Andrew B. Heckert

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A.B. Heckert's Google Scholar Profile
https://www.ncbi.nlm.nih.gov/myncbi/a.b..heckert.1/bibliography/public/

Position

Professor of Geology, Department of Geological & Environmental Sciences, Appalachian State University
Director, McKinney Geology Teaching Museum, Appalachian State University
Unpaid associations include, or have included:
Research Associate, Lauer Foundation for Paleontology, Wheaton, Illinois
Research Associate, New Mexico Museum of Natural History & Science, Albuquerque
Research Associate, North Carolina Museum of Science and Nature, Raleigh
Research Associate, Virginia Museum of Natural History, Martinsville
Adjunct Associate Professor, Department Biological Sciences, North Carolina State University

Citizenship: U.S. Citizen by birth (Hamilton, OH)

Education

Ph.D. Earth & Planetary Sciences University of New Mexico 2001 (3.99 GPA)
M.S. Earth & Planetary Sciences University of New Mexico 1997 (3.74 GPA)
B.S. Geology *summa cum laude* Denison University, Granville, Ohio 1993 (3.83 GPA)

Dissertation: The microvertebrate record of the Upper Triassic (Carnian) lower Chinle Group, southwestern U.S.A. and the early evolution of dinosaurs (465 pp; 38 citations). Published as a monograph in the New Mexico Museum Bulletin series in 2004 (183 citations according to Google Scholar).

Thesis: Litho- and biostratigraphy of the lower Chinle Group, east-central Arizona and west-central New Mexico, with a description of a new theropod (Dinosauria:Theropoda) from the Bluewater Creek Formation (278 pp.). Published as several articles in diverse formats.

Research Interests

I undertake **field-based** projects addressing Mesozoic, especially Triassic, paleobiodiversity through the **collection of new vertebrate assemblages**, particularly microvertebrates, and associated stratigraphic data. Many of my projects are **student-driven, specimen-based** studies of microvertebrate assemblages from understudied stratigraphic intervals or novel localities.

Employment (postgraduate only)

Professor of Geology, Dept. Geological & Environmental Sci, Appalachian State University 2014-current
Associate Professor of Geology, Department of Geology, Appalachian State University 2011-2014
Assistant Professor of Geology, Department of Geology, Appalachian State University 2005-2011
(also Director, McKinney Geology Teaching Museum, Appalachian State University)
Geoscience Collections Manager, New Mexico Museum of Natural History & Science 2002-2005

Awards

2021 Fulbright Global Scholar Award, research project in South Africa and Poland 2021-2022
2021 Chancellor's Award for Excellence in Research, Scholarship, and Creative Activity, Appalachian State
2018 Elected to Academy of Outstanding Teachers, College of Arts & Sciences, Appalachian State
2017 Undergraduate Research Mentorship Excellence Award, Appalachian State (inaugural award)
2015 Donald W. Sink Family Outstanding Scholar Award, ASU College of Arts & Sciences

2011 North Carolina Outstanding Earth Science Educator. NC Science Teachers Association

Formal Teaching Experience (1990-present)

Appalachian State University, (2005-current)

Traditional classes (including conversions to online in 2020)

Features of all classes taught, regardless of level:

—Utilized course management software extensively for lectures, grades, etc.
WebCT (2005-2008) and Moodle-based ASULearn 1.0-2.0 (2008-2026) and Canvas
—Incorporate multiple methodologies, including multimedia, in classroom and lab
—Continually updating to include "current events," updated text, & recent discoveries
—Require extensive writing in lecture exams, labs, homework assignments, etc.
—Encourage student attendance at departmental lectures and other campus STEM events

Introduction to Physical Geology (GLY 1101) lecture (5) and labs (2), Fall, 2005-2010
—Instructor of record, Fall, 2005, 2006, 2010, Spring 2007, 2008
—Integrated classroom response systems ("clickers") in Spring '08 (first in department)
—Integrated ASULearn (online) exams (Fall, 2010)
—Contributed to lab manual revisions, including field trips
—Produced camera-ready laboratory manual from diverse contributions for Spring, 2007
—Require some essays/written responses on exams regardless of class sizes (up to 140)

Introduction to Historical Geology (GLY1102) lecture (5) and labs (~31), Spring, 2006-current
—Instructor of record, Fall 2007, 2012, 2013; Spring 2014, 2015.
—First to integrate "clickers" (Fall, 2013)
—First to integrate ASULearn exams in the lecture (Fall, 2012)
—Extensively involved in production of laboratory manual, authoring many exercises and editing all others, updated almost every semester.
—Developed new lab exercises on numerical dating methods, geological principles, and weighing dinosaurs, improved samples by securing new fossils, etc.
—Heavily involved with redesign of laboratory to meet new general education program
—Co-developed "prequiz" assignments on ASULearn (Spring, 2010)
—Re-invented course day trip, run in Spring '06 and Fall, '08
—Invented "Sentence check-outs," to evaluate student understanding of lab topics
—Lecture course included multiple new learning activities/assignments

Dinosaurs: Then and Now (GLY 1842; GES 1842) lecture course, Fall, 2015-current (except 2021)
—2015-2026—11 Fall sections averaging ~90 students; 3 Summer sections (~20-30 students ea.)
—Converted to online delivery for summer, 2020 (19 students) and fall (100 students)
—Developed lecture course for university General Education program
—In theme "How we know what we know about the past" (not strictly science)
—Am only professor teaching course
—Popular choice for minors in geology, animal studies and biology majors
—Using ASULearn "prequizzes," iClickers/Poll Everywhere, and ASULearn exams
—Developed innovative "Dinosaur Toy Evaluation" exercise
—"Name your own dinosaur" workshop exercise associated with final exam

