmann, PJ**, Hobbs, AM\*, Kavalench, ML\* and Russell, AP. 2004. Modulated but conserved segmental growth of the original tail in *Callisaurus draconoides* (Phrynosomatidae) and *Calotes versicolor* (Agamidae). *Herpetologica* 60: 62-74.
4. **Bergmann, PJ**, Lessard, S\* and Russell, AP. 2003. Tail growth in *Chamaeleo dilepis* (Sauria: Chamaeleonidae): Functional implications of segmental patterns. *Journal of Zoology, London* 261: 417-425.

3. **Bergmann, PJ** and Russell, AP. 2003. Lamellar and scensor numbers in lizards: Patterns revealed through correlational analysis. *Amphibia-Reptilia* 24: 379-385.
2. **Bergmann, PJ** and Russell, AP. 2001. Growth of the original tail in *Anolis grahami*: Isometry of the whole is a product of regional differences. *Journal of Herpetology* 35: 232-238.
1. Russell, AP, **Bergmann, PJ** and Barbadillo, LJ. 2001. Maximal caudal autotomy in *Podarcis hispanica* (Lacertidae): The caudofemoralis muscle is not sundered. *Copeia* 2001: 154-163.

#### *Other unrefereed contributions*

6. **Bergmann, PJ**. 2013. Book Review of "Convergent Evolution: Limited Forms Most Beautiful" by G McGhee. *Quarterly Review of Biology* 87: 386.
5. **Bergmann, PJ**. 2001. The effect of human-facilitated hybridization on conservation and biodiversity in herpetoculture. *Proceedings of the 24<sup>th</sup> International Herpetological Symposium*: 15-37.
4. **Bergmann, PJ**. 1997. Multi-species enclosures: A practical solution using a quasi-ecological approach. *Proceedings of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Canadian Herp. Symposia*: 127-135.
3. **Bergmann, PJ**. 1997. The natural history of the Central Asian Tortoise. *Reptile Life* 1: 20-23.
2. **Bergmann, PJ**. 1996. The serpent's tail: Tooth talk. *The OphidioFile* 1: 38,29.
1. **Bergmann, PJ**. 1996. The serpent's tail. *The OphidioFile* 1: 38.

#### **Conference Presentations** (Oral presentation unless otherwise noted)

\* Undergraduate student coauthors

\*\* Graduate student coauthors

69. Tonelli-Sippel, I\*\*, **Bergmann, PJ**. 2022. How functional complexity affects performance relationships and trait integration. Annual Meeting of Society for Integrative & Comparative Biology, Pheonix, AZ, USA.
68. Zhong, B\*\*, Wang, T\*\*, Erickson, E\*, **Bergmann, PJ**, Goldman, DI. 2022. Body-leg coordination in lizard locomotion along the body elongation and limb reduction continuum. Annual Meeting of Society for Integrative & Comparative Biology, Pheonix, AZ, USA.
67. Cheu, AY\*\*, **Bergmann, PJ**. 2022. Kinematic differences between running on water versus running on land in *Anolis sagrei*. Symposium Presentation at Annual Meeting of Society for Integrative & Comparative Biology, Phoenix, AZ, USA.
66. Cheu, AY\*\*, **Bergmann, PJ**. 2021. Choose your own adventure: Performance and kinematics of multiple climbing and swimming strategies in lizards. Annual Meeting of Society for Integrative & Comparative Biology, Virtual.
65. Zhong, B\*\*, Goldman, DI, **Bergmann, PJ**. 2021. Body-leg coordination in lizard locomotion along the body elongation and limb reduction continuum. Annual Meeting of Society for Integrative & Comparative Biology, Virtual.
64. Chong, B\*\*, Erickson, E\*, Goldman, DI, **Bergmann, PJ**. 2020. Transitions in body wave dynamics in lizards with varying body and limb proportions. American Physical Society March Meeting. Virtual.
63. **Bergmann, PJ**, Mann, SD\*, Morinaga, G\*\*, Freitas, ES\*\*, Siler, CD. 2020. Convergent evolution of vertebral morphology and locomotion in snake-like lizards. Symposium

