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Position

Associate Professor of Geology, Department of Geology, Appalachian State University
Director, McKinney Geology Teaching Museum, Appalachian State University
Research Associate, New Mexico Museum of Natural History & Science, Albuquerque
Research Associate, North Carolina Museum of Science and Nature, Raleigh

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)

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.)

Research Interests

I am interested in **field-oriented, specimen-based microvertebrate** studies in vertebrate biostratigraphy, evolution, and systematics especially the early evolution of dinosaurs as revealed by Triassic-Jurassic paleontology, biostratigraphy and biochronology. Presently I am engaged in multiple Upper Triassic micro- and macrovertebrate projects across North America. A secondary interest involves using scanning electron microscopy (SEM) to investigate microvertebrate taxonomy and evolution throughout the Mesozoic.

Employment (postgraduate only)

Associate Professor of Geology, Department of Geology, Appalachian State University 2011-current
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

Formal Teaching Experience (1990-present)

As Assistant and Associate Professor, Appalachian State University, (2005-current)

Features of all classes taught:

- Utilized course management software extensively for lectures, grades, etc.
WebCT (2005-2008) and ASULearn (2008-current)
- Incorporate multiple methodologies, including multimedia, in classroom
- Continually updating to include “current events,” updated text, & recent discoveries
- Introduction to Physical Geology* (GLY 1101) lecture (5) and labs (2), Fall, 2005-current
 - Integrated classroom response systems (“Clickers”) (Spring, 2008, Fall, 2010)
 - Integrated ASULearn exams (Fall, 2010)
 - Contributed to lab manual revisions, including field trips
 - Produced camera-ready laboratory manual for Spring, 2007
 - Require some short-answers on exams regardless of class size (up to overload of 140)
 - Integrated Fred Webb Jr. Outdoor Geology Laboratory (“rock garden”) into lab
- Introduction to Historical Geology* (GLY 1102) lecture (1) and labs (18), Spring, 2006-current
 - Developed new lab exercise (Numerical dating methods), improved samples, etc.

- Heavily involved with redesign 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
- Lecture course included multiple new learning activities/assignments
- Evolution of the Earth* (GLY 2250, 4 credits) Lectures (3) and labs (5) Fall, 2008-current
 - First instructor to teach new course; have taught overloaded sections (24)
 - Integrated Fred Webb Jr. Outdoor Geology Laboratory (“rock garden”) into course
 - Combines principles of historical geology with earth systems science
 - Developed new labs and field trips to support course
 - Extensive writing requirements in weekly lab reports, including field trips
 - Actively collect specimens to update and improve multiple exercises
- Dinosaurs* (GLY 3549, 3 credits), Spring, 2006
 - Developed new topics course, included field trip to NC Museum of Natural Sciences
 - Final project included both paper and oral presentations
- Triassic trip: Field and Museum Methods* (GLY 3520, 1 credit), 2007, 2009-10
 - 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 3520, 2 credits), Spring intersession, 2008
 - Similar to above but with more stratigraphic/mapping emphasis; up to 11 students
- Invertebrate Paleontology and Historical Geology Laboratory* (GLY 4024), Fall, 2006
 - “Sabbatical replacement,” but still added and upgraded materials
- 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
- Dinosaurs: Origins, Evolution, Extinction?* (GH1515, Freshman Honors), Fall, 2007, 2009
 - Included running 4-day field trip to US National Museum (Smithsonian) in 2007
 - Fall, 2009 class overloaded (20 instead of 15)
 - 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
- “Outside the classroom”
 - Triassic trips field course has covered 13 states
 - Honors field trip drove to District of Columbia (2007), Raleigh (2009)
 - Utilized field trips to NC, VA, and TN in 1102 and 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)

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

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

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 catalogued 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)
Curatorial: M.S. and Ph.D. projects, 2000+ catalogued 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

Obtained funding from Vulcan Materials Co. for “G.E.M.S. Exhibit” (\$20,000 pledged)
Appalachian State University Foundation Fellows Grant, Spring, 2007
University Research Council Grant, Fall, 2005 (Highest rated proposal), Fall, 2006, Spring, 2008, 2010
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-current)
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)

Outreach Activities

Television:

Segment on Fred Webb Jr. “rock garden” on UNC-TV, Fall, 2008
Advisor (and “cameo”) in PBS documentary *Earthshaker*, on *Seismosaurus* (2005)
Interviewed by *NBC Nightly News* at excavation, May, 2000
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:

Lead tours and give lectures associated with McKinney Geology Teaching Museum (2005-current)
Dozens of lectures for the NMMNH, NMFOP, Albuquerque Geological Society, and others
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
Speaker for diverse school groups in the Albuquerque metropolitan area

Other:

NMMNH liaison to NM Friends of Paleontology (volunteer organization, 2002-2005)
Editor, NM Friends of Paleontology newsletter (1998-1999; 2003-2005)
New Mexico Geological Society Fall Field Conference co-chair, 2001, 2003.

Field & Travel Experience

Geological fieldwork in nine western states, North Carolina, Virginia, and Ohio, 1993-present
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, 150+ 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 NM, TX, AZ, UT & CO
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) and Germany (1998) and across the US.

Professional Society Memberships

Carolina Geological Society (CGS; lifetime member), Geological Society of America (GSA), 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), Arizona Geological Society.

Selected Scholarships, Fellowships, & Awards

The University of New Mexico 1993-2001:

Society of Vertebrate Paleontology Predoctoral Fellowship, 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 Kottowski 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 scholarship
National Merit Scholarship
Ohio Academic Scholarship
Wells Science Scholarship
Anderson Science Scholarship
Robert C. Byrd Scholarship
Procter & Gamble Scholarship

Peer Review Service

Served as a reviewer for multiple international paleontological journals, including *Acta Palaeontologica Polonica*, *Geological Magazine*, *Ichnos*, *Journal of African Earth Sciences*, *Journal of Vertebrate Paleontology*, *Neues Jahrbuch für Geologie und Paläontologie*, *New Mexico Geological Society Guidebook*, *Palaeontographica Abteilung A*, *Palaeontology*, *Palaeoworld*, *Palaaios*, *Rocky Mountain Geology*, *Zoological Journal of the Linnean Society of London*, and others.

Editorial board of the *New Mexico Museum of Natural History & Science Bulletin*, which involves frequent peer-review duties,

Publication Highlights (comprehensive bibliography attached)

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.

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.

Lucas, S.G., and Heckert, A.B., editors, 1995, *Permian Footprints and Facies*, New Mexico Museum of Natural History and Science Bulletin 6, 300 pp.

Lucas, S.G., and Heckert, A.B., editors, 2000, *Dinosaurs of New Mexico*, New Mexico Museum of Natural History and Science Bulletin 17, 240 pp.

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 Publications (see following pages for complete list)

- Heckert, A.B., Lucas, S.G., Rinehart, L.F., Celleskey, M.D., Spielmann, J.A., and Hunt, A.P., 2010, Articulated skeletons of the aetosaur *Typhothorax coccinarum* Cope (Archosauria: Stagonolepididae) from the Upper Triassic Bull Canyon Formation (Revueltian: early-mid Norian), eastern New Mexico, USA: *Journal of Vertebrate Paleontology*, v. 30, no. 3, 619-632. *Featured article in May issue and freely available online:*
<http://dx.doi.org/10.1080/02724631003763524>
- Heckert, A.B., Lucas, S.G., Rinehart, L.F., and Hunt, A.P., 2008, A new genus and species of sphenodontian from the Ghost Ranch *Coelophysis* quarry (Upper Triassic: Apachean), Rock Point Formation, New Mexico, USA: *Palaeontology*, v. 51, p. 827-845.
- Heckert, A. B., Lucas, S. G., Rinehart, L. F., Spielmann, J. A., Hunt, A. P., and Kahle, R., 2006, Revision of the archosauromorph reptile *Trilophosaurus*, with a description of the first skull of *Trilophosaurus jacobsi*, from the Upper Triassic Chinle Group, West Texas, USA; *Palaeontology*, v. 49, p. 621-640.
- Beatty, B.L., and Heckert, A.B., 2009, A large archosauriform tooth with multiple supernumerary carinae from the Upper Triassic of New Mexico (USA), with comments on carina development and anomalies in the Archosauria: *Historical Biology*, v. 21, p. 57-65.
<http://www.informaworld.com/smpp/content~content=a915318366~db=all~jumptype=rss>
- Joyce, W.G., Lucas, S.G., Scheyer, T.M., Heckert, A.B., and Hunt, A.P., 2009, A thin-shelled reptile from the Late Triassic of North America and the origin of the turtle shell: *Proceedings of the Royal Society B*, v. 296, p. 507-513 (available online 10 October 2008).
<http://rspb.royalsocietypublishing.org/content/276/1656/507.full.pdf+html?sid=504de079-34b5-4313-b1e0-e7f1860e42f3>
- Mitchell, J. S., Heckert, A. B., and Sues, H.-D., 2010, Grooves to tubes: Evolution of the venom delivery system in a Late Triassic "reptile": *Naturwissenschaften*, v. 97, p. 1117-1121.