Evolution of the Earth (GLY/GES 2250; 4 credits) Lectures (16) and labs (~30+?) Fall, 2008-current
—Instructor of record Fall ('08, founding course; '23) and Spring (2009-12, 16–2026)
—Converted second half of course (lecture and lab) to online delivery in 2020 pandemic
—First instructor to teach new course; have taught many overloaded sections
—Built course from various sources, keeping what worked & adding extensively
—Combines principles of historical geology with earth systems science
—Developed new labs and field trips to support course
—Includes two field trip handouts as transition to higher-level courses
—Compiled exercises into first "lab manual," to which I continue to contribute
—Extensive writing requirements in weekly lab reports, including field trips
—Integrated Fred Webb Jr. Outdoor Geology Laboratory ("rock garden")
—Later labs integrate skills from earlier exercises

—Requires attendance of departmental lecture series and related topics
—Actively collect specimens to update and improve multiple exercises
—Developed multiple worksheets to accompany lecture topics
—Added "Poll Everywhere" and ASULearn "prelabs" for Spring, 2024

Paleontological Laboratory and Analytical Techniques GES 3264, two credits)
—Taught initial offering as topics course; have taught the course 5 times
—Modeled on a "studio," with 2-hour introduction to topics each week; students complete projects on their own time subsequently
—Used to prepare students for graduate school, preparation and museum jobs
—Provides skills in multiple aspects of preparation, including fossil extraction, conservation, duplication, and documentation.
—Multiple students report that this course was critical to earning internships
—Activities build up molds, casts, and 3D prints to support GES classes and outreach programs
—Final projects are two "mini-exhibits," only one of which can feature vertebrate body fossils
—"Mini-exhibits" then augment museum displays and outreach materials

Dinosaurs (GLY 3549, 3 credits), Spring, 2006 (see Honors course, below)
—Developed new topics course, included field trip to NC Museum of Natural Sciences
—Final project included both paper and oral presentations

Invertebrate Paleontology and Historical Geology Laboratory (GLY 4024), Fall, 2006
—"Sabbatical replacement," but still added and upgraded materials

Honors Courses

Dinosaurs: Origins, Evolution, Extinction? (GH1515, Freshman Honors), Fall, 2007, 2009
—Included running 4-day field trip to US National Museum (Smithsonian) in 2007
—Developed intensive writing & poster assignments and "laboratory" activities
—Included field trip to NC Museum of Natural Sciences in 2009
—Final projects included research papers and poster presentations
—Fall, 2009 class overloaded (20 instead of 15)

Research and Topics Courses (* = published outcome)

Senior Research and Senior Thesis (GLY 4501, 4510), 2006-2007 w/Jessica Camp
—*Enamel microstructure of phytosaurs (Reptilia:Archosauria)

Senior Research and Senior Thesis (GLY 4501, 4510), 2009-2010 w/Jonathan Mitchell
—*Upper Triassic microvertebrates of Moncure, NC—3 published papers resulted

Senior Research and Senior Thesis (GLY 4501, 4510), 2011-2012 w/Eric Sload
—*Triassic fossils solve stratigraphic problems in Picketwire Canyonlands
—3D microscopy project with results presented at SVP, 2011

Senior Research and Senior Thesis (GLY 4501, 4510), 2013 w/Alex Harrison
—Upper Triassic microvertebrates from the Blue Hills of Arizona—Presented, SVP 2013

Senior Research and Senior Thesis (GLY 4501, 4510), 2015-2016 w/Jared Voris
—*Hybodont shark from the Upper Triassic Redonda Fm, New Mexico

Senior Research and Senior Thesis (GLY 4501, 4510), 2016-2017 w/Devin Hoffman
—*CT-scan, digital reconstruction, and histology of *Coahomasuchus*—2 published papers

Senior Research and Senior Thesis (GLY 4501, 4510), 2017-2018 w/Nick Brand
—*Microvertebrate assemblage of the Upper Cretaceous Williams Fork Formation, CO

Senior Research and Senior Thesis (GLY 4501, 4510), 2019-2020 w/Mathias Eads
—*Evaluating the Resource Efficiency of Physical and Digital Fossil Replication Methods

Senior Research and Senior Thesis (GES 4501, 4510), 2020-2021 w/Ciara Sailar
—The *Triceratops* specimen at Appalachian State University – a study of the skeleton of a Cretaceous dinosaur, including histologic analysis

Senior Research and Senior Thesis (GES 4501, 4510), 2021-2022 w/Isaac Pugh
—*Comprehensive description of the drepanosaur fossils from the Upper Triassic Homestead Site

Senior Research and Senior Thesis (GES 4501, 4510), 2022-2023 w/Alyssa Wurtz

—Preliminary description of the microvertebrates from "ReBecca's Hollow," a microvertebrate site in the Upper Cretaceous Williams Fork Formation of northwestern Colorado

Senior Research and Senior Thesis (GES 4501, 4510), 2024 w/Alec Quinn

—Evaluation of reconstructions and exhibits of *Otodus megalodon*, the giant extinct shark

Senior Research and Senior Thesis (GES 4501, 4510), 2023-2024 w/Luke Rose

—*Description and analysis of Upper Triassic lungfish tooth plates from the Homestead site in New Mexico and the Lower Triassic of Driefontein, South Africa

Triassic Fossil Identification and Description (GES 3539), 2021 w/six students

—This class took the best students from the previous fall's "FFF" cohort and brought them up to speed with a world-class new paleontological site that will lead to multiple publications.

Field Courses

Field and Museum Methods in Paleontology (GES 2857), 2018-current (except 2020)

—17-day field & museum methods course built from "Triassic Trip" courses (see below)

—Innovative blend of field- and museum time

—Students collect primary data on the fossil record

—Involves "behind the scenes" time at multiple museums

Triassic trip: Field and Museum Methods (GLY 3520, 1 credit), Intersession, 2007, 2009-2010

—Two-week course introducing students to vertebrate paleontology techniques

—Provide first extended field experience in geology & paleontology for many students

—Introduce students to research projects in field

—Course also introduces a dramatically different culture (southwestern USA)

Triassic trip: Field and Museum Methods (GLY 35xx, 2 credits), Spring intersession, 2008, 11-17

—All of above but with more stratigraphic/mapping emphasis; up to 11 students

—Integrated video technology/documentaries (2011-current)

—Trips involve primary data collection that has been used in multiple research projects

"Outside the classroom"

—"Triassic trip" has traveled through 16 states with field work in NM, AZ, UT & CO

—Same trip/course has visited museums and fossil sites in seven states

—Honors field trip drove to District of Columbia (2007), Raleigh (2009)

—Utilized field trips to NC, VA, and TN in GLY 1102 and GLY 2250

Instructor, University of New Mexico

Taught 400-level graduate-level seminar on vertebrate paleontology (2003)

Instructor, Columbia University's Biosphere 2 Center (2000-2001)

Integrated Earth Systems Science class (Fall, 2000)

—Intensive ESS course requiring coordination with 3 other courses

Helped lead 3 separate week-long multidisciplinary field trips (2000-2001)

Teaching Assistant, University of New Mexico (1993-2000)

Coordinator, Physical Geology Laboratory classes (1994-1995, 1997-2000)

—Completely revised course materials and curriculum

—Computerized all laboratory exercises and supplementary materials

—Developed new exercises involving ground water, the rock cycle, and other topics

Groundwater exercise published as part of Columbia University's *Earthscape* series:

www.earthscape.org/t1/ES14455/heckert.html (no longer active)

Same exercise was accepted for AGI/NAGT Environmental Geology lab manual (unpublished)

21 sections of Physical or Historical Geology Laboratory (1993-2000)

Served on selection committee for physical geology laboratory manual

Reviewed AGI/NAGT Physical Geology Laboratory Manual (4th & 5th eds.) for Prentice Hall

Nominated for campus-wide outstanding teaching assistant awards, 1997-8

Teaching assistant (undergraduate), Physical Geology Laboratory, Denison University (1990-1993)

Museum Experience (New Mexico Museum of Natural History & Science, 1993-2005)

As Geoscience Collections Manager, oversaw 8% annual growth in cataloged collections (2002-2005)
Engaged in all aspects of fossil collection including permitting, excavation, curation & publication
Partnered w/U.S. Bureau of Land Management to put entire paleontological collection online (2003)
Supervised 4 volunteers and 4 undergraduate student interns (2002-2005)
Spearheaded acquisition of 40 surplus specimen cabinets for field collections
Curatorial: M.S. and Ph.D. projects, 2000+ cataloged Triassic vertebrates (1993-2001)
—Led or co-led excavations collecting 150+ plaster jackets
—Collected over 10,000 pounds of screenwash matrix
Contract collections manager, 1994, 1997, assisted in moving NMMNH collections, 1996

Grants

External to Appalachian State

Fulbright Global Scholar Award, 2021, for research in South Africa (2021, 2022) and Poland (2021)
Co-PI w/ M. Toran and E. Cowan, JOIDES "Pop-up Science" encounter exhibit (2019)
Worked with M. Toran to secure >$25,000 in commitments from Vulcan Materials Company for the "Geobago" mobile outreach lab, teacher workshops, and other initiatives.
Contributed to EPA "Water on the Move" grant (Marta Toran, PI) (~$60,000+ awarded)
Departmental representative on NSF-funded S-STEM project (Rahman Tashakkori, PI) that provides stipends and research opportunities for underrepresented STEM students. 2018-current
Paleontological Society Outreach Grant (w/M. Toran), $5,000 for teacher workshop, 2018
Paleontology and paleoenvironments of the Middle Triassic Moenkopi Formation in Dinosaur National Monument ($20,000 award from National Park Service, 2012); $11,000 extension authorized in September, 2013.

Internal to Appalachian State

Appalachian State University SSWAG (Summer Salary for Writing a Grant) for Summer, 2021
Appalachian State University Board of Trustees International Research Grants, 2013, 2020
Appalachian State University Foundation Fellows Grant, Spring, 2007
University Research Council (URC) Grants, Fall, 2005, 2006, 2008, 2010, 2013, 2014, 2015
Supervised student authors generating ~$25,000 in internal support from the Office of Student Research, SAFE (Student and Faculty Excellence) and other funds.

Donations Secured to Appalachian State

Diverse parties associated with me have donated many thousands of dollars towards scholarships, student travel, and other opportunities (>$30k by various donors)
Alumni of my courses have endowed a scholarship for students to attend my "Triassic trip" (2020) (>$25k)
Friends impressed by the performance of my students endowed the McKinney Paleontology Scholarship ($25k); this is in addition to the many donations listed previously.
Drove "Sponsor a Bone" for Archie the Aetosaur (2018-2019)—donations from the NC Fossil Club and others associated with me were instrumental in raising ~60-75% (>$10k) of the cost of the "Archie the Aetosaur" bronze life reconstruction of *Gorgetosuchus* on campus.
Essentially the entirety of the Fred Webb Jr. Outdoor Geology Laboratory (~45 of ~50 specimens) were donated to Appalachian as a result of my efforts.
NC Fossil Club members and others have donated thousands of fossils and other specimens to the McKinney Geology Teaching Museum/Department of Geological & Environmental Sciences; these specimens have greatly improved the quality of specimens in multiple lab courses, museum exhibits, and outreach.
Acquired 40+ specimen cabinets from the NC Museum of Natural Sciences, these are in use across the department in research, instructional, and storage spaces.

Grants prior to 2005 (before starting at Appalachian State)

U.S. Bureau of Land Management "Fossils-at-risk" on-line database project (2002, 2003)
Co-principal investigator, Petrified Forest National Park "Sonsela project" (2003-2005)
Secured **$150,000** endowment for fossil preparation at NMMNH (2002)
Paleobiological Fund Grant (1999)

Petrified Forest Museum Association Research Grants (1995, 1997, 1998, 2000; **6** total)
New Mexico Geological Society Student Grant (1999)
UNM Student Research Allocations Grants (**5**) and UNM Research and Project Travel Grants (**3**)
The Dinosaur Society Research Grant (1994)
See below for additional student funding

Student Research (see attached for a complete list of presentations and publications)

Supervised eleven senior theses at Appalachian
—Camp, Mitchell, Sload, Harrison, Voris, Hoffman, Brand, Eads, Sailar, Pugh, Rose, Quinn
Research students have presented at major regional, national, and international meetings (~50 abstracts)
All students apply for, and almost all earn, Office of Student Research (OSR) support
—OSR travel grants to almost all students presenting research
—OSR student research grants (Hoffman, Delgado, Eads, Sanchez, Sailar, Wurtz/Dunn, Plesh) for materials and/or analytical time
—SAFE grants to multiple students attending scientific meetings
Office of Student Research Undergraduate Research Assistantships ($1,000-$1200/semester)
Sload (2), Harrison (2), Voris (2), Avrahami (2), Delgado (2), Brand (1), Hendrix (1), Eads (1), Sailar (1), Pugh (1), Quinn (1), Carter (2)

Outreach & Engagement Activities

Multimedia (Internet, television, radio):

Talk to the Evolutionary Studies Institute, University of the Witwatersrand, South Africa, subsequently posted to YouTube (https://www.youtube.com/watch?v=m5pRAKbQut4), 240+ views
Talk to the Royal Tyrrell Museum of Paleontology in Drumheller, Alberta subsequently posted to YouTube (https://www.youtube.com/watch?v=3d3cgO3EZYc) *has generated over 44,000 views*
Help manage department Facebook page, posting on student success, outreach events, etc.
Prominently featured with students on in-house promotional videos on Appalachian Geology
"Talking Triassic" interview on "Sciworks" aired 14 September, 2015
http://cpa.ds.npr.org/wfdd/audio/2015/09/070-SWRadio-NCTriassic-Heckert.mp3
Segment on Fred Webb Jr. "rock garden" on UNC-TV's *North Carolina Now*, Fall, 2008
Advisor (and "cameo") in PBS documentary *Earthshaker*, on *Seismosaurus* (2005)
Interviewed by *NBC Nightly News* at excavation, May, 2000 (aired that night, but I was still in the field)
Lecture for Albuquerque Open-Spaces summer series (1996) aired on public-access cable for years.
Appeared in PBS documentary *Deep time* on the geology of New Mexico (1994)

Talks and tours:

Routinely have large booths at regional "Fossil Fairs" in 3 states with multiple undergraduate assistants
Often deliver talks to the NC Fossil Club, Forsyth Gem & Mineral Club, Lifelong Learners, others.
Lead tours and give lectures associated with McKinney Geology Teaching Museum (2005-current)
—Hundreds of school children from schools throughout the region annually
—Includes talks for other departments, boards, alumni organizations, etc.
—We run one of the largest booths at the STEaM festival each year.
Guest speaker for ASU Math Science Education Center science series (2011-2013, 2016-2017, 2019)
Guest speaker and liaison to Catawba Science Center in Hickory, NC (2011-current)
Guest speaker, North Carolina Fossil Club (2011, 2017, 2019, 2022)
Dozens of lectures for the NMMNH, NMFOP, Albuquerque Geological Society, public schools, etc.
City of Albuquerque Open-Spaces speaker 1996-1997 (1996 talk aired on public-access cable for years)
Paleontology department tours for NMMNH's "Young Explorers" summer programs, 2002-2005

Other:

NMMNH liaison to NM Friends of Paleontology (volunteer organization, 2002-2005)
Editor, NM Friends of Paleontology newsletter (1998-1999; 2003-2005)

Field & Travel Experience (1993-current)

Geological fieldwork in eleven western states, North Carolina, Virginia, Ohio, Argentina, and South Africa.
Stratigraphic and paleontologic studies for M.S., Ph.D., and other projects

—Specialized in paleontological, stratigraphic, and sedimentologic work
—Supervised numerous paleontological excavations (70+ volunteers, 3000+ hrs, 250+ jackets)
—Collected Devonian-Pleistocene bones, footprints, skin impressions, shells, etc.
—Measured several kilometers of stratigraphic sections ranging from Pennsylvanian to Recent
—Led or co-led dozens of student and/or professional field trips in New Mexico, Texas, Arizona, Utah, Colorado, North Carolina, and Virginia.

Independent consulting work assessing paleontological resources (1994-2002)
—Conducted several paleontological resource surveys in Arizona and New Mexico

Studied in museums and visited the field in Argentina (1996, 2013, 2014), Germany (1998, 2018)

Fossil Collections

Fossils collected by me and/or under my supervision are reposited in at least eleven natural history museums on three continents, including: New Mexico Museum of Natural History & Science, Albuquerque; North Carolina Museum of Natural Sciences, Raleigh; Museum of Western Colorado, Grand Junction; Utah Field House of Natural History, Vernal; Badlands Dinosaur Museum, Dickinson, North Dakota; Virginia Museum of Natural History, Martinsville; Denver Museum of Nature & Science, Denver; Petrified Forest National Park, Arizona; Mesalands Dinosaur Museum, Tucumcari, NM; CRILAR, La Rioja, Argentina, and Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg, South Africa.

