

CURRICULUM VITAE

Callum Foster Ross

Department of Organismal Biology and Anatomy
University of Chicago
1027 East 57th Street
Chicago IL 60637
Email: rossc@uchicago.edu
Phone (773) 834 7858

CURRENT ACADEMIC POSITIONS

Professor, Organismal Biology and Anatomy, University of Chicago, 2012-present.
Research Associate, Field Museum of Natural History, Department of Zoology, Division of Fishes, 2010-present.

PREVIOUS ACADEMIC POSITIONS

Faculty, Committee on Evolutionary Biology, University of Chicago, 2005 – 2018.
Associate Professor, Organismal Biology and Anatomy, University of Chicago, 2004- 2012.
Associate Professor, Department of Anatomical Sciences, Stony Brook University, 2000 – 2004.
Assistant Professor, Department of Anatomical Sciences, Stony Brook University, 1995 – 2000.
Faculty, Program in Biomedical Engineering, Stony Brook University, September 12, 1995 - 2003.
Postdoctoral Associate & Research Instructor, Department of Anatomical Sciences, Stony Brook University, 1994 - 1995.
J.J. Smieszek Research Fellow and Postdoctoral Research Fellow Department of Anatomy and Human Biology, University of the Witwatersrand, August 1993 – August, 1994.

EDUCATION

Ph.D. Biological Anthropology and Anatomy: "The functions of the postorbital septum and anthropoid origins", Department of Biological Anthropology and Anatomy, Duke University, Durham, North Carolina, USA, 1987-1993.
B.A. Anthropology and Ancient History, University of Auckland, New Zealand, 1984-1987.

TEACHING EXPERIENCE

The Human Body, Pritzker School of Medicine, University of Chicago. Course Director, 2005- present: lectures and labs on gross anatomy, tissue histology, medical imaging, embryology.
Development and Evolution of Neuromechanical Systems, Graduate Course, IGERT Course, Melina Hale Co-Director, Organismal Biology and Anatomy, University of Chicago, 2010-2016.
Evolutionary Biomechanics of Vertebrate Feeding Systems, Graduate Course, Organismal Biology and Anatomy, University of Chicago, 2009, 2013.
Bone, Graduate Course, Organismal Biology and Anatomy, University of Chicago, 2007.
Vertebrate Paleontology (HBA 550), Course Director with C. Forster, Department of Anatomical Sciences, Stony Brook University; Spring, 1997, 1999, 2002, 2004.
Review of Head and Neck Anatomy for Advanced Education Program in Orthodontics and Periodontics; P. Garant Course Director, School of Dental Medicine, Stony Brook University; Fall, 1994-2003.

Regional Human Anatomy for Allied Health Students (HBA 461); B. Demes Course Director; Department of Anatomical Sciences, Stony Brook University; Summer, 1996, 1998, 2000, 2002.
The Body: Human Gross Anatomy for Medical Students (HBA 531); J. Stern Course Director, Department of Anatomical Sciences, Stony Brook University, Fall, 1995, 1997, 1999, 2001, 2003.
Primate Evolution (HBA 564), J. Fleagle Course Director, Department of Anatomical Sciences, Stony Brook University; Spring 1996, Spring 1998.
Postdoctoral Teaching Associate in *Anatomy of the Head, Neck and Trunk for Dental Students* (HBA 521); D. Krause Course Director, Department of Anatomical Sciences, Stony Brook University, Fall, 1994.
Graduate Teaching Assistant in *Primate Evolution* (Drs. Elwyn Simons and Diane Doran, Instructors) Department of Biological Anthropology and Anatomy, Duke University, 1992-1993.
Graduate Teaching Assistant in *Human Gross Anatomy*, Department of Biological Anthropology and Anatomy, Duke University, 1989 – 1990; 1990 – 1991.

UNIVERSITY SERVICE AT UNIVERSITY OF CHICAGO

Director of XROMM Core Facility, 2018-present.
Risk Management Group, Biological Sciences Division, 2018-present.
Council of the University Senate, 2018-2021
Board on Computing Activities and Services, 2017-2020.
University-Wide Disciplinary Committee. 2014-2017.
Ad Hoc Committee on Graduate and Professional School Student International Activities, 2012.
Research Computing Center: Scientific Visualization Initiative Advisory Committee, 2012 – 2016.
Wuhan University Medical Education Reform (WUMER) Project Steering Committee, 2008 – present.
Pritzker Initiative Steering Committee (Medical curriculum reform steering committee), 2006 – 2016.
Committee on (Student) Promotions, Pritzker School of Medicine, University of Chicago, 2005-2012.
Preclinical Curriculum Review Committee, Pritzker School of Medicine, University of Chicago, 2005-present. Chair, 2012-2016.
Committee on Academic Promotions, University of Chicago, 2012-2013.
Committee on Reappointment of Assistant Professors, University of Chicago, 2010-2012.
Institutional Animal Care and Use Committee, University of Chicago, Full member, 2004-2008; Alternate Member and Ad Hoc Member for nonhuman primate protocols, 2008 – 2012.

PROFESSIONAL SERVICE

Illinois Governor's Representative on *Task Force on Best Practices and Licensing of Non-Transplant Organ Donation Task Force*, September 2021-January 2022.
American Association for Anatomy Human Body Donor Task Force (2021-2023).
American Association for Anatomy Human Body Donor Committee (2023-2026).
Board of Directors, *Anatomical Gift Association of Illinois*, 2008 – present, Vice President of the Board, 2009-2011
President of the Board, 2011-present.
Board of Reviewers, *The Anatomical Record*, 2010 - present
National Science Foundation Panel Member: 2008, information available on request.
NIH F32 Review Panel, 2019

Editorial Board, *Journal of Human Evolution*, 2005-2008.

Associate Editor *American Journal of Physical Anthropology*, 2000 – 2004.

External Member, *Professional Accomplishments Evaluation Committee*, National Museum of Natural History, Smithsonian Institution, year available on request.

Manuscript Reviews for *American Journal of Physical Anthropology*; *American Journal of Primatology*; *Anatomical Record*; *Behavioral Ecology and Sociobiology*; *Folia Primatologica*; *International Journal of Primatology*; *Journal of Human Evolution*; *Journal of Anatomy*; *Evolution*, *Journal of Experimental Biology*; *Journal of Theoretical Biology*; *Physiological and Chemical Zoology*, etc.

Grant Reviews for *NSF Physical Anthropology*, *NSF Integrative and Evolutionary Physiology*; *National Institutes of Health*; *Wenner Gren Foundation*; *Engineering and Physical Sciences Research Council of the United Kingdom*; *Research Foundation of Flanders*; *Israel Science Foundation*., etc.

PROFESSIONAL FIELD EXPERIENCE

Feeding ecology research on *Sapajus*, Hacienda Boa Vista, Piaui, Brazil, 2016; Carlos Botelho, Brazil, 2017; Brownsberg, Suriname, 2018.

Paleontological field collecting at Stompoor Kimberlite, South Africa: Co-Director with Dr. R.M.H. Smith; May-June, 1999.

Paleontological field collecting in Late Cretaceous Kirkwood Formation, Grahamstown, South Africa; Co-Director with Drs. C. Forster and W. J. De Klerk; July, 1994; June 1995; June, 1996; June 1997, June 1998, July 1999.

Paleontological field collecting at Gcwihaba and Nqumtsa Hills, Northwest Botswana: Co-Director with Drs. D. Waddle and B. Williams; August, 1994; July, 1995; June 1996; June, 1997.

Paleontological field collecting in Kuiseb River Valley and southeastern Namibia: Director; June-July, 1994.

Archeological excavation East of Mariental, Namibia; Co-Director with Dr. Maciej Henneberg (University of the Witwatersrand); October, 1993.

Preliminary reconnaissance of Tertiary exposures in southeastern Namibia; Director; August, 1993; October, 1993.

Paleontological field collecting near Moghara Oasis, Egypt (Duke University Primate Center/Egyptian Geological Survey); directed by Dr. E.L. Simons (Duke University); Fall 1988.

Paleontological field collecting in the Fayum Province, Egypt (Duke University Primate Center/Egyptian Geological Survey); directed by Dr. E.L. Simons (Duke University); Fall 1988 and Fall 1990.

Paleontological field collecting in the Bighorn Basin, Wyoming, USA; directed by Dr. T.M. Bown (U.S. Geological Survey) and Dr. K.D. Rose (Johns Hopkins University); Two weeks, summer 1988.

Paleontological field collecting in the Magdalena River Valley, Huila Province, Republic of Colombia (Instituto Nacional de Investigaciones Geologico-Mineras [INGEOMINAS] and Duke University); directed by Dr. R.F. Kay, (Duke University); Summer, 1988.

Archeological excavation, New Zealand; directed by Dr. R. Green, Department of Anthropology, Prehistory Section, University of Auckland, New Zealand; Summer, 1987.

CURRENT MEMBERSHIPS IN ACADEMIC SOCIETIES

American Association of Anatomists

American Association of Physical Anthropologists

International Society of Vertebrate Morphology

Society of Integrative and Comparative Biology

RESEARCH INTERESTS

Primate and human evolution; vertebrate feeding biomechanics; motor control of chewing and swallowing; evolutionary neuromechanics; medical education.

HONORS AND AWARDS

Plenary Speaker at *International Congress of Vertebrate Morphologists*, Prague, Czechia, 2019.

Keynote Speaker at *Japanese Society for Dysphagia Rehabilitation*, Niigata, Japan September, 2016.

The role of sensorimotor cortex in control of orofacial behaviors in primates.

Plenary speaker at *1st International Workshop on Evolutionary Changes in the Craniofacial Morphology of Primates*. Institute of Anatomy, Ernst Moritz Arndt University, Greifswald, Germany. 18th-20th September, 2003.

Keynote Speaker at *14th International Symposium on Dental Morphology*. Department of Anatomy & Cell Biology, Ernst Moritz Arndt University, Greifswald, Germany. August 27th-30th, 2008.

Dean's Distinguished Lecture, Pritzker School of Medicine, "Evolution in Medicine" October, 2006.

Nakamura Prize for Best Poster. *International Mastication Symposium*, Brisbane, Australia.

"Modulation of bite force in mammals during mastication". 2006

Member, Academy of Distinguished Medical Educators University of Chicago, Pritzker School of Medicine, October 2008-2011; recognizing significant contributions to the education of Pritzker medical students and excellence in teaching.

Master of Academy of Distinguished Medical Educators, University of Chicago, Pritzker School of Medicine, October 2011. Lifetime Award for extraordinary and long-standing commitment to medical education.

University of Chicago Pritzker School of Medicine Class of 2010, 2016, 2019, 2021: LDH Wood Award for Outstanding Basic Science Teaching.

University of Chicago Pritzker School of Medicine Class of 2009-2021: Favorite Faculty Award.

Juan Comas Student Paper Prize, *American Association of Physical Anthropologists Meetings in Milwaukee Wisconsin* for paper entitled "Muscle attachment and the function of the haplorhine postorbital septum". 1991.

CURRENT GRANT SUPPORT

National Science Foundation, Integrative Organismal Biology Program: "Collaborative Research: Evolution of the hyoid, pharynx and swallowing biomechanics in mammals". IOS-2315501, C.F. Ross, S. Williams (PIs), X.-Z. Luo (Co-PIs). \$754,091.

National Institutes of Health, "Cortical control and biomechanics of tongue movement". NINDS. 1 R01 NS134968-01 C.F. Ross (PI), N.G. Hatsopoulos (Co-PI).

National Institutes of Health, "Coding of Action by Motor & Premotor Cortical Ensembles". 4R01NS045853-12, N. Hatsopoulos PI; C.F. Ross MPI, University of Chicago; December 2018-2023 (\$2.7 million).

Chicago Biological Consortium/Searle Funds, "Bending the Bone—Developing 21st Century Tools for Bony Manipulation in the Operating Room." Catalyst Award C-101. L. Alkureishi, PI (UIC); RR Reid Co-PI, University of Chicago; CF Ross and T.C. He, Consultants, University of Chicago; September 1, 2020-August 31, 2022 (\$104,000)

PAST GRANT SUPPORT

- National Institutes of Health*, “The neural basis of touch and proprioception in the primate orofacial sensorimotor cortex”. 1R01DE027236-01. F. Arce-McShane, PI; C.F. Ross and N. Hatsopoulos MPIs, University of Chicago; April 2018-2023 (\$2.5 million).
- National Science Foundation, Physical Anthropology Program*: “Collaborative Research: Evolution and Biomechanics of Mandibular Form in *Australopithecus anamensis* and *A. afarensis*”. BCS1515165. W. Kimbel, A.B. Taylor, C.V. Ward, C. Robinson, C.F. Ross, Co-PIs. 2014-2019 (\$95,467 at University of Chicago).
- National Science Foundation*, Major Research Instrumentation, “MRI: Acquisition of a Data Lifecycle Instrument (DaLI) for Management and Sharing of Data from Instruments and Observations.” MRI 1626552. H.B. Runesha (Principal Investigator), C.F. Ross (Co-PI), G. Kindlmann (Co-PI), (\$725,558).
- France Chicago Center, FACCTS (France and Chicago Collaborating in the Sciences) Committee*, “Biomechanics and motor control of feeding behavior in the smallest living primates: *Microcebus murinus*”, 2010-2015. (\$15,500).
- National Institutes of Health*, “Neuroplasticity and the role of sensorimotor cortex in control of orofacial function”. R01DE023816-01. C.F. Ross, PI; N. Hatsopoulos University of Chicago; B. J. Sessle. University of Toronto. March 2014-2019 (\$2.5 million).
- National Institutes of Health*, “Improving Physical Infrastructure to Enhance Animal Model Research: Acquisition of equipment for in vivo CT scanning of nonhuman primates in animal research facility” SR01DE023831-04S1. MPI, George Langan. February 2017-January 2018 (\$250,000).
- National Science Foundation, Physical Anthropology Program*: “Collaborative Research: Integrative analysis of capuchin ingestive feeding biomechanics”. NSF 1627206 D. Strait, PI, P. Dechow, I. Grosse, C.F. Ross, B. Wright, Co-PIs. 2015-2018 (\$152,226 at UChicago).
- National Science Foundation* “Major Research Instrumentation: Acquisition of Biplanar Digital Videofluoroscopy for X-ray Reconstruction of Moving Morphology.” MRI 1338036 C.F. Ross, PI; M. Hale, D. Margoliash, M. Westneat, Co-PIs, 2013-2017 (\$559,826)
- National Science Foundation*, “Collaborative Research: The Late Devonian Tetrapodomorph *Tiktaalik roseae*.” Neil Shubin, PI; Callum Ross, Co-PI. 2010-2014.
- Canadian Institutes of Health Research*, Oral Physiology: “Neural Mechanisms of Orofacial Function.” Barry Sessle, PI; Collaborators include C.F. Ross and N. Hatsopoulos, University of Chicago. 2009-2014 (\$360,000 at University of Chicago).
- National Science Foundation*, Division of Graduate Education. Integrative Graduate Education and Research Training Program. “Integrative Training in Motor Control and Movement.” Melina Hale, PI; N. Hatsopoulos, M. McIver, C.F. Ross, N. Shubin, Co-PIs. 2009-2014 (\$3,000,000).
- National Science Foundation: HOMINID Program*: “Collaborative Research: Integrative analysis of hominid feeding biomechanics”. D. Strait, PI, C. Byron, P. Dechow, I. Grosse, P. Lucas, B. Richmond, C.F. Ross, M. Spencer, Q. Wang, B. Wright, Co-PIs. 2009-2014. (\$ 2,500,000: \$406,000 at University of Chicago).
- Biotechnology and Biological Sciences Research Council of the United Kingdom*, “The role of skull flexibility in feeding - an investigation using advanced computer modeling techniques.” Dr. Michael Fagan, University of Hull, PI. Callum Ross, Collaborator, 2010-2013. (\$70,000 over 3 years at University of Chicago).

National Science Foundation, Physical Anthropology Program, Collaborative Research: Integrative analysis of the scaling of primate feeding systems. Callum Ross, PI. 2010-2013. (\$310,000 over 3 years at University of Chicago).

National Science Foundation "Doctoral Dissertation Improvement: Structure, performance and evolution of the primate auditory system". M. Coleman, Co-PI., (\$12,000).

National Science Foundation "The functional morphology of the facial skeleton in hominids and nonhuman primates". D. Strait, PI, P. Dechow, B. Richmond, C. Ross and M. Spencer, Co-PIs. 2003-2005 (\$160,000).

National Science Foundation "In vivo EMG, bone strain, and cineradiography in strepsirrhine primates". 2001-2004 (\$260,167).

Wenner Gren Foundation for Anthropological Research Inc. Anthropoid Origins Symposium. Richard F. Kay, Co-PI, 2000 (\$8,220)

National Science Foundation "Anthropoid origins Symposium". Richard F. Kay, Co-PI, 2000 (\$16,115)

National Geographic Society "Paleontology of Late Cretaceous crater-lake deposits, South Africa". PI with R.M.H. Smith, South African Museum, Cape Town, 1999-2001 (\$19,916).

National Science Foundation "Dissertation Research: Phylogeny of the Tenrecoid Insectivores (Lipotyphla: Mammalia)." Graduate student's grant [Rob Asher] 1997-2000 (\$7,804)

Jurassic Foundation. "Systematic excavation of a "bone-bed" and further exploration of Lower Cretaceous terrestrial sediments in the Algoa and Oudtshoorn Basins, South Africa." Co- Principal Investigator with W. J. De Klerk, Albany Museum, Grahamstown, 1999-2000 (\$2,000).

National Geographic Society Supplement to "Exploration for and excavation of Plio-Pleistocene cave breccias in Ngamiland, northwestern Botswana." Principal Investigator 1999 (\$2,000).

National Science Foundation "Bone strain, electromyography and finite-element modeling of the primate circumorbital region." Principal Investigator (with X. Chen) 1997-2000 (\$103,344).

The Dinosaur Society "The first theropod dinosaur from the Cretaceous of southern Africa: Fossil preparation and further exploration of the Kirkwood Formation." Co-PI with C. A. Forster and W. de Klerk, 1997-1998 (\$8,681).

National Geographic Society "Exploration for and excavation of Plio-Pleistocene cave breccias in Ngamiland, northwestern Botswana." Principal Investigator (with D. Waddle and B. Williams), 1996-1997 (\$24,090).

The Dinosaur Society "Prospecting for early Cretaceous Dinosaurs in the Kirkwood Formation, Algoa Basin, South Africa" Principal Investigator (with C.F. Forster and W.J. DeKlerk), 1996-1997 (\$11,110).

Boise Fund: Prospecting for Tertiary Vertebrate Fossil Localities in Namibia. 1993-1994. (\$900)

Leakey Foundation General Grant: Prospecting for Tertiary Fossil Vertebrate Localities in Namibia: 1994-1995. (\$4,000)

American Museum of Natural History Collection Study Grant: December, 1991-1992.

North Carolina Academy of Science, Robert Bryden Graduate Research Award: 1991.

Duke University Graduate School Dissertation Travel Award: 1991.

Sigma Xi, The Scientific Research Society, Grant-in-Aid of Research: 1991.

National Science Foundation, Dissertation Improvement Grant (Co-Principal Investigator): 1991 (William L. Hylander, Principal Investigator). (\$11,995)

IN PREPARATION

- Prado, FB, Dechow, PC, Iriarte-Diaz, J, Porro, LB, Orsbon, C, Taylor, AB, Ross, CF (in preparation) Biomechanics of the mandible of the New World monkey *Sapajus apella*: bone material properties, in vivo bone strain, and finite element modelling.
- Prado, FB, Freire, AR, Rossi, AC, Kupzcik, K, Ross, CF (in preparation) In vivo bone strain and finite element models of the human and non-human primate mandibles: clinical and evolutionary applications.
- Pryor McIntosh, LC, Strait, DS, Ross, CF, Wang, Q, Opperman, L, Dechow, PC (2021) Trabecular bone morphometry in the primate supraorbital region. *Royal Society Interface* (in revision)
- Caldwell, MW, Nydam RL, Palci, A, Simões, T, Garberoglio, FF, Strong, CRC, Sues, H-D, Ross, CF and de Klerk, WJ. (2022). The oldest known snake from Gondwana (Valanginian, Lower Cretaceous of South Africa) illuminates early snake braincase evolution and palaeobiogeography. *Proceeding of the Royal Society B* (submitted).

SUBMITTED PAPERS

- McParland E, Mitchell JK, Laurence-Chasen, JD, Afolabi O, Aspinwall, LC, Takahashi K, Ross CF, Gidmark NJ (2023) The kinematics of proal chewing in rats. *Journal of Experimental Biology* (submitted)
- Wilken AT, Schultz JA, Luo Z-X, Ross CF. (2023) A new biomechanical model of the mammal jaw based on load path analysis. *Journal of Experimental Biology* (submitted)
- Freire, A, Rossi AC, Taylor AB, Reid RR, Ross CF, Prado FB. Strain during mandibular distraction osteogenesis in Pierre-Robin sequence — a finite element study. *J Biomechanics* (submitted)

PUBLISHED PAPERS

- Laird MF, Ross CF, Kang V, Konow N (2023) Introduction: food processing and nutritional assimilation in animals. *Philos Trans R Soc Lond B Biol Sci.* 2023 12 04; 378(1891):20220559. PMID: 37839455
- Richard BA, Spence M, Rull-Garza M, Tolosa Roba Y, Schwarz D, Ramsay JB, Laurence-Chasen JD, Ross CF, Konow, N. (2023) Rhythmic chew cycles with distinct fast and slow phases are ancestral to gnathostomes. *Philos Trans R Soc Lond B Biol Sci.* [doi: 10.1098/rstb.2022.0539](https://doi.org/10.1098/rstb.2022.0539)
- Panagiotopoulou O, Robinson D, Iriarte-Diaz J, Ackland D, Wilken A, Taylor AB, Ross CF (2023) Dynamic finite element modelling of the macaque mandible during a complete mastication gape cycle of mastication. *Phil Trans B.* [doi: 10.1098/rstb.2022.0549](https://doi.org/10.1098/rstb.2022.0549).
- #170. Laird MF, Iriarte-Diaz J, Byron CD, Granatosky MC, Taylor AB, Ross CF (2023) Gape drives regional variation in temporalis architectural dynamics in tufted capuchins. *Phil Trans B.* [doi: 10.1098/rstb.2022.0550](https://doi.org/10.1098/rstb.2022.0550).
- Stilson, KT, Luo, Z-X, Li, P, Olson, S, Ross, CF (2023) Three-dimensional mandibular kinematics of mastication in the marsupial *Didelphis virginiana*. *Phil Trans B.* [doi: 10.1098/rstb.2022.0548](https://doi.org/10.1098/rstb.2022.0548)
- Arce-McShane FI, Sessle, B, Ram Y, Ross, CF, Hatsopoulos, NG (2023) Multiple regions of sensorimotor cortex encode bite force and gape. *Front. Syst. Neurosci.* 17 [doi: 10.3389/fnsys.2023.1213279](https://doi.org/10.3389/fnsys.2023.1213279)
- Laird MF, Kanno CM, Yoakum, CB, Fogaça, MD, Taylor AB, Ross, CF, Chalk-Wilayto, J, Holmes, MA, Terhune, CE, de Oliveira, JA. (2023) Ontogenetic changes in bite force and gape in tufted capuchins. *Journal of Experimental Biology* jeb.245972. [doi: 10.1242/jeb.245972](https://doi.org/10.1242/jeb.245972). PMID: 37439316.
- Haravu PN, Gonzalez M, Nathan SL, Ross CF, Panagiotopoulou O, Reid RR. (2023) The biomechanics of chewing and suckling in the infant: A potential mechanism for physiologic metopic suture

- closure. *PLoS Comput Biol.* 2023 Jun 22;19(6): e1011227. [doi:10.1371/journal.pcbi.1011227](https://doi.org/10.1371/journal.pcbi.1011227). PMID: 37347795; PMCID: PMC10321651.
- Ross CF, Laurence-Chasen JD, Li P, Orsbon CP, Hatsopoulos NG (2023) Biomechanical and cortical control of tongue movements during chewing and swallowing. *Dysphagia* [doi: 10.1007/s00455-023-10596-9](https://doi.org/10.1007/s00455-023-10596-9). PMID: 37326668.
- Laurence-Chasen JD, Ross CF, Arce-McShane FI, Hatsopoulos NG (2023) Robust cortical encoding of 3D tongue shape during feeding. *Nature Communications* 14:2991. doi: doi.org/10.1038/s41467-023-38586-3.
- Byron C, Reed D, Iriarte-Diaz J, Wang Q, Strait D, Laird MF, Ross CF (2023) Sagittal suture strain in capuchin monkeys (*Sapajus* and *Cebus*) during feeding. *American Journal of Biological Anthropology* [doi: 10.1002/ajpa.24701](https://doi.org/10.1002/ajpa.24701)
- Smith, AL, Davis, J, Panagiotopoulou, O, Taylor, AB, Robinson, C, Ward, CV, Kimbel, WH, Alemseged, Z and Ross CF (2023) Does the model reflect the system? When two-dimensional biomechanics is not 'good enough'. *J. R. Soc. Interface.*202022053620220536. [doi: 10.1098/rsif.2022.0536](https://doi.org/10.1098/rsif.2022.0536).
- Haravu, P, Shang, M, Iriarte-Diaz, J, Reid RR, Ross CF, Panagiotopoulou O. (2022) *Macaca mulatta* is a good model for human mandibular fixation research. *Royal Society Open*. [doi:0.1098/rsos.220438](https://doi.org/10.1098/rsos.220438).
- Gartner, SM, Whitlow, KR, Laurence-Chasen, JD, Granatosky, MC, Ross, CF, Westneat, MW (2022) Suction feeding of West African lungfish (*Protopterus annectens*): XROMM analysis of jaw mechanics, cranial kinesis, and hyoid mobility. *Biology Open* 11 (9): bio059447. DOI: 10.1242/bio.059447
- Forster, CA, De Klerk, WJ, Poole, KE, Chinsamy-Turan, A, Roberts, EM, Ross, CF (2022) *Iyuku raathi*, a new iguanodontian dinosaur from the Early Cretaceous Kirkwood Formation, South Africa. *Anatomical Record* DOI: 10.1002/ar.25038
- Faltings, L, Young, M, Ross, CF, Granatosky, MG (2022) Got rhythm? Rhythmicity differences reflect different optimality criteria in feeding and locomotor systems. *Evolution* 76(9):2181-2190. DOI: 10.1111/evo.14569.
- Ledogar, J, Senck, S, Villmoare, B, Smith, AL, Weber, G, Richmond, B, Dechow, P, Ross, CF, Grosse, I, Wright, B, Wang, Q, Byron, C, Benazzi, S, Carlson, K, Carlson, K, McIntosh, L, van Casteren, A, Strait, D. (2022) Mechanical compensation in the evolution of the early hominin feeding apparatus. *Proceedings of the Royal Society B.* 289: 20220711. doi.org/10.1098/rspb.2022.0711
- Laurence-Chasen, JD, Arce-McShane, FI, Hatsopoulos, NG, Ross, CF (2022) Loss of tactile feedback impairs feeding performance and consistency of tongue-jaw coordination. *Journal of Oral Rehabilitation* doi.org/10.1111/joor.13336.
- Chalk-Wilayto, J, Fogaça, M, Wright, B, van Casteren, A, Fragaszy, D, Izar, P, Visalberghi, E, Strait, D, Ross, CF, Wright, K, Laird, M (2022) Effects of food material properties on food processing efficiency in bearded capuchins. *American Journal of Biological Anthropology* doi.org/10.1002/ajpa.24561.
- Laird, MF, Punjani, Z, Oshay, RR, Wright, BW, Fogaça, MD, van Casteren, A, Izar, P, Visalberghi, E, Fragazy, D, Strait, DS, Ross, CF, Wright, KA. (2022) Feeding postural behaviors and food material and geometric properties in bearded capuchin monkeys (*Sapajus libidinosus*). *American Journal of Biological Anthropology* 178(1): 3–16. doi.org/10.1002/ajpa.24501.

- Whitlow, KR, Ross, CF, Gidmark, NJ, Laurence-Chasen, JD, Westneat, MW (2022) Ceratohyal motion drives mandibular depression and oral cavity volume change in *Polypterus bichir* suction feeding. *J exp. Biol.* 225(3): jeb243283. doi: 10.1242/jeb.243283.
- Mangalam M, Ross CF, Izar P, Visalberghi E, Fragaszy DM (2022) How capuchin monkeys use their semi-prehensile tail. *Current Science* 122(2): 195-200.
- Li P, Ross CF, Luo Z. (2022) Morphological disparity and evolutionary transformations in the primate hyoid apparatus. *Journal of Human Evolution* 162, 103094. doi: 10.1016/j.jhevol.2021.103094
- Mehari-Abraha, H, Iriarte-Diaz, J, Reid, RR, Ross, CF, Panagiotopoulou, O (2022) Fracture fixation technique and chewing side impact jaw mechanics in mandible fracture repair. *Journal of Bone and Mineral Research* doi.org/10.1002/jbm4.10559.
- Feilich, K, Laurence-Chasen, JD, Orsbon, C, Gidmark, NJ, Ross, CF (2021) Twist and chew: three dimensional tongue kinematics during chewing in macaque primates. *Biology Letters* 17:20210431.20210431. doi.org/10.1098/rsbl.2021.0431.
- Teaford, MF, Ungar, PS, Taylor, AB, Vinyard, CJ, Ross, CF, Laird, MF (2021) Grit your teeth and chew your food: Implications of food material properties and abrasives for rates of dental microwear formation in laboratory *Sapajus apella* (Primates). *Palaeogeography, Palaeoclimatology, Paleoecology* 583(4):110644. doi/10.1016/j.palaeo.2021.110644.
- Smith, AL, Robinson, C, Taylor, AB, Panagiotopoulou, O, Davis, J, Ward, CV, Kimbel, WH, Alemseged, Z, Ross, CF (2021) Comparative biomechanics of the *Pan* and *Macaca* mandibles during mastication: Finite element modeling of loading, deformation and strain regimes. *Royal Society Interface* 11: 20210031. doi/10.1098/rsfs.2021.0031.
- Dutel, H, Gröning, F, Sharp, AC, Watson, PJ, Herrel, A, Ross, CF, Jones, MH, Evans, SE, Fagan, MJ (2021) Comparative cranial biomechanics in two lizard species: impact of variation in cranial design. *Journal of Experimental Biology* jeb.234831 doi: 10.1242/jeb.234831.
- Laird, MF, Wright, BW, Rivera, AO, Fogaça, MD, van Casteren, A, Fragaszy, DM, Izar, P, Visalberghi, E, Scott, RS, Strait, DS, Ross, CF, Wright, KA (2020) Ingestive behaviors in bearded capuchins (*Sapajus libidinosus*). *Scientific Reports* 10: 20850.
- Humphries, LS, Reid, RR, Ross, CF, Taylor, AB, Collins, JM, Freire, AR, Rossi, AC, Prado, FB (2020) Biomechanical and morphological analysis of the Pierre Robin Sequence mandible: Finite element and morphometric study. *Anatomical Record* 2020: 1-14. doi.org/10.1002/ar.24543.
- Panagiotopoulou, O, Iriarte-Diaz, J, Mehari-Abraha, H, Taylor, AB, Wilshin, S, Dechow, PC (2020) Biomechanics of the mandible of *Macaca mulatta* during the power stroke of mastication: Loading, deformation, and strain regimes and the impact of food type. *Journal of Human Evolution* 147: doi.org/10.1016/j.jhevol.2020.102865
- Laurence-Chasen, JD, Manafzadeh, AR, Hatsopoulos, N, Ross, CF, Arce-McShane, F (2020) Integrating XMA Lab and DeepLabCut for high-throughput XROMM. *Journal of Experimental Biology* 223: jeb226720. doi.org/10.1242/jeb.226720
- Granatosky, MC, Ross, CF (2020) Differences in muscle moment arms lengths, mechanical advantages, and force vector orientations underlie differing optimality criteria between primate feeding and locomotor systems. *Journal of Anatomy* doi.org/10.1111/joa.13279
- Orsbon, CP, Gidmark, NJ, Gao, T, Ross, CF (2020) XROMM and diceCT reveal a hydraulic mechanism of tongue base retraction in swallowing. *Scientific Reports* 2020 May 19. doi.org/10.1038/s41598-020-64935-z.

- Laird, MF, Granatosky, MC, Taylor, AB, Ross, CF (2020) Muscle architecture dynamics modulate performance of the superficial anterior temporalis muscle during chewing in capuchins. *Scientific Reports* 10: 6410. doi.org/10.1038/s41598-020-63376-y.
- Granatosky, MC, McElroy, E, Lemelin, P, Reilly, SM, Nyakatura, JA, Andrada, E, Kilbourne, BM, Allen, VR, Butcher, MT, Blob, RW, Ross, CF (2020) Variation in limb loading magnitude and timing in tetrapods. *Journal of Experimental Biology* 2020 223. doi: 10.1242/jeb.201525.
- Teaford, MF, Ungar, PS, Taylor, AB, Ross, CF, Vinyard, CJ (2020) The dental microwear of hard-object feeding in laboratory *Sapajus apella* and its implications for dental microwear formation. *American Journal of Physical Anthropology* doi.org/10.1002/ajpa.24000.
- Ram, Y and Ross, CF (2019) Jaw elevator muscle coordination during rhythmic mastication in primates: Are triplets units of motor control? *Brain, Behaviour and Evolution*: doi.org/10.1159/000503890.
- Laird, MF, Ross, CF, O'Higgins, P (2019) Jaw kinematics and facial morphology in humans. *Journal of Human Evolution* 139: 102639. doi:0.1016/j.jhevol.2019.102639
- Mehari-Abraha, H, Iriarte-Diaz, J, Ross, CF, Taylor, AB, Panagiotopoulou, O (2019) The mechanical effect of the periodontal ligament on bone strain regimes in a validated finite element model of a macaque mandible. *Frontiers in Biomechanics* 2019 doi: 10.3389/fbioe
- Kuhn, C, Ross, CF (2019) Development of the urinary and genital systems: A clinically oriented review. In *Operative Manual of Pediatric and Adolescent Reconstruction*, ed. M.S. Gundeti. Jaypee Brothers Medical Publishers Pvt., Ltd. Pp. 103-129.
- Wright, BW, Wright, KA, Strait, DS, Ross, CF, Laird, MF, Van Casteren, A, Scott, R (2019) Taking a big bite: working together to better understand the evolution of feeding in primates. *American Journal of Primatology*. Doi: 10.1002/ajp.22981
- Granatosky, MC, McElroy, E, Laird, MF, Iriarte-Diaz, J, Taylor, AB and Ross, CF (2019) Joint angular excursions during cyclical behaviors differ between tetrapod feeding and locomotor systems. *Journal of Experimental Biology* doi.org/10.1242/jeb.200451.
- Hendges, CD, Patterson, BD, Cáceres, NC, Gasparini GM & Ross, CF (2019) Skull shape and the demands of feeding: a biomechanical study of peccaries (Mammalia, Cetartiodactyla). *Journal of Mammalogy*. 100 (2): 475–486. doi.org/10.1093/jmammal/gyz061.
- Ross, CF, Iriarte-Diaz, J (2019) Evolution, constraint and optimality in primate feeding systems. In Bels, V. Ed. *Feeding In Vertebrates*. Fascinating Life Sciences. Springer Nature, Switzerland. Pp. 787-829. Doi: 10.1007/978-3-030-13739-7_20
- Liu, S, Iriarte-Diaz, J, Hatsopoulos, NG, Ross, CF, Takahashi, K, Chen, Z (2019) Dynamics of motor cortical activity during naturalistic feeding behavior. *Journal of Neural Engineering*. 16(2): 026038. doi.org/10.1088/1741-2552/ab0474
- Granatosky, MC, Bryce, CM, Hanna, J, Fitzsimons, A, Laird, MF, Stilson, K, Wall, CE and Ross, CF (2018) Inter-stride variability triggers gait transitions in mammals and birds. *Proceedings of the Royal Society*. 285 doi.org/10.1098/rspb.2018.1766.
- Ross, CF, Porro, LB, Herrel, A, Evans, SE, Fagan, MJ (2018) Bite force and cranial bone strain in four species of lizards. *Journal of Experimental Biology* 221, jeb180240. doi:10.1242/jeb.180240.
- Arce-McShane, FI, Sessle, BJ, Ross, CF, Hatsopoulos, NG (2018) Primary sensorimotor cortex exhibits complex dependencies of spike-field coherence on neuronal firing rates, field power, and behavior. *Journal of Neurophysiology* 2018 Jul 1;120(1):226-238. doi: 10.1152/jn.00037.2018.

- Taylor, AB, Terhune, C, Toler, M, Holmes, M, Hylander, WL, Ross, CF, Vinyard, CJ (2018) The hard-object feeding sooty mangabey does not have jaw-muscle fiber architecture or leverage that facilitate relatively large bite forces compared to other papionins. *Anatomical Record* 301(2):325-342. DOI: 10.1002/ar.23718.
- Orsbon, CP, Gidmark, NJ, Ross, CF (2018) Dynamic musculoskeletal functional morphology: Integrating diceCT and XROMM. *Anatomical Record* 301(2):378-406. DOI: 10.1002/ar.23714.
- Ram, Y and Ross, CF (2018) Evaluating the triplet hypothesis during rhythmic mastication in primates. *Journal of Experimental Biology* 221(2). pii: jeb165985. DOI: 10.1242/jeb.165985.
- Teaford, MF, Ungar, PS, Taylor, AB, Ross, CF, Vinyard, CJ (2017) *In vivo* rates of dental microwear formation in laboratory primates fed different food items. *Biosurface and Tribology* DOI: 10.1016/j.bsbt.2017.11.005
- Panagiotopoulou, O, Iriarte-Diaz, J, Wilshin, S, Dechow, PC, Taylor, AB, Mehari-Abraha, H, Aljunid, SF, Ross, CF (2017) *In vivo* bone strain and finite element modeling of a rhesus macaque mandible during mastication. *Zoology* 134: 13-29. DOI: 10.1016/j.zool.2017.08.010
- Iriarte-Diaz, J, Terhune, C, Taylor, AB, Ross, CF (2017) Functional correlates of the position of the axis of rotation of the mandible during chewing in non-human primates. *Zoology* 124: 106-118. DOI: 10.1016/j.zool.2017.08.006
- Nakamura, Y, Iriarte-Diaz, J, Arce-McShane, F, Orsbon, CP, Brown, KA, Eastment, M, Inoue, M, Ross, CF, Takahashi, K (2017) Sagittal plane kinematics of the jaw and hyolingual apparatus during swallowing in *Macaca mulatta*. *Dysphagia* 32(5): 663-677 DOI: 10.1007/s00455-017-9812-4.
- Ross, CF, Iriarte-Diaz, J, Platts, E, Walsh, T, Heins, L, Gerstner, GE, Taylor, AB (2017) Scaling of rotational inertia of primate mandibles. *Journal of Human Evolution* 106: 119-132. DOI: 10.1016/j.jhevol.2017.02.007.
- Ledogar JA, Benazzi, S., Smith AL, Weber GW, Grosse IR, Ross CF, Richmond BG, Wright BW, Byron C., Strait, DS, Wang, Q, Dechow, PC. (2017) The biomechanics of bony facial “buttresses” in South African australopiths: an experimental study using finite element analysis. *Anatomical Record* 300:171–195. DOI: 10.1002/ar.23492
- Ross, CF (2016) Skull diversity. In *International Encyclopedia of Primatology*. Editor in Chief, Agustín Fuentes. John Wiley and Sons, Inc. DOI: 10.1002/9781119179313.wbprim0320
- Pryor LC, Strait DS, Ledogar JA, Smith AL, Ross CF, Wang Q, Opperman LA, Dechow PC. (2016) Internal bone architecture in the zygoma of *Homo* and *Pan*. *Anatomical Record* 299: 1704-1717. DOI: 10.1002/ar.23499
- Ledogar JA, Dechow PC, Wang Q, Gharpure P, Gordon AD, Baab KL, Smith AL, Weber GW, Grosse IR, Ross CF, Richmond BG, Wright BW, Byron C, Wroe S, Strait DS. (2016) Human feeding biomechanics: performance, variation, and functional constraints. *PeerJ* 4:e2242 DOI.org/10.7717/peerj.2242
- Ross, CF, J Iriarte-Diaz, D Reed, TA. Stewart, AB Taylor (2016) *In vivo* bone strain in the mandibular corpus of *Sapajus* during different oral food processing behaviors. *Journal of Human Evolution* 98: 36-65. DOI: 10.1016/j.jhevol.2016.06.004
- Gharpure, P, Kontogiorgos, E, Opperman, L, Ross, CF, Strait, DS, Smith, AL, Pryor, L, Wang, Q, Dechow, PC (2016) Elastic properties of chimpanzee craniofacial cortical bone *Anatomical Record* 299: 1718-1733. DOI: 10.1002/ar.23466
- Prado, FB, Freire, AR, Rossi, AC, Ledogar, JA, Smith, AL, Dechow, PC, Strait, DS, Voigt, T, Ross, CF (2016) Review of in vivo bone strain studies and finite element models of the zygomatic complex in

- humans and non-human primates: Implications for clinical research and practice. *Anatomical Record* 299: 1753-1778. DOI: 10.1002/ar.23486
- Mochizuki, Y. et al. (56 authors) (2016) Similarity in neuronal firing regimes across mammalian species. *The Journal of Neuroscience* 36(21): 5736-5747. DOI: 10.1523/jneurosci.0230-16.2016
- Arce-McShane, FI, Takahashi, K, Ross, CF, Sessle, BJ, Hatsopoulos, NG (2016) Primary motor and sensory cortical areas communicate via spatiotemporally coordinated networks at multiple frequencies. *Proceedings of National Academy of Sciences* 113 (18): 5083-5088. DOI: 10.1073/pnas.1600788113
- Ledogar, JA, Smith AL, Benazzi S, Weber GW, Spencer MA, Carlson KB, McNulty KP, Dechow, PC, Grosse, IR, Ross CF, Richmond, BG, Wright, BW, Wang, Q, Byron, C., Carlson, K.J., de Ruiter, D.J., Berger, L.R., Tamvada, K., Pryor, L.C., Berthaume, M.A., Strait, DS (2016) Mechanical evidence that *Australopithecus sediba* was limited in its ability to eat hard foods. *Nature Communications* 7, 10596
- Subramaniam, NP, Hyttinen, J, Hatsopoulos, NG, Ross, CF, Takahashi, K (2015) Recurrence network analysis of multiple local field potential bands from the orofacial portion of primary motor cortex. Conference Proceedings of the IEEE *Engineering in Medicine and Biology Society*, 2015: 5343-5346. DOI: 10.1109/EMBC.2015.7319598
- Best, MD, Nakamura, Y, Kijak, NA, Allen, MJ, Lever, TE, Hatsopoulos, NG, Ross, CF; Takahashi, K (2015). Semiautomatic marker tracking of tongue positions captured by videofluoroscopy during primate feeding. Conference Proceedings of the IEEE *Engineering in Medicine and Biology Society*, 2015: 5347-5350. DOI: 10.1109/EMBC.2015.7319599.
- Taylor, AB, Yuan, T, Ross, CF, Vinyard, CJ (2015). Jaw-muscle force and excursion scale with negative allometry in platyrrhine primates. *American Journal of Physical Anthropology* 158 (2): 1096-8644. DOI: 10.1002/ajpa.22782
- Toussaint, S, Herrel, A, Ross, CF, Aujard, F, Pouydebat, E (2015). Substrate diameter and orientation in the context of food type in the Gray Mouse Lemur, *Microcebus murinus*: Implications for the origins of grasping in Primates. *International Journal of Primatology* 01/2015; DOI:10.1007/s10764-015-9844-2
- Thomas, P, Pouydebat, E, Hardy, I, Aujard, F, Ross, CF, Herrel, A (2015) Sexual dimorphism in bite force in the grey mouse lemur. *Journal of Zoology* 296(2). DOI: 10.1111/jzo.12225
- Aiello, BR, Iriarte-Diaz, J, Blob RW, Butcher MT, Carrano, MT, Espinoza NR, Main RP, Ross, CF (2015) Bone strain magnitude is correlated with bone strain rate in tetrapods: implications for models of mechanotransduction. *Proceedings of the Royal Society B* 282 (1810) DOI: 10.1098/rspb.2015.0321
- Smith AL, Benazzi S, Ledogar JA, Tamvada K, Pryor Smith LC, Weber GW, Spencer MA, Dechow PC, Grosse IR, Ross CF and others. (2015). Biomechanical implications of intraspecific shape variation in chimpanzee crania: moving towards an integration of geometric morphometrics and finite element analysis. *Anatomical Record* 298(1): 122-144. DOI: 10.1002/ar.23074.
100. Smith AL, Benazzi S, Ledogar JA, Tamvada K, Pryor Smith LC, Weber GW, Spencer MA, Lucas, PW, Michael, S, Shekeban, A, Al-Fadhalah, K, Almusallam, AS, Dechow, PC, Grosse, IR, Ross CF and others. (2015). The feeding biomechanics and dietary ecology of *Paranthropus boisei*. *Anatomical Record* 298(1): 145-167. DOI: 10.1002/ar.23073

- Porro LB, Ross, CF, Iriarte-Diaz, J, O'Reilly, JC, Evans, SE, Fagan, M (2014) In vivo cranial bone strain and bite force in the agamid lizard *Uromastix geyri*. *The Journal of Experimental Biology* 217(11): 1983-1992.
- Ross, CF, J. Iriarte-Diaz (2014) What does feeding system morphology tell us about feeding? *Evolutionary Anthropology*. 23(3): 105-120.
- Arce, F.I., Hatsopoulos, NG, Lee, J.-C., Ross, CF, Sessle, B.J. (2014) Modulation dynamics in the orofacial sensorimotor cortex during motor skill acquisition. *Journal of Neuroscience* 34(17): 5985-97.
- Orsbon, C, Kaiser, R, Ross, CF (2014) Physician opinions about an anatomy core curriculum: A case for medical imaging and vertical integration. *Anatomical Sciences Education* 7: 251-261
DOI: 10.1002/ase.1401
- Toussaint, S, Reghem, E, Chotard, H, Herrel, A, Ross, CF, Pouydebat, E (2013) Food acquisition on arboreal substrates by the grey mouse lemur: implication for primate grasping evolution. *Journal of Zoology* 291: 235-242
- Porro, LB, Metzger K, Iriarte-Diaz, J, Ross, CF (2013) *In vivo* bone strain and finite element modeling of the mandible of *Alligator mississippiensis*. *Journal of Anatomy* 223(3): 195-227.
- Arce, FI, Lee, J-C, Ross, CF, Sessle, BJ, Hatsopoulos, N (2013) Directional information from neuronal ensembles in the primate orofacial sensorimotor cortex. *Journal of Neurophysiology* 110: 1357-1369.
- Strait, DS, Constantino P, Lucas, PW, Richmond, BG, Spencer, MA, Dechow, PC, Ross, CF, Grosse IR, Wright, BW, Wood, BA et al. (2013). Viewpoints: Diet and dietary adaptations in early hominins: The hard food perspective. *American Journal of Physical Anthropology* 151(3): 339-55.
- Reed, DA, Scapino, RP, Ross, CF, Chen, D, Diekwisch, TH (2013) Developmental and evolutionary perspectives on fibrous cartilage in TMJ tissue engineering. In: Greene C, Laskin D, editors. *Treatment of TMDs: Bridging the Gap Between Advances in Research and Clinical Patient Management*. Chicago: Quintessence Publishing Co.
- Takahashi, K, Pesce L., Best M., Iriarte-Diaz J., Kim S., Coleman T.P., Hatsopoulos N.G., and Ross, CF (2012) Granger causality analysis of state dependent functional connectivity of neurons in orofacial motor cortex during chewing and swallowing. *Proceedings of 6th International Conference on Soft Computing and Intelligent Systems, Kobe, Hyogo, Japan Nov., 2012*: 1067-1071.
- Strait, DS, Weber, GW, Constantino, P., Lucas, PW, Richmond, BG, Spencer, MA, Dechow, PC, Ross, CF, Grosse, IR, Wright, BW, Wood, BA, Wang, Q, Byron, CD, Slice, DE, 2012. Microwear, mechanics and the feeding adaptations of *Australopithecus africanus*. *Journal of Human Evolution* 62: 165-168.
- Wang, Q, Wood, SA, Grosse, IR, Ross, CF, Zapata U, Byron, CD, Wright BW, Strait DS (2012) The role of the sutures in biomechanical dynamic simulation of a macaque cranial finite element model: Implications for the evolution of craniofacial form. *The Anatomical Record* 295: 278-288.
- Phillips, AW, Smith, SG, Ross, CF, Straus, CM (2012) Direct correlation of radiologic and cadaveric structures in a gross anatomy course. *Medical Teacher* 34: 779-784.
- Ross, CF, Blob, RW, Carrier, D, Daley, MA, Deban, S, Demes, B, Gripper, J, Kilbourne, B, Iriarte-Diaz, J, Landberg, T, Polk, JD, Schilling, N, Vanhooydonck, B (2012) Evolution of locomotor rhythmicity in tetrapods. *Evolution* 67(4): 1209-1217. DOI: 10.1111/evo.12015

- Williams, BA, Ross, CF, Frost, SR, Waddle, D, Gabadirwe, M, Brook, G (2012) Fossil *Papio* cranium from !Ncumtsa (Koanaka) Hills, western Ngamiland, Botswana. *American Journal of Physical Anthropology* 149: 1-17. DOI: 10.1002/ajpa.22093
- Phillips, AW, Smith, SG, Ross, CF, Straus, CM (2012) Improved understanding of human anatomy through self-guided radiological anatomy modules. *Academic Radiology* 19: 902-907.
- Ross, CF, Iriarte-Diaz, J, Nunn, CL (2012). Innovative approaches to the relationship between diet and mandibular morphology in primates. *International Journal of Primatology* 33: 632-660.
- Berthaume, M, Dechow, PC, Iriarte-Diaz, J, Ross, CF, Strait, DS, Wang, Q, Grosse, IR (2012). Probabilistic finite element analysis of a craniofacial finite element model. *Journal of Theoretical Biology* 300: 242-253.
- Ross, CF (2011) Public Anatomy: History and Potential, In *Controversial Bodies: Thoughts on the Public Display of Plastinated Corpses*. John Lantos (Editor), Johns Hopkins University Press, pp. 63-72.
- Konow, N, Herrel, A, Ross, CF, Williams, SH, German, RZ, Sanford, CPJ, Gintof, C (2011) Evolution of chewing jaw and hyoid muscle activity patterns in gnathostomes. *Integrative and Comparative Biology* 51(2) 235-246.
- Iriarte-Diaz, J, Reed, DA, Ross, CF (2011) Sources of variance in temporal and spatial aspects of jaw kinematics in two species of primates feeding on foods of different properties. *Integrative and Comparative Biology* 51(2): 307-319. doi:10.1016/j.jbiomech.2011.03.022).
- Wood, S.A., Strait, DS, Dumont, E.R., Ross, CF, Grosse, I.R. (2011) The effects of modeling simplifications on craniofacial finite element models: The alveoli (tooth sockets) and periodontal ligaments. *Journal of Biomechanics* 44: 1831-1838.
- Porro, LB, Holliday, C. M., Anapol, F., Ontiveros, L.C., Ontiveros, L.P., Ross, CF (2011) Free body analysis, beam mechanics, and finite element modeling of the mandible of *Alligator mississippiensis*. *Journal of Morphology* 272 (8): 910-937. DOI: 10.1002/jmor.10957.
- Terhune, C., Iriarte-Diaz, J Taylor, A., Ross, CF (2011) The instantaneous center of rotation of the mandible in non-human primates. *Integrative and Comparative Biology* 51(2): 320-332.
- Ross, CF, Berthaume, M., Iriarte-Diaz, J Dechow, PC, Porro, LB, Richmond, BG, Spencer, M. and Strait, D. (2011) *In vivo* bone strain and finite-element modeling of the craniofacial haft in catarrhine primates. *Journal of Anatomy* 218: 112-141.
- Reed, DA, Porro, LB, Iriarte-Diaz, J, Lemberg, J, Holliday, CM, Anapol, F and Ross, CF (2011) The impact of bone and suture material properties on mandibular function in *Alligator mississippiensis*: testing theoretical phenotypes with finite element analysis. *Journal of Anatomy* 218: 59-74.
- Chalk, J, Richmond, BG, Ross, CF, Strait, DS, Wright, BW, Spencer, MA, Wang, Q, Dechow, PC (2011) A finite element analysis of masticatory stress hypotheses. *American Journal of Physical Anthropology* 145:1-10.
- Reed, DA and Ross, CF (2010) The influence of food material properties on jaw kinematics in the primate, *Cebus*. *Archives of Oral Biology* 55: 946-962.
- Bastir, M, Rosas, A, Stringer, CB, Cuétara, JM, Kruszynski, R, Weber, GW, Ross, CF and Ravosa, MJ(2010) Effects of brain size and facial size on the evolution of the basicranium in *Homo*. *Journal of Human Evolution* 58(5): 424-431.
- Williams, B.A., Kay, R.F., Kirk, E.C., Ross, CF (2010) *Darwinius masillae* – A reply to Franzen et al. (2009). *Journal of Human Evolution*. 59: 567-573.
- Gintof, C, Konow, N, Ross, CF, Sanford, CPJ (2010) Rhythmicity in teleost chewing: A comparison with amniotes. *Journal of Experimental Biology* 213: 1868-1875.

- Ravosa, MJ, Ross, CF, Williams, SH, Costley, DB (2010) Allometry of masticatory loading patterns in mammals. *Anatomical Record* 293: 557-571.
- Strait, DS, Grosse, I., Dechow, PC, Smith, AL, Wang, Q, Weber, GW, Neubauer, S., Slice, DE, Chalk, J, Richmond, BG, Lucas, PW, Spencer, MA, Schrein, C, Wright, BW, Byron, CD, Ross, CF (2010) The structural rigidity of the cranium of *Australopithecus africanus*: implications for diet, dietary adaptations and the allometry of feeding biomechanics. *Anatomical Record* 293: 582-593.
- Ross, CF, Baden, AL, Georgi, JA, Herrel, A, Metzger, KA, Reed, DA, Schaerlaeken, V, Wolff, MS (2010) Chewing variation in lepidosaurs and primates. *Journal of Experimental Biology* 213: 572-584.
- Zapata, U, Metzger, KA, Wang, Q, Elsey, RM, Ross, CF, Dechow, PC (2010) Material properties of mandibular cortical bone in the American alligator, *Alligator mississippiensis*. *Bone* 46: 860-867.
- Herrel, A, Schaerlaeken, V, Moravec, J, Ross, CF (2009) Sexual shape dimorphism in tuatara. *Copeia* 2009 (4): 727-731.
- Ross, CF and Martin, RD (2009) The role of vision in the origin and evolution of primates. In *Evolutionary Neuroscience*. Jon Kaas (ed.). New York: Academic Press, pp. 819-838.
- Forster, C, Farke, A, McCartney, J, de Klerk, W, Ross, CF (2009) A "Basal" (non-avetheropod) tetanuran from the Lower Cretaceous Kirkwood Formation of South Africa. *Journal of Vertebrate Paleontology* 29: 283-285.
- Strait, DS, Weber, GW, Neubauer, S, Chalk, J., Richmond, BG, Lucas, PW, Spencer, MA, Schrein, C., Dechow, PC, Ross, CF, Grosse, IR, Wright, BW, Constantino, P, Wood, BA, Lawn, B, Hylander, WL, Wang, Q, Byron, CD, Slice, DE, Smith, AL (2009). The feeding biomechanics and dietary ecology of *Australopithecus africanus*. *Proceedings of the National Academy of Sciences* 106(7): 2124-2129.
- Ross, CF, Washington, RL, Eckhardt, A, Reed, DA, Vogel, E, Dominy, N, Machanda, Z (2009) Ecological consequences of scaling of chew cycle duration and daily feeding time in Primates. *Journal of Human Evolution* 56: 570-585.
- Ross, CF, Reed, DA, Washington, RL, Eckhardt, A, Anapol, F, Shahnoor, N (2009) Scaling of chew cycle duration in Primates. *American Journal of Physical Anthropology* 138: 30-44.
- Schaerlaeken, V, Herrel, A, Aerts, P, Ross, CF (2008) The functional significance of the lower temporal bar in *Sphenodon punctatus*. *Journal of Experimental Biology* 211: 3908-3914.
- Herrel, A, Schaerlaeken, V, Ross, CF, Meyers, JJ, Nishikawa, K, and Aerts, P (2008) Electromyography and the evolution of motor control: limitations and insights. *Integrative and Comparative Biology*. 48 (2): 261-271.
- Wang, Q, Dechow, PC, Wright, BW, Ross, CF, Strait, DS, Richmond, BG, Spencer, MA (2008) Surface strain on bone and sutures in a monkey facial skeleton: an *in vitro* method and its relevance to finite element analysis. In: *Primate Craniofacial Function and Biology*. Vinyard C.J., Ravosa M.J. and Wall C.E., (eds.). Springer: New York, pp. 173-198.
- Strait, DS, Wright, BW, Richmond, BG, Ross, CF, Dechow, PC, Spencer, MA, Wang, Q (2008). Craniofacial strain patterns during premolar loading: Implications for human evolution. In: *Primate Craniofacial Function and Biology*. Vinyard C.J., Ravosa M.J. and Wall C.E., (eds.). Springer: New York, pp. 149-172.
- Ross, CF (2008) Does the primate face torque? In: *Primate Craniofacial Function and Biology*. Vinyard C.J., Ravosa M.J. and Wall C.E., (eds.). Springer: New York. Pp. 63-81.

- Anapol, F, Shahnoor, N, and Ross, CF (2008) Scaling of reduced physiologic cross-sectional area in primate muscles of mastication. In: *Primate Craniofacial Function and Biology*. Vinyard C.J., Ravosa M.J. and Wall C.E., (eds.). Springer: New York. Pp. 201-216.
- Herrel, A, Schaerlaeken, V, Meyers, JJ, Metzger, KA, and Ross, CF (2007) The evolution of cranial design and performance in squamates: consequences of skull bone reduction on feeding behavior. *Integrative and Comparative Biology* 47:107-117.
- Ross, CF, Eckhardt, A, Herrel, A, Hylander, WL, Metzger, KA, Schaerlaeken, V, Washington, RL, Williams, SH (2007) Modulation of intra-oral processing in mammals and lepidosaurs. *Integrative and Comparative Biology* 47: 118-136.
- Strait, DS, Richmond, BG, Spencer, MA, Ross, CF, and Wood, BA (2007) Masticatory biomechanics and its relevance to early hominid phylogeny. *Journal of Human Evolution* 52: 585-599.
- Ross, CF, Dharia, R, Herring, SW, Hylander, WL, Liu, Z-J, Rafferty, KL, Ravosa, MJ, Williams, SH (2007) Modulation of mandibular loading and bite force in mammals during mastication. *Journal of Experimental Biology* 210: 1046-1063
- Hall, MI and Ross, CF (2007) Eye shape and activity pattern in birds. *Journal of Zoology* 271: 437-444.
- Ross, CF and Kirk, EC (2007) Evolution of eye size and shape in primates. *Journal of Human Evolution* 52:294-313.
- Ross, CF and Martin, RD (2007) The role of vision in the origin and evolution of primates. In *Evolution of Nervous Systems. Volume 4: The Evolution of Primate Nervous Systems*. Todd M. Preuss and Jon Kaas (eds). Oxford: Elsevier, pp. 59-78.
- Heesy, CP, Ross, CF and Demes, BD (2006) Oculomotor stability and the functions of the postorbital bar and septum. In *Primate Origins: Adaptation and Evolution*, M.J. Ravosa and M. Dagosto (eds.). New York: Kluwer Academic/Plenum Publishers, pp. 257-283.
- Ross, CF, Hall, M.I., and Heesy, C.P. (2006) Were basal primates nocturnal? Evidence from eye and orbit shape. In *Primate Origins: Adaptation and Evolution*, M.J. Ravosa and M. Dagosto (eds.). New York: Kluwer Academic/Plenum Publishers, pp. 233-256.
- Trueb, L., Ross, CF, and Smith, R. (2005) A new pipoid anuran from the Late Cretaceous of South Africa. *Journal of Vertebrate Paleontology* 25(3): 533-547.
- Martin, R.D., and Ross, CF (2005). The evolutionary and ecological context of primate vision. In *The Primate Visual System*. Ed, Jan Kremers, John Wiley & Sons; pp. 1-36.
- Hylander, WL, Wall, C.E., Vinyard, C., Ross, CF, Ravosa, MJ J., Williams, S., and Johnson, K.R. (2005). Temporalis function in anthropoids and strepsirrhines: an EMG study. *American Journal of Physical Anthropology* 128: 35-56.
- Strait, D., Wang, Q, Dechow, PC, Ross, CF, Richmond, B., Spencer, M., Patel, and B.A. (2005) Modeling elastic properties in finite element analysis: how much precision is needed to produce an accurate model? *Anatomical Record* 283A: 275-287.
- Ross, CF, Patel B.A., Slice, D.E., Strait, D., Dechow, P.C, Richmond, B., and Spencer, M. (2005) Modeling masticatory muscle force in finite-element analysis: sensitivity analysis using principal coordinates analysis. *Anatomical Record* 283A: 288-299.
- Metzger, K.A, Daniel, W., Ross, CF (2005) Comparison of beam theory and finite-element analysis to *in vivo* bone strain in the alligator cranium. *Anatomical Record* 283A: 331-348.
- Richmond, BG, Wright, B., Grosse, I., Dechow, PC, Ross, CF, Spencer, M., Strait, DS (2005). Finite Element Analysis in functional morphology. *Anatomical Record* 283A: 259-274.
- Ross, CF (2005) Finite-element modeling in vertebrate biomechanics. *Anatomical Record* 283A: 253-8.

- Ross, CF and Metzger, KA (2004) Bone strain gradients and optimization in tetrapod skulls. *Annals of Anatomy* 186: 387-396.
- Dominy, N.J., Ross, CF, Smith, T.D. (2004) Evolution of primate sensory systems: past, present and future. *Anatomical Record* 281A: 1078-1082.
- Coleman, M.N. and Ross, CF (2004) Primate auditory diversity and its influence on hearing performance. *Anatomical Record* 281A:1123-1137.
- Hylander, WL, Ravosa, MJ, and Ross, CF (2004) Jaw muscle recruitment patterns during mastication in anthropoids and prosimians. In F. Anapol, R. German, & N. Jablonski, eds., *Shaping Primate Evolution*. Cambridge: Cambridge University Press. Pp. 229-257.
- Ross, CF, Henneberg, M., Richard, S., and Ravosa, MJ (2004) Curvilinear and geometric modeling of basicranial flexion in a phylogenetic context: Is it adaptive? Is it constrained? *Journal of Human Evolution* 46: 185-213
- Ross, CF and R.F. Kay (2004) Anthropoid origins: Retrospective and prospective. In, C.F. Ross and R.F. Kay, eds., *Anthropoid Origins: New Visions*. New York: Kluwer Academic/ Plenum Publishers, pp. 701-737.
- Ross, CF (2004) The tarsier fovea: functionless vestige or nocturnal adaptation? In, C.F. Ross and R.F. Kay, eds., *Anthropoid Origins: New Visions*. New York: Kluwer Academic/ Plenum Publishers. pp. 477-537.
- Ross, CF and R.F. Kay (2004) Evolving perspectives of Anthrozoidea. In, C.F. Ross and R.F. Kay, eds., *Anthropoid Origins: New Visions*. New York: Kluwer Academic/ Plenum Publishers, pp. 3-41.
- Kay, R. F., Williams, B. A., Ross, CF, Takai, M., and Shigehara, N. (2004). Anthropoid origins: a phylogenetic analysis. In: Ross, CF and Kay, R. F. (eds.): *Anthropoid Origins: New Visions*. Kluwer Academic/Plenum Publishers, New York, pp. 91-135.
- Heesy, C.P. and Ross, CF (2004) Mosaic evolution of activity pattern, diet, and color vision in haplorhine primates. In, C.F. Ross and R.F. Kay, eds., *Anthropoid Origins: New Visions*. New York: Kluwer Academic/ Plenum Publishers, pp. 665-698.
- Ross, CF, Lockwood, C., Fleagle, J.G. and Jungers, W.L. (2002) Adaptation and behavior in the primate fossil record. In J.M. Plavcan, R.F. Kay, W.L. Jungers & C.P. Van Schaik, eds. *Reconstructing Behavior in the Primate Fossil Record*. New York: Kluwer Academic/Plenum Publishers. Pp. 1-41.
- Ross, CF (2001) *In vivo* function of the craniofacial haft: The interorbital "pillar". *American Journal of Physical Anthropology* 116: 108-139.
- Heesy C.P. and C.F. Ross (2001) Evolution of activity patterns and chromatic vision in primates: Morphometrics, genetics and cladistics. *Journal of Human Evolution* 40: 111-149.
- Lieberman, D.E., Ross, CF, Ravosa, MJ(2000) The primate cranial base: ontogeny, function and integration. *Yearbook of Physical Anthropology* 43: 117-169.
- Ross, CF (2000) Into the light: The origin of Anthrozoidea. *Annual Review of Anthropology* 29: 147-194.
- Ross, CF, and Covert, H.H. (2000) The petrosal of *Omomys carteri* and the evolution of the primate basicranium. *Journal of Human Evolution* 39: 225-251.
- Hylander, WL, Ravosa, MJ, Ross, CF, Wall, C. E. and Johnson, K.R. (2000) Symphyseal fusion and jaw-adductor muscle force: An EMG study. *American Journal of Physical Anthropology* 112: 469-492.
- Ross, CF and Hylander, WL (2000) Electromyography of the anterior temporal muscles of *Aotus* and the function of the anthropoid postorbital septum. *American Journal of Physical Anthropology* 112: 455-468.

- Ross, CF and Wall, C. (2000) Mammalian feeding and primate evolution. *American Journal of Physical Anthropology* 112: 449-453.
- De Klerk, W.J., Forster, C. A., Sampson, S.D., Chinsamy, A. and Ross, CF (2000) A new carnivorous dinosaur from South Africa: Coelurosaurian distributions in Gondwana. *Journal of Vertebrate Paleontology* 20: 324-332.
- Strait, DS and Ross, CF (1999) Kinematic data on primate head and neck posture: implications for the evolution of basicranial flexion and an evaluation of registration planes. *American Journal of Physical Anthropology* 108: 205-222.
- Ross, CF, H.-D. Sues and de Klerk, W. (1999). Lepidosaurian fossils from the lower Cretaceous of South Africa. *Journal of Vertebrate Paleontology*. 19(1): 21-27.
- Hylander, WL, Ravosa, MJ, Ross, CF and Johnson, K.R. (1998) Mandibular corpus strain in primates: Further evidence for the relationship between symphyseal fusion and jaw-adductor muscle force. *American Journal of Physical Anthropology* 107:257-271.
- Ross, CF, Williams, B. A., and Kay, R.F. (1998) Phylogenetic analysis of anthropoid relationships. *Journal of Human Evolution* 35: 221-306.
- Kay, R.F., Ross, CF, Williams, B. A. and Johnson, D. (1997) Cladistic analysis and anthropoid origins: Response. *Science* 278: 2135-2136.
- Kay, R.F., Ross, CF, and Williams, B. A. (1997) Anthropoid origins. *Science* 275: 797-804.
- Ross, CF (1996) An adaptive explanation for the origin of the Anthrozoidea (Primates). *American Journal of Primatology* 40(2): 205-230
- Ross, CF and Hylander, WL (1996) *In vivo* and *in vitro* bone strain analysis of the circumorbital region of *Aotus* and the function of the postorbital septum. *American Journal of Physical Anthropology* 101(2): 183-215.
- Ross, CF and Henneberg, M. (1995) Basicranial flexion, relative brain size and facial kyphosis in *Homo sapiens* and some fossil hominids. *American Journal of Physical Anthropology* 98: 575-593.
- Ross, CF (1995) Muscular and osseous anatomy of the primate anterior temporal fossa and the functions of the postorbital septum. *American Journal of Physical Anthropology* 98: 275-306.
- Ross, CF (1995) Allometric and functional influences on primate orbit orientation and the origins of the Anthrozoidea. *Journal of Human Evolution* 29: 201-227
- Ravosa, MJ and Ross, CF (1994) Allometry and heterochrony in *Alouatta palliata* and *Alouatta seniculus*. *American Journal of Primatology* 33: 277-299.
- Ross, CF (1994) Craniofacial evidence for anthropoid and tarsier relationships. In Fleagle, J.G. and Kay, R.F. (eds.), *Anthropoid Origins*. New York: Plenum Press, pp. 469-547.
- Ross, CF (1993) The functions of the postorbital septum and anthropoid origins. Ph.D. Dissertation, Duke University.
- Ross, CF and Ravosa, MJ (1993) Basicranial flexion, relative brain size and facial kyphosis in nonhuman primates. *American Journal of Physical Anthropology* 91: 305-324.
- Ross, CF (1987) A misuse of evolutionary models in archaeology: "The Evolution of the Polynesian Chiefdoms". *Archaeology in Oceania*. 22: 33-37.

EDITED VOLUMES

- Ross, CF (2005), Co-Guest Editor, *Anatomical Record* 281A: *Evolution of Primate Sensory Systems*.
- Ross, CF (2005), Guest Editor, *Anatomical Record* 283A: *Finite Element Analysis in Vertebrate Biomechanics*.

Ross, CF and R.F. Kay, eds., (2004) *Anthropoid Origins: New Visions*. New York: Kluwer Academic/ Plenum Publishers.

PUBLISHED BOOK REVIEWS

- Ross, CF (2018) *Voracious Science and Vulnerable Animals: A Primate Scientist's Ethical Journey*. by John P. Gluck, Chicago (Illinois): University of Chicago Press. *Quarterly Review of Biology* 93(11): 22-23.
- Ross, CF (2013) *Complexity, Modularity, and Integration in the Human Head*. The Evolution of the Human Head. By Daniel E. Lieberman, 2011. Cambridge, Mass: The Belknap Press of Harvard University Press. *Journal of Human Evolution* 64: 56–67.
- Ross, CF (2008) Review of *Body of Work. Meditations on Mortality from the Human Anatomy Lab*. By Christine Montross. *Quarterly Review of Biology* 83: 326.
- Ross, CF (2007) *Christopher Beard: The Hunt for the Dawn Monkey. Unearthing the Origins of Monkeys, Apes and Humans*. *International Journal of Primatology* 28:1195–1196. DOI 10.1007/s10764-007-9212-y
- Ross, CF (2004) Review of A.A. Biewener, *Animal Locomotion*, R. MacNeill Alexander, *Principles of Animal Locomotion*, S. Vogel, *Comparative Biomechanics: Life's Physical World*. *Evolutionary Anthropology* 13: 160-161.
- Ross, CF (2003) Review of "The Primate Fossil Record". *Journal of Human Evolution* 45:195-201.
- Ross, CF (1999) How to carry out functional morphology? *Evolutionary Anthropology* 7: 217-222.
- MacLatchy, L.M. and Ross, CF (1996) Primate paleontology. (Review of proceedings of 55th Annual Meeting of the Society of Vertebrate Paleontology, Pittsburgh PA, November 1-4, 1995). *Evolutionary Anthropology* 4(2): 41-2.
- Ross, CF (1992) A personal view of Oaxtepec. Review of Proceedings of Third Meeting of the Osaka Group for the Study of Dynamic Structures. *Rivista di Biologia (Biology Forum)* 85(2): 237-242.

PUBLIC PRESS and WEB

- Miracle Planet (2004) Episode 5 of Miracle Planet, a television program produced by NHK and aired in Japan in 2004 and in USA in 2008. Discussed function and evolution of orbital convergence, retinal fovea and the postorbital septum.
- Warren-Brown, G. (2000) A New Kid on the Ancient Block, *Leadership Magazine* (South Africa), June, 2000. Article about our work in Early Cretaceous sediments near Grahamstown, South Africa. Application of the month at Xcitex website, December, 2002. <http://www.xcitex.com/appofmonth.html>
- Featured grantee, National Geographic, July, 1998. <http://www.nationalgeographic.com/research/archive/index.html>

SYMPOSIA ORGANIZED

- First Latin American Congress on Craniofacial Biomechanics*, UNICAMP Dental School, Piracicaba, Brazil, December, 2018; Co-Organizer, Dr. Felipe B. Prado, UNICAMP.
- Motor control of orofacial function*. Nanosymposium at Society for Neuroscience, 2012. Co-organized with Kazutaka Takahashi.
- Motor control of orofacial function*. Nanosymposium at Society for Neuroscience, 2011. Co-organized with Kazutaka Takahashi.

Neuromechanics Symposium, University of Chicago May 17 and 18, 2010, Co-Organizer with Melina Hale and Derek Kamper.

The physical properties of foods and the evolution of primate feeding systems, Workshop at ICVM-8, Paris, France, July 2007. Co-Organizer with Peter Lucas.

Finite-Element Analysis of Vertebrate Skulls, Workshop at ICVM-7, Boca Raton Florida, July 28th, 2004. Abstracts in *Journal of Morphology*, 260 (3).

Evolution of the Special Senses in Primates. 73rd Annual Meeting of American Association of Physical Anthropologists, April 17, 2004, Tampa, FL. Abstracts in *Am. J. Phys. Anthropol. Suppl.* 38. Co-organizer with T. D. Smith and N. J. Dominy.

Anthropoid Origins Symposium. Powdermill Nature Reserve, Pennsylvania, April 19-22, 2001. Funded by NSF and Wenner Gren. Co-organizer, R.F. Kay.

Biomechanics of Mammalian Feeding. 65th Annual Meeting of American Association of Physical Anthropologists, April 13, 1996, Durham NC. Abstracts in *Am. J. Phys. Anthropol. Suppl.* 22: 48-50. Papers published in *Am. J. Phys. Anthropol.* (2000) 112(4). Co-organizer, C.E. Wall.

INVITED SYMPOSIA

Workshop: Discussions on Chewing, Breathing and Swallowing: Jacksonville, Florida, February, 2019
Texture and oral processing: from basic mechanisms to practical applications. Symposium at Association for Chemoreception Sciences. Bonita Springs, Florida, April, 2018.

Moving to feeding; applying muscle-mechanics principles from locomotor to feeding systems. Symposium Key Note Speaker. Society of Experimental Biologists, Brighton, United Kingdom, 2016.

Determinants of the mammalian feeding system design. Discussant. International Congress of Vertebrate Morphologists 11, Washington DC, 2016.

The Role of Mosaic Habitats in Hominin Evolution, Annual Meeting of American Association of Physical Anthropologists, Calgary Canada, April, 2014.

Workshop on Intra-Oral Food Processing, Norwalk, CT. Workshop sponsored by *PepsiCo*. October, 2013

Neural Control of Feeding Behaviors. Kyoto, Japan, Neuro2013, 36th Annual Meeting of the Japan Neuroscience Society, June, 2013.

Innovative Techniques in Feeding Ecology Workshop. George Washington University, March 27th-28th, 2010.

York Symposium on Craniofacial Biomechanics: in vivo to in silico, Hull/York University, July, 2009. Workshop & Symposium. York Medical Society, York, United Kingdom K 8th – 10th July 2009.

Controversial Bodies: How to View and Think about Plastinated Corpses. Kansas City Public Library. Co-sponsored by the Kansas Humanities Council, Kansas City Public Library and Department of History and Philosophy of Medicine at University of Kansas Medical School. December 5th, 2008.

14th International Symposium on Dental Morphology. Department of Anatomy & Cell Biology, Ernst Moritz Arndt University, Greifswald, Germany. August 27th-30th, 2008.

Interpreting function from bone: linking experimental and modeling analyses to comparative and paleontological studies. International Congress of Vertebrate Morphology, Paris, July, 2007.

Evolution of feeding systems. Symposium at Annual Meeting of Society of Integrative and Comparative Biology, Phoenix Arizona, January, 2007.

Scaling and Biomechanics Symposium, Annual Meeting of Society of Experimental Biology, Canterbury, Great Britain, April, 2006.

Symposium honoring William L. Hylander at Annual Meeting of American Association of Physical Anthropologists, Milwaukee, WI, April, 2005.

Evolution of the Visual System, Fifth Annual Fall Vision Meeting, Optical Society of America Meeting, University of Arizona, Tucson, October 21, 22 and 23, 2005.

Plenary speaker at *1st International Workshop on Evolutionary Changes in the Craniofacial Morphology of Primates*. Institute of Anatomy, Ernst Moritz Arndt University, Greifswald, Germany. 18th-20th September, 2003.

1st Symposium on Primate Origins, Chicago, December, 2001.

Symposium on *The Importance of Color Vision in the Foraging Strategies of Primates: Relationship to Physicochemical Properties of Foods and Feeding Decisions*. The University of Hong Kong, Jan 4-5, 2000.

Symposium on *Anthropoid Origins*, Duke University, Durham, North Carolina, USA, May, 1992.

Third Meeting of the Osaka Group of Structuralist Biologists, Mexico City, Mexico, April 15-19, 1991.

OTHER INVITED PRESENTATIONS

Department of Morphology – Anatomy, Piracicaba Dental School, University of Campinas, Piracicaba, SP, Brazil, June 2017, *Integrative studies of primate feeding biomechanics*.

Concord Field Station, Harvard University, Boston MA, April, 2017, *Diversity in design criteria in vertebrate musculoskeletal systems*.

Department of Anthropology, Washington University, St. Louis, May, 2016, *Jaws! What are they good for?*

Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, February, 2016, *Jaws! What are they good for?*

Department of Anatomy, Wuhan University Medical School, Wuhan, China, October, 2015. *Anatomy of the abdomen*. Training lecture to faculty.

Department of Neurosciences, Faculty of Medicine, University of Montreal, Montreal Quebec, Canada, December, 2015. *Integrative biology of feeding: the role of rhythmicity and cortical dynamics in the control of mammal chewing*.

University of Illinois at Chicago, College of Dentistry, June 2015, *Dental reduction in human evolution*.

Araçatuba Dental School Universidade Estadual Paulista Julio de Mesquita Filho, Aracatuba, Sao Paulo, Brazil, June, 2015, *Jaws! What are they good for?*

Araçatuba Dental School Universidade Estadual Paulista Julio de Mesquita Filho, Aracatuba, Sao Paulo, Brazil, June, 2015, *Biomechanical Studies of the Zygoma: A review of comparative, in vivo, and finite-element modeling studies of the lateral orbital wall and zygomatic arch*.

Department of Anthropology, Rutgers University, May 2015 *Jaws! What are they good for?*

Department of Biological Anthropology, Duke University, November, 2014. *Jaws! What are they good for?*

Department of Otolaryngology-Head and Neck Surgery, University of Missouri School of Medicine, Columbia, Missouri, June 2014. *Decoding the role of cortex in control of swallowing. How can it help with dysphagia?*

Department of Pathology and Anatomical Sciences, University of Missouri, Columbia, Missouri, 2013. *What does mandible morphology tell us about diet? Finite-element modeling and in vivo approaches to form-function relationships in vertebrate jaws*.

National Institute for Physiological Sciences, Okazaki, Japan, July, 2013. *The evolution of rhythmicity in vertebrate feeding and locomotion.*

Showa University Dental School, Tokyo, Japan, June, 2013. *Continuous and discontinuous representations of jaw and tongue kinematics in neuron populations in MI orofacial cortex.*

Department of Neuroscience and Oral Physiology, Osaka University Graduate School of Dentistry, Osaka Japan, June, 2013. *Continuous and discontinuous representations of jaw and tongue kinematics in neuron populations in MI orofacial cortex.*

Nippon Dental University School of Life Sciences, Niigata, Japan, June, 2013. *Continuous and discontinuous representations of jaw and tongue kinematics in neuron populations in MI orofacial cortex.*

Department of Anthropology, Kyoto University, Kyoto, Japan, June, 2013. *Why is mandible morphology not (well) correlated with diet?*

School of World Studies, Virginia Commonwealth University, November, 2012. *Fossils, Phylogeny and Feeding. Integrative approaches to primate evolution.*

Department of Functional Anatomy & Evolution, Johns Hopkins University School of Medicine, November, 2012. *Why is mandible morphology not (well) correlated with diet?*

Department of Anatomy & Cell Biology Seminar Series, Rush Medical College, Chicago, January 30, 2012. *The Many Functions of Bone in Vertebrate Skulls.*

Watson Armour Seminar Series, Field Museum of Natural History, March 3, 2010. *The importance of tongues and rhythm in vertebrate feeding.*

Department of Oral Biology Seminar Series, University of Michigan, February 18, 2010. *The evolution of chewing rhythmicity in vertebrates.*

Primate Behavior Brown Bag Seminar Series, University of Chicago, February 3, 2010. *Ecological consequences and biomechanical determinants of the scaling of feeding time and chew cycle duration in Primates.*

Department of Biology Seminar Series, Chicago State University, November 16, 2009. *What's the difference between a lizard and a mammal? Evolutionary Neuromechanics of Vertebrate Chewing.*

Department of Ecology and Evolutionary Biology, Brown University, November 10, 2009. *Lizard and mammal chewing: rhythmicity and feed-forward control and the role of cerebral cortex.*

Dental Morphology Seminar Series, University of Illinois at Chicago, October 22, 2009. *Evolutionary Neuromechanics of Vertebrate Chewing.*

Evolutionary Morphology Seminar Series, University of Chicago, October 29, 2009. *Evolutionary Neuromechanics of Vertebrate Chewing.*

University of Chicago Alumni Association, Harper Lecture, Greenwich CT, October 2009. *Reconstructing our Past: Adventures in the Fossil Record.*

Craniofacial Biomechanics Workshop, York, England, July, 2009. *Multidimensional analysis of organismal structure and function using geometric morphometrics and finite-element modeling.*

Functional Morphology and Evolution Research Unit, The Hull York Medical School, England, November, 2008. *How do mammals chew better than lizards? Evolution of amniote chewing.*

Department of Engineering, The University of Hull, England, November, 2008. *In vivo and in silico strain analysis of the circumorbital region of catarrhines*

Department of Biology, University of Akron, April, 2008. *Evolution of modulation of amniote chewing.*

Department of Anatomy, Northeastern Ohio University College of Medicine, April, 2008. *Of Springs and R. McNeill Alexander's Mother. Scaling of chew frequency and time in primates.*

Department of Anthropology, George Washington University, March, 2008. *Of Springs and R. McNeill Alexander's Mother. Scaling of chew frequency and time in primates.*

Department of Functional Anatomy & Evolution, Johns Hopkins University School of Medicine, February, 2007. *Modulation of primate feeding kinematics and kinetics to food material properties.*

Functional Morphology and Evolution Research Unit, The Hull York Medical School, England, September, 2006. *Modulation of force output in rhythmic motor systems: mammalian mastication.*

Department of Ecology and Evolutionary Biology, Brown University, May, 2006. *Modulation of force output in rhythmic motor systems: mammalian mastication*

Animal Behavior Brown Bag Seminar, University of Chicago, November, 2004. *Anthropoid origins and the evolution of the primate visual system.*

Evolutionary Morphology Seminar Series, University of Chicago, October, 2004. *The Ford Dilemma and the Unity of Vertebrate Skeletal Biology.*

Department of Anthropology, Washington University, St Louis, February, 2004. *In vivo bone strain and morphological integration in primate skulls. Does strain integrate?*

Department of Organismal Biology and Anatomy, University of Chicago, February, 2003. *Are skulls really different? What in vivo data tell us about skeletal design.*

Department of Biomedical Sciences, College of Osteopathic Medicine, Ohio University, February, 2003. *What's the skull for? What in vivo data tell us about vertebrate skull function.*

Department of Anthropology and Institute of Human Origins, September, 2002. *How does the primate skull work? What in vivo data tell us about primate skull function.*

Evolutionary Morphology Seminar Series, University of Chicago, October, 1999. *Anthropoid origins: Do we care about consilience between function and phylogeny?*

Denver Museum of Natural History, Denver, CO. April, 1996. *Two lecture series: Hammer and anvil: the origins and evolution of the mammalian ear.*

School of Dentistry, Stony Brook University, January, 1995, 1996, 1997, 1999: *Evolution, anatomy and function of the temporomandibular joint.*

Department of Anthropology, Yale University, December, 1994: *New interpretations of anthropoid origins.*

Department of General Anatomy, Dental School, University of the Witwatersrand, 1993: *The evolution of the anthropoid skull.*

Department of Anatomy and Human Biology, University of the Witwatersrand, 1993: *The functions of the postorbital septum and anthropoid origins.*

Ph.D.s TRAINED

Katrina Whitlow, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *Finning Forward for Food: Coordination of locomotor and Skull Mechanics in Fishes During Feeding.* Co-Advisor, Mark Westneat.

Kelsey Stilson, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *The Kinematics and Neurofeedback of Mastication in Didelphis virginiana.*

JD Laurence-Chasen, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *Neuromechanics of the Primate Tongue during Feeding*.

Courtney Orsbon, MD/PhD student, Pritzker School of Medicine and Organismal Biology & Anatomy, University of Chicago. Thesis Title: *Swallowing Biomechanics of the Macaca mulatta hyolingual apparatus*. Graduated 2018. Current position: *Residency at University of Vermont, Department of Radiology*.

Yashesvini Ram, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *Coordination Between Muscles and the Sensorimotor Cortex During Orofacial Behaviors in Non-Human Primates*. Graduated 2017. Current Position: *Senior Scientist at Abbott Laboratories*.

David A. Reed, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *The Biomechanical Determinants of Phenotypic Variance in the Mandible of Alligator mississippiensis*. Graduated 2011, Current Position: *Assistant Professor, University of Illinois, Chicago*.

Mark Coleman, Interdepartmental Doctoral Program in Anthropological Sciences, Stony Brook University. Thesis Title: *Middle and inner ear morphology and ecology*. Graduated, 2007. Current position: *Assistant Professor, Department of Medical Education, Western Atlantic University School of Medicine*.

Keith Metzger. *Graduate Program in Anatomical Sciences, Stony Brook University*. Thesis Title: *The kinematics of intra-oral prey transport in lizards*. Graduated, 2005 (Co-advised with Dr. Brigitte Demes). Current Position: *Assistant Dean of Medical Education, Professor of Medical Sciences, Department of Medical Sciences, Seton Hall University*.

Margaret Hall. *Graduate Program in Anatomical Sciences, Stony Brook University*. Thesis title: *Eye and orbit size and shape in vertebrates*. Graduated, 2005. Current position: *Department of Anatomy, Arizona College of Osteopathic Medicine, Midwestern University in Glendale, Arizona*.

Christopher P. Heesy. *Interdepartmental Doctoral Program in Anthropological Sciences, Stony Brook University*. Thesis title: *The functions of the mammalian postorbital bar*. (Co-advised with Dr. Brigitte Demes). Graduated, Fall, 2003. Current position: *Department of Anatomy, Arizona College of Osteopathic Medicine, Midwestern University in Glendale, Arizona*.

Robert Asher. *Interdepartmental Doctoral Program in Anthropological Sciences, Stony Brook University*. Thesis Title: *Phylogenetic relationships among tenrecoid insectivores*. Graduated, Fall, 2000. Current position: *Senior Lecturer and Curator, University Museum of Zoology, University of Cambridge*.

POSTDOCs ADVISED

JD Laurence-Clausen, Current Position: *Private Industry, Chicago*

Kara Feilich, Ph.D. Current Position: *Private Industry, Chicago*

Amanda Smith, Ph.D. Current Position: *Assistant Professor, Pacific Northwest University*

Fritzie Arce-McShane, Ph.D. Current Position: *Assistant Professor, University of Washington*.

Michael C. Granatosky, Ph.D., Current Position: *Assistant Professor of Anatomy, New York Institute of Technology*.

Nicholas Gidmark, Ph.D. Current Position: *Assistant Professor, Knox College*.

Jose (Pepe) Iriarte-Diaz, Ph.D. Current Position: *Assistant Professor, University of the South, Sevanee*.

Myra F. Laird, Ph.D. Current Position: *Assistant Professor of Clinical Integrative Anatomical Sciences, Keck School of Medicine, University of Southern California*.

Richard H. Madden, Ph.D. Current Position: *Retired, Los Angeles California*.

Ali Nabavizadeh, Ph.D. Current Position: *Assistant Professor of Veterinary Gross Anatomy at the University of Pennsylvania School of Veterinary Medicine.*

Laura B. Porro, Ph.D. Current Position: *Lecturer in Anatomy in the Centre for Integrative Anatomy in the Department of Cell and Developmental Biology at University College London.*

Julia Schultz, Dr. rer. Nat. Current Position: *Research Assistant, Institut für Geowissenschaften, University of Bonn.*

Ellen Schulz-Kornas, Ph.D. Current Position: *Head of the Research Laboratory, Department of Cariology, Endodontology and Periodontology, University of Leipzig.*

Kazutaka Takahashi, Ph.D. Current Position: *Assistant Research Professor, Department of Organismal Biology & Anatomy, University of Chicago.*

CURRENT POSTDOCTORAL ADVISEES

Kaleb Sellers, PhD. Organismal Biology and Anatomy

CURRENT Ph.D. ADVISEES

Peishu Li, Organismal Biology & Anatomy, University of Chicago. Thesis Title: TBD

Alec Wilken, Organismal Biology & Anatomy, University of Chicago. Thesis Title: TBD

Ph.D. COMMITTEES

Addison Kemp, *Primate Binocular Vision. Adaptive Significance in Grasping and Locomotion.* University of Texas, Austin, 2019.

Andrew George, *Functional Morphology and Evolution of the Balistiform Swimming Mode.* University of Chicago, 2020

Brianna K. McHorse, *Macroevolution and biomechanics of digit reduction in horses.* Harvard University, 2019.

Dallas Krentzel, *Rodent jaw evolution.* University of Chicago, 2018

David Grossnickle, *Macroevolutionary patterns and dietary adaptations in early cladotherian mammals,* University of Chicago, 2018.

Justin Lemberg, Organismal Biology & Anatomy, University of Chicago. Thesis Title: *Feeding Biomechanics of Tiktaalik roseae.* 2017

Chris Breese, *Neuromechanical mechanisms for row-wise integration in the rat vibrissal system.* Biomedical Engineering, Northwestern University. 2017

Myra Laird, *Chewing efficiency in modern humans: adaptation and variation of the masticatory complex,* New York University, 2016.

Aaron Olsen, *Beyond the beak: The evolutionary and functional morphology of bird beaks and their underlying linkage mechanism.* Organismal Biology & Anatomy, University of Chicago. 2016

Charlie McCord, *Why subdivide? Functional partitioning of the jaw adductor muscles and evolutionary neuromechanics of feeding in tetraodontiform fishes.* Organismal Biology & Anatomy, University of Chicago. 2014

Hilary Christensen, *Body size and reconstruction of diet in early Cenozoic mammals.* Department of Geophysical Sciences, University of Chicago, 2012

Brandon Kilbourne, *Limb rotational inertia in quadrupedal mammals.* Committee on Evolutionary Biology, University of Chicago, 2011.

Cindy Carlson, *Behavioral mechanisms of post-copulatory sexual selection in wild pigtail macaques.*

Committee on Evolutionary Biology, University of Chicago.

Christian Kammerer, *Cranial disparity in the non-mammalian Synapsida*, Committee on Evolutionary Biology, University of Chicago, 2009.

Rudyard Sadler, *A morphometric study of crocodylian ecomorphology through ontogeny and phylogeny*, Committee on Evolutionary Biology, University of Chicago, 2009.

Mehran Moazen, *Investigating the biomechanics of a lizard skull using advanced computer modelling techniques with experimental validation*, Medical Engineering, Department of Engineering, Hull University, United Kingdom, 2009.

Justin A. Georgi, *Semicircular canal morphology as evidence of locomotor environment in amniotes*. Anatomical Sciences, Stony Brook University, 2008.

Anthony Olejniczak, *Micro-computed tomography of primate molars*. Stony Brook University, 2006.

Anjali Goswami, *The evolution of morphological integration in the mammalian skull*, Committee on Evolutionary Biology, University of Chicago, 2004.

David Eliot, *Integrative function of neck and shoulder girdle muscles: head stabilization during upper limb efforts*. Anatomical Sciences, Stony Brook University, 1998.

NON-PH.D. THESIS COMMITTEES

Kelsie Pos, *Evolutionary history versus dietary niche as factors shaping pharyngeal jaw skeletal structure in cyprinid fishes*. Knox College, 2018.

Caylen Erger, *Characterization of the laryngeal adductor reflex in rhesus macaques*. Undergraduate Honors Thesis, The College, University of Chicago, 2017.

Alexandra Weill, *Evolution, biomechanics, and morphometrics of the lower jaw of Tiktaalik roseae*. Undergraduate Honors Thesis, The College, University of Chicago 2011.

Sara ElShafie, *A New Long-Necked Turtle, Laganemys tenerensis (Pleurodira: Araripemydidae) from the Elrhaz Formation (Aptian-Albian) of Niger*. Undergraduate Honors Thesis, The College, University of Chicago, 2011.