

## DENA M. SMITH

Assistant Professor of Geological Sciences  
Curator of Invertebrate Paleontology  
CU Museum of Natural History, UCB 265  
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### EDUCATION

#### University of Arizona.

Ph.D. in Geosciences, Minor in Entomology, 2000; Karl W. Flessa, Advisor  
Dissertation: The evolution of plant-insect interactions: Insights from the Tertiary fossil record.

#### University of California at Santa Cruz.

B.A. in Biology and Environmental Studies (combined degree), 1994; Leo F. Laporte and Deborah Letourneau, Honors Thesis Co-Advisors  
Honors Thesis: Plant - Insect Interactions in the Fossil Record.

### RESEARCH POSITIONS HELD

Department of Geological Sciences and CU Museum, University of Colorado, Boulder: *Assistant Professor and Curator of Invertebrate Paleontology, August 2000 – present.*

Florissant Fossil Beds National Monument: *Research Associate, May 1998 – present.*

Department of Paleobiology, Smithsonian Institution: *Evolution of Terrestrial Ecosystems - Fossil Insect Consultant, May 1995- September 1996.*

### PROFESSIONAL MEMBERSHIPS (activity within last five years)

Association of Tropical Biology  
Entomological Society of America  
Coleopterists Society  
Geological Society of America  
International Organisation of Palaeobotany  
Organization for Tropical Studies  
Paleontological Society  
Society for the Advancement of Chicanos and Native Americans in the Sciences  
Society for Sedimentary Geology

### RESEARCH AND GRANTS

### PUBLICATIONS

(\*denotes student advisee, <sup>UCM</sup> denotes research using CU Museum specimens)

#### Books Edited:

<sup>UCM</sup> Meyer, H.M. and **D.M. Smith** (editors) 2008. Paleontology of the Upper Eocene Florissant Formation, Colorado. Geological Society of America Special Paper 435. 177p.

#### Papers in Refereed Journals:

<sup>UCM</sup> **Smith, D.M.** and A.P. Moe-Hoffman. 2007. Taphonomy of Diptera in Lacustrine Environments: A case study from Florissant Fossil Beds, Colorado. *Palaios*, 22:623-629.

<sup>UCM</sup> J. Krieger, R.P. Guralnick, **D.M. Smith**. 2007. Generating empirically determined, continuous measures of leaf shape for climate prediction. *Palaios*, 22:212-219.

**D.M. Smith**, A. Cook\* and C.R. Nufio. 2006. How Physical Characteristics of Beetles Affect their Fossil Preservation. *Palaios* 21(3):305-310.

<sup>UCM</sup> A. Hicks and **D.M. Smith**. 2006. *Athysanella bidentata* n.sp. (Hemiptera: Cicadellidae): a likely endemic leafhopper from the San Luis Valley in Colorado. *Zootaxa* 1164:63-68.

<sup>UCM</sup> A. Moe\* and **D.M. Smith**. 2005. Using Fossil Flies to Interpret Paleoenvironment, Florissant Fossil Beds NM, Colorado. *Palaeogeography, Palaeoecology, Palaeoclimatology*, 221:203-214.

B.C. Ratcliffe, **D.M. Smith** and D.M. Erwin. 2005. The World's Largest Fossil Scarab Beetle: *Oryctoantiquus borealis*, New Genus and Species, from the Eocene of Oregon, U.S.A. (Insecta: Coleoptera). *Coleopterist's Bulletin*, 59(1):127-135.

<sup>UCM</sup> **Smith, D. M.** and C. R. Nufio. 2004. Levels of Herbivory in Two Costa Rican Rainforests: Implications for Studies of Fossil Herbivory. *Biotropica* 36(3):318-326.

#### **Papers in Refereed Books:**

**Smith, D.M.** 2008. A comparison of plant-insect associations in the middle Eocene Green River Formation and the Upper Eocene Florissant Formation and their climatic implications. *In* H.M. Meyer and D.M. Smith (eds), *Paleontology of the Upper Eocene Florissant Formation, Colorado*. Geological Society of America Special Paper, 435:89-104.

<sup>UCM</sup> A. Kinchloe\*, **D.M. Smith**, R.P. Guralnick, P.E. Cushing and J. Krieger. 2008. Quantitative prediction of fossil biodiversity: Eocene Spiders from Florissant, Colorado. *In* H.M. Meyer and D.M. Smith (eds), *Paleontology of the Upper Eocene Florissant Formation, Colorado*. Geological Society of America Special Paper, 435:105-116.

#### **Other Publications**

**Smith, D.** and S. Nufio. 2008. Book Review: "We Sing and Learn Dinosaurs". *Palaeontologia Electronica* 11(2): [http://palaeo-electronica.org/2008\\_2/books/wee.htm](http://palaeo-electronica.org/2008_2/books/wee.htm)

**Smith, D. M.** 2004. Book Review: "The Fossils of Florissant, Herbert W. Meyer, 2003, Smithsonian Institution Press, Washington D.C., 258p. (Hardcover, \$ 39.99) ISBN:1-58834-107-0". *Palaios* 19(1): 106-107.

