# Emily R Rayfield

List of Publications by Year
in descending order



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|---|---|---|---|
| 113 papers | 5,388 citations | 66343 42 h-index | 98798 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 Effigia and implications for its ecological role in the Triassic. Anatomical Record, 2022, 305, 2435-2462. | 1.4 | 5 |
| 2 | Distal Humeral Morphology Indicates Locomotory Divergence in Extinct Giant Kangaroos. Journal of Mammalian Evolution, 2022, 29, 27-41. | 1.8 | 8 |
| 3 | Divergent locomotor evolution in â€œgiantâ€•kangaroos: Evidence from foot bone bending resistances and microanatomy. Journal of Morphology, 2022, 283, 313-332. | 1.2 | 10 |
| 4 | Walking with early dinosaurs: appendicular myology of the Late Triassic sauropodomorph Thecodontosaurus antiquus. Royal Society Open Science, 2022, 9, 211356. | 2.4 | 7 |
| 5 | Climate, competition, and the rise of mosasauroid ecomorphological disparity. Palaeontology, 2022, 65, . | 2.2 | 6 |
| 6 | Increasing morphological disparity and decreasing optimality for jaw speed and strength during the radiation of jawed vertebrates. Science Advances, 2022, 8, eabl3644. | 10.3 | 16 |
| 7 | The braincase, brain and palaeobiology of the basal sauropodomorph dinosaurThecodontosaurus antiquus. Zoological Journal of the Linnean Society, 2021, 193, 541-562. | 2.3 | 9 |
| 8 | Ontogenetic endocranial shape change in alligators and ostriches and implications for the development of the nonâ€avian dinosaur endocranium. Anatomical Record, 2021, 304, 1759-1775. | 1.4 | 21 |
| 9 | Jaw shape and mechanical advantage are indicative of diet in Mesozoic mammals. Communications Biology, 2021, 4, 242. | 4.4 | 22 |
| 10 | Testing the influence of crushing surface variation on seed-cracking performance among beak morphs of the African seedcracker Pyrenestes ostrinus. Journal of Experimental Biology, 2021, 224, . | 1.7 | 1 |
| 11 | Testing for a dietary shift in the Early Cretaceous ceratopsian dinosaur Psittacosaurus lujiatunensis. Palaeontology, 2021, 64, 371-384. | 2.2 | 4 |
| 12 | Osteology and digital reconstruction of the skull of the early tetrapod Whatcheeria deltae. Journal of Vertebrate Paleontology, 2021, 41, . | 1.0 | 5 |
| 13 | Ecological opportunity and the rise and fall of crocodylomorph evolutionary innovation. Proceedings of the Royal Society B: Biological Sciences, 2021, 288, 20210069. | 2.6 | 33 |
| 14 | Craniofacial development illuminates the evolution of nightbirds (Strisores). Proceedings of the Royal Society B: Biological Sciences, 2021, 288, 20210181. | 2.6 | 9 |
| 15 | Cephalic biomechanics underpins the evolutionary success of trilobites. Palaeontology, 2021, 64, 519-530. | 2.2 | 8 |
| 16 | Niche partitioning shaped herbivore macroevolution through the early Mesozoic. Nature Communications, 2021, 12, 2796. | 12.8 | 11 |
| 17 | The diversity of Triassic South American sphenodontians: a new basal form, clevosaurs, and a revision of rhynchocephalian phylogeny. Journal of Systematic Palaeontology, 2021, 19, 787-820. | 1.5 | 9 |
| 18 | Phylogenetic relationships of the European trilophosaurids Tricuspisaurus thomasi and Variodens inopinatus. Journal of Vertebrate Paleontology, 2021, 41, . | 1.0 | 5 |

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|---|---|---|---|
| 19 | Morphological disparity in theropod jaws: comparing discrete characters and geometric morphometrics. Palaeontology, 2020, 63, 283-299. | 2.2 | 26 |
| 20 | Decelerated dinosaur skull evolution with the origin of birds. PLoS Biology, 2020, 18, e3000801. | 5.6 | 18 |
| 21 | Osteological redescription of the Late Triassic sauropodomorph dinosaur Thecodontosaurus antiquus based on new material from Tytherington, southwestern England. Journal of Vertebrate Paleontology, 2020, 40, e1770774. | 1.0 | 12 |
| 22 | Was the Devonian placoderm Titanichthys a suspension feeder?. Royal Society Open Science, 2020, 7, 200272. | 2.4 | 11 |
| 23 | Biomechanical properties of the jaws of two species of Clevosaurus and a reanalysis of rhynchocephalian dentary morphospace. Palaeontology, 2020, 63, 919-939. | 2.2 | 8 |
| 24 | Disparities in the analysis of morphological disparity. Biology Letters, 2020, 16, 20200199. | 2.3 | 60 |
| 25 | The consequences of craniofacial integration for the adaptive radiations of Darwinâ€™s finches and Hawaiian honeycreepers. Nature Ecology and Evolution, 2020, 4, 270-278. | 7.8 | 57 |
| 26 | A digital dissection of two teleost fishes: comparative functional anatomy of the cranial musculoskeletal system in pike ( Esox lucius ) and eel ( Anguilla anguilla ). Journal of Anatomy, 2019, 235, 189-204. | 1.5 | 8 |
| 27 | The multifactorial nature of beak and skull shape evolution in parrots and cockatoos (Psittaciformes). BMC Evolutionary Biology, 2019, 19, 104. | 3.2 | 37 |
| 28 | What Does Musculoskeletal Mechanics Tell Us About Evolution of Form and Function in Vertebrates?. Fascinating Life Sciences, 2019, , 45-70. | 0.9 | 12 |
| 29 | Convergence and functional evolution of longirostry in crocodylomorphs. Palaeontology, 2019, 62, 867-887. | 2.2 | 32 |
| 30 | Functional tests of the competitive exclusion hypothesis for multituberculate extinction. Royal Society Open Science, 2019, 6, 181536. | 2.4 | 24 |
| 31 | The use of extruded finite-element models as a novel alternative to tomography-based models: a case study using early mammal jaws. Journal of the Royal Society Interface, 2019, 16, 20190674. | 3.4 | 22 |
| 32 | The evolutionary relationship among beak shape, mechanical advantage, and feeding ecology in modern birds*. Evolution; International Journal of Organic Evolution, 2019, 73, 422-435. | 2.3 | 117 |
| 33 | The importance of wave exposure on the structural integrity of rhodoliths. Journal of Experimental Marine Biology and Ecology, 2018, 503, 109-119. | 1.5 | 19 |
| 34 | Evolution of jaw disparity in fishes. Palaeontology, 2018, 61, 847-854. | 2.2 | 21 |
| 35 | The role of miniaturization in the evolution of the mammalian jaw and middle ear. Nature, 2018, 561, 533-537. | 27.8 | 51 |
| 36 | Open data and digital morphology. Proceedings of the Royal Society B: Biological Sciences, 2017, 284, 20170194. | 2.6 | 103 |

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|---|---|---|---|
| 37 | Ontogenetic constraints on foraminiferal test construction. Evolution & Development, 2017, 19, 157-168. | 2.0 | 13 |
| 38 | Craniodental functional evolution in sauropodomorph dinosaurs. Paleobiology, 2017, 43, 435-462. | 2.0 | 26 |
| 39 | Biomechanical Evaluation of Different Musculoskeletal Arrangements in Psittacosaurus and Implications for Cranial Function. Anatomical Record, 2017, 300, 49-61. | 1.4 | 22 |
| 40 | Herbivorous dinosaur jaw disparity and its relationship to extrinsic evolutionary drivers. Paleobiology, 2017, 43, 15-33. | 2.0 | 28 |
| 41 | Scaling and functional morphology in strigiform hind limbs. Scientific Reports, 2017, 7, 44920. | 3.3 | 9 |
| 42 | Morphological evolution of the mammalian jaw adductor complex. Biological Reviews, 2017, 92, 1910-1940. | 10.4 | 51 |
| 43 | The shapes of bird beaks are highly controlled by nondietary factors. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5352-5357. | 7.1 | 192 |
| 44 | Differential effects of altered patterns of movement and strain on joint cell behaviour and skeletal morphogenesis. Osteoarthritis and Cartilage, 2016, 24, 1940-1950. | 1.3 | 34 |
| 45 | 3D Camouflage in an Ornithischian Dinosaur. Current Biology, 2016, 26, 2456-2462. | 3.9 | 72 |
| 46 | Comparative cranial myology and biomechanics of Plateosaurus and Camarasaurus and evolution of the sauropod feeding apparatus. Palaeontology, 2016, 59, 887-913. | 2.2 | 43 |
| 47 | Building Finite Element Models to Investigate Zebrafish Jaw Biomechanics. Journal of Visualized Experiments, 2016, , . | 0.3 | 12 |
| 48 | Translating taxonomy into the evolution of conodont feeding ecology. Geology, 2016, 44, 247-250. | 4.4 | 30 |
| 49 | Combining geometric morphometrics and finite element analysis with evolutionary modeling: towards a synthesis. Journal of Vertebrate Paleontology, 2016, 36, e1111225. | 1.0 | 97 |
| 50 | Computed tomography, anatomical description and threeâ€dimensional reconstruction of the lower jaw of <scp>E</scp>usthenopteron foordi <scp>W</scp>hiteaves, 1881 from the <scp>U</scp>pper <scp>D</scp>evonian of <scp>C</scp>anada. Palaeontology, 2015, 58, 1031-1047. | 2.2 | 21 |
| 51 | Potential and limitations of finite element modelling in assessing structural integrity of coralline algae under future global change. Biogeosciences, 2015, 12, 5871-5883. | 3.3 | 9 |
| 52 | Descriptive Anatomy and Three-Dimensional Reconstruction of the Skull of the Early Tetrapod Acanthostega gunnari Jarvik, 1952. PLoS ONE, 2015, 10, e0118882. | 2.5 | 39 |
| 53 | Finite element modelling predicts changes in joint shape and cell behaviour due to loss of muscle strain in jaw development. Journal of Biomechanics, 2015, 48, 3112-3122. | 2.1 | 41 |
| 54 | Osteological and Soft-Tissue Evidence for Pneumatization in the Cervical Column of the Ostrich (Struthio camelus) and Observations on the Vertebral Columns of Non-Volant, Semi-Volant and Semi-Aquatic Birds. PLoS ONE, 2015, 10, e0143834. | 2.5 | 12 |

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| 55 | Retrodeformation and muscular reconstruction of ornithomimosaurian dinosaur crania. PeerJ, 2015, 3, e1093. | 2.0 | 34 |
| 56 | Validation experiments on finite element models of an ostrich (Struthio camelus) cranium. PeerJ, 2015, 3, e1294. | 2.0 | 32 |
| 57 | Cranial biomechanics underpins high sauropod diversity in resource-poor environments. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20142114. | 2.6 | 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. | 3.4 | 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. | 3.4 | 2 |
| 60 | Functional adaptation underpinned the evolutionary assembly of the earliest vertebrate skeleton. Evolution & Development, 2014, 16, 354-361. | 2.0 | 9 |
| 61 | Cranial anatomy ofErlikosaurus andrewsi(Dinosauria, Therizinosauria): new insights based on digital reconstruction. Journal of Vertebrate Paleontology, 2014, 34, 1263-1291. | 1.0 | 46 |
| 62 | Finite element, occlusal, microwear and microstructural analyses indicate that conodont microstructure is adapted to dental function. Palaeontology, 2014, 57, 1059-1066. | 2.2 | 30 |
| 63 | Dietary specializations and diversity in feeding ecology of the earliest stem mammals. Nature, 2014, 512, 303-305. | 27.8 | 125 |
| 64 | Digital dissection â€“ using contrastâ€enhanced computed tomography scanning to elucidate hardâ€and softâ€tissue anatomy in the Common Buzzard Buteo buteo. Journal of Anatomy, 2014, 224, 412-431. | 1.5 | 72 |
| 65 | Adaptive plasticity in the mouse mandible. BMC Evolutionary Biology, 2014, 14, 85. | 3.2 | 89 |
| 66 | Feeding biomechanics in Acanthostega and across the fishâ€“tetrapod transition. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20132689. | 2.6 | 45 |
| 67 | A virtual world of paleontology. Trends in Ecology and Evolution, 2014, 29, 347-357. | 8.7 | 205 |
| 68 | Hydrodynamic constraints on the evolution and ecology of planktic foraminifera. Marine Micropaleontology, 2014, 106, 69-78. | 1.2 | 42 |
| 69 | Functional anatomy and feeding biomechanics of a giant <scp>U</scp>pper <scp>J</scp>urassic pliosaur (<scp>R</scp>eptilia: <scp>S</scp>auropterygia) from <scp>W</scp>eymouth <scp>B</scp>ay, <scp>D</scp>orset, <scp>UK</scp>. Journal of Anatomy, 2014, 225, 209-219. | 1.5 | 30 |
| 70 | Feeding Mechanics in Spinosaurid Theropods and Extant Crocodilians. PLoS ONE, 2013, 8, e65295. | 2.5 | 53 |
| 71 | Linking evolution and development: Synchrotron Radiation Xâ€ray tomographic microscopy of planktic foraminifers. Palaeontology, 2013, 56, 741-749. | 2.2 | 28 |
| 72 | Withinâ€guild dietary discrimination from 3â€<scp>D</scp> textural analysis of tooth microwear in insectivorous mammals. Journal of Zoology, 2013, 291, 249-257. | 1.7 | 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. | 7.1 | 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. | 2.6 | 83 |
| 75 | Inter-Vertebral Flexibility of the Ostrich Neck: Implications for Estimating Sauropod Neck Flexibility. PLoS ONE, 2013, 8, e72187. | 2.5 | 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. | 3.4 | 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. | 3.4 | 21 |
| 78 | Models in palaeontological functional analysis. Biology Letters, 2012, 8, 119-122. | 2.3 | 40 |
| 79 | Testing microstructural adaptation in the earliest dental tools. Biology Letters, 2012, 8, 952-955. | 2.3 | 15 |
| 80 | Functional Evolution of the Feeding System in Rodents. PLoS ONE, 2012, 7, e36299. | 2.5 | 146 |
| 81 | Functional Morphometric Analysis of the Furcula in Mesozoic Birds. PLoS ONE, 2012, 7, e36664. | 2.5 | 33 |
| 82 | Cranial biomechanics of Diplodocus (Dinosauria, Sauropoda): testing hypotheses of feeding behaviour in an extinct megaherbivore. Die Naturwissenschaften, 2012, 99, 637-643. | 1.6 | 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. | 2.6 | 49 |
| 84 | Pedal Claw Curvature in Birds, Lizards and Mesozoic Dinosaurs â€“ Complicated Categories and Compensating for Mass-Specific and Phylogenetic Control. PLoS ONE, 2012, 7, e50555. | 2.5 | 63 |
| 85 | The Endocranial Anatomy of Therizinosauria and Its Implications for Sensory and Cognitive Function. PLoS ONE, 2012, 7, e52289. | 2.5 | 70 |
| 86 | Initial radiation of jaws demonstrated stability despite faunal and environmental change. Nature, 2011, 476, 206-209. | 27.8 | 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. | 1.5 | 43 |
| 88 | Sensitivity and ex vivo validation of finite element models of the domestic pig cranium. Journal of Anatomy, 2011, 219, 456-471. | 1.5 | 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. | 1.5 | 82 |
| 90 | Modeling the effects of cingula structure on strain patterns and potential fracture in tooth enamel. Journal of Morphology, 2011, 272, 50-65. | 1.2 | 29 |

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|---|---|---|---|
| 91 | The Response of Cranial Biomechanical Finite Element Models to Variations in Mesh Density. Anatomical Record, 2011, 294, 610-620. | 1.4 | 54 |
| 92 | Functional implications of dicynodont cranial suture morphology. Journal of Morphology, 2010, 271, 705-728. | 1.2 | 31 |
| 93 | Mechanics of the scarf premaxilla-nasal suture in the snout ofLystrosaurus. Journal of Vertebrate Paleontology, 2010, 30, 1283-1288. | 1.0 | 17 |
| 94 | Comparative Feeding Biomechanics of Lystrosaurus and the Generalized Dicynodont Oudenodon. Anatomical Record, 2009, 292, 862-874. | 1.4 | 33 |
| 95 | Neurocranial osteology and systematic relationships ofVaranus(Megalania)priscaOwen, 1859 (Squamata: Varanidae). Zoological Journal of the Linnean Society, 2009, 155, 445-457. | 2.3 | 22 |
| 96 | Morphospace occupation in thalattosuchian crocodylomorphs: skull shape variation, species delineation and temporal patterns. Palaeontology, 2009, 52, 1057-1097. | 2.2 | 72 |
| 97 | Shape and mechanics in thalattosuchian (Crocodylomorpha) skulls: implications for feeding behaviour and niche partitioning. Journal of Anatomy, 2009, 215, 555-576. | 1.5 | 90 |
| 98 | Utility and validity of Middle and Late Triassic â€˜land vertebrate faunachronsâ€™. Journal of Vertebrate Paleontology, 2009, 29, 80-87. | 1.0 | 50 |
| 99 | Patterns of morphospace occupation and mechanical performance in extant crocodilian skulls: A combined geometric morphometric and finite element modeling approach. Journal of Morphology, 2008, 269, 840-864. | 1.2 | 162 |
| 100 | Cranial performance in the Komodo dragon (Varanus komodoensis) as revealed by highâ€resolution 3â€Ð finite element analysis. Journal of Anatomy, 2008, 212, 736-746. | 1.5 | 79 |
| 101 | Establishing a framework for archosaur cranial mechanics. Paleobiology, 2008, 34, 494-515. | 2.0 | 55 |
| 102 | Functional morphology of spinosaur â€˜crocodile-mimicâ€™ dinosaurs. Journal of Vertebrate Paleontology, 2007, 27, 892-901. | 1.0 | 84 |
| 103 | Finite Element Analysis and Understanding the Biomechanics and Evolution of Living and Fossil Organisms. Annual Review of Earth and Planetary Sciences, 2007, 35, 541-576. | 11.0 | 351 |
| 104 | Ecological and evolutionary implications of dinosaur feeding behaviour. Trends in Ecology and Evolution, 2006, 21, 217-224. | 8.7 | 62 |
| 105 | Aspects of comparative cranial mechanics in the theropod dinosaurs Coelophysis, Allosaurus and Tyrannosaurus. Zoological Journal of the Linnean Society, 2005, 144, 309-316. | 2.3 | 89 |
| 106 | Using finite-element analysis to investigate suture morphology: A case study using large carnivorous dinosaurs. The Anatomical Record Part A: Discoveries in Molecular, Cellular, and Evolutionary Biology, 2005, 283A, 349-365. | 2.0 | 107 |
| 107 | A Geographical Information System (GIS) study of Triassic vertebrate biochronology. Geological Magazine, 2005, 142, 327-354. | 1.5 | 48 |
| 108 | Cranial mechanics and feeding in Tyrannosaurus rex. Proceedings of the Royal Society B: Biological Sciences, 2004, 271, 1451-1459. | 2.6 | 146 |

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| 109 | Prey attack by a large theropod dinosaur. Nature, 2002, 416, 387-388. | 27.8 | 10 |
| 110 | Prey attack by a large theropod dinosaur. Nature, 2002, 416, 388-388. | 27.8 | 6 |
| 111 | Cranial design and function in a large theropod dinosaur. Nature, 2001, 409, 1033-1037. | 27.8 | 219 |
| 112 | Morphological Change During The Ontogeny Of The Planktic Foraminifera. Journal of Micropalaeontology, 0, , 2014-017. | 3.6 | 8 |
| 113 | Digital cranial endocast ofRiograndia guaibensis(Late Triassic, Brazil) sheds light on the evolution of the brain in non-mammalian cynodonts. Historical Biology, 0, , 1-18. | 1.4 | 13 |