- Presentation at Annual Meeting of Society for Integrative & Comparative Biology, Austin, TX, USA.
62. Cheu, AY\*\*, **Bergmann, PJ**. 2020. Ontogenetic allometry of locomotor performance in basilisk lizards. Annual Meeting of Society for Integrative & Comparative Biology, Austin, TX, USA.
  61. Reed, SA\*, Mann, SD\*, **Bergmann, PJ**. 2020. Mechanisms that determine success at running on water in the quadrupedal lizard *Anolis sagrei*. Annual Meeting of Society for Integrative & Comparative Biology, Austin, TX, USA. Poster.
  60. Mann, SD\*, Reed, SA\*, **Bergmann, PJ**. 2020. Running on land and water: Three-dimensional limb kinematics of *Anolis sagrei*. Annual Meeting of Society for Integrative & Comparative Biology, Austin, TX, USA. Poster.
  59. Wagner, GP, Griffith, O, **Bergmann, PJ**, Irschick, DJ, and Siler, CD. 2019. Digit loss and re-evolution in the Philippine skink genus *Brachymeles*: morphology and development. International Congress of Vertebrate Morphology, Prague, Czech Republic.
  58. **Bergmann, PJ**, Berry, D\*. 2019. Effects of head shape on granular substrate penetration performance in fossorial lizards. Annual Meeting of Society for Integrative & Comparative Biology, Tampa Bay, FL, USA.
  57. Cheu, AY\*\*, **Bergmann, PJ**. 2019. Differential lizard limb muscle function during different modes of locomotion. Annual Meeting of Society for Integrative & Comparative Biology, Tampa Bay, FL, USA. Poster.
  56. **Bergmann, PJ**, Morinaga, G\*\*, Schaper, EG\*, Siler, CD, Irschick, DJ, Wagner, GP. 2018. Locomotor performance and kinematics evolution in the transition to snake-like body shapes. 2<sup>nd</sup> Joint Congress on Evolutionary Biology, Montpellier, France.
  55. Delorenzo, L\*, Irschick, DJ, **Bergmann, PJ**, Wagner, GP, Siler, CD. 2018. 3D analysis of body elongation of *Brachymeles* lizards and other taxa. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA.
  54. Baker, JA, Reyes, ML\*\*, **Bergmann, PJ**. 2018. The allometric relationship between egg size and female age in Threespine Stickleback. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA.
  53. Schaper, EG\*, Morinaga, G\*\*, Siler, CD, **Bergmann, PJ**. 2018. Microspatial niche partitioning in semi-fossorial lizards (Scincidae: *Brachymeles*). Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA. Poster.
  52. Morinaga, G\*\*, **Bergmann, PJ**. 2018. Vertebral and axial kinematics of limb-reduced squamates. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA.
  51. Cheu, AY\*\*, **Bergmann, PJ**. 2018. Basilisk Olympics: Multiple modes of locomotion influences the degree of functional constraint in a trait. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA.
  50. **Bergmann, PJ**, Morinaga, G\*\*, Siler, CD, Irschick, DJ. 2018. The evolution of snake-like body shape and its bearing on relationships between running and burrowing performance. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, CA, USA.
  49. **Bergmann, PJ**, Pettinelli, KJ\*, Crockett, ME\*\*, Schaper, EG\*. 2017. The effects of granular substrate particle size on sprinting in lizards. Annual Meeting of Society for Integrative & Comparative Biology, New Orleans, LA, USA.



48. Wilbur, JJ\*, Morinaga, G\*\*, and **Bergmann, PJ**. 2017. Power analysis of a novel non-linear phylogenetic regression model. Annual Meeting of Society for Integrative & Comparative Biology, New Orleans, LA, USA. Poster.
47. Cheu, AY\*\*, and **Bergmann, PJ**. 2017. Increasing complexity of form-function relationships when considering multiple modes of locomotion. Annual Meeting of Society for Integrative & Comparative Biology, New Orleans, LA, USA. Poster.
46. Crockett, ME\*\*, and **Bergmann, PJ**. 2017. Running on uneven surfaces: The effect of substrate particle size and unevenness on performance. Annual Meeting of Society for Integrative & Comparative Biology, New Orleans, LA, USA. Poster.
45. Holden, RA\*\*, Cheu, AY\*\*, and **Bergmann, PJ**. 2017. Performance variation in basilisk lizards during different aquatic modes of locomotion. Annual Meeting of Society for Integrative & Comparative Biology, New Orleans, LA, USA. Poster.
44. **Bergmann, PJ**. 2016. Pathways of convergence of snake-like body shapes in squamate reptiles. Annual Meeting of Society for Integrative & Comparative Biology, Portland, OR, USA.
43. McElroy, EJ, McBrayer, LD, Clemente, C, and **Bergmann, PJ**. 2016. Does evolutionary convergence of ecomorphology result in convergence of performance capacity? A test using Australian and North American lizards. Annual Meeting of Society for Integrative & Comparative Biology, Portland, OR, USA.
42. Morinaga, G\*\*, and **Bergmann, PJ**. 2016. Phenotypic variation affects burrowing performance in the Australian skink genus, *Lerista*. Annual Meeting of Society for Integrative & Comparative Biology, Portland, OR, USA.
41. Harwell, F\*\*, Mitchell, A, and **Bergmann, PJ**. 2016. The effects of dehydration on thermoregulation and hydroregulation in three species of frogs. Annual Meeting of Society for Integrative & Comparative Biology, Portland, OR, USA. Poster.
40. **Bergmann, PJ**, Provost, M\*. 2015. The effect of head shape on penetration of granular materials: An analysis of lizard mechanical models. 13<sup>th</sup> Annual Northeast Granular Materials Workshop. Clark University.
39. **Bergmann, PJ**. 2015. Patterns of convergence in the body shape of Squamate reptiles. Annual Meeting of Society for Integrative & Comparative Biology, West Palm Beach, USA.
38. Morinaga, G\*\*, and **Bergmann, PJ**. 2015. The vertebral kinematics of convergent elongate, limb reduced squamates. Annual Meeting of Society for Integrative & Comparative Biology, West Palm Beach, USA.
37. Pettinelli, K\*\*, and **Bergmann, PJ**. 2015. Particle size and shape affect non-steady state locomotion in a lizard (*Eremias arguta*). Annual Meeting of Society for Integrative & Comparative Biology, West Palm Beach, USA. Poster.
36. Diebboll, H\*\*, and **Bergmann, PJ**. 2015. Environmental, biological and behavioral effects on the dehydration rates of amphibians. Annual Meeting of Society for Integrative & Comparative Biology, West Palm Beach, USA. Poster.
35. Alonso, C\*\*, and **Bergmann, PJ**. 2015. Standardizing phylogenetically independent contrasts using estimates of phylogenetic signal. Annual Meeting of Society for Integrative & Comparative Biology, West Palm Beach, USA. Poster.

34. Mitchell, A\*\*, and **Bergmann, PJ**. 2014. The effects of environmental temperature and moisture on temperature and moisture preferences in green frogs (*Lithobates clamitans*). Annual Meeting of Society for Integrative & Comparative Biology, Austin, USA.
33. Morinaga, G\*\*, and **Bergmann, PJ**. 2014. Biogeography and body shape evolution in parallel radiations in the Australian skink genus, *Lerista*. Annual Meeting of Society for Integrative & Comparative Biology, Austin, USA.
32. McElroy, EJ, and **Bergmann, PJ**. 2014. Many-to-many mapping of phenotype to performance: An extension of the F-matrix for studying functional complexity. Annual Meeting of Society for Integrative & Comparative Biology, Austin, USA. Poster.
31. **Bergmann, PJ**, and Hare-Drubka, M\*. 2014. Hindlimb muscle lever systems differ among joints and stride phases in basilisk lizards. Annual Meeting of Society for Integrative & Comparative Biology, Austin, USA.
30. **Bergmann, PJ**, and McElroy, EJ. 2013. Many-to-many mapping of phenotype on function, and the F-array. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, USA.
29. McElroy, EJ, and **Bergmann, PJ**. 2013. The evolution of tail size, tail autotomy, and locomotor performance in lizards. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, USA.
28. Gaudreau, MG\*\*, and **Bergmann, PJ**. 2013. Patterns of abiotic niche evolution in salamanders along different niche axis spatial scales. Annual Meeting of Society for Integrative & Comparative Biology, San Francisco, USA. Poster.
27. McElroy, EJ, and **Bergmann, PJ**. 2012. The impact of tail loss on locomotor performance. 7<sup>th</sup> World Congress of Herpetology, Vancouver, Canada.
26. **Bergmann, PJ**, and Berk, CP\*. 2012. Evolution and integration of weapons in horned lizards (*Phrynosoma*). Annual Meeting of Society for Integrative & Comparative Biology, Charleston, USA.
25. **Bergmann, PJ**, and Berk, CP\*. 2011. The evolution of defensive horn allometry in horned lizards (*Phrynosoma*). Annual Meeting of Society for the Study of Evolution, Norman, USA.
24. **Bergmann, PJ**. 2010. Characterizing macroevolution: The degree of clustering in phylomorphospace. Annual Meeting of the Society for the Study of Evolution, Portland, USA.
23. **Bergmann, PJ**, Irschick DJ. 2010. Tempo and mode of axial evolution: Is body elongation a key innovation? Annual Meeting of the Society for Integrative and Comparative Biology, Seattle, USA.
22. **Bergmann, PJ**, Irschick DJ. 2009. Alternate pathways in the evolution of body shape and locomotion in lizards. Annual Meeting of the Society for Integrative and Comparative Biology, Boston, USA.
21. **Bergmann, PJ**. 2008. Reduced constraint on vertebral number facilitates the diversification of lizards. Annual Meeting of the Canadian Society of Zoologists, Halifax, Canada. Abstract: Bull. Canadian Soc. Zool. 29(2): 79.
20. **Bergmann, PJ**, Irschick, DJ. 2008. Conservatism in lizard vertebral number evolution is widespread but not universal. Annual Meeting of the Society for Integrative and Comparative Biology, San Antonio, USA.

19. **Bergmann, PJ**, Meyers, JJ and Irschick, DJ. 2007. Tests of directional evolution in body proportions in lizards. Annual Meeting of the Canadian Society of Zoologists, Montreal, Canada. Abstract: Bull. Canadian Soc. Zool. 38(2): 65.
18. **Bergmann, PJ**, Meyer, JJ and Irschick, DJ. 2006. Evolving to be short and stubby: orthogenesis and grades of evolution in body plan in lizards. Annual Meeting of the Society for Integrative and Comparative Biology, Phoenix, USA.
17. **Bergmann, PJ** and Irschick, DJ. 2005. The temperature-dependence of sprinting performance in day geckos (*Phelsuma dubia*). Annual Joint Meeting of the Ichthyologists and Herpetologists, New Orleans, USA.
16. **Bergmann, PJ** and Irschick, DJ. 2005. The temperature-dependence of clinging and sprinting ability in day geckos. Annual Meeting of the Society for Integrative and Comparative Biology, Orlando, USA. Abstract: Integr. Comp. Biol. 45: 964.
15. **Bergmann, PJ** and Russell, AP. 2004. Patterns of variation in relation to tail morphology, vertebral number and tail length in lizards. Abstract: Integr. Comp. Biol. 44: 524.
14. **Bergmann, PJ** and Russell, AP. 2004. Use of principal component analysis in modeling growth of segmental structures. International Congress of Vertebrate Morphology 7, Boca Raton, USA. Abstract: Journal of Morphology 260: 278.
13. Russell, AP, **Bergmann, PJ** and Melin, A\*. 2004. Segmental and regional growth in the rat vertebral column. Abstract only: Journal of Morphology 260: 324.
12. **Bergmann, PJ** and Russell, AP. 2003. Application of Bayesian inference in the phylogenetic analysis of multiple data sources: intraspecific systematics of the turnip-tailed gecko. Annual Meeting of the Society for Integrative and Comparative Biology, New Orleans, USA. Abstract: Integr. Comp. Biol. 43: 830.
11. **Bergmann, PJ** and Russell, AP. 2003. As patterns breakdown: Conservatism in segmental tail growth of lizards. Annual Meeting of the Canadian Society of Zoologists, Lethbridge, Canada. Abstract: Bull. Canadian Soc. Zool. 34(2): 28.
10. Russell, AP and **Bergmann, PJ**. 2003. Telling tails: Patterns of caudal growth among iguanian lizards. Abstract: Bull. Canadian Soc. Zool. 34(2): 91.
9. **Bergmann, PJ** and Russell, AP. 2002. Growth of the original tail in iguanian lizards: Are segmental patterns of growth conserved? Annual Meeting of the Society for Integrative and Comparative Biology, Toronto, Canada. Abstract: Integr. Comp. Biol. 42: 1195.
8. **Bergmann, PJ** and Russell, AP. 2002. Phylogenetic and ecological aspects of hindlimb segment growth patterns in various lizards. Annual Meeting of the Canadian Society of Zoologists, Lethbridge, Canada. Abstract: Bull. Canadian Soc. Zool. 33: 41.
7. **Bergmann, PJ** and Russell, AP. 2002. Differential tail growth in the lizard *Anolis grahami*. Prairie Universities Biological Symposium, Calgary, Canada.
6. **Bergmann, PJ** and Russell, AP. 2002. Patterns of hindlimb segment growth in various lizards and their relation to lizard ecology. Annual Meeting of the Society for Integrative and Comparative Biology, Anaheim, USA. Abstract: American Zoologist 41: 1390-1391.
5. **Bergmann, PJ** and Russell, AP. 2001. A test of the assumption of isometric tail growth and possible implications for morphometrics and functional ecology. Annual Meeting of the Society for the Study of Amphibians and Reptiles and the Herpetologists' League, Indianapolis, USA.

4. **Bergmann, PJ** and Russell, AP. 2001. Unusual systematic and biogeographic characteristics of *Thecadactylus rapicauda* (Squamata: Gekkonidae): A proposed program of study with comments on some methodological problems. Annual Meeting of the Society for the Study of Amphibians and Reptiles and the Herpetologists' League, Indianapolis, USA. Poster.
3. **Bergmann, PJ**. 2000. The effect of human-facilitated hybridization on conservation and biodiversity in herpetoculture. International Herpetological Symposium, New Orleans, USA.
2. **Bergmann, PJ**. 1999. Hybridization, domestication, and conservation – Biological implications of inadvertent actions. Canadian Herpetological Symposium, Drumheller, Canada.
1. **Bergmann, PJ**. 1997. Multi-species enclosures: A practical solution using a quasi-ecological approach. Canadian Herpetological Symposium, Drumheller, Canada.

### **Invited Seminars**

18. Clark University Presidential Inauguration Symposium. Progression of the COVID-19 pandemic through time. Spring 2022.
17. Ball State University & Purdue University Fort Wayne. On the existence and persistence of intermediate varieties. Spring 2022. Virtual.
16. Brown University. Convergent evolution of snake-like forms in vertebrates. Spring 2020.
15. Clark University. Convergent evolution of snake-like forms in vertebrates. Spring 2020.
14. University of Oklahoma. The how and the why of the evolution of snake-like body shapes. Spring 2019.
13. Greater Worcester Humanists. On the existence and persistence of intermediate varieties: A new take on one of Darwin's evolutionary worries. Spring 2019.
12. Clark University Physics. Complexity in relationships between form, function, and habitat use. Spring 2016.
11. University of Massachusetts Amherst. Complexity in relationships between form, function, and habitat use. Fall 2015.
10. College of Charleston. Phenotype-function-niche relationships. Fall 2014.
9. University of Massachusetts Boston. Phenotype-function-niche relationships. Fall 2014.
8. Worcester Polytechnic Institute. Phenotype-function-niche relationships. Fall 2013.
7. Clark University, Active Matter Group. A biomechanical perspective of sprawling locomotion. Summer 2011.
6. Clark University. The evolution of body shape in segmented animals. Spring 2010.
5. University of Arizona. Characterizing macroevolution: Tempo and mode of vertebral and body shape evolution in lizards. Spring 2010.
4. University of Northern Iowa. The evolution of body shape in segmented animals. Fall 2009
3. University of Massachusetts Amherst. A phylogenetic and functional approach to the study of evolution of body shape in lizards. Summer 2008.

2. University of Arizona. The evolution of body shape in segmented animals. Spring 2008.
1. Brown University. The evolution and development of tail length in lizards. Fall 2005.