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

2011 Papers

- Foster, J. R., and Heckert, A. B., 2011, Ichthyoliths and other microvertebrate remains from the Morrison Formation (Upper Jurassic) of northeastern Wyoming: A screen-washed sample indicates a significant aquatic component to the fauna: *Palaeogeography, Palaeoclimatology, Palaeoecology*, In Press.
- Lucas, S. G., Tanner, L. H., Donohoo-Hurley, L. L., Geissman, J. W., Kozur, H., Heckert, A. B., and Weems, R. E., 2011, Position of the Triassic-Jurassic boundary and timing of the end-Triassic extinctions on land: Data from the Moenave Formation on the southern Colorado Plateau, USA: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 302, p. 194-205.

2011 Abstracts

- Bartholomew-Staples, A.D., A virtual boulder field inside the classroom—The interactive rock garden at Appalachian State University. *Geological Society of America Abstracts with Programs*. SE GSA. http://gsa.confex.com/gsa/2011SE/finalprogram/abstract_185248.htm
- Heckert, A.B., 2011, A boulder field adjacent to the classroom—the Fred Webb Jr. outdoor geology laboratory at Appalachian State University. *Geological Society of America Abstracts with Programs*. SE GSA. http://gsa.confex.com/gsa/2011SE/finalprogram/abstract_185248.htm
- Sload, E.J., Heckert, A.B., Lucas, S.G., Schumacher, B.A., 2011, Triassic tetrapod fossils above “Jurassic” strata in Picketwire Canyon, Southeastern Colorado, require major revision of lower Mesozoic stratigraphy across the southern High Plains. *Geological Society of America Abstracts with Programs*. SE GSA http://gsa.confex.com/gsa/2011SE/finalprogram/abstract_185272.htm

2010 Papers

- Heckert, A.B., Lucas, S.G., Rinehart, L.F., Celeskey, M.D., Spielmann, J.A., and Hunt, A.P., Articulated skeletons of the aetosaur *Typhothorax coccinarum* Cope (Archosauria:Stagonolepididae) from the Upper Triassic Bull Canyon Formation (Revueltian: early-mid Norian), eastern New Mexico, USA: *Journal of Vertebrate Paleontology*, v. 30, no. 3, 619-642. Featured article in May issue and freely available online: <http://dx.doi.org/10.1080/02724631003763524>**
- Lucas, S. G., Rinehart, L. F., Krainer, K., Spielmann, J. A., and Heckert, A. B., Taphonomy of the Lamy amphibian quarry: A Late Triassic bonebed in New Mexico, U.S.A.: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 298, p. 388-398. DOI: 10.1016/j.palaeo.2010.10.025
- Mitchell, J. S., and Heckert, A. B., 2010, The setup, use and efficacy of sodium polytungstate separation methodology with respect to microvertebrate remains: *Journal of Paleontological Techniques*, v. 7, p. 1-12. <http://www.jpaleontologicaltechniques.org/pasta3/JPT%20N7/Bulletin.html> or for .pdf: http://www.jpaleontologicaltechniques.org/pasta3/JPT%20N7/Pdf/JPT_n007_Jun.pdf
- Mitchell, J. S., Heckert, A. B., and Sues, H.-D., Grooves to tubes: Evolution of the venom delivery system in a Late Triassic "reptile": *Naturwissenschaften*, v. 97, p. 1117-1121. DOI: 10.1007/s00114-010-0729-0**