#### **Publications Prior to Arrival at CU-Boulder**

**Smith, D.M.** 2000. Beetle taphonomy in a recent ephemeral lake in southeastern Arizona. *Palaios*, 15(2):152-160.

**Smith, D.M.** 1999. Comparative Taphonomy and Paleoecology of Insects in Lacustrine Deposits. *Proceedings of the First International Paleontomological Conference*, Moscow, Russia. 12 pgs.

Labandeira, C.C. and **D.M. Smith**. 1999. Thoughts on the First International Paleontomological Conference, 30 August to 4 September 1998, The Paleontological Institute, Moscow, Russia, *Paleobiology*, (2)

Flessa, K.W. and **D.M. Smith**. 1997. Paleontology in Academia: Recent trends and future opportunities. *Priscum*, 8(1):1-4.

**Smith, D.M.** 1994. Plant - Insect Interactions in the Fossil Record. *Phytophaga*, 6: 35-49.

#### **Publications in Preparation:**

**D.M. Smith**. Coleopteran Diversity Revisited: A fossil perspective. *To be submitted to Nature*, Sept. 08.

<sup>UCM</sup> **D.M. Smith**, and J. Thoene\*. Apples and Oranges, Beetles and Flies: Comparative taphonomy of Florissant Coleoptera and Diptera. *To be submitted to Palaeogeography, Palaeoecology, Palaeoclimatology*. Nov. 08.

<sup>UCM</sup> **D.M. Smith**. Florissant is better than amber, for beetle diversity. *To be submitted to Proceedings of the*

*National*

*Academy of Sciences*, Dec. 08.

**D.M. Smith**. Megabiases in the fossil record of beetles. *To be submitted to Paleobiology*, Feb. 09.

**D.M. Smith**, J. Pardo\*, M. Gorman\* and B. Small. A New Fossil Orthopteroid from the Jurassic of Colorado. *To*

*be*

*submitted to Journal of Paleontology*, Mar. 09.

#### **Abstracts since arrival at CU-Boulder**

Hollis, KA\*, KD Webster\* and **D.M. Smith**. 2008. Using Taphonomic Disparity to Understand Preservation Biases in the Western Interior Seaway: An Example from the Pierre Shale (Upper Cretaceous). Geological Society of America Annual Meeting, Abstracts with Programs.

Small, B.J., M.A. Gorman\*, J. Pardo\* and **D.M. Smith**. 2007. A Late Jurassic lacustrine biota from the Morrison Formation of Colorado. Geological Society of America Annual Meeting, Abstracts with Programs 39(6).

Leckey, E\* and **D.M. Smith**. 2007. Plant-Insect Interactions and Climate from the Miocene of Nevada. Ecological Society of America Annual Meeting, Abstracts with Programs.

**D.M. Smith** and A.P. Moe-Hoffman. 2006. Taphonomy of Diptera in the lacustrine deposits of the Florissant Formation (Late Eocene), Colorado. Geological Society of America Annual Meeting, Abstracts with Programs 38(7).

- <sup>UCM</sup> Benson, M.E.\*, **D.M. Smith** and S. Spaulding 2006. Exceptional diversity in Late Eocene Freshwater Diatoms from the Florissant Formation, Teller County, Co. Geological Society of America Annual Meeting, Abstracts with Programs, 38(7).
- <sup>UCM</sup> Leckey, E.\* and **D.M. Smith**. 2006. Plant-insect interactions in the Middle Miocene of Nevada. Geological Society of America Annual Meeting, Abstracts with Programs, 38(7).
- D.M. Smith**. 2004. Florissant is better than amber: A comparison of beetle preservation, diversity and ecological representation. Geological Society of America Annual Meeting, Abstracts with Programs, 36(5): 40.
- D.M. Smith**. 2004. Using insect herbivory as a proxy for insect diversity: cautions from a modern tropical forest assemblage. Geological Society of America Annual Meeting, Abstracts with Programs, 36(5):381.
- <sup>UCM</sup> Forbis, J.\* and **D.M. Smith**. 2004. Sampling methods and measures of diversity and paleoclimate in fossil floras. Geological Society of America Annual Meeting, Abstracts with Programs, 36(5): 63.
- <sup>UCM</sup> Kinchloe, A.E.\*, **D.M. Smith**, P.E. Cushing, and R.P. Guralnick, 2004. A morphometric study of the Eocene spiders of Florissant, Colorado. Geological Society of America Annual Meeting, Abstracts with Programs, 36(5): 40.
- <sup>UCM</sup> Moe, A.P.\*, **D.M. Smith** and A. Cook\*. 2003. Near shore or off shore? Reconstructing the depositional setting of an ancient lake assemblage in Stewart Valley (Miocene), Nevada. Geological Society of America Annual Meeting, Abstracts with Programs, 35(6): 537.
- <sup>UCM</sup> Cook, A.\* and **D.M. Smith**. 2003. They bend but they don't break: Testing the Physical Robustness of Beetle Cuticle. Geological Society of America Annual Meeting, Abstracts with Programs, 35(6): 538.
- Smith, D.M.** 2002. Patterns of diversity and preservation in the fossil record of Coleoptera. *In* "Insect Extinction: Historical and Ecological Patterns", Entomological Society of America Annual Meeting, Ft. Lauderdale, Florida. (*Invited Speaker*)
- <sup>UCM</sup> Hodgkins, J.\* and **D.M. Smith**. 2002. Climate and Ecology of an Eocene Plant-Herbivore Assemblage. Geological Society of America Annual Meeting, Abstracts with Programs, 34(6):425.
- <sup>UCM</sup> Moe, A.P.\* and **D.M. Smith**. 2002. Using fossilized Diptera from the Florissant Formation as Paleoenvironmental Indicators. Geological Society of America Annual Meeting, Abstracts with Programs, 34(6):102.
- <sup>UCM</sup> **D.M. Smith**. 2002. Exceptional diversity and preservation: Insects and plants of the Middle Miocene Stewart Valley Assemblage. Geological Society of America Annual Meeting, Abstracts with Programs, 34(6):102.
- Smith, D.M** and A. Cook\* 2001. Beetle Bias: How sedimentary environment influences patterns of Coleopteran Diversity in the fossil record. Geological Society of America Annual Meeting, Abstracts with Programs, 33(6), 267.
- Smith, D.M.** 2001. Taphonomic bias and insect diversity: A lesson from the beetles and flies. North American Paleontological Convention 2001, Abstracts with Programs, PaleoBios, 21(2): 117.

