

# Emily R Rayfield

## List of Publications by Year in descending order

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Version: 2024-02-01

113  
papers

5,388  
citations

66315

42  
h-index

98753

67  
g-index

116  
all docs

116  
docs citations

116  
times ranked

3473  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | Cranial functional morphology of the pseudosuchian <i>Effigia</i> and implications for its ecological role in the Triassic. <i>Anatomical Record</i> , 2022, 305, 2435-2462.                                     | 0.8 | 5         |
| 2  | Distal Humeral Morphology Indicates Locomotory Divergence in Extinct Giant Kangaroos. <i>Journal of Mammalian Evolution</i> , 2022, 29, 27-41.   | 1.0 | 8         |
| 3  | Divergent locomotor evolution in giant kangaroos: Evidence from foot bone bending resistances and microanatomy. <i>Journal of Morphology</i> , 2022, 283, 313-332.   | 0.6 | 10        |
| 4  | Walking with early dinosaurs: appendicular myology of the Late Triassic sauropodomorph <i>Thecodontosaurus antiquus</i> . <i>Royal Society Open Science</i> , 2022, 9, 211356.                                   | 1.1 | 7         |
| 5  | Climate, competition, and the rise of mosasauroid ecomorphological disparity. <i>Palaeontology</i> , 2022, 65, .   | 1.0 | 6         |
| 6  | Increasing morphological disparity and decreasing optimality for jaw speed and strength during the radiation of jawed vertebrates. <i>Science Advances</i> , 2022, 8, eabl3644.                                  | 4.7 | 16        |
| 7  | The braincase, brain and palaeobiology of the basal sauropodomorph dinosaur <i>Thecodontosaurus antiquus</i> . <i>Zoological Journal of the Linnean Society</i> , 2021, 193, 541-562.                            | 1.0 | 9         |
| 8  | Ontogenetic endocranial shape change in alligators and ostriches and implications for the development of the nonavian dinosaur endocranium. <i>Anatomical Record</i> , 2021, 304, 1759-1775.                     | 0.8 | 21        |
| 9  | Jaw shape and mechanical advantage are indicative of diet in Mesozoic mammals. <i>Communications Biology</i> , 2021, 4, 242.   | 2.0 | 22        |
| 10 | Testing the influence of crushing surface variation on seed-cracking performance among beak morphs of the African seedcracker <i>Pyrenestes ostrinus</i> . <i>Journal of Experimental Biology</i> , 2021, 224, . | 0.8 | 1         |
| 11 | Testing for a dietary shift in the Early Cretaceous ceratopsian dinosaur <i>Psittacosaurus lujiatunensis</i> . <i>Palaeontology</i> , 2021, 64, 371-384.   | 1.0 | 4         |
| 12 | Osteology and digital reconstruction of the skull of the early tetrapod <i>Whatcheeria deltae</i> . <i>Journal of Vertebrate Paleontology</i> , 2021, 41, .  | 0.4 | 5         |
| 13 | Ecological opportunity and the rise and fall of crocodylomorph evolutionary innovation. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20210069.                                    | 1.2 | 33        |
| 14 | Craniofacial development illuminates the evolution of nightbirds (Strisores). <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20210181.  | 1.2 | 9         |
| 15 | Cephalic biomechanics underpins the evolutionary success of trilobites. <i>Palaeontology</i> , 2021, 64, 519-530.  | 1.0 | 8         |
| 16 | Niche partitioning shaped herbivore macroevolution through the early Mesozoic. <i>Nature Communications</i> , 2021, 12, 2796.  | 5.8 | 11        |
| 17 | The diversity of Triassic South American sphenodontians: a new basal form, clevosaur, and a revision of rhynchocephalian phylogeny. <i>Journal of Systematic Palaeontology</i> , 2021, 19, 787-820.              | 0.6 | 9         |
| 18 | Phylogenetic relationships of the European trilophosaurids <i>Tricuspisaurus thomasi</i> and <i>Variodens inopinatus</i> . <i>Journal of Vertebrate Paleontology</i> , 2021, 41, .                               | 0.4 | 5         |

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|----|---|------|-----------|
| 19 | Morphological disparity in theropod jaws: comparing discrete characters and geometric morphometrics. <i>Palaeontology</i> , 2020, 63, 283-299.  | 1.0  | 26        |
| 20 | Decelerated dinosaur skull evolution with the origin of birds. <i>PLoS Biology</i> , 2020, 18, e3000801.  | 2.6  | 18        |
| 21 | Osteological redescription of the Late Triassic sauropodomorph dinosaur <i>Thecodontosaurus antiquus</i> based on new material from Tytherington, southwestern England. <i>Journal of Vertebrate Paleontology</i> , 2020, 40, e1770774. | 0.4  | 12        |
| 22 | Was the Devonian placoderm <i>Titanichthys</i> a suspension feeder?. <i>Royal Society Open Science</i> , 2020, 7, 200272.   | 1.1  | 11        |
| 23 | Biomechanical properties of the jaws of two species of <i>Clevosaurus</i> and a reanalysis of rhynchocephalian dentary morphospace. <i>Palaeontology</i> , 2020, 63, 919-939.   | 1.0  | 8         |
| 24 | Disparities in the analysis of morphological disparity. <i>Biology Letters</i> , 2020, 16, 20200199.  | 1.0  | 60        |
| 25 | The consequences of craniofacial integration for the adaptive radiations of Darwin's finches and Hawaiian honeycreepers. <i>Nature Ecology and Evolution</i> , 2020, 4, 270-278.  | 3.4  | 57        |
| 26 | A digital dissection of two teleost fishes: comparative functional anatomy of the cranial musculoskeletal system in pike ( <i>Esox lucius</i> ) and eel ( <i>Anguilla anguilla</i> ). <i>Journal of Anatomy</i> , 2019, 235, 189-204.   | 0.9  | 8         |
| 27 | The multifactorial nature of beak and skull shape evolution in parrots and cockatoos (Psittaciformes). <i>BMC Evolutionary Biology</i> , 2019, 19, 104.   | 3.2  | 37        |
| 28 | What Does Musculoskeletal Mechanics Tell Us About Evolution of Form and Function in Vertebrates?. <i>Fascinating Life Sciences</i> , 2019, , 45-70.   | 0.5  | 12        |
| 29 | Convergence and functional evolution of longirostry in crocodylomorphs. <i>Palaeontology</i> , 2019, 62, 867-887.   | 1.0  | 32        |
| 30 | Functional tests of the competitive exclusion hypothesis for multituberculate extinction. <i>Royal Society Open Science</i> , 2019, 6, 181536.  | 1.1  | 24        |
| 31 | The use of extruded finite-element models as a novel alternative to tomography-based models: a case study using early mammal jaws. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190674.                                  | 1.5  | 22        |
| 32 | The evolutionary relationship among beak shape, mechanical advantage, and feeding ecology in modern birds*. <i>Evolution; International Journal of Organic Evolution</i> , 2019, 73, 422-435.   | 1.1  | 117       |
| 33 | The importance of wave exposure on the structural integrity of rhodoliths. <i>Journal of Experimental Marine Biology and Ecology</i> , 2018, 503, 109-119.  | 0.7  | 19        |
| 34 | Evolution of jaw disparity in fishes. <i>Palaeontology</i> , 2018, 61, 847-854.   | 1.0  | 21        |
| 35 | The role of miniaturization in the evolution of the mammalian jaw and middle ear. <i>Nature</i> , 2018, 561, 533-537.   | 13.7 | 51        |
| 36 | Open data and digital morphology. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2017, 284, 20170194.   | 1.2  | 103       |