2010 Abstracts

- Heckert, A.B., Biostratigraphic significance and redescription of the enigmatic vertebrate *Colognathus obscurus* from the Upper Triassic Chinle Group, Southwestern USA. *Journal of Vertebrate Paleontology, SVP Program and Abstracts Book 2010*, p. 103-104A.
- Heckert, A. B., and Mitchell, J. S., Mesozoic microvertebrates as windows into tetrapod tooth development, in International Palaeontological Congress, London, p. 192 <http://www.ipc3.org/docs/ProgrammeAbstractsfull.pdf>
- Heckert, A.B., Mitchell, J.S., and Schneider, V., East meets west and south comes north—How a single microvertebrate locality can revise Newark Supergroup diversity—the Moncure microvertebrate site, North Carolina. Southeastern Association of Vertebrate Paleontology, 3 June, 2010. (Unpublished proceedings)

2009 Monograph

- Rinehart, L. F., Lucas, S. G., Heckert, A. B., Spielmann, J. A., and Celeskey, M. D., 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*, v. 45, 260 pages.

2009 Papers

Beatty, B.L., and Heckert, A.B., A large archosauriform tooth with multiple supernumerary carinae from the Upper Triassic of New Mexico (USA), with comments on carina development and anomalies in the Archosauria: *Historical Biology*, v. 21, p. 57-65.

<http://www.informaworld.com/smpp/content~content=a915318366~db=all~jumptype=rss>

Joyce, W.G., Lucas, S.G., Scheyer, T.M., Heckert, A.B., and Hunt, A.P., A thin-shelled reptile from the Late Triassic of North America and the origin of the turtle shell: *Proceedings of the Royal Society B*, v. 296, p. 507-513 (available online 10 October 2008).

<http://rspb.royalsocietypublishing.org/content/276/1656/507.full.pdf+html?sid=504de079-34b5-4313-b1e0-e7f1860e42f3>

Lucas, S.G., Sullivan, R.M., Cather, S.M., Jasinski, S.E., Fowler, D.W., Heckert, A.B., Spielmann, J.A., and Hunt, A.P., 2009, No definitive evidence of Paleocene dinosaurs in the San Juan Basin: *Palaeontologia Electronica*, v. 12, p. 10. http://www.palaeo-electronica.org/2009_2/199/index.html

Spielmann, J.A., Lucas, S.G., Heckert, A.B., Rinehart, L.F., and Richards, H.R., III, 2009, Redescription of *Spinosuchus caseanus* (Archosauromorpha: Trilophosauridae) from the Upper Triassic of North America: *Palaeodiversity*, v. 2, p. 283-313.

2009 Abstracts

Heckert, A.B., Schneider, V., Olsen, P.E., Mitchell, J.S., Vertebrate diversity of the Upper Triassic Chatham Group, Deep River Basin, central North Carolina: Southeastern Association of Vertebrate Paleontology, Martinsburg, VA, May 27-30. Available online at:

http://web.me.com/dooleyclan/SEAVP/SEAVP_files/Abstract%20book.pdf

Heckert, A.B., Mitchell, J.S., Schneider, V., Olsen, P.E., Microvertebrate sampling greatly increases the vertebrate diversity of Upper Triassic Newark Supergroup, North Carolina, USA: 9th North American Paleontological Convention, 21-26, 2009, published in Cincinnati Museum Center Scientific Contributions, no. 3, p. 88. <http://npsc2009.org/wp-content/uploads/2009/06/npsc-2009-abstracts-cinc-mus-ctr-sci-cont-3.pdf>

Heckert, A.B., Lucas, S.G., Rinehart, L.F., Spielmann, J.A., and Celleskey, M., An articulated skeleton of the aetosaur *Typhothorax coccinarum* Cope (Archosauria: Stagonolepididae) from the Upper Triassic Bull Canyon Formation (Revueltian: early-mid Norian), eastern New Mexico, USA: *Journal of Vertebrate Paleontology*, *SVP Program and Abstracts Book 2009*, p. 112-113A.

Heckert, A.B., Lucas, S.G., Dickinson, W.R., and Mortensen, J.K., 2009, New ID-TIMS U-Pb ages for Chinle Group strata (Upper Triassic) in New Mexico and Arizona, correlation to the Newark Supergroup, and implications for the "long Norian": Geological Society of America Abstracts with Programs, v. 41, p. 123. http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_162342.htm

Lucas, S.G., Heckert, A.B., Rinehart, L.F., Spielmann, J.A., and Jasinski, S., Vertebrate fauna, stratigraphy and age of the Whitaker quarry (Ghost Ranch, New Mexico), the richest Upper Triassic dinosaur quarry in the world: *Journal of Vertebrate Paleontology*, *SVP Program and Abstracts Book 2009*, p. 137-138A.

Mitchell, J.S., Heckert, A.B., Schneider, V., and Olsen, P.E., Evolutionary insights from preliminary statistical analysis of teeth of the venomous microvertebrate *Uatchitodon* (Archosauriformes) from the Upper Triassic (Sanford sub-basin, Cummock Formation) of North Carolina, USA: *Journal of Vertebrate Paleontology*, *SVP Program and Abstracts Book 2009*, p. 149A.

Norman, J.R., Heckert, A.B., Krzyzanowski, S.E., Rinehart, L.F., and Lucas, S.G., New microvertebrate faunal assemblage from the Upper Triassic Blue Mesa Member of the Petrified Forest Formation in the Blue Hills, east-central Arizona: *Geological Society of America Abstracts with Programs*, v. 41, p. 103. http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_160031.htm

Rinehart, L.F., Lucas, S.G., and Heckert, A.B., Lateral line groove development as an indicator of terrestriality in metoposaurid amphibians *Journal of Vertebrate Paleontology*, *SVP Program and Abstracts Book 2009*, p. 171-172A.

Rinehart, L. F., Lucas, S. G., and Heckert, A. B., Lateral line groove development as a measure of terrestriality in Late Triassic metoposaurid amphibians: *New Mexico Geology*, v. 31, no. 2, p. 47.

Rinehart, L.F., Lucas, S.G., and Heckert, A.B., Limb allometry and lateral line groove development indicates terrestrial-to-aquatic lifestyle transition in Metoposauridae (Amphibia: Temnospondyli): *Geological Society of America Abstracts with Programs*, v. 41, p. 263.

- http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_160014.htm
Schumacher, B.A., Heckert, A.B., and Lucas, S.G., Vertebrate fossil discoveries prompt major shift in Mesozoic stratigraphy of Picketwire Canyonlands, Comanche National Grassland, southeastern Colorado: *Geological Society of America Abstracts with Programs*, v. 41, p. 546.
http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_162834.htm
Spielmann, J.A., Lucas, S.G., Heckert, A.B., Sullivan, R.M., and Jasinski, S., Land-vertebrate faunachrons, GIS and cladotaxonomy—towards a global Triassic tetrapod biochronology: *Geological Society of America Abstracts with Programs*, v. 41, p. 107.
http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_159455.htm

2008 Paper

- Heckert, A.B., Lucas, S.G., Rinehart, L.F., and Hunt, A.P., A new genus and species of sphenodontian from the Ghost Ranch *Coelophysis* quarry (Upper Triassic: Apachean), Rock Point Formation, New Mexico, USA: *Palaeontology*, v. 51, p. 827-845. doi.wiley.com/10.1111/j.1475-4983.2008.00786.x

2008 Monograph

- 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 pp.

2008 Note

- Heckert, A.B., Comments on the proposed conservation of *Buettneria* Case, 1922 (Amphibia): *Bulletin of Zoological Nomenclature*, v. 65(4), p. 310-313.

2008 Abstracts

- Heckert, A.B., Schneider, V., Olsen, P.E., Mitchell, J.S., The Moncure microvertebrate fauna (Upper Triassic: Norian), Colon cross-structure/Sanford Sub-basin, North Carolina: *Geological Society of America Abstracts with Programs*, v. 40(4), p. 55.
http://gsa.confex.com/gsa/2008SE/finalprogram/abstract_136659.htm
Heckert, A.B., Mitchell, J.S., Schneider, V. and Olsen, P.E. 2008. Exceptional taxonomic diversity from a single site: The Upper Triassic Moncure microvertebrate locality, Cumnock Formation, Sanford sub-basin, North Carolina, USA. *Journal of Vertebrate Paleontology*, v. 28(supplement to no. 3): 90A.
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