

Amy Rachel Davidson

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Education and Professional Training

Oberlin College, Ohio, 1978	B. A. with a major in Studio Art.
Sculpture Center, New York, 1983 to 1987	Life-sized figures in clay and cast plaster, life-drawing.
Harvard Extension School, 1989 to 1993	Mammalogy, General Chemistry, Intro and Sedimentary Geology, Osteology, Vertebrate Structure and Function, Vertebrate Evolution.
Harvard Medical School, 1989	Human Anatomy/Dissection.
American Institute for Conservation Aug. 15-19, 2005	Workshop on Adhesives for Conservation.
Canadian Conservation Institute Oct. 16-17, 2006	Workshop on Adhesives for Paleontology Collections.

Professional Employment

Fossil Preparation

Jun. 1993 to present	<i>Senior Principal Preparator</i> , Division of Paleontology, American Museum of Natural History, New York, NY. Preparation of specimens of large to extremely small size in matrices ranging from loosely indurated sandstones to extremely hard volcanoclastics. Prepared specimens include theropod and protoceratopsian dinosaurs (embryos, juveniles, adults), birds, lizards, turtles, Mesozoic and Cenozoic mammals. Small scale molding and casting.
Jun. 1990 to Jun. 1993	<i>Preparator</i> , Department of Vertebrate Paleontology, Museum of Comparative Zoology, Harvard University, Cambridge, MA. Two years of intensive training and one year of independent projects with William Amaral in a two-person lab. Micropreparation of medium sized and extremely small specimens, in medium to very hard matrices (hematite, highly indurated mudstone). Prepared specimens include Tertiary mammals, procolophonids, turtles, theropod and prosauropod dinosaurs, aetosaurs, pterosaurs, birds, plagiosaurid and capitosaurid amphibians. Also responsible for preparation training and supervision of two volunteers, purchasing and management of lab and Greenland expedition supplies, locating sources for new materials and equipment, repair and maintenance of lab and expedition equipment.
1992 to 2000	<i>Freelance Preparator</i> , AMNH and associated institutions. Specializing in micropreparation (including jaw disarticulation) of small mammal skulls, fossils in very hard matrices (including Chilean volcanoclastics) and fossils from the Gobi.

Anatomical Preparation/Collections Management

Jun. 1988 to Mar. 1991	<i>Curatorial Assistant</i> , Department of Mammalogy, Museum of Comparative Zoology, Harvard University, Cambridge, MA, and Field Station, Concord, MA. Preparation of skeletons from a wide variety of (mostly mammal) carcasses using dermestid beetles and composting techniques. Also reorganizing of research collection and processing of loans, including detailed anatomical descriptions for loan records.
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Modelmaking/Moldmaking

- Oct. 1985 to Oct. 1988 *Primary Technician*, M S 2 5/Mark Stein Modelmaking, New York, NY.
Small shop producing special effects for television, films and trade shows. Sculpting, molding, casting, general problem-solving under tight deadlines. Materials included silicone, latex, vinyl and Skinflex rubbers, alginate, polyester and epoxy resins, plasters and waxes.
- Dec. 1978 to Mar. 1980 *Modelmaker*, Exhibits Central, Smithsonian Institution, Washington, DC.
Life-like biological models for National Museum of Natural History and fiberglass reproductions of portrait busts for the National Portrait Gallery. Silicone and dental plaster molds, epoxy casts, vacuum-formed acetate and painted papier-mâché.

Sculpture/Bronze Casting/Moldmaking

- Feb. 1983 to May 1985 *Sculptor and Contractor*, Frank D. Paulo Public Memorial, Staten Island, NY.
Sculpted a large bronze public monument with two figures installed in an historic landmark park between the Courthouse and Borough Hall. Worked with various groups, including New York City Art and Landmarks Preservation Commissions on sculpture and base design, placement and conservation. Contracted the foundry, supervised molding, casting and installation.
- May 1980 to May 1982 *Apprentice*, Johnson Atelier Technical Institute of Sculpture, Princeton, NJ.
Trained in all aspects of cast sculpture production, including life-sized figures in plastilene, waste molds and plaster casting, RTV rubber molds, wax casting and finishing, bronze and aluminum casting in ceramic shell, bonded sand and green sand molds, welded re-bar armatures, metal chasing and patination.