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|----|---|-----|-----------|
| 37 | Ontogenetic constraints on foraminiferal test construction. <i>Evolution &amp; Development</i> , 2017, 19, 157-168.   | 1.1 | 13        |
| 38 | Craniodental functional evolution in sauropodomorph dinosaurs. <i>Paleobiology</i> , 2017, 43, 435-462.   | 1.3 | 26        |
| 39 | Biomechanical Evaluation of Different Musculoskeletal Arrangements in <i>Psittacosaurus</i> and Implications for Cranial Function. <i>Anatomical Record</i> , 2017, 300, 49-61.   | 0.8 | 22        |
| 40 | Herbivorous dinosaur jaw disparity and its relationship to extrinsic evolutionary drivers. <i>Paleobiology</i> , 2017, 43, 15-33.   | 1.3 | 28        |
| 41 | Scaling and functional morphology in strigiform hind limbs. <i>Scientific Reports</i> , 2017, 7, 44920.   | 1.6 | 9         |
| 42 | Morphological evolution of the mammalian jaw adductor complex. <i>Biological Reviews</i> , 2017, 92, 1910-1940.   | 4.7 | 51        |
| 43 | The shapes of bird beaks are highly controlled by nondietary factors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 5352-5357.  | 3.3 | 192       |
| 44 | Differential effects of altered patterns of movement and strain on joint cell behaviour and skeletal morphogenesis. <i>Osteoarthritis and Cartilage</i> , 2016, 24, 1940-1950.  | 0.6 | 34        |
| 45 | 3D Camouflage in an Ornithischian Dinosaur. <i>Current Biology</i> , 2016, 26, 2456-2462.   | 1.8 | 72        |
| 46 | Comparative cranial myology and biomechanics of <i>Plateosaurus</i> and <i>Camarasaurus</i> and evolution of the sauropod feeding apparatus. <i>Palaeontology</i> , 2016, 59, 887-913.  | 1.0 | 43        |
| 47 | Building Finite Element Models to Investigate Zebrafish Jaw Biomechanics. <i>Journal of Visualized Experiments</i> , 2016, , .  | 0.2 | 12        |
| 48 | Translating taxonomy into the evolution of conodont feeding ecology. <i>Geology</i> , 2016, 44, 247-250.  | 2.0 | 30        |
| 49 | Combining geometric morphometrics and finite element analysis with evolutionary modeling: towards a synthesis. <i>Journal of Vertebrate Paleontology</i> , 2016, 36, e1111225.  | 0.4 | 97        |
| 50 | Computed tomography, anatomical description and three-dimensional reconstruction of the lower jaw of <i>Eusthenopteron foordi</i> Whiteaves, 1881 from the Upper Devonian of Canada. <i>Palaeontology</i> , 2015, 58, 1031-1047.                              | 1.0 | 21        |
| 51 | Potential and limitations of finite element modelling in assessing structural integrity of coralline algae under future global change. <i>Biogeosciences</i> , 2015, 12, 5871-5883.   | 1.3 | 9         |
| 52 | Descriptive Anatomy and Three-Dimensional Reconstruction of the Skull of the Early Tetrapod <i>Acanthostega gunnari</i> Jarvik, 1952. <i>PLoS ONE</i> , 2015, 10, e0118882.   | 1.1 | 39        |
| 53 | Finite element modelling predicts changes in joint shape and cell behaviour due to loss of muscle strain in jaw development. <i>Journal of Biomechanics</i> , 2015, 48, 3112-3122.  | 0.9 | 41        |
| 54 | Osteological and Soft-Tissue Evidence for Pneumatization in the Cervical Column of the Ostrich ( <i>Struthio camelus</i> ) and Observations on the Vertebral Columns of Non-Volant, Semi-Volant and Semi-Aquatic Birds. <i>PLoS ONE</i> , 2015, 10, e0143834. | 1.1 | 12        |

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|----|--|------|-----------|
| 55 | Retrodeformation and muscular reconstruction of ornithomimosaurian dinosaur crania. PeerJ, 2015, 3, e1093.   | 0.9  | 34        |
| 56 | Validation experiments on finite element models of an ostrich ( <i>Struthio camelus</i> ) cranium. PeerJ, 2015, 3, e1294.  | 0.9  | 32        |
| 57 | Cranial biomechanics underpins high sauropod diversity in resource-poor environments. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20142114.                                    | 1.2  | 63        |
| 58 | What makes an accurate and reliable subject-specific finite element model? A case study of an elephant femur. Journal of the Royal Society Interface, 2014, 11, 20140700.                              | 1.5  | 2         |
| 59 | What makes an accurate and reliable subject-specific finite element model? A case study of an elephant femur. Journal of the Royal Society Interface, 2014, 11, 20140854.                              | 1.5  | 2         |
| 60 | Functional adaptation underpinned the evolutionary assembly of the earliest vertebrate skeleton. Evolution & Development, 2014, 16, 354-361.   | 1.1  | 9         |
| 61 | Cranial anatomy of <i>Erlikosaurus andrewsi</i> (Dinosauria, Therizinosauria): new insights based on digital reconstruction. Journal of Vertebrate Paleontology, 2014, 34, 1263-1291.                  | 0.4  | 46        |
| 62 | Finite element, occlusal, microwear and microstructural analyses indicate that conodont microstructure is adapted to dental function. Palaeontology, 2014, 57, 1059-1066.                              | 1.0  | 30        |
| 63 | Dietary specializations and diversity in feeding ecology of the earliest stem mammals. Nature, 2014, 512, 303-305.   | 13.7 | 125       |
| 64 | Digital dissection “ using contrast-enhanced computed tomography scanning to elucidate hard and soft-tissue anatomy in the Common Buzzard <i>Buteo buteo</i> . Journal of Anatomy, 2014, 224, 412-431. | 0.9  | 72        |
| 65 | Adaptive plasticity in the mouse mandible. BMC Evolutionary Biology, 2014, 14, 85.   | 3.2  | 89        |
| 66 | Feeding biomechanics in <i>Acanthostega</i> and across the fish-tetrapod transition. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20132689.                                     | 1.2  | 45        |
| 67 | A virtual world of paleontology. Trends in Ecology and Evolution, 2014, 29, 347-357.   | 4.2  | 205       |
| 68 | Hydrodynamic constraints on the evolution and ecology of planktic foraminifera. Marine Micropaleontology, 2014, 106, 69-78.  | 0.5  | 42        |
| 69 | Functional anatomy and feeding biomechanics of a giant Upper Jurassic pliosaur ( <i>Riptilia: Sauropterygia</i> ) from Wyoming <i>B&amp;D</i> . Journal of Anatomy, 2014, 225, 209-219.                | 0.9  | 30        |
| 70 | Feeding Mechanics in Spinosaurid Theropods and Extant Crocodylians. PLoS ONE, 2013, 8, e65295.   | 1.1  | 53        |
| 71 | Linking evolution and development: Synchrotron Radiation X-ray tomographic microscopy of planktic foraminifers. Palaeontology, 2013, 56, 741-749.  | 1.0  | 28        |
| 72 | Within-guild dietary discrimination from <i>D</i> textural analysis of tooth microwear in insectivorous mammals. Journal of Zoology, 2013, 291, 249-257.   | 0.8  | 44        |

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|----|---|------|-----------|
| 73 | Edentulism, beaks, and biomechanical innovations in the evolution of theropod dinosaurs. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 20657-20662. | 3.3  | 59        |
| 74 | Morphological and biomechanical disparity of crocodile-line archosaurs following the end-Triassic extinction. Proceedings of the Royal Society B: Biological Sciences, 2013, 280, 20131940.       | 1.2  | 83        |
| 75 | Inter-Vertebral Flexibility of the Ostrich Neck: Implications for Estimating Sauropod Neck Flexibility. PLoS ONE, 2013, 8, e72187.  | 1.1  | 55        |
| 76 | What makes an accurate and reliable subject-specific finite element model? A case study of an elephant femur. Journal of the Royal Society Interface, 2012, 9, 351-361.                           | 1.5  | 17        |
| 77 | Virtual experiments, physical validation: dental morphology at the intersection of experiment and theory. Journal of the Royal Society Interface, 2012, 9, 1846-1855.                             | 1.5  | 21        |
| 78 | Models in palaeontological functional analysis. Biology Letters, 2012, 8, 119-122.  | 1.0  | 40        |
| 79 | Testing microstructural adaptation in the earliest dental tools. Biology Letters, 2012, 8, 952-955.   | 1.0  | 15        |
| 80 | Functional Evolution of the Feeding System in Rodents. PLoS ONE, 2012, 7, e36299.   | 1.1  | 146       |
| 81 | Functional Morphometric Analysis of the Furcula in Mesozoic Birds. PLoS ONE, 2012, 7, e36664.   | 1.1  | 33        |
| 82 | Cranial biomechanics of Diplodocus (Dinosauria, Sauropoda): testing hypotheses of feeding behaviour in an extinct megaherbivore. Die Naturwissenschaften, 2012, 99, 637-643.                      | 0.6  | 50        |
| 83 | The sharpest tools in the box? Quantitative analysis of conodont element functional morphology. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 2849-2854.                    | 1.2  | 49        |
| 84 | Pedal Claw Curvature in Birds, Lizards and Mesozoic Dinosaurs – Complicated Categories and Compensating for Mass-Specific and Phylogenetic Control. PLoS ONE, 2012, 7, e50555.                    | 1.1  | 63        |
| 85 | The Endocranial Anatomy of Therizinosauria and Its Implications for Sensory and Cognitive Function. PLoS ONE, 2012, 7, e52289.  | 1.1  | 70        |
| 86 | Initial radiation of jaws demonstrated stability despite faunal and environmental change. Nature, 2011, 476, 206-209.   | 13.7 | 116       |
| 87 | Strain in the ostrich mandible during simulated pecking and validation of specimen-specific finite element models. Journal of Anatomy, 2011, 218, 47-58.  | 0.9  | 43        |
| 88 | Sensitivity and <i>ex vivo</i> validation of finite element models of the domestic pig cranium. Journal of Anatomy, 2011, 219, 456-471.   | 0.9  | 76        |
| 89 | Finite element modelling of squirrel, guinea pig and rat skulls: using geometric morphometrics to assess sensitivity. Journal of Anatomy, 2011, 219, 696-709.                                     | 0.9  | 82        |
| 90 | Modeling the effects of cingula structure on strain patterns and potential fracture in tooth enamel. Journal of Morphology, 2011, 272, 50-65.   | 0.6  | 29        |

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| 91  | The Response of Cranial Biomechanical Finite Element Models to Variations in Mesh Density. <i>Anatomical Record</i> , 2011, 294, 610-620.  | 0.8 | 54        |
| 92  | Functional implications of dicynodont cranial suture morphology. <i>Journal of Morphology</i> , 2010, 271, 705-728.  | 0.6 | 31        |
| 93  | Mechanics of the scarf premaxilla-nasal suture in the snout of <i>Lystrosaurus</i> . <i>Journal of Vertebrate Paleontology</i> , 2010, 30, 1283-1288.  | 0.4 | 17        |
| 94  | Comparative Feeding Biomechanics of <i>Lystrosaurus</i> and the Generalized Dicynodont <i>Oudenodon</i> . <i>Anatomical Record</i> , 2009, 292, 862-874.   | 0.8 | 33        |
| 95  | Neurocranial osteology and systematic relationships of <i>Varanus</i> ( <i>Megalania</i> ) <i>prisca</i> Owen, 1859 (Squamata: Varanidae). <i>Zoological Journal of the Linnean Society</i> , 2009, 155, 445-457.                        | 1.0 | 22        |
| 96  | Morphospace occupation in thalattosuchian crocodylomorphs: skull shape variation, species delineation and temporal patterns. <i>Palaeontology</i> , 2009, 52, 1057-1097.   | 1.0 | 72        |
| 97  | Shape and mechanics in thalattosuchian (Crocodylomorpha) skulls: implications for feeding behaviour and niche partitioning. <i>Journal of Anatomy</i> , 2009, 215, 555-576.  | 0.9 | 90        |
| 98  | Utility and validity of Middle and Late Triassic "land vertebrate faunachrons". <i>Journal of Vertebrate Paleontology</i> , 2009, 29, 80-87.   | 0.4 | 50        |
| 99  | Patterns of morphospace occupation and mechanical performance in extant crocodylian skulls: A combined geometric morphometric and finite element modeling approach. <i>Journal of Morphology</i> , 2008, 269, 840-864.                   | 0.6 | 162       |
| 100 | Cranial performance in the Komodo dragon ( <i>Varanus komodoensis</i> ) as revealed by high-resolution finite element analysis. <i>Journal of Anatomy</i> , 2008, 212, 736-746.  | 0.9 | 79        |
| 101 | Establishing a framework for archosaur cranial mechanics. <i>Paleobiology</i> , 2008, 34, 494-515.   | 1.3 | 55        |
| 102 | Functional morphology of spinosaur "crocodile-mimic" dinosaurs. <i>Journal of Vertebrate Paleontology</i> , 2007, 27, 892-901.   | 0.4 | 84        |
| 103 | Finite Element Analysis and Understanding the Biomechanics and Evolution of Living and Fossil Organisms. <i>Annual Review of Earth and Planetary Sciences</i> , 2007, 35, 541-576.   | 4.6 | 351       |
| 104 | Ecological and evolutionary implications of dinosaur feeding behaviour. <i>Trends in Ecology and Evolution</i> , 2006, 21, 217-224.  | 4.2 | 62        |
| 105 | Aspects of comparative cranial mechanics in the theropod dinosaurs <i>Coelophysis</i> , <i>Allosaurus</i> and <i>Tyrannosaurus</i> . <i>Zoological Journal of the Linnean Society</i> , 2005, 144, 309-316.                              | 1.0 | 89        |
| 106 | Using finite-element analysis to investigate suture morphology: A case study using large carnivorous dinosaurs. <i>The Anatomical Record Part A: Discoveries in Molecular, Cellular, and Evolutionary Biology</i> , 2005, 283A, 349-365. | 2.0 | 107       |
| 107 | A Geographical Information System (GIS) study of Triassic vertebrate biochronology. <i>Geological Magazine</i> , 2005, 142, 327-354.   | 0.9 | 48        |
| 108 | Cranial mechanics and feeding in <i>Tyrannosaurus rex</i> . <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2004, 271, 1451-1459.   | 1.2 | 146       |

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|-----|---|------|-----------|
| 109 | Prey attack by a large theropod dinosaur. <i>Nature</i> , 2002, 416, 387-388.   | 13.7 | 10        |
| 110 | Prey attack by a large theropod dinosaur. <i>Nature</i> , 2002, 416, 388-388.   | 13.7 | 6         |
| 111 | Cranial design and function in a large theropod dinosaur. <i>Nature</i> , 2001, 409, 1033-1037.   | 13.7 | 219       |
| 112 | Morphological Change During The Ontogeny Of The Planktic Foraminifera. <i>Journal of Micropalaeontology</i> , 0, , 2014-017.  | 1.3  | 8         |
| 113 | Digital cranial endocast of <i>Riograndia guaibensis</i> (Late Triassic, Brazil) sheds light on the evolution of the brain in non-mammalian cynodonts. <i>Historical Biology</i> , 0, , 1-18. | 0.7  | 13        |