## INVITED COLLOQUIA

- "Insect Response to Climate Change", Department of Geosciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, 10/08.
- "The Evolution of Insects: What we can learn from the fossil record", Department of Geosciences, University of Iowa, Iowa City, IA, 4/06.
- "The Evolution of Fossil Insects: What we can learn from the fossil record" Department of Geological Sciences, University of Colorado, Boulder, CO. 9/05.
- "Fossil Insects: Little Extinction, Lots of Diversification", Western Interior Paleontological Society Founders Symposium 2005, Extinctions: Punctuations in Time, Colorado School of Mines, Golden, CO. 3/05.
- "Insect Diversity Revisited: How Preservation Impacts our Perceptions". Department of Ecology, Population and Organismic Biology - Colloquium, University of Colorado, Boulder, CO. 4/03.
- "Fossil Insects: Their preservation and interactions with plants". University of Colorado at Boulder Natural History Museum. 12/98.

## GRANT ACTIVITY

### *External Grants In Review*

**NSF-EAR-Sedimentary Geo & Paleobiology**

The Response of Insects to Climate Change in the Eocene through Oligocene of Colorado. Dates: 5/15/09-5/14/12.  
Amount:\$232,132. *Submitted July 16, 2008.*

**National Park Service – Rocky Mountain Cooperative Ecosystem Studies Unit**

Co PIs– Dena Smith and Herbert Meyer

Excavation of Fossils from the Florissant Formation to Investigate the Response of Insects to Climate Change during

the Eocene-Oligocene Transition, and Development of an Interactive Website for Identifying Fossil Insects.

Dates:5/15/09-5/14/12.

Amount: \$20,000. *Submitted July 31, 2008.*

**Funded**

**National Park Service – Rocky Mountain Cooperative Ecosystem Studies Unit**

Co PIs– Dena Smith and Herbert Meyer, Florissant Fossil Beds.

Develop Mirror Website of FLFO Paleontological Database. Dates: 9/30/07 – 3/1/10.

Amount: \$20,000 (total amount funded to CU).

**Evolving Earth Foundation**

PI - Dena Smith, Co PI – MaryEllen Benson, PhD Candidate, Geological Sciences

Exceptional diversity in late Eocene freshwater diatoms from the Florissant Formation, Teller County, Colorado.

Dates: Summer 2007-Summer 2008

Amount: \$3,000

**National Park Service – Rocky Mountain Cooperative Ecosystem Studies Unit**

Co PIs– Dena Smith and Herbert Meyer, Florissant Fossil Beds.

Excavate and Research Fossil Plants from the Antero Formation. Dates: 5/15/07 - 1/31/10.

Amount: \$10,000 (total amount funded to CU).

**National Park Service – Rocky Mountain Cooperative Ecosystem Studies Unit**

Co PIs– Dena Smith and Herbert Meyer, Florissant Fossil Beds.

Taxonomy & Paleoenvironmental Indications of Fossil Diatoms. Dates:5/15/05 - 9/30/08

Amount: \$21,150 (total amount funded to CU).

**NSF - Biological Research Collections (NSF-DEB 0345875)**

Sole PI

Computerization and Reorganization of the Invertebrate Paleontology Collections. Dates: 8/15/04 - 7/31/07.