Exhibit Design/Construction

- May to Sept. 1977 *Assistant Designer*, Exploratorium Museum of Science, San Francisco, CA.
Designed and assisted in the construction of a permanent interactive exhibit on the nature of shadows.

Field Work

- Summers 1993 to 2000 Gobi Desert, Mongolia: AMNH/Mongolian Academy of Sciences joint expeditions

Primary responsibilities included purchasing, packing and shipping all collecting equipment and materials, locating solvents in Mongolia, distributing and maintaining stocks for collecting during the expedition. Also responsible for most of the excavation and jacketing of small specimens and occasionally larger specimens using specialized techniques for fragile bone in very loose sandstone. Camp duties included entering large numbers of specimens into the field catalogue every evening, protecting, sorting and packing all specimens for transport out of the field, inventorying and repacking of all specimens for export, including building crates when necessary. Often arrived in advance of the main crew to prepare for the expedition or remained behind for follow-up work on the shipment.

- Jun. to Aug. 1992 Jameson Land, East Greenland: Triassic Fleming Fjord Formation. Museum of Comparative Zoology expedition

Extensive responsibilities before, during and after a major expedition by helicopter. Handled all inventory, purchasing, packing of food and equipment for nine people, and assisted W. Amaral with logistics. Prospecting and quarrying in very hard rock at two different localities. Unpacked, cleaned, stored equipment. Unpacked specimens, checked them against the field list, stored them in labeled drawers.

- July 1991 Wyoming: Bighorn Basin, Paleocene/Eocene Polecat Bench, Willwood, and Fort Union Formations; Como Bluff, Morrison Formation; Redbird, Cretaceous Pierre Shale; Torrington (Harvard Fossil Reserve), Oligocene Brule Formation. Museum of Comparative Zoology expedition.

Lead a three-person expedition funded by the Museum of Comparative Zoology. Responsible for planning, organizing, driving the expedition vehicle, and covering all expenses within budget. Prospecting, surface collecting, quarrying, jacketing, and packing large specimens back to camp.

Professional Society Membership and Service

Society of Vertebrate Paleontology (member 1991 to present).

SVP Joseph F. Chance Preparators' Award Committee (Chair 1998 to 2001, member 2002, 2003).

Journal of Vertebrate Paleontology (Associate Editor for 'fossil preparation' related submissions, 2005).

SVP Preparators' Business Meeting/ Preparators' Committee: initiated annual meetings given official status in 2002. (member 1998 to present, Convener of first meeting 1998, Moderator 1999, 2000, Continuity Subcommittee Chair, 2004 to present)

PREPLIST preparators' online discussion list (active contributor 2002 to present)

American Institute for Conservation

Society for the Preservation of Natural History Collections

Society of Vertebrate Paleontology Preparators' Symposium

- 2009 **A.R. Davidson:** *Temporary Gap-Filling to Stabilize an Exploded Matrix for Fossil Preparation: the Sand and Butvar B-76 Technique.* Bristol, UK (poster)
- 2008 **A. R. Davidson:** *Removing Fossil Ribs: the Thread Technique.* Cleveland, OH (poster)
- 2007 **A. R. Davidson:** *Preparing to Prepare Your Fossil Vertebrate: Set-Ups to Maximize Speed and Control.* Austin, TX (invited "basics" talk)
- 2006 **A.R. Davidson, S. Alderson, M. Fox:** *Assembling an Archival Marking Kit for Paleontological Specimens.* Ottawa, ON, Canada (poster)
- 2005 M. Fox, **A. R. Davidson, A. Kellner, D. Pol, P. Puerta, H. Silva:** *The First International Workshop for Micropreparