

Curriculum Vitae

David Bradley Baier

Department of Ecology and Evolutionary Biology
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Current Position

Post Doctoral Research Associate, Brown University – Advisors
Elizabeth Brainerd and Stephen Gatesy

Education:

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| 2006 | Autodesk Master classes – Maya animation
Boston, MA |
| 1999-2006 | Doctoral Dissertation
Department of Ecology and Evolutionary Biology
Brown University |
| 2000 | Character Animation in Maya (1 week course)
Alias, Inc. Education Services
Toronto, ON |
| 1994-1997 | Bachelor of Science
Montana State University Bozeman, MT
Department of Anthropology and Sociology |
| 1990-1992 | Cleveland Institute of Art
Cleveland, Ohio |

Research Experience:

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| 2006-Current | Assisting in the development of Dual X-ray system for analysis of 3-D skeletal motions (Dr. Elizabeth Brainerd). Matlab and Maya programming.
Assisting in reconstruction of 3-D skeletal motion in flying pigeons (Dr. Stephen Gatesy). Maya programming, 3-D modeling. |
| 2001-2005 | Doctoral dissertation research: Archosaur Shoulder Mechanics and the Evolution of Avian Flight. Included 3-D force balance |

modeling, mechanical testing, alligator skeletal kinematics, fossil reconstructions

1999-2000 Research project with Dr. S.M. Gatesy; Histological investigation of muscle fiber types in turkey tails prompted by disparate EMG recordings during flight and display.

1997 Undergraduate Research project with Dr. Jack Fisher
Developed database program for data input and analysis of mule deer teeth and investigated patterns of tooth eruption and wear on known-age mule deer.

Professional Work Experience:

2004 Consultant: Yale Peabody Museum Torosaurus sculpture

2002 Human anatomy instructor: EMT training program Miriam Hospital

1997-1999 Fossil Preparator
Museum of the Rockies Paleontology Department
Bozeman, MT

1998-1999 Paleontology Site Leader
Museum of the Rockies Paleontology Field Program

1997 Paleontologist/Interpreter internship
Makoshika State Park, Glendive MT

Teaching Experience:

Brown University – Teaching Assistant

2000-2004 Human Morphology – 1st year medical student course

2000 Comparative Vertebrate Anatomy

1999 Animal Behavior

Montana State University – Teaching Assistant

1997 Introductory Genetics

1995 Introductory Anthropology

1996 Student Field Supervisor – Archaeological excavation at Montana State University

Honors:

Graduated Montana State University Summa cum laude
Dean's list all semester's at MSU and CIA
Honorary Scholarship (Cleveland Institute of Art)
Montana Archaeological Society Scholarship-1996
MSU Letter's and Science Scholarship

Grants:

SigmaXi Grant in aid of Research
Stephen J. Gould Grant, Paleontology Society

**Activities &
Organizations:**

Society of Comparative and Integrative Biology
Society of Vertebrate Paleontology
Society of Avian Paleontology and Evolution
Co-chair MSU Anthropology Association 1996/97 (student organization)
Phi Kappa Phi National Honor Society
Lambda Alpha – National Honor Society for Anthropology

Invited Speaker:

7th International Conference of Vertebrate Morphology – Symposium on Mesozoic Birds. “Archosaur Shoulder Mechanics: Implications for Mesozoic birds.”

Publications:

Baier, D.B., Gatesy, S.M., and Jenkins, F.A. A critical ligamentous mechanism in the evolution of avian flight Nature Jan18 445(7125) .

Gatesy, S.M. and Baier, D.B., The origin of the avian flight stroke: a kinematic and kinetic perspective Paleobiology 31(3): 382-399

Published Abstracts:

Baier DB, Gatesy SM, The role of Avian Slow-twitch fibers in Turkey Tail Display. Society of Comparative and Integrative Biology Meeting Abstracts 104 2001

Baier DB, Gatesy SM, Shoulder Mechanics in Gliding Birds: Implications for the Evolution of Forelimb Aerodynamics Journal of Vertebrate Paleontology 22(3) 2002

Baier DB, 3-D Force Balance Model of the Avian Shoulder and the Role of the Acrocoracoid Process *Journal of Vertebrate Paleontology* 23(3) 2003

Baier DB, Gatesy SM, Shoulder Mechanics in Gliding Birds: Implications for the Evolution of Forelimb Aerodynamics *Society of Comparative and Integrative Biology Meeting Abstracts* 2003

Baier DB, Alligator Forelimb Kinematics and The Evolution of Archosaur Shoulder Mechanics *Journal of Vertebrate Paleontology* 24(3) 2004

Baier DB, Archosaur Shoulder Mechanics and the Evolution of Avian Flight *Journal of Vertebrate Paleontology* 26(3) 2006

Other Presentations:

Baier DB, Shoulder Mechanics and the Evolution of Avian Flight. *Ecology and Evolutionary Biology Departmental Seminar*. 2002

Baier DB, Alligator Shoulder Joint Function and the Evolution of Avian Flight. *Ecology and Evolutionary Biology Departmental Seminar* 2004