

Chris Organ

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Curriculum Vitae

01/06/2023

Appointments

- 2021- Lecturer (Assistant Professor) of Evolutionary Biology, University of Reading
- 2013-21 Assistant Research Professor, Department of Earth Sciences, Montana State University
- 2017-19 Director/Chair, Directed Interdisciplinary Studies, Honors College, Montana State University
- 2014-19 Assistant Teaching Professor, WIMU Program in Veterinary Medicine, Department of Microbiology & Cell Biology, Montana State University
- 2010-12 Scientist II, Department of Genetics and Genomics, Biogen
- 2010 Research Scientist, Ragon Institute, MGH, MIT & Harvard
- 2009 Visiting Professor, Department of Ecology and Evolutionary Biology, Brown University
- 2005-10 Postdoctoral Fellow, Department of Organismic & Evolutionary Biology, Harvard University, advisor: Scott Edwards

Consulting

- 2021 Manager, Data Science, BioStat Solutions
- 2020 Bioinformatics Staff Scientist, Integrated DNA Technologies

Education

- 2004 Ph.D. Montana State University, Biological Sciences, advisor: Jack Horner
- 1996 B.S. Michigan State University, Material Science

Certifications

- 2023 Fellow, Higher Education Academy
- 2021 Python Programmer Career Certificate, DataCamp
- 2020 Data Scientist with Python Career Certificate, DataCamp
- 2020 Data Analyst with Python Career Certificate, DataCamp

Publications (bolded numbers indicate student co-authors)

- 50.** Surya, K. and C. L. Organ. Molecular branch lengths describe trait evolution better than time. (in review).
- 49.** Wilson, L., J. D. Gardner, J. P. Wilson, P. S. Druckenmiller, G. M. Erickson, and C. L. Organ. Latitude does not shape body size evolution in mammals or dinosaurs (in review).
- 48.** LaBarge, T. W. and C. L. Organ. A Bayesian reanalysis of Phorusrhacidae and the evolution of gigantism (in review).
- 47.** Surya, K., J. D. Gardner, C. L. Organ. SARS-CoV-2 evolution is punctuated. (in review).
- 46.** Krumenacker, L. J., J. Gardner, D. Varricchio, D. Bowen, T. Dyman, and C. Organ. (*accepted*). The phylogenetic relationships of Orodrominae. *Journal of Vertebrate Paleontology*.
- 45.** Gardner, J. and C. L. Organ (2021). Evolutionary sample size and concision in phylogenetic comparative analysis. *Journal of Systematic Biology*. 70(5): 1061–1075, doi.org/10.1093/sysbio/syab017.
- 44.** Gemmell, N.J., Rutherford, K., Prost, S. et al. (2020). The tuatara genome reveals ancient features of amniote evolution. *Nature*. 584: 403–409. <https://doi.org/10.1038/s41586-020-2561-9>.
- 43.** Gardner, J., M. Laurin, and C. L. Organ (2020). The relationship between genome size and metabolic rate in extant vertebrates. *Philosophical Transactions of the Royal Society B*. (375): 1793. <https://doi.org/10.1098/rstb.2019.0146>.

42. Gardner, J., K. Surya, and C. L. Organ (2019). Early tetrapodomorph biogeography: controlling for fossil record bias in macroevolutionary analyses. *Comptes Rendus Palevol.* 18 (7): 693-908. doi.org/10.1016/j.crpv.2019.10.008.
41. Organ, C. L. (2018). Biogeography across the ages. *Nature Ecology & Evolution.* doi:10.1038/s41559-018-0486-6.
40. Jun Liu, J., C. L. Organ, M. J. Benton, M. C. Brandley, and J. C. Aitchison (2017). Live birth in an archosauriform reptile. *Nature Communications:* 8(14445). doi:10.1038/ncomms14445.
39. Gates, T. D., C. L. Organ, and L. Zanno. (2016). Bony cranial ornamentation linked to rapid evolution of gigantic theropod dinosaurs. *Nature Communications.* doi: 10.1038/ncomms12931.
38. Wilson, J. P., J. D. Woodruff, J. Gardner, H. Flora, J. R. Horner, and C. L. Organ. (2016). Vertebral adaptations to large body size in theropod dinosaurs. *PLoS ONE* 11(7): e0158962. doi:10.1371/journal.pone.0158962.
37. Organ, C. L., M. Struble, A. Canoville, V. de Buffr  nil, and M. Laurin. (2016). Macroevolution of genome size in sarcopterygians during the water-land transition. *Comptes Rendus Palevol.* 15: 67-75.
36. Laurin, M., A. Canoville, M. Struble, C. L. Organ, and V. de Buffr  nil. (2016). Early genome size increase in urodeles. *Comptes Rendus Palevol.* 15: 77–85.
35. Moore, T. Y., C. L. Organ, S. V. Edwards, A. Biewener, C. Tabin, F. A. Jenkins, and K. L. Cooper. (2015). Multiple phylogenetically distinct events shaped the evolution of limb skeletal morphologies associated with bipedalism in the jerboas. *Current Biology.* 25(21): 2785–2794.
34. Organ, C. L., L. N. Cooper, and T. L. Hieronymus. (2015). Macroevolutionary developmental biology: embryos, fossils, and phylogenies. *Developmental Dynamics.* 244: 1184–1192. doi:10.1002/dvdy.24318.
33. Janes, D. E., C. L. Organ, R. Stiglec, D. O'Meally, S. D. Sarre, A. Georges, J. A. M. Graves, N. Valenzuela, R. A. Literman, K. Rutherford, N. Gemmell, J. B. Iverson, J. W. Tamplin, S. V. Edwards, and T. Ezaz. (2014). Molecular evolution of *Dmrt1* accompanies change of sex-determining mechanisms in Reptilia. *Biology Letters.* 10: 20140809.
32. Rashid, D. J., Chapman, S. C., Larsson, H. C. E., Organ, C. L., Bebin, A.-G., Merzdorf, C., Bradley, R., and J. R. Horner. (2014). From dinosaurs to birds: a tail of evolution. *EvoDevo.* 5:25.
31. Wu, S., F. Zhang, S. V. Edwards, J. Ye, W. Wu, X. Ni, C. Quan, J. Meng, and C. Organ. (2014). The evolution of bipedalism in jerboas (rodentia: dipodoidea): origin in humid and forested environments. *Evolution.* 68-7: 2108–2118.
30. Amemiya, C. T. et. al. (2013). Comparative analysis of the genome of the African coelacanth, *Latimeria chalumnae*, sheds light on tetrapod evolution. *Nature.* (496): 311-316. *Cover article
29. Organ, C. L. (2013). Origins of Cooking. In *McGraw Hill 2013 Yearbook of Science & Technology.* McGraw-Hill Publishers, New York, NY.
28. Friedlander, S. M., A. L. Herrmann, D. P. Lowry, E. R. Mephram, M. Lek, K. N. North, and C. L. Organ. (2013). *ACTN3* allele frequency in humans covaries with global latitudinal gradient. *PLoS One.* 8(1): e52282.
27. Organ, C. L. (2012). Genomics and the lost world: paleontological insights into genome evolution. In *Clone to Bone: The Synergy of Morphological and Molecular Tools in Palaeobiology.* (Eds.) R. Asher and J. Mueller. Cambridge University Press. 16-37.
26. Wu, S., Wu, W., Zhang, F., Ye, J., Ni, X., Sun, J., Meng, J., Edwards, S. V., and C. L. Organ. (2012). Molecular and Paleontological evidence for a post-Cretaceous Origin of Rodents. *PLoS One.* 7(10): e46445.
25. Organ, C. L., Z. Machanda, R. Wrangham, and C. Nunn. (2011). Phylogenetic rate shifts in chewing time during the evolution of *Homo*. *Proceedings of the National Academy of Sciences, USA.* 108 (35): 14555-14559.
24. Alföldi, J. et. al. (2011). The genome of the green anole lizard and a comparative analysis with birds and mammals. *Nature.* 477(7366): 587-591.

23. Janes, D.E., C. Chapus, Y. Gondo, D.F. Clayton, S. Sinha, C. A. Blatti, C.L. Organ, M. Fujita, C.N. Balakrishnan, and S.V. Edwards (2011). Reptiles and mammals have differentially retained long conserved noncoding sequences from the amniote ancestor. *Genome Biology and Evolution*. 3: 102-113.
22. Organ, C. L., A. Canoville, R. R. Reisz, and M. Laurin. (2011). Paleogenomic data suggest mammal-like genome size in the ancestral amniote and derived large genome size in amphibians. *Journal of Evolutionary Biology*. 24: 372–380.
21. Organ, C. L. and S. V. Edwards (2011). Major Events in the Evolution of the Avian Genome. In *The Evolution of Modern Birds*. (Eds.) G. Dyke and G. Kaiser. University of California Press. 325-337.
20. Janes, D. E., C. L. Organ, M. K. Fujita, A. M. Shedlock, and S. V. Edwards. (2010). Genome Evolution in Reptilia, the Sister Group of Mammals. *Annual Review of Genomics and Human Genetics*. 11: 239-264.
19. Janes, D. E., C. L. Organ, and S. V. Edwards. (2010). Variability in sex-determining mechanisms influences genome complexity in reptiles. *Cytogenetic and Genome Research*. 127:242-248.
18. Organ, C. L.*, M. Rasmussen*, M. W. Baldwin, M. Kellis, and S. V. Edwards (2010). A Phylogenomic Approach to the Evolutionary Dynamics of Gene Duplication in Birds. In *Evolution After Gene Duplication*. (Eds.) K. Dittmar and D. Liberles. Wiley & Sons. 253-268. *contributed equally.
17. Baldwin, M. W., Winkler, H., Organ, C. L., Helm, B. (2010). Wing pointedness associated with migratory distance in common-garden and comparative studies of stonechats (*Saxicola torquata*). *Journal of Evolutionary Biology*, 23(5):1050-1063.
16. Organ, C. L., D. E. Janes, A. Meade, and M. Pagel (2009). Genotypic sex determination enabled adaptive radiations of extinct marine reptiles. *Nature*. 461: 389-392. [selected as a “must read” at the Faculty of 1000]
15. Organ, C. L., S. Brusatte, and K. Stein (2009). Sauropod dinosaurs evolved moderately sized genomes unrelated to body size. *Proceedings of the Royal Society, B*.
14. Schweitzer, M. H., W. Zheng, C. L. Organ, R. Avci, Z. Suo, L. M. Freimark, V. S. Lebleu, M. B. Duncan, M. G. Vander Heiden, J. M. Neveu, W. S. Lane, J. S. Cottrell, J. R. Horner, L. C. Cantley, R. Kalluri, and J. M. Asara (2009). Biomolecular characterization and protein sequences of the Campanian hadrosaur *B. canadensis*. *Science*. 324: 626-361.
13. Organ, C. L. and A. M. Shedlock (2009). Paleogenomics of pterosaurs and the evolution of small genome size in flying vertebrates. *Biology Letters*. 5: 47–50.
12. Organ, C. L., R. Godinez Moreno, and S. V. Edwards (2008). Three tiers of genome evolution in reptiles. *Integrative and Comparative Biology*. 48(4): 494-504.
11. Organ, C. L. and D. Janes (2008). Evolution of sex chromosomes in Sauropsida. *Integrative and Comparative Biology*. 48(4): 512-519.
10. Organ, C. L. (2008). Paleogenomics. Pp. 249-251. In *McGraw Hill 2008 Yearbook of Science & Technology*. McGraw-Hill Publishers, New York, NY.
9. Janes, D. E., C. L. Organ and N. Valenzuela (2008). New resources inform study of genome size, content and organization in non-avian reptiles. *Integrative and Comparative Biology*. 48(4): 447-453.
8. Organ, C. L., M. H. Schweitzer, W. Zheng, L. M. Freimark, L. C. Cantley, J. M. Asara (2008). Molecular phylogenetics of mastodon and *Tyrannosaurus rex*. *Science*. 320 (5875): 499.
7. Organ, C. L., A. M. Shedlock, A. Meade, M. Pagel, S. V. Edwards. (2007). Origin of avian genome size and structure in non-avian dinosaurs. *Nature*. 446: 180-184.
6. Holmes, R. and C. L. Organ. (2007). An ossified tendon trellis in *Chasmosaurus* (Ornithischia: Ceratopsidae). *Journal of Paleontology*. 81(2): 411–414.
5. Organ, C. L. (2006). Biomechanics of ossified tendons in ornithomimid dinosaurs. *Paleobiology*. 32(4): 649–662.
4. Organ, C. L. (2006). Thoracic epaxial muscles in living archosaurs and ornithomimid dinosaurs. *The Anatomical Record Part A: Discoveries in Molecular, Cellular, and Evolutionary Biology*. 288A: 782-793.

3. Organ, C. L. and J. Adams. (2005). The histology of ossified tendon in dinosaurs. *Journal of Vertebrate Paleontology*. 25 (3): 602-613.
2. Adams, J. and C. L. Organ. (2005). Histologic determination of ontogenetic patterns and processes in hadrosaurian ossified tendons. *Journal of Vertebrate Paleontology*. 25 (3): 614-622.
1. Organ, C. L., J. B. Cooley, and T. L. Hieronymus. (2003). A non-invasive quarry mapping system. *Palaos*. 18(1): 74-77.

Grants & Funding

External Funding

8. Franklin Education Foundation (2020). Summer Research Internship Mentor Program. PI: Chris Organ. **\$32,000**.
7. NSF (2017-2020). NRT-IGE: Nelson Story STEM Fellowship Program. PI: Shannon D Willoughby, Co-Is: Jennifer L Green, Brock J LaMeres, and Chris L Organ. **\$492,485**.
6. Paleontological Society (2017). Invited Speaker Award. **\$400**.
5. NSF (2007). Reptile Genomics and Evolutionary Genetics Symposium. PI: Dan Janes, Co-I: Chris Organ. **\$6,749**.
4. Society for Integrative and Comparative Biology Symposium Grant (2008). Reptile Genomics and Evolutionary Genetics Symposium. PI: Dan Janes, Co-I: Chris Organ. **\$5,225**.
3. NIH (2005-2007). NSRA Postdoctoral Fellowship: Evolution of *Bmp* Genes 2 and 4 in Archosaurs. **\$142,200**.
2. International Society of Biomechanics, Dissertation Grant (2001). The Evolution of Tail Deflection and Erect Posture Synapsida and Diapsida. **\$4,000**.
1. West Shore Art League Scholarship. (1991-1992). PI: Chris Organ **\$3,000**.

Internal Funding

3. Montana State University Faculty Improvement Grant (2016). Discussing Science Outside of the Laboratory. Co-PIs: Shannon D Willoughby and Chris Organ. **\$8,000**.
2. Harvard Postdoctoral Travel Grant (2009). PI: Chris Organ **\$1,000**.
1. Harvard Department of OEB Travel Grant (2007). PI: Chris Organ **\$1,500**.

Grants in Review

1. Leverhulme Trust. Sex and Reproduction During the Evolution of Apes. PI: Chris Organ, Co-I: Andrew Meade. **£466,290**. [in second round of review]

Grants Declined Recently

2. NSF (2022). Science and Technology Center for Analytical and Molecular Paleontology (CAMP). PI: Mary H Schweitzer, Co-Is: Chris L Organ, Ethan G Hyland, Jason L Painter, and Lindsay Zanno. **\$30,000,000**.
1. Keck Foundation (2018). Project-Driven Interdisciplinary Honors Degree, PI: Chris L Organ. **\$255,468**.

Grant Applications in Preparation (submission in 2023)

3. Leverhulme Trust (outline proposal target submission by 1 May, 2023). Genome evolution in living fossils. PI: Chris Organ, Co-I: Andrew Meade.
2. BBSRC: Data-driven biology (due 27 September 2023). SciPhy: A python library for science using phylogenies. PI: Chris Organ, Co-I: Andrew Meade.
1. MRC: Population and systems medicine research (23 June, 2023 Future round open for applications). Comparative analysis of Bone Innervation. PI: Chris Organ.

Teaching & Mentoring

Curriculum Design

- 2012-13 Science Curriculum, Daniels Academy: Curriculum design for private high school, Park City, Utah
- 2002-04 Howard Hughes Medical Institute, Undergraduate Biology Curriculum Improvement: Improving quantitative reasoning and skills in biology, Montana State University

Course Instructor: Postgraduate Courses

5. Macroevolution, 3hrs/wk, 12 students, MSU (x1), **Eval: 92%**
4. Cell Physiology, 4hrs/wk, ~10 students, MSU & WSU (x6), **Eval: 90%**
3. Phylogenetics, with Matt Lavin, 3hrs/wk, 14 students, MSU (x1)
2. Survey of Evolutionary Biology, with Scott Edwards, 3hrs/wk, ~15 students, Harvard (x2), **Eval: 92%**
1. Vertebrate Paleontology, 5hrs/wk, 45 students, MSU (x1), **Eval: 98%**

Course Instructor: Undergraduate Courses

17. Palaeoecology (BI3CP8), with Brian Pickles, 3hrs/wk, ~25 students, UofR (x1 in 2023)
16. Palaeontology Research Field Course, with Brian Pickles and Vicky Boulton, 2 wks, UofR (x1)
15. Academic Tutor for School of Biological Sciences, 4 hrs/term, 10 students total, UofR (x1)
14. Biogeography, 3hrs/wk, 24 students, MSU (x1), **Eval: 90%**
13. 21st Century Biology, 2hrs/wk, ~30 students, MSU (x2), **Eval: 97%**
12. Comparative Vertebrate Anatomy, 8hrs/wk, ~120 students, MSU (x5), **Eval: 90%**
11. Dinosaurs!, 3hrs/wk, ~80 students, MSU (x4) **Eval: 92%**
10. Dinosaur Paleontology, 5hrs/wk, 24 students, MSU (x1), **Eval: 98%**
9. Earth History and Evolution, 3hrs/wk, ~75 students, MSU (x4), **Eval: 92%**
8. Evolution and Diversity, University of Utah (x1), **Eval: 95%**
7. Evolutionary Biology, 3hrs/wk, 113 students, Brown University (x1)
6. Honors Evolution, 6hrs/wk, 8 students, MSU (x1), **Eval: 96%**
5. Honors Seminar: Texts & Critics, 4hrs/wk, 14 students, MSU (x1), **Eval: 95%**
4. Honors Seminar: Ultimate Cause of a Dog: How We Encounter Reality, with Kent Davis, 6hrs/wk, 15 students, MSU (x1), **Eval: 98%**
3. Martial Philosophies of Asia, 2hrs/wk, ~12 students, MSU (x3), **Eval: 93%**
2. Taekwondo, 2hrs/wk, ~30 students, MSU (x10), **Eval: 98%**
1. Zoology, 5hrs/wk, ~50 students, Simmons College (x2)

Contributor/Guest Lecturer

4. Current Topics in Ecology & Zoology (BI1EA2), for Phil Baker, UofR (x1 in 2023)
3. Ecology (BI1EC2), for Manuela Gonzalez-Suarez, 2hrs/term, ~50 students, UofR (x2 in 2023)
2. BI2ERD5: Reptiles and Dinosaurs, for Brian Pickles, 2hrs/term, ~50 students, UofR (x1)
1. Evolution, for Matt Lavin and Kevin O'Neil, 3hrs/term, ~100 students, MSU (x2)

Teaching Assistant: Undergraduate Courses

5. Biology of Organisms, MSU (x1)
4. Comparative Vertebrate Anatomy, MSU (x3)
3. Foundations of Biological Diversity, Harvard (x1), **Eval: 90%**
2. Genetics and Genomics, Harvard (x1), **Eval: 90%**
1. Understanding Darwinism, Harvard (x1), **Eval: 90%**

Undergraduates mentored in research (n=30)

STEEEM undergraduate research advisor, 7 students total, UofR

Issy Walker (2022-, UoR)	Rebecca McKie (2022-, UoR)
Tanner Barney (2021-2021, MSU)	Lauren Keller (2021-2021, MSU)
Sarah Montalbano (2018-2019, MSU)	Gia Fisher (2017-2019, MSU)
Rudy Hummel (2016-2019, MSU)	Kevin Surya (2016-2019, MSU)

Carolyn Kocken (2016-2019, MSU)
Isabelle Brenes (2016-2019, MSU)
John Wilson (2016-2018, MSU)
Holley Flora (2014-2016, MSU)
Angela Desmond (2010-2012, Boston College)
Amanda Herrmann (2009, Brown University)
Emily Mephram (2009, Brown University)
Jason Adams (1999-2003, MSU)

Thomas LaBarge (2016-2019, MSU)
Kevin Jones (2016-2018, MSU)
Mikayla Struble (2013-2016, MSU)
Jacob Gardner (2014-2016, MSU)
Scott Friedlander (2009, Brown University)
Daniel Lowry (2009, Brown University)
Raelene Zospah (1999-2004, MSU)
Martha Middlebrooks (2000-2003, MSU)

Graduate Supervision

PhD students, Advisor

2. Kevin Surya, Montana State University (2020-)
1. Jacob Gardner, University of Reading/Montana State University (2016-)

PhD students, Co-advisor/Committee Member

4. Ashinsa De Silva Wijeyeratne, PhD 2nd Advisor, University of Reading (2022-)
3. Carolynne Roberts, PhD Committee Member, University of Reading (2022-)
2. Hogan, Jason, PhD Committee Member, Montana State University (2016-2019)
1. L.J. Krumenacker, PhD Committee Member, Montana State University (2016-2017)

MSc Supervision

3. Isaura Aguilar, Masters co-advisor, Montana State University (2018-2019)
2. William Freimuth, Masters committee member, Montana State University (2017-2019)
1. Garrett Scofield, Masters committee member, Montana State University (2015-2018)

Professional Service

Current Memberships

- Society for the Study of Evolution
- Society for Vertebrate Paleontology
- European Society for Evolutionary Biology

Research Groups

2015-20 Tuatara Genome Group
2010-13 Coelacanth Genome Group
2009-11 *Anolis* Genome Group

Service to Profession

- 2022- Editorial Board, *Frontiers in Earth Science*
2022- Member of the Global Evolutionary Biology Initiative (GEBI), The European Society for Evolutionary Biology (ESEB)
2015-19 Editorial Board, *Journal of Evolutionary Biology*
2011-19 Editorial Board, *Frontiers in Ecology and Evolution*
2011-19 Editorial Board, *Frontiers in Earth Science*
2011-18 Editorial Board, *Frontiers in Genetics*
2016 Reviewer for *Evolution* (4th ed), Macroevolution chapter. Textbook by Doug Futuyma and Mark Kirkpatrick
2011 Reviewer for *Evolution: Making Sense of Life*. Textbook by Carl Zimmer and Douglas Emlen
2009-11 Board, Science for the Public
- Grant reviewer (n=18): National Science Foundation, Royal Society of New Zealand Marsden Fund, European Research Council, The Leverhulme Trust

- Peer reviewer (n=175): *Science, Nature, Nature Communications, Nature Ecology & Evolution, Proceedings of the National academy of Sciences, Proceedings of the Royal Society, Journal of Vertebrate Paleontology, Trends in Genetics, Trends in Ecology & Evolution, Global Change Biology, Biology Letters, Ecology Letters, Heredity, Journal of Anatomy, Journal of Evolutionary Biology, Frontiers in Genetics, Molecular Biology and Evolution, Systematic Biology, Evolution, BioEssays, Comptes rendus Palevol, Genome, Journal of Experimental Biology, Diversity, PeerJ, PLoS One*

Departmental/University Service

- 2022 Workshop for SBS staff on submitting to *Nature* journals with *Nature Communications* editor Devin Ward
- 2022 Workshop for UoR PhD Students and postdocs on career management with training plans, expectation guides, and quality assurance plans
- 2022 Peer-Assessment of SBS research output, University of Reading (n=2)
- 2017-21 Presidential Scholarship Selection Committee, Honors College
- 2017-19 Chair, Faculty Advisory Committee, Directed Interdisciplinary Studies Degree Program
- 2017-19 Honors College Advisory Council
- 2017-18 Cameron Presidential Scholarship Selection Committee, Honors College
- 2015-18 Core 2.0 Steering Committee
- 2013-15 Faculty sponsor for the Montana State University Taekwondo Club
- 2013-15 Faculty sponsor for the Montana State European Medieval Fencing Club
- 2003 Search committee member, Dean, Museum of the Rockies

Invited Seminars

- 2022 University of Bristol. The Evolution of Function in Dinosaurs.
- 2021 Washington University. Deep-Time Data Science.
- 2020 LifeMine. Adventures in Phyloinformatics.
- 2019 Purdue University. Phylogenetic Data Science: Interdisciplinary Solutions using Evolutionary Modelling.
- 2016 Northeast Ohio Medical University. Sex Across Time: The Macroevolutionary Dynamics of Sex Chromosomes.
- 2016 University of Montana. Sex Chromosome Macroevolution & The Reproductive Biology of Dinosaurs.
- 2014 University of Mexico. Genome Macroevolution: Integrating NGS with Paleobiology.
- 2013 La Trobe University, Melbourne, Australia. Using Evolutionary Trees to Understand the Rise of the Human Species.
- 2013 La Trobe University, Melbourne, Australia. Genome Macroevolution: Insights from Genes, Phylogenies, & Fossils.
- 2012 Center for Scientific Research, Paris. Evolution of Sex Chromosomes: Using Comparative Methods to Study Traits That Do Not Fossilize.
- 2011 University of Wisconsin, Parkside. Macroevolution of Sex Chromosomes.
- 2011 Washington & Lee University. Phyloinformatics: using trees to study genomes, fossils, and disease.
- 2010 University of Massachusetts Medical School. Phylogenetic Methods for Studying Genomes and Disease.
- 2010 Michigan Technological University. Macroevolution: Biology in Deep Time.
- 2010 Worcester Polytechnic. Understanding Biology with Phylogenies and Fossils.
- 2010 Brown University. Integrating Biology with phylogenetic Comparative Methods.
- 2010 University of Chicago. Below the Surface: Discovering Biology with Trees and Fossils.
- 2009 American Museum of Natural History. Retrodiction.
- 2009 Novartis Pharmaceuticals. The Power of Phylogeny.
- 2009 Harvard University. Retrodiction: Phylogenetic Comparative Methods for Predicting the Past.

- 2009 SUNY Oswego. Beyond Homology and Analogy with Phylogenetic Comparative Methods.
- 2008 Miami University. Integrating Genomics and Paleontology.
- 2008 University of Wisconsin, Madison. Paleogenomics.
- 2008 Montana State University. There and Back Again.
- 2008 Ohio Wesleyan University. Paleogenomics: Teaching Old Bones New Tricks, Comparatively.
- 2007 University of Wisconsin, La Crosse. Paleogenomics: Genome Biology, Evolution, & the Fossil Record.
- 2007 Northern Michigan University. Paleogenomics: Genome Biology and Evolution.
- 2006 University of New Hampshire. The Genomes of Giants: Genome Evolution within the Dinosauria.
- 2006 University of Illinois, Urbana-Campaign. From the Fossils of Cells: Genome Architecture.

Conference Activity

Organized Workshops & Symposia

- 2018 Creative Inquiry and Undergraduate Research in the Arts and Humanities
- 2011-12 Phylogenetic Methods, Workshop at SVP, Organizer with Chris Venditti
- 2010 Bayesian Comparative Methods, workshop at Harvard, Organizer with Andrew Meade
- 2008 Reptile Genomics and Evolutionary Genetics. SICB, San Antonio. Organizer with Dan Janes
- 2008 Analytical Molecular Paleontology. Panelist. North Carolina State University

Presentations

- 57. Organ, C., L. Keller, and J. D. Gardner (2022). Bergmann's rule was absent in Mesozoic dinosaurs and mammals. Society of Vertebrate Paleontology.
- 56. Gardner, J. D., J. P. Wilson, H. M. Flora, X. Xu, and C. Organ (2022). Functional innovations drove evolutionary rates and diversification in dinosaurs. Society of Vertebrate Paleontology.
- 55. Gardner, J. D., J. P. Wilson, H. M. Flora, X. Xu, and C. L. Organ (2022). Innovations in movement drove evolutionary rates and diversification in dinosaurs. Symposium on Vertebrate Palaeontology and Comparative Anatomy, NHM London.
- 54. Vischer, S., K. C. Rogers, C. Organ, and M. Anderson (2022). Fossilized Bones and Ancient Genomes: Using Preserved Osteocyte Lacunae to Predict Genome Size in Vertebrates from the Upper Cretaceous Maevarano Formation, Madagascar. SICB
- 53. LaBarge, T. and C. Organ (2021). Bayesian reanalysis of the evolution of Phorusrhacidae (Aves, Cariamiformes). GSA.
- 52. Gardner, J. and C. Organ (2021). Evolutionary sample size and consistency in phylogenetic comparative analysis. Evolution (SSE).
- 51. Aguilar-Pedrayes, I, C. Organ, J. D. Gardner, and D. Varricchio (2020). Facial keratin and tooth presence: Coevolution of traits in dinosaurs. Society of Vertebrate Paleontology.
- 50. LaBarge, T. and C. Organ (2020). A Bayesian Reanalysis of Phorusrhacidae and the Evolution of Gigantism. Society of Vertebrate Paleontology.
- 49. LaBarge, T. and C. Organ (2020). The Interrelationships of Phorusrhacidae and the Evolution of Gigantism. NCUR.
- 48. Sakamoto, M., C. Organ, J. Baker, M. Benton, A. Meade, M. Pagel, and C. Venditti (2019). Different evolutionary dynamics govern body size evolution in dinosaur groups. Palaeontological Association.
- 47. Surya, K. and C. Organ (2019). Do branch lengths in time or substitutions better represent trait evolution? NCUR.
- 46. Surya, K. and C. Organ (2019). Does Trait Evolution Follow Time or Genetic Substitution? Evolution (SSE).
- 45. Green, J. L., S. D. Willoughby, LaMeres, B. J., B. E. Hughes, L. B. Stermann, C. L. Organ, and E. K. Davis (2019). The Art of Storytelling: Engaging Audiences with Podcasts and Curiosity Cafes. Joint Statistical Meetings.

44. LaMeres, B. J., S. D. Willoughby, C. L. Organ, J. L. Green, B. E. Hughes, E. K. Davis and L. B. Stermann (2019). Using Improvisational Acting Techniques to Improve the Oral Communication Skills of STEM Graduate Students. American Society for Engineering Education.
43. Sakamoto, M., Organ, C., Baker, J., Benton, M., Meade, A., Pagel, M., and C. Venditti (2018) Different evolutionary dynamics govern body size evolution in dinosaur groups. *Palaeontological Association*.
42. Organ, C. L. and G. Fisher. (2018) Analyzing Cellular Traits with Developmental Phylogenetics. *International Society for Evolution, Medicine, and Public Health*.
41. Willoughby, S., Hughes, B., Stermann, L., Organ, C., La Meres, B., and G. Green (2018) STEM Storytellers: Improving Graduate Students' Oral Communication Skills. *American Association of Physics Teachers*.
40. Gates, T. A., L. E. Zanno, and C. L. Organ (2018) Quantifying the Evolution Of Theropod Cranial Ornaments. *Society of Vertebrate Paleontology*.
39. Jennifer L. Green, J. L., S. Willoughby, B. LaMeres, B. Hughes, L. Stermann, C. Organ, and K. Davis (2018) STEM Storytellers: Improving Graduate Students' Oral Communication Skills. *Joint Statistical Meetings*.
38. Fisher, G. and C. L. Organ. (2018) How is Cancer Incidence Driven by Stem Cell Division Rate? *NCUR*.
37. Surya, K. and C. L. Organ. (2018) Which Phylogeny Better Fits Species Trait Data: Time or Molecular Tree? *NCUR*.
36. LaMeres, B. J., S. D. Willoughby, C. L. Organ, J. L. Green, B. E. Hughes, E. K. Davis and L. B. Stermann (2018). STEM Storytellers: Improving the Oral Communication Skills of STEM Graduate Students. *American Society for Engineering Education*.
35. Surya, K., L. W. Viñola-López, I. Brenes, J. D. Gardner, C. L. Organ, and D. J. Varricchio. (2017) Pelvic Sexual Dimorphism in Modern Birds (Aves: Neornithes) and Its Evolutionary Relationship with Relative Egg Size. *NCUR*.
34. Organ, C. L. (2017) Genome macroevolution: insights from fossils and phylogenies. *Geological Society of America*.
33. Gardner, J. and C. Organ. (2017) The macroevolutionary dynamics of vertebrate genome size. *Geological Society of America*.
32. Surya, K., I. Brenes, J. Gardner, L. Viñola, W. Lázaro, C. Organ, and D. Varricchio. (2017) Pelvic coevolution with egg size and shape in modern birds: implication for reproductive biology of extinct dinosaurs. *Geological Society of America*.
31. Struble, M. K., J. Gardner, and C. Organ (2017) Biomechanical stresses of pedal grasping behavior within modern Aves: morphological adaptations and Mesozoic Implications. *Society of Vertebrate Paleontology*.
30. Surya, K., I. M. Brenes, L. W. Viñola-López, J. D. Gardner, C. L. Organ, D. J. Varricchio (2017) Pelvic Sexual Dimorphism in Modern Birds (Aves: Neornithes) and Its Evolutionary Relationship with Relative Egg Size. *Society of Vertebrate Paleontology*.
29. Tollis, M., C. L. Organ, S. Prost, D. Winter, N. Gemmell (2017) The tuatara genome sheds light on phylogenetics and rates of evolution during the amniote radiation. *Evolution Meeting (SSE)*.
28. Struble, M., J. Gardner, and C. L. Organ (2016) Convergent evolution and biomechanics of the raptorial foot. *Society of Vertebrate Paleontology*.
27. Gardner, J. and C. L. Organ (2016) Discrete models of correlated evolution are prone to false positive results. *Society of Vertebrate Paleontology*.
26. Organ, C. L. (2016) Advancing beyond the phylogenetic bracket. *Society of Vertebrate Paleontology*.
25. Organ, C. L., D. Janes, and A. Meade. (2016) Sex Chromosome Macroevolution & The Reproductive Biology of Dinosaurs. *Evolution Meeting (SSE)*.
24. Gardner, J., J. P. Wilson, D. C. Woodruff, H. M. Flora, J. R. Horner, and C. L. Organ (2015) Physiological adaptations to large body size in the spine of theropods. *Society of Vertebrate Paleontology*.

23. Struble, M., C. L. Organ, A. Canoville, V. de Buffrenil, and M. Laurin (2015) Interpreting the Evolution of Genome Size: An Application of Osteohistology. Society of Vertebrate Paleontology.
22. Gardner, J. D., J. P. Wilson, H. M. Flora, and C. L. Organ (2014) Dinosaur Locomotion Evolves in Episodic Bursts. GSA.
21. Gates, T. A., C. L. Organ, and L. E. Zanno (2014) Non-avian theropod socio-ecology: can galliform birds provide insights? Society of Vertebrate Paleontology.
20. Organ, C. L. (2013) Using evolutionary trees to understand the rise of the human species. Systems Biology Workshop, La Trobe University.
19. Organ, C. L. (2013) Genome Macroevolution: Insights from Genes, Phylogenies, & Fossils. Systems Biology Workshop, La Trobe University.
18. Organ, C. L. and D. Janes (2012) Evolution of sex chromosomes in dinosaurs. Society of Vertebrate Paleontology.
17. Venditti, C., M. Benton, C. Organ, A. Meade, and M. Pagel (2011) The evolutionary sources of morphological diversity in dinosaurs. Journal of Vertebrate Paleontology.
16. Organ, C. L. (2011) Polarizing Genome Evolution. Gordon Conference: Evolutionary Genomics, University of New England.
15. Organ, C. L., C. Nunn, Z. Machanda, and R. Wrangham (2010) Cooking originated in African *Homo erectus*. Evolution Meeting (SSE).
14. Organ, C. L., M. Andrew, and M. Pagel (2009). Bayesian inference of discrete character states. SICB 2009 Annual Meeting. Boston, MA.
13. Organ, C. L., D. Janes, A. Meade, and M. Pagel (2009) Molecules and morphology in evolutionary genomics: compatible and compulsory. Journal of Vertebrate Paleontology.
12. Schweitzer, M. H., W. Zheng, T. Cleland, R. Kalluri, J. M. Asara, C. L. Organ, and J. R. Horner (2008). Exceptional preservation in *Brachylophosaurus canadensis* (Campanian, Judith River Formation, Montana, USA). Journal of Vertebrate Paleontology.
11. Organ, C. L., R. G. Moreno and S. V. Edwards (2008). Genome architecture & diversity in reptiles. SICB 2008 Annual Meeting.
10. Organ, C. L. and S. V. Edwards. (2006). Paleogenomics of pterosaurs and the evolution of vertebrate flight. Society of Vertebrate Paleontology.
9. Organ, C. L., M. Pagel, and S. V. Edwards. (2006). Dinogenomics: The genomes of dinosaurs and the origin of avian genome architecture. Evolution Meeting (SSE).
8. Organ, C. L. and S. V. Edwards. (2006). Paleogenomics—The dinosaurian origins of avian genome structure. Workshop on Chicken Genomics & Development. Cold Spring Harbor Laboratory.
7. Organ, C. L. (2003). The biomechanics of ossified tendons in ornithomimid dinosaurs. International Society of Biomechanics XIXth Congress: Book of Abstracts. University of Otago. Dunedin, New Zealand.
6. L. (2003). Epaxial muscles and tendons in archosaurs: they're not just for duck-bills anymore. Society of Vertebrate Paleontology.
5. and C. L. Organ. (2003). Ontogenetic development of ossified tendons in hadrosaurian dinosaurs. Society of Vertebrate Paleontology.
4. Adams, J. and C. L. Organ. (2001). Descriptive osteology of ossified tendons from an articulated specimen of *Brachylophosaurus canadensis*. Society of Vertebrate Paleontology.
3. Cooley, J., C. L. Organ, and T. Hieronymus. (2001). A non-invasive floating grid mapping system. Paleobios.
2. Marshall, C. L., and C. L. Organ. (2001). Re-examination of ossified tendons in ornithischians. Society of Vertebrate Paleontology.
1. Organ, C. L. (2001). Ossified tendons in Ornithischians: a locomotor adaptation that reduces tail deflection. Society of Vertebrate Paleontology.

Outreach

Engagement with the Media

- 2023 "The origins of walking began in fish" article for The Conversation UK
- 2022 Consultant, for the band Cash Cows' song [Little Stegosaurus](#)
- 2021 Consultant, 'iBoom!' tv quiz show, Spain
- 2015 Consultant, Trail Blazers TV series, The Discovery Channel
- 2010 "For Extinct Monsters of the Deep, a Little Respect" NYT article (March) by Sean B. Carroll
- 2007 "Jurassic Genome" News focus in *Science* by Carl Zimmer (March)
- 2000 Consultant for the series: Dinosaurs of North America, The Discovery Channel

Other Media Coverage of Research

NIH and NSF homepages, Computing Life (NIH educational publication), WIRED Magazine, National Geographic, New York Times, Washington Post, USA Today, Telegraph, Boston Globe, Science News, Cosmos Magazine, Discover Magazine, Science and Vie, Science Magazine, Nature, Heredity, Arstechnica.com, Slate.com, ScienceDaily.com, Museum of the Rockies, NBC, ABC, CNN, the Discovery Channel, BBC, NPR, Celebrity Science Club (Japanese TV show), Muse, Quanta Magazine, Scientific American, and dozens of U.S. and international newspapers.

Community Seminars & Public Presentations

- 2021 Dinosaur Rainbows: Vision & Color in Dinosaurs (Morning Star Elementary)
- 2015 Museum of the Rockies. Macroevolution: New ways to harness fossils and phylogenies
- 2015 WonderLust. Genomics: the information age of biology
- 2013 Museum of Science, Boston. Triceratops Symposium, Organizer and Speaker
- 2009 Boston Public Library. The Jurassic genome: discovering biology with fossils
- 2007 Nerd Night, Boston. Artisan breads for everyone
- 2006 Nerd Night, Boston. Dinosaur cells and *tyrannosaurus'* backache
- 2006 Marblehead Public School. Paleogenomics: the genomes of dinosaurs
- 2005 Traverse City Public Library. The biology of duckbill dinosaurs
- 1996 East Lansing High School. Biomechanics

Professional Development

- 2022 Applying for a Royal Society Research Grant, UofR
- 2021 HPC Cluster Training, Biostats Solutions
- 2019 Public Speaking for Scientists, workshop by Greg Paul (Kansas State University)
- 2018 NIH grant writing workshop, by Michele Hardy, MSU
- 2012 Project Based Learning Short Course, High Tech High, San Diego, CA
- 2011 Leadership Training Course, Biogen Idec, Cambridge, MA
- 2011 Complete Genomics Short Course, Boston, MA
- 2010 Complete Genomics Short Course, Boston, MA
- 2006 UCSC Genome Browser Short Course, Boston, MA

Awards & Honors

- 2019 Cox Faculty Award for Creative Scholarship and Teaching, MSU (nominated)
- 2019 President Excellence in Teaching Award, MSU (nominated)
- 2019 Provost award undergraduate research creativity mentoring, MSU (nominated)
- 2018 Ron Wasserstein Award, Best Paper in Statistics Education for "STEM Storytellers, Improving Graduate Students' Oral Communication Skills".
- 2018 125th Anniversary Celebration, Highlighted Faculty, MSU Research Symposium
- 2017 Keynote Speaker, Paleogenomics Symposium. Geological Society of America, Seattle
- 2013 Keynote Speaker, Systems Biology Workshop, La Trobe University, Melbourne, Australia
- 2009 Research Feature in *Cell* (Issue 139, October 30, 2009)
- 2009 Bio featured in Abstractions column, *Nature* (Vol 461, Issue no. 7262, 2009)
- 2009 Faculty of 1000, "must read" paper (for Organ et. al. *Nature* 2009)

2007,13	Keynote Speaker, recruitment event for Molecular Biosciences Program, MSU
2005,08	Faculty Appreciation Dinner, Harvard University, student nominated
2004	Teacher Appreciation Day, MSU, student nominated