Amount: \$432,000.

**Internal Grants:**

**CU-Boulder Outreach Committee Grant**

PI - Dena Smith, Co PI – Cathy Regan, Education Coordinator, CU Museum

Fossils and the Natural World: Museum Training and Support for 3<sup>rd</sup> Grade Teachers. Dates: Summer 2008-

Summer 2009. Amount: \$5,000

**CU-Boulder Outreach Committee Grant**

PI - Dena Smith, Co PI - James Hakala, Assistant Director, CU Museum

Museum Outreach Science Training (MOST). Dates: Summer 2006-Summer 2007. Amount: \$4,980

**Council on Research and Creative Work – Grant in Aid, University of Colorado.**

Sole PI

Fossil Insects and Plants from Stewart Valley (Miocene), Nevada. Dates: 05/15/02 – 05/15/03. Amount: \$7000.

**Council on Research and Creative Work – Junior Faculty Development Award, University of Colorado.**

Sole PI

Fossil Insects and Plants from Stewart Valley (Miocene), Nevada. Dates: 05/15/02 – 05/15/03. Amount: \$5000.

*Awards and Fellowships prior to arrival at CU-Boulder*

**National Science Foundation Graduate Research Fellowship.** 6/95-6/99.

**Centennial Award** - University of Arizona Alumni Association. 12/96

**Analysis of Biological Diversification - Research Training Group Fellowship** – Univ. of Arizona. 8/94 -6/95.

**CURATION**

- 2008** Supervision of Invertebrate Paleontology Collection Manager (Hollis – starting 9/08) and student collections staff (Leckey, Padilla and Barton).  
Curation of 3,000 Green River Insects (supervised and trained a team of five undergraduates to assist with processing of materials)  
Curation of 450 Burgess Shale Fossils (trained and collaborated with volunteer Dr. Diane Brown)  
Supervised corrections to taxonomy, reorganization and inventory of plant and aquatic invertebrate holotypes, Kudia River fossils, Antero and Pitch Pinnacle formation specimens.  
Accession of approximately 7,400 fossil insects, arachnids and plants from Denson, Donnell, Old Mtn., Mahaffey Trail, Anvil Points and Paleoburn localities, Green River Formation, CO., gifted by Mr. David Kohls.  
Field work in the Pitch Pinnacle Formation (Sept 08)
- 2007** Supervision of Invertebrate Paleontology Collection Manager (Marcot) and student collections team (Leckey, Padilla and Barton)  
Continued work on NSF-Collections Improvement Grant: Development of Invertebrate Paleontology Webpage, Online Database and DiGIR interface (in collaboration with Marcot and Hess), continued fossil inventory and updates to taxonomy (supervision of Marcot and student workers).  
Accession of approximately 6,000 fossil insects and arachnids from Denson, Donnell and Old Mtn. Localities, Green River Formation, CO., gifted by Mr. David Kohls.  
Supervised corrections to taxonomy, reorganization and inventory of Florissant plant collections (non-holotypes) and Pierre Formation specimens.  
Field work in Piceance Creek Basin, Green River Formation, CO. (Aug 07).
- 2006** Served as point-person of Paleontology Section (Spring and Summer)  
Supervision of Paleontology Collection Manager (Culver, Spring and Summer)  
Supervision of Invertebrate Paleontology Collection Managers (Moe and Marcot)  
Accession of approximately 6,000 fossil insects and arachnids from the Paleoburn, Denson and Donnell Localities, Green River Formation, CO., gifted by Mr. David Kohls.  
Led fieldtrip as part of GEOL 5700 seminar to visit Paleoburn Locality, Green River Formation, CO., and taught students about paleoecological sampling in lacustrine deposits (collected and accessioned approximately 300 insect specimens).
- 2005** Curator of Exhibit, Stone Lace: The Fossils of Florissant, CU Museum  
Served as point-person of Paleontology Section (Fall 2005).  
Supervision of Paleontology Collection Manager (Culver) starting Fall 2005.  
Supervision of Invertebrate Paleontology Collection Manager (Moe)  
Accession of approximately 7,500 fossil insects and arachnids from the Anvil Points Locality, Green River Formation, CO., gifted by Mr. David Kohls.
- 2004** Curator of Exhibit, Stone Lace: The Fossils of Florissant, CU Museum  
Supervision and training of new Paleobiology Collection manager (in collaboration with curators Chin and Eberle).  
Hire, Train and Supervise new Invertebrate Paleontology Collection manager (NSF funded).  
Supervision and training: three graduate assistants on invertebrate curation projects (database formation, accession and curation of Florissant macrofloral material, holotype database and research of relevant literature, curation of green river insects, amber insect inventory).  
Housing and organization of amber/copal collection for possible future gift to Museum (400 pieces from

Colombia and Madagascar).