### **Professional Memberships**

- Society for the Study of Evolution
- Society for Integrative and Comparative Biology
- Society for the Study of Amphibians and Reptiles
- Canadian Society of Zoologists

### **Service**

- **Clark University Committees**
  - Research Board. University Level. 2021-Present.
  - Academic Technology Committee. University Level. 2019-Present.
    - Chair of the committee: 2020-Present.
  - Biology Graduate Studies Committee. Departmental. 2011-2018, 2019-Present.
    - Chair of the committee: 2015-2018, 2019-Present.
  - Institutional Animal Care & Use Committee. University Level. 2011-Present.
    - Chair of the committee: 2014-Present.
  - Biology Faculty Search Committee. University Level. 2019-2020.
  - Research Board. University Level. 2016-2018.
  - Environmental Science Steering, Biology Rep. Interdepartmental. 2012-2018.
  - Biology Faculty Search Committee. University Level. 2017-2018
  - Physics Faculty Search Committee. University Level. 2016-2017
  - Biology seminar series organizer. Departmental. 2012-2014.
  - Biology Faculty Search Committee. University Level. 2011-2012.
- **Graduate Student Committees**
  - PhD: Chair of 4 committees, member of 5 committees.
  - MS: Chair of 12 committees, member of 19 committees.
- **Other Clark University Service**
  - University Open Houses: Spring: 2011-2015, 2017; Fall: 2014-2017, 2021.
  - Wrote Graduate Studies section of Biology self-study. 2017.
  - LEEP Exemplar Group on Capstones, 2016.
  - Animal Welfare Assurance renewal, 2014, 2018.
  - Organized Bumpus Symposium for Biology Grad Student Research. 2013-2014.
  - Participated in writing Graduate Studies section of Department Plan. 2012.
  - CETL Workshop on Collaborating in the Classroom, Presenter. Apr 2012.
  - LEEP Workshop on Teaching Approaches, Attendee. Fall 2011.
  - LEEP Symposium, Participant. May 2011.
  - Biology Representative - Science Librarian search interviews. Apr 2011.
- **Reviewer** for 44 journals (116 manuscripts, 90 while at Clark): American Naturalist (1), Anatomical Record (2), Animal Behaviour (1), Axios (1), Belgian Journal of Zoology (2), Biological Journal of the Linnean Society (3), Biology Letters (1), BMC Ecology (1), BMC

Evolutionary Biology (8), Book chapters (2), Canadian Journal of Zoology (1), Ecology (1), Ethology (2), Evolution (6), Evolutionary Biology (5), Evolutionary Ecology (2), Folia Zoologica (1), Functional Ecology (6), Herpetologica (2), Herpetological Conservation Biology (2), Insects (1), Integrative & Comparative Biology (2), Journal of Experimental Biology (11), Journal of Experimental Zoology A (2), Journal of Herpetology (3), Journal of Morphology (7), Journal of Orthoptera Research (1), Journal of the Royal Society Interface (2), Journal of Zoology (2), Journal of Zoological Systematics (1), Molecular Phylogenetics and Evolution (3), Oecologia (2), Philosophical Transactions of the Royal Society B (2 issue proposals), Physiological & Biochemical Zoology (3), PLoS Global Public Health (1), PLoS One (1), Proceedings of the National Academy of Sciences (1), Proceedings of the Royal Society B (3), Quarterly Review of Biology (1), Springer Verlag (2 - book proposals), Southeast Naturalist (1), Systematic Biology (2), Zoological Journal of the Linnean Society (3), Zoologica Scripta (1), Zoology (6), and Zootaxa (1).

- **Reviewer** of Grant Proposals. National Science Foundation: Ad Hoc review of full proposals (7). Louisiana Board of Regents (1).
- **Faculty External Reviews:** National Research Foundation of South Africa (1).
- **K-12 Outreach**
  - Lecture on Fieldwork for Upward Bound program students. Summer 2014 (20 high school students).
  - Demonstration of anatomy and dissection to grade 9 students from UPCS. 2011-2019 (40 students per year).
  - Functional Anatomy workshops for Upward Bound program students. Summer 2013, 2015 (12 high school students).
  - College Preparedness Workshop participant. Spring 2014. Discussion with local teachers of student needs for success in STEM at the college level.
- **Judging student oral presentations & posters** at the 2006, 2010, 2012, 2013 at the Annual Meeting of the Society for Integrative and Comparative Biology.
- **Broadening Participation in Biology Mentor** at the Society for Integrative & Comparative Biology conference. 2019, 2022.