Professional Society Memberships

Asociación Paleontológica Argentina (APA), Arizona Geological Society, Carolina Geological Society (CGS; lifetime member), Geological Society of America (GSA), National Association of Geoscience Teachers (NAGT), National Center for Science Education (NCSE), New Mexico Geological Society (NMGS; lifetime member), Palaeontological Association (PalAss), Paleontological Society (PS), Sigma Xi (Scientific Research Society), Society of Vertebrate Paleontology (SVP).

Selected Scholarships & Fellowships

The University of New Mexico 1993-2001:

Society of Vertebrate Paleontology Predoctoral Fellowship (Mary Dawson Award), 2000
University of New Mexico Dean's Dissertation Fellowship, 2000
Sigma Xi Excellence in Graduate Research Award (UNM Chapter), 2000
Society of Vertebrate Paleontology Bryan Patterson Award, 1999
New Mexico Geological Society Kottlowski Fellowship, 1998
University of New Mexico Wengerd Traveling Fellowship, 1998
University of New Mexico Geology Alumni Scholarship, 1995, 1996, 1998, 1999, 2000
Richard Vann Paleontology Scholarship, 1995 & 1997

Denison University 1989-1993:

$60,000+ in national, state, & local awards for scientific & academic excellence, including:
Barry M. Goldwater, **National Merit**, Ohio Academic, Denison University Wells Science, Denison University Anderson Science, Robert C. Byrd, NAGT Field Camp, Denison University LaMoreaux Field Camp, and Procter & Gamble scholarships, among others.

Peer Review and other Service to the Profession

Served as a reviewer for multiple international paleontological journals, including:
*Acta Palaeontologica Polonica, Ameghiniana, The Anatomical Record, Geobios, Geological Magazine, Historical Geology, Ichnos, Journal of African Earth Sciences, Journal of Iberian Geology, Journal of Paleontology, Journal of the Royal Society Interface, Journal of Vertebrate Paleontology (*including *Society of Vertebrate Paleontology Memoirs*), *Memoirs of the Geological Society of London*, *Naturwissenschaften*, *Neues Jahrbuch für Geologie und Paläontologie, New Mexico Bureau of Geology Memoirs, New Mexico Geological Society Guidebook, New Mexico Museum of Natural History & Science Bulletin, Palaeontographica Abteilung A, PPP (Palaeogeography, Palaeoclimatology, Palaeoecology), Palaeontologica Polonica, Palaeontologica Electronica, Palaeontology*, *Palaeoworld, Palaios, Paleobiology, Paleobios, PeerJ*, *PLoS One, Proceedings of the Geologists' Association, Proceedings of the Royal Society B*, *Rivista Italiana di Paleontologia e Stratigrafia*, *Rocky Mountain*

Geology, Royal Society Open Science, Scientific Reports, Sedimentary Geology, Southeastern Geology, *Zoological Journal of the Linnaean Society of London, Zootaxa* and others.

Editorial board of the *New Mexico Museum of Natural History & Science Bulletin* (2005-2015?) and *Eastern Paleontologist* (2017-current), which involves frequent peer-review duties of both monographs and regular contributions.

Occasional proposal reviewer, principally for the National Science Foundation (NSF).

External Reader

Atrayee Haldar, Indian Institute of Technology, Kharagpur (PhD, 2025)
Chandele Montgomery, Evolutionary Studies Institute, University of the Witwatersrand (MS, 2022)
Debarati Datta, Indian Institute of Technology, Kharagpur (PhD, 2021)
Mohd Shafi Bhat, Indian Institute of Technology, Kharagpur (PhD, 2018)

Graduate committee member

Haviv Avrahami (M.S., North Carolina State University, 2018)
Susan Drymala (M.S., North Carolina State University, 2015).

Host Committee:

2018 Carolina Geological Society (CGS) Fall Field Trip, Boone and vicinity
2012 Society of Vertebrate Paleontology Meeting (Raleigh).
2012 Southeastern Association of Vertebrate Paleontology (Boone).

Field Trip Leader

2018 Carolina Geological Society Fall Field Trip (Fred Webb Outdoor Geology Lab stop)
2014 Southeast section of the Geological Society of America (1-day trip was canceled but field guide published as Liutkus-Pierce et al., 2014; see references)
2012 Society of Vertebrate Paleontology (3-day trip in October, 2013); 21 participants from 4 countries
2012 Geological Society of America (3-day trip in November, 2013; literally ran with one arm due to surgery); 14 participants from across the U.S. and Canada.
2012 Southeastern Association of Vertebrate Paleontology (half-day field trip).
2003 New Mexico Geological Society Fall Field Conference co-chair, Zuni Plateau (3-day trip, 100+ participants).
2001 New Mexico Geological Society Fall Field Conference co-chair, Llano Estacado (3-day trip, 100+ participants).

Additional Service (exclusive of the McKinney Geology Teaching Museum)

Departmental

Academic advisor, 2006-current. Typically advise paleontology concentration majors, but have advised many others to completion.

Routinely serve on, and sometimes chair, departmental committees, including Departmental Personnel (DPC), Promotion and Tenure (PTC), Post-tenure Review (PTR), Curriculum, Search, Recruiting and others. I have frequently chaired the PTC. I attend almost every departmental event (seminar, recruiting/open house, banquet, geolympics, etc.).

Highlights include serving as Curriculum Committee chair as an Assistant Professor in 2006-2008 (2 years) encompassing an enormous overhaul of the entire departmental curriculum. This restructuring was a major factor in our subsequent growth that quadrupled the number of majors. Later curriculum committee work streamlined senior exams, reducing faculty workload and increasing student pass rate.

Photographs of my students dot the department, college, and university web pages and other promotional materials and are prominently featured in many college and university websites.