**2003**

Served as point-person of Paleontology Section (Spring and Summer 2003).  
Collection management duties with other curators, during the eight months that we were without a collection manager.  
Handled all Invertebrate and Plant fossil loans and inquiries.  
Helped oversee repairs to the basement floor (due to flooding in building).  
Worked with undergraduate student on digital imaging of the holotype collection (Matt Westerby).  
Worked with Museum Informatics Coordinator (Tara Hess) on development of Holotype Database.  
Supervision: two collection managers (Murphey and Hall in Spring).  
Supervision and training: two graduate assistants on invertebrate curation projects (database work, accession and curation of Green River material, Holotype database and research of relevant literature, paleobiology database work).  
Field work – Douglas Pass region of the Green River Formation, Western Colorado (collected over 200 insects, seeds and leaf compression fossils)

**2002**

Served as point-person of Paleontology Section.  
Worked on revision of section policy and procedure and oversaw building repairs  
Began Holotype project – identify, locate and rehouse all holotype collections (over 700 specimens)  
Oversaw acquisition of fossil material for CU Museum Invertebrate Paleontology – rare Silurian soft-bodied organisms and an excellent collection of Cretaceous Foraminifera.  
Supervision: two collection managers (Murphey and Hall)  
Supervision and training: two graduate assistants and two undergraduates on invertebrate curation projects (database formation, holotype project – search for specimens and rehousing, curation of green river plants, physical reorganization of many of the fossil invertebrates into a general stratigraphic order).  
Field work – Stewart Valley, Nevada. Timed sampling study of fossil insects (over 1,400 specimens collected). Grant in Aid and JFDA supported.

**2001**

Served as point-person of Paleontology Section.  
Reorganized section budget procedures.  
Oversaw equipment purchases and space organization.  
Move to Bruce Curtis building (MCOL) from Hunter Building.  
Specimen selection and label text for Centennial Exhibit.  
Supervision: one full-time collection manager (Murphey) and one part-time collection manager (Hall).  
Supervision and training: one graduate student, two undergraduate students and a volunteer on invertebrate curation projects.  
Field work - Three Field trips to Green River Formation, CO – fossil plants and insects. This added 200 new specimens and two new insect localities to the CU Museum's holdings.

**2000**

Reorganization of fossil insect collection.  
Accessioned approximately 1,200 new fossil plants and insects from the Douglas Pass region of the Green River Formation, CO (Middle Eocene).  
Supervision and training: one graduate student who worked to re-house Florissant fossil insects to more secure storage practices.  
Field work: Collection of material from John Day Formation, Oregon (multiple insect specimens).

## TEACHING

### ***CU Courses Taught***

(\*indicates new course development, <sup>R</sup>indicates major course revision)

**GEOL 5700, Seminar: Paleontology Reading Group:** Spring 04.

<sup>R</sup> **GEOL 3410, Paleobiology:** Fall 01, 03, 07.

\***MUSM 5061, Scientific Illustration:** Fall 02, Spring 05 and 07.

\***MUSM 5914, Paleontology Collections:** Co-Taught, Fall 02.

\* **GEOL 4700/5700, Seminar: Taphonomic Processes:** Co-Taught, Spring 02. Solo, Spring 06.

\* MUSM 5051, Entomology Practicum: Co-Taught Fall 01.

**Other Teaching**

**Seminar Instructor, Fossil Insects of the Florissant Formation.** 7/07. Florissant Fossil Beds National Monument seminar series on Paleontology of the Florissant Fossil Beds. Florissant, CO.

-Taught insect preservation, diversity and covered current research being conducted at Florissant fossil beds. Visited and discussed field sites and examined specimens (both body fossil and insect feeding traces).

**Resource Instructor, OTS: Tropical Biology: An Ecological Approach.** 2/99, 6/99, 2/00, 3/01, 1/02, 1/03, 2/04 Organization for Tropical Studies, University of Costa Rica, San Jose, Costa Rica.

-Taught insect systematics & evolution, field techniques, geology and climate of Costa Rica and paleobiology.

**Guest Lectures in Classes at the University of Colorado-Boulder.**

“What we can learn about evolution from the fossil record”. In EBIO 3080, Evolution. 9/06, 9/07.

“Fossil Insects as Paleoenvironmental Indicators”. In GEOL 5700-004, Topics: Paleoenvironmental Evidence. 4/06.

“Insects and the Fossil Record”. In EEB 4660, Insect Biology. 3/05 and 2/06, 3/07.

“Fossil Insect Research Program”. In GEOL 5700, Topics: Introduction to Geological Science Faculty, 11/05, 10/07.

“The fossil record of insects”. In GEOL 3410, Paleobiology, 10/05.

“Taphonomy and Paleontological Collections” In MUSM 5914, Museum Practicum in Geology. 11/04, 11/06.

“Co-evolution and the Fossil Record”. In EPOB 5320-002, Current Topics in Evolutionary Biology: Coevolution. 4/04.

**Students (<sup>UCM</sup> denotes research projects using CU Museum specimens)**

**Graduate Student Advisees**

**Current:**

<sup>UCM</sup> **Mary Ellen Benson**, PhD candidate, Geological Sciences, expected December 2009.  
Florissant Diatoms: Stratigraphy, Ecology and Systematics.

<sup>UCM</sup> **Erin Leckey**, PhD candidate, Geological Sciences, expected 2010.  
Evolution of oak-herbivore interactions.

<sup>UCM</sup> **Melissa Barton**, MS candidate, Museum and Field Studies Program, expected Spring 2009.  
Flora of the Antero Formation.

**John Hankla**, MS candidate, Museum and Field Studies Program, expected Summer 2009.  
Digital Database of Fossil Dinosaur Collection.

**Christina Spence**, MS candidate, Museum and Field Studies Program, expected Summer 2010.

**Graduated:**

<sup>UCM</sup> **Kathy Hollis**, MS candidate, Museum and Field Studies Program, Summer 2008.  
Thesis: “Using Taphonomic Disparity to Understand Preservation Biases in the Western Interior Seaway: An Example from the Pierre Shale (Upper Cretaceous)”

<sup>UCM</sup> **Amanda Cook**, MS, Department of Geological Sciences, Summer 2004.  
Thesis: “Actualistic taphonomy of fossil beetles in lake environments”.

<sup>UCM</sup> **April Kinchloe**, MS, Department of Geological Sciences, Summer 2004,  
Thesis: “Morphometric techniques and the systematics of spiders from Florissant Fossil Beds”.

<sup>UCM</sup> **Amy Moe**, MS, Museum and Field Studies Program, Spring 2003.  
Thesis: “Using fossil flies as indicators of pre-Quaternary climate”.

**Undergraduate Student Advisees (Honors, UROP, Interns and Independent Projects)**

**Current:**

<sup>UCM</sup> **Kevin Webster**, Ecology and Evolutionary Biology and Geological Sciences, University of Colorado

3D preserved insects from the Barstow Formation (Miocene), California (Geo Mentorship Program), Pierre Shale Mollusks database project (UROP funded).

- UCM* **Carter Casad**, Environmental Studies, University of Colorado – Taphonomy of insects from the Green River Formation (UROP-Grant).
- UCM* **Jenell Thoene**, Geological Sciences, University of Colorado – Taphonomy of beetles from the Florissant Formations (BURST Internship Program).
- Nina Xiong**, Ecology and Evolutionary Biology, University of Colorado – Climate variables that correlate with insect damage levels in modern Oak forests (NIH/HHMI Scholar Program).
- Andrea Jaszlics**, Ecology and Evolutionary Biology, University of Colorado – Early evolution of the Crocodylomorpha (Independent Project).

***Past:***

- Jason Pardo**, BS Fall 2007, Department of Ecology and Evolutionary Biology, University of Colorado- Jurassic Fish and Insects of the Canon City region. (UROP/Mentorship funded 2004)
- UCM* **Olivia Woodruff**, Geological Sciences, University of Colorado – Taphonomy of insects from the Green River Formation (UROP-Team Grant).
- UCM* **Mark Gorman**, Undergraduate, Geological Sciences and Ecology and Evolutionary Biology – Actualistic Taphonomy of Plants and Insects in lacustrine settings. (Independent Project).
- UCM* **Katherine Fornash**, Geology and Geophysics, Yale University – Plant-insect interactions and climate change in the Cenozoic of Western North America. (RECESS Program).
- UCM* **Kristen Hill**, Undergraduate, Ecology and Evolutionary Biology, Curation of the Columbian amber and taphonomic studies of amber. (UROP funded)
- UCM* **William Dowling**, Undergraduate, Ecology and Evolutionary Biology - Curatorial Techniques (UROP funded)
- UCM* **Shannon Madore**, UROP (Spring 2006) - Curatorial Techniques and Fossils of the Green River Formation (continued as paid hourly worker in Summer 06).
- UCM* **Kelley Pruckler**, UROP (Spring 2006) - Curatorial Techniques and Fossils of the Green River Formation.
- UCM* **Elizabeth Hutson**, UROP (Spring 2006) - Curatorial Techniques and Fossils of the Green River Formation.
- UCM* **Clare Murray**, Department of Geological Sciences (Volunteer, Fall 2003-Spring 2004) – Fossils insects and plants from Rio Puerto Viejo, La Selva Biological Station, Costa Rica.
- UCM* **Meghann Toner**, Department of Ecology and Evolutionary Biology (Volunteer, Spring 2004)– Invertebrate Paleontology Museum Techniques.
- Gianna Hernandez**, Summer Minority Access to Research Training (SMART: Summer 2004) – The role of climate in plant-insect interactions: A study of Costa Rican Lifezones.
- Leah Katz**, SURE Program (Summer 2004) - The role of climate in plant-insect interactions: A study of Costa Rican Lifezones.
- UCM* **Vanessa Rosario Lopez**, Summer Minority Access to Research Training (SMART: Summer 2003)– Plant-Insect Interactions in Stewart Valley (Miocene), NV.
- UCM* **Matthew Westerby**, Department of Geological Sciences (UROP & Mentorship: Summer 2003)– Invertebrate Paleontology Curation Techniques & Online Database of the CU Museum Fossil Holotype Collection.
- UCM* **Adam Clark**, SURE Program (Summer 2003) – Small mammal fossils of the Cueva del Tigre, Guanacaste, Costa Rica.
- UCM* **Janice Forbis**, BS Fall 2003, Department of EPO Biology - How sampling affects paleoenvironmental interpretations and measures of diversity in fossil floras. (Honors Thesis – Advisor)
- UCM* **Jamie Hodgkins**, BS Spring 2003, Department of Anthropology – Long-term study of fossil insect herbivory at Douglas Pass, CO. (UROP funds to work on this project) & The occurrence of Brucellosis in ancient Middle eastern populations (Honors Thesis – Co Advisor).
- Kandice Fero**, BS Spring 2002, Department of EPO Biology – Ecology of a High Altitude Ant Population. (Honors Thesis – Committee Member)
- UCM* **Maria Ruiz Yantin**, Summer Minority Access to Research Training (SMART: Summer 2001) – An analysis of the paleoclimate of the Douglas Pass plant locality, (Middle Eocene) Green River Formation, CO.

***Student Committee Membership***

*PhD Defense Exam Committees*

*Heidi Schutz, EBIO (2008), Jonathan Krieger, EBIO (2006), Kathleen Weaver (Sims), EBIO (2006), Shannon Fehlberg (Kuschel), EBIO (2006), Antoinette Piaggio, EPOB (2004), Chadwick Tillberg, EPOB (2003)*

*Masters Defense Exam Committees*

*Bethany Lewis, Museum and Field Studies (2008), Eric Chapman, Museum and Field Studies (2007), Monique McHenry, Museum and Field Studies (2005), Marie Worley, Museum and Field Studies (2004), Joseph Daniel, Museum and Field Studies (2003), Eric Heydelweide, Geological Sciences (2002)*

*PhD Qualifying Exam Committees*

*Heidi Shutz, EPOB (2004), Jonathan Krieger, EPOB (2002), Shannon Kuschel, EPOB (2003), Kathleen Sims, EPOB (2002), Kathleen Prudic, EPOB (2001), Jeffrey Oliver, EPOB (2001), Antoinette Piaggio, EPOB (2001), Chadwick Tillberg, EPOB(2000)*

*3<sup>rd</sup> Semester Review Committees*

*Heidi Shutz, EPOB (2003), Kathleen Prudic, EPOB (2000), Jeffrey Oliver, EPOB (2000)*

*Masters Comprehensive Exam Committees*

*Bethany Lewis, Museum and Field Studies (2007), Eric S. Chapman, Museum and Field Studies (2006), Monique McHenry, Museum and Field Studies (2004), Marie Worley, Museum and Field Studies (2003), Joseph Daniel, Museum and Field Studies (2002)*

***Teaching and Professional Development Workshops Attended***

*Teaching Assessment 101*

*Faculty Teaching Excellence Program (FTEP) – Performance in a Nutshell, Creativity in Large Classes, Teaching Portfolios, Early Career Faculty Program*

*Leadership Education for Advancement and Promotion – Leadership Development Workshop, Time Management*

**SERVICE**

***Professional Service***

***Service to Professional Organizations***

Webmaster, Paleontological Society. 4/08 – Present.

Reviews Editor/Editorial Board Member, Palaeontologia Electronica. 12/07-Present.

Councilor (under 40), Paleontological Society. 10/07- Present.

Associate Editor, PALAIOS. 1/2007 - Present

Advisory Board Member, Paleobiology Database, NCEAS, Santa Barbara, CA. 2004 – Present

Contributing Researcher, Paleobiology Database, NCEAS, Santa Barbara, CA. 2001 – Present

Paleontological Society Student Awards Committee, Spring 08.

Co-Convener, Geological Society of America, Topical Session: Paleontology and Stratigraphy of the Late Eocene Florissant Formation, Colorado. GSA Annual Meeting, Denver, CO, 2004.

Co-Moderator, Geological Society of American, Discipline Session: Paleontology VII: Organismal Interactions and Behavior. GSA Annual Meeting, Denver, CO, 2004.

Field Trip Co-Organizer, American Association of Arachnologists Annual Meeting, to fossil arthropod localities in the Green River Formation, Western Colorado, 2003.

Hosted and Organized Fossil Insect Reception and Tour at CU Museum, during GSA Annual Meeting, Denver, CO, 2002.

Founded NAPALEOENT listserv for the fossil insect community, 2002.

***Manuscripts and Books Reviewed:***

*American Journal of Botany, Cretaceous Research, GSA Special Volume: Causes and Consequences of Globally Warm Climates in the Early Paleogene, Journal of Paleontology, Naturewissenschaften, Rocky Mountain Geology, PALAIOS, Paleontological Short Course: The fossil record of predation,*

*Reviewed book “Principles of Paleontology, Third Edition” by Arnie Miller and Mike Foote, Freeman Press.*

***Grants and Fellowships Reviewed:***

Mac Arthur Fellowship Evaluation (Summer 2008)  
NSF – Division of Earth Sciences, Postdoctoral Fellowships (Spring 2008)  
NSF – Division of Polar Programs, Antarctic Sciences (Fall 2007).  
NSF - Division of Environmental Biology, Systematic Biology (Spring 2005, Fall 2005).  
NSF - Division of Biological Infrastructure, Biological Research Collections (Fall 2004).

### ***University Service to Departments***

#### ***Summer 2004***

CU Museum Interim Director (1.5 months), Museum Exhibits Committee

#### ***Department Committee Assignments***

##### ***2007-2008***

Geological Sciences Diversity Liason, Chair of Geological Sciences Sloan Committee, CU Museum Curriculum Committee

##### ***2006-2007***

Geological Sciences Diversity Liason, Chair of Geological Sciences Sloan Committee, Geological Sciences Department Chair Search Committee (Fall semester), CU Museum mid-term salary committee

##### ***2005-2006***

CU Museum Director Exploratory Committee (Spring Semester), Museum Collections Committee (Spring Semester), Geological Sciences Diversity Liason, Geological Science Sloan Committee.

##### ***2004-2005***

Museum Exhibits Committee (Fall semester), Geological Sciences Diversity Liason, Geological Sciences Sloan Committee.

##### ***2003-2004***

Museum Search for Assistant Director Committee Member, Museum Collections Committee, Museum Exhibits Committee, Geological Sciences Sloan Committee, Geological Sciences Research PRP Committee Member.

##### ***2002-2003***

Museum Steering Committee, Museum Curriculum Committee, Museum Collections Committee, Geological Sciences Sloan Committee

##### ***2001-2002***

Chair of Museum Search Committee for Vertebrate Paleontologist, Museum Space Committee, Museum Collections Committee, Museum AAM Accreditation Committee, Museum Curriculum Committee, Geological Sciences Executive Committee Member, Geological Sciences Sloan Committee.

##### ***2000-2001***

Museum Space Committee, Museum Collections Committee, Museum AAM Accreditation Committee, Museum Curriculum Committee, Geological Sciences Sloan Committee

### ***University Service in Education***

Tour of Paleontology Hall, Shining Mountain Waldorf School (Fall 2007)

Faculty Panelist, Ronald E. McNair Postbaccalaureate Achievement Program (Summer 2006)

Members Only, Family Fossil Fun Event (Fall 2005)

Florissant Shale Splitting Event (Fall 2005)

Helped host CU Museum Family Day (Spring 2004)

Hosted Girls at the Museum Exploring Science (GAMES) Program (Fall 2002, Spring 2004 & 2005)

Host and Introduction of Herbert Meyer, Park Paleontologist, “The Late Eocene Upland Forests of Florissant: Living on the Verge of Global Climate Change”, CU Museum (Spring 2005).

Host and Collections Tour – Colorado Native Plant Society, Fossil plant workshop (Spring 2005).

Founder and Facilitator of the Paleontology Reading Group (Fall 2003- Spring 2004)

Panelist, “Life in Academia”, SMART Program, University of Colorado, Boulder, CO. 7/03.

Keynote Speaker, SMART Program, Reception and Awards Ceremony, University of Colorado, Boulder, CO. 8/03.

## ***Community Service***

### ***School Visits and Programs***

- “Insects Caught in Time” for grades 3-6, Mamie Doud Eisenhower Public Library, Broomfield, CO. 7/08.
- Panelist, “Bringing Culture to Work”, SOARS/RESESS Programs, University Corporation for Atmospheric Research, Boulder, CO. 6/08.
- “Art and Science: A perfect combination”, Shining Mountain Waldorf School, Boulder, CO. 9/2007.
- “Insects, Plants and Climate Change: What we can learn from the 34 million year old Florissant Formation”. CU Museum of Natural History, University of Colorado, Boulder, CO. 2/05.
- “New Perspectives on Old Fossils”, In Centennial Anniversary Celebration of the CU Museum of Natural History, University of Colorado, Boulder, CO. 11/02.
- “A Future for Fossil Insects”. In 100th Anniversary Celebration of the Geological Sciences Department, University of Colorado, Boulder, CO. 10/02.

### ***Interviews***

- Featured in article “The Many Hats of the Museum Curator”, by Jennifer Griffin in The AWIS (Association for Women in Science) Newsletter, Vol. 26, No. 1, pgs. 30-31 (Winter 2007).
- Articles on research comparing beetle preservation in amber deposits to Florissant Fossil Beds appeared in The Daily Camera (Nov. 2004) and La Voz Nueva (Nov. 2004)