College of Arts and Sciences (exclusive of the McKinney Geology Teaching Museum)

Served on various committees, principally the Donald Sink Research Award committee (2016-current)
Made presentations to the CAS Advisory Council on multiple occasions
Frequent guest lecturer in various courses.
S-STEM representative for the department, overseeing 2-3 students on scholarship yearly (~2015-2022)
Other duties as assigned, e.g., Caligari Scholarship Committee

University

Barry M. Goldwater Scholarship Committee (Prestigious Scholars Program/Honors College)
Frequent guest lecturer in First Year Seminar (FYS) courses
Frequent guest speaker for Math Science Education Center, Summer Ventures, etc.
Regular attendee of Convocation, Spring Commencement, etc.
Served in various roles for Office of Student Research, includes the advisory board and search committee
Founder of "Post-lab," an informal STEM networking event that is ±monthly on campus

Publication Highlights (comprehensive bibliography either attached or available on request)

Books and Monographs

Heckert, A.B., 2004, *Late Triassic microvertebrates from the Upper Triassic Chinle Group (Otischalkian-Adamanian: Carnian), southwestern U.S.A.*: New Mexico Museum of Natural History and Science Bulletin 27, 170 pages.

Klein, H., Heckert, A.B., and Celeskey, M., 2023, *Chirotheres: Tracking the Ancestors of Dinosaurs and Crocodiles.* Indiana University Press (Life of the Past series). 360 pp. https://iupress.org/9780253066046/chirotheres/

Lucas, S. G., Rinehart, L. F., Heckert, A. B., Hunt, A. P., and Spielmann, J. A., 2016, *Rotten Hill: A Late Triassic bonebed in the Texas Panhandle, USA*: New Mexico Museum of Natural History and Science Bulletin 72, 97 pages.

Rinehart, L. F., Lucas, S. G., Heckert, A. B., Spielmann, J. A., and Celeskey, M. D., 2009, *The paleobiology of* Coelophysis bauri *(Cope) from the Upper Triassic (Apachean) Whitaker quarry, New Mexico, with detailed analysis of a single quarry block*: New Mexico Museum of Natural History and Science Bulletin 45, 260 pages.

Spielmann, J.A., Lucas, S.G., Rinehart, L.F. & Heckert, A.B., 2008, *The Late Triassic archosauromorph* Trilophosaurus. New Mexico Museum of Natural History and Science Bulletin 43: 177 pages.

Co-edited volumes

Heckert, A.B., and Lucas, S.G., editors, 2002, *Upper Triassic Stratigraphy and Paleontology*, New Mexico Museum of Natural History and Science Bulletin 21, 301 pp.

Heckert, A.B., and Lucas, S.G., editors, 2005, *Vertebrate paleontology in Arizona*, New Mexico Museum of Natural History and Science Bulletin 29, 210 pp.

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Zeigler, K.E., Heckert, A.B., and Lucas, S.G., editors, 2003, *Paleontology and geology of the Upper Triassic Snyder quarry, north-central New Mexico*, New Mexico Museum of Natural History and Science Bulletin 24, 132 pp.

Selected Recent Major Publications (see following pages for complete list)

Heckert, A.B., Nesbitt, S.J., Stocker, M.R., Schneider, V.P., Hoffman, D.K., and Zimmer, B.W., 2021, A new short-faced archosauriform from the Upper Triassic *Placerias*/Downs' Quarry complex, Arizona, U.S.A, expands the morphological diversity of the Triassic archosauriform radiation. *The Science of Nature*. v. 198, article 32, 17 pp. https://doi.org/10.1007/s00114-021-01733-1

Pugh, I., Nesbitt, S. J., Heckert, A. B., Lauer, R., and Lauer, B., 2024, A new drepanosauromorph (Diapsida) from east–central New Mexico and diversity of drepanosaur morphology and ecology at the Upper Triassic Homestead Site at Garita Creek (Triassic: mid-

Some statistics from Google Scholar® (through 2025—as of 31 December 2025)

See: http://scholar.google.com/citations?user=qp4P57MAAAAJ&hl=en
Citations: 6182 (1542 since 2020); h-index: 40 (20 since 2020); i10 index: 170 (42 since 2019)

Some statistics from ISI Web of Science® (through 01/01/2024) (includes abstracts)

ISI titles: 64 titles, including comments in *Geology*, *Palaeontologia Electronica*, and *Systematic Biology*
ISI articles cited 958 times by 617 articles (excluding self-citations, which increase totals to 958 and 617)

h-index: 19; 30% first-authorships; average total citations per year is 22.38

My own publications tally (through 12/27/2018, so sadly out-of-date)

Total titles (abstracts and papers): 465
Sole- or senior-authored papers: 63
Junior-authored papers: 125
Student authors on 21 papers (11 Appalachian student authorships)
Sole- or senior-authored abstracts: 99
Junior-authored abstracts: 178
Student authors on 101 abstracts; 72 of those authors were undergraduates (61 ASU student authorships)
Co-edited volumes: 5 (2 as senior editor, 3 as junior editor)
Monographs: 4 (1 as sole author, 3 as a junior author)

Miscellaneous credits

Photographs

Numerous photos of my students engaged in research, outreach, and field work dot the department, college, and university web pages.

Photos of and by my students have been published in the Society of Vertebrate Paleontology's Fossil Preparation Calendar, supporting the Hix Fund for Fossil Preparation in 2026, 2025, and several other years.

Cover photo, March, 2012 *Journal of Paleontology* (SEM image from Heckert et al. article)
Cover photo, 2003 New Mexico Geological Society Guidebook 55, *Geology of the Zuni Plateau*.
Cover photo, June, 2002, *Environmental Practice*: Journal of the National Association of Environmental Professionals, v. 4, no. 2.
Cover photo, 1998 Annual Report of the New Mexico and Arizona Land Company
Back cover photo, 2005 New Mexico Geological Society Guidebook 57, *Geology of the Chama Basin*
Back cover photo, 2004 Arizona Geological Society membership directory
Photographs on 3 pages, Arizona Geological Society membership directory, 2002/2001.

Poetry

"The favorite," *Exile* (Denison University Literary Art Magazine), Spring, 1993, p. 38
"Wonderings of an adopted son," *Exile* (Denison University Literary Art Magazine), Fall, 1992, p. 56

Letters to the editor

Watauga Democrat (several occasions)
Sports Illustrated, May, 2001
Proceedings of the New York Academy of Science, 2000, v. 40, no. 3, p. 5.
Oxford Press, 1995
Albuquerque Journal, 1994
University of New Mexico *Daily Lobo* (several occasions)

Complete scientific bibliography on the following pages

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(Particularly significant titles in **boldface** type)

2026 Papers

Crothers, J., Eberle, J., Brinkman, D., Wurtz, A., Heckert, A. B., Hunt-Foster, R. K., Foster, J. R., Dirkes, I. C., & Dunn, R. 2026. An actinopterygian-dominated fish fauna from the Upper Cretaceous Williams Fork Formation, northwestern Colorado, and evidence for provinciality across Laramidia at the Campanian/Maastrichtian boundary. *Cretaceous Research*, v. 182, 106313. https://doi.org/https://doi.org/10.1016/j.cretres.2026.106313

Crouch, JN., Heckert, AB., Lauer, B., and Lauer, R. 2026. Microcoprolite morphotypes from the Revueltian (Upper Triassic: Norian) age Homestead Site, Garita Creek Formation, east-central New Mexico, USA. *Ichnos*, 16 pp. https://doi.org/10.1080/10420940.2026.2666124.

Dollman, K. N., Tolchard, F. B., Choiniere, J. N., Hancox, J., Heckert, A. B., Montgomery, C., Buffa, V., & Botha, J. 2026.. Synchrotron imaging reveals diversity in archosauromorph growth strategies by the end of the Early Triassic. *iScience*, *29*(6). https://doi.org/10.1016/j.isci.2026.116162

Tolchard, F. B., Buffa, V., Hancox, P. J., Heckert, A. B., Dollman, K. N., Botha, J., and Choiniere, J. N., 2026, Morphological diversity in humeral remains from a South African Konzentrat-Laggerstätte site provide new insights into the Early Triassic archosauromorph radiation: The Anatomical Record, v. in press
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2026 Abstracts (plus at least 11 from SVP, 2026; IPC7 abstract pending)

Bartlinski, J.J., Heckert, A.B., Lauer, B., Lauer, R., 2026, An investigation of enamel degradation in teeth of the Homestead site microvertebrate assemblage of the Garita Creek Formation (Late Triassic: Norian) New Mexico. Triple Joint 75th Southeastern/60th North-Central/60th South-Central Annual Section Meeting, *Geological Society of America Abstracts with Programs*. https://gsameetings.secure-platform.com/se26/solicitations/103012/sessiongallery/schedule/items/95983/application/12623

Crouch, J.N., Turner, I., and Heckert, A.B., 2026, A marine vertebrate assemblage from the Upper Cretaceous (Latest Cretaceous: Maastrichtian) Peedee Formation of Greenville, North Carolina. TrTriple Joint 75th Southeastern / 60th North-Central / 60th South-Central Annual Section Meeting, Triple Joint 75th Southeastern/60th North-Central/60th South-Central Annual Section Meeting, *Geological Society of America Abstracts with Programs*. https://gsameetings.secure-platform.com/se26/solicitations/103012/sessiongallery/schedule/items/95986/application/11789

Mirabile, D. N., and Heckert, A, B., 2026, An Upper Cretaceous vertebrate assemblage from the Tooth Draw quarry of the Hell Creek Formation (Upper Maastrichtian), South Dakota and its implications for coelurosaurian theropod phylogeny. Triple Joint 75th Southeastern/60th North-Central/60th South-Central Annual Section Meeting, *Geological Society of America Abstracts with Programs*. *Nick won an outstanding poster prize from the Paleontological Society for this poster.* https://gsameetings.secure-platform.com/se26/solicitations/103012/sessiongallery/schedule/items/96009/application/13309

Santoro, L, Heckert, A.B, Ward, D, Dissolving diagenetic selenite from microvertebrate concentrate: Scaling up a successful chemical treatment. Triple Joint 75th Southeastern/60th North-Central/60th South-Central Annual Section Meeting, *Geological Society of America Abstracts with Programs*. *Leiana earned a runner-up outstanding poster prize from the Paleontological Society for this poster.* https://gsameetings.secure-platform.com/se26/solicitations/103012/sessiongallery/schedule/items/95986/application/11856

Schwarte, M.R, Choiniere, S.G, Pugh.I, Heckert, A.B, Michael the *Microraptor* and Osborn the *Velociraptor*: *Dromaeosaur* Life Reconstruction for Educating the Public. Triple Joint 75th Southeastern/60th North-Central/60th South-Central Annual Section Meeting, *Geological Society of America Abstracts with*

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Rose, L. J. P., Heckert, A. B., Hancox, P.J., and Hageman, S. J., 2025, Fossil lungfishes (Sarcopterygii, Dipnoi) of the Lower Triassic Driefontein locality in the Burgersdorp Formation, Beaufort Group, of South Africa, and their implications for ceratodontiform diversity after the end-Permian mass extinction: *Journal of Vertebrate Paleontology*, p. e2522785. https://doi.org/10.1080/02724634.2025.2522785

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Geissler, A.E., Carter, C., Plesh K., Crouch, J. and Heckert, A.B., 2025, Design and Application of portable paleontological exhibits to enhance educational engagement in an undergraduate paleontology techniques course: *Association of Materials and Methods (AMMP) Meeting*, Johnson City, TN, pp. 62-63.

Heckert, A.B., Celeskey, M.D., Donovan, T., Toran, M., and Waterworth, L., 2025, From a Triassic bundle of bones to bronze: Fabrication of a life reconstruction of Archie the Aetosaur in a university setting: Association of Materials and Methods (AMMP) Meeting, Johnson City, TN, pp. 19-24.

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Toran, M., *Choiniere, S., *Schwarte, M., and Heckert, A.B., 2025, Methods for making paleontological materials available for outreach to teachers, schools, and the greater public through undergraduate education and internships. *Association of Materials and Methods (AMMP) Meeting*, Johnson City, TN, pp 97-98.

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Carter, C., Heckert, A.B., Lauer, B., & Lauer, R., 2024, Preliminary statistical study of Late Triassic archosauriform teeth from the Homestead Site, a microvertebrate assemblage in east-central New Mexico: *12th North American Paleontological Convention, Program with Abstracts*, p. 143.

Carter, C.., Heckert, A.B., Lauer, B., & Lauer, R., 2024, Preliminary statistical study of Late Triassic archosauriform teeth from the Homestead Site, a microvertebrate assemblage in east-central New Mexico: *Journal of Vertebrate Paleontology, Program and Abstracts*, 2024, p. 130.

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Crothers, J., Wurtz, A., Hunt-Foster, R., Foster, J.R., & Heckert, A.B., 2024, A diverse microvertebrate site from the Late Cretaceous Williams Fork Formation (Campanian—Maastrichtian) of Colorado and its paleoecological implications for Laramidia. *Journal of Vertebrate Paleontology, Program and Abstracts*, p. 156.

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Dunn, R.A., Wurtz, A.L., & Heckert, A.B., 2024, Hydrogen peroxide greatly increases breakdown of fossiliferous sediments from Upper Cretaceous microvertebrate sites in the Williams Fork Formation, northwestern Colorado: *GSA Abstracts with Programs*, v. 56, no. 2. https://gsa.confex.com/gsa/2024SE/meetingapp.cgi/Paper/398233

Dunn, R., Heckert, A.B., Foster, J.R., Hunt-Foster, R.K., 2024, Super Charger Heaven: A Freshwater Microvertebrate Assemblage from the Upper Cretaceous Williams Fork Formation of Northwestern Colorado. *Journal of Vertebrate Paleontology, Program and Abstracts*, pp. 60.

Hancox, P.J., Montgomery, C., Heckert, A.B., Rose, L.J.P., Duffin, C.J., and Schneiderhan, E.A., 2024, The fossil fish fauna from the lower Burgersdorp Formation of the main Karoo Basin: *Palaeontological Society of South Africa abstracts*, p. 51.

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Heckert, A.B., Hancox, J.P., and Choiniere, J.N., 2024, Tanystropheid (Diapsida, Archosauromorpha) occurrences from the Lower Triassic Burgersdorp Formation (*Cynognathus* Assemblage Zone: Early Triassic) of South Africa: A rare early Gondwanan record of the clade: *Journal of Vertebrate Paleontology, Program and Abstracts*, 2024, pp. 389-390.

Montgomery, C., Choiniere, J.N., Heckert, A.B., Hancox, P.J., and Dollman, K.N,, 2024, Comparative morphology and composition of Olenekian coprolites using 3D X-ray imaging: *Palaeontological Society of South Africa abstracts*, p. 77

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Nohomovich, M., Nesbitt, S.J., Haridy, Y., Shubin, N, Heckert, A.B., Barrett, P., Lauer, B.H., Lauer, R., Stocker, M.R., 2024, New anuran material from the Dockum Group in the American Southwest provides insight into frog novelty, evolution, and biogeography in the Late Triassic. *Journal of Vertebrate Paleontology, Program and Abstracts*, 2024, pp. 410-411.

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Tolchard, F.B., Hancox, P.J., Heckert, A.B., Dollman, K.N, and Choiniere, J.N., 2024, A South African Lagerstätte Site Reveals New insights into the Triassic archosauromorph radiation: *Palaeontological Society of South Africa abstracts*, p. 128.

2023 Book

Klein, H., Heckert, A.B., and Celeskey, M., 2023, Chirotheres: Tracking the Ancestors of Dinosaurs and Crocodiles. Indiana University Press (Life of the Past series). 360 pp. ISBN: 9780253066046n https://iupress.org/9780253066046/chirotheres/

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Duffin, C.J., Heckert, A.B., & Hancox, P.J., 2023, A new low diversity lacustrine elasmobranch assemblage from the Lower Triassic Burgersdorp Formation South Africa with descriptions of *Lissodus tumidoclavus* n. sp. (Chondrichthyes: Hybodontoidea): *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*: v. 308(2), pp. 151-179. DOI: 10.1127/njgpa/2023/1134

Reyes, W.A., Parker, W.G., & Heckert, A.B., 2023, A new aetosaur (Archosauria: Pseudosuchia) from the upper Blue Mesa Member (Adamanian: Early–Mid Norian) of the Late Triassic Chinle Formation, northern Arizona, USA, and a review of the paratypothoracin *Tecovasuchus* across the southwestern USA: *PaleoBios*, v. 40(9), pp. 1-15. https://doi.org/10.5070/P940961559

Rinehart, L. F., Lucas, S. G., Hunt, A. P., and Heckert, A. B., 2023, Skull and jaw shape as indicators of trophic guild association in temnospondyl amphibians and other aquatic predators: New Mexico Museum of Natural History and Science Bulletin, v. 90, p. 585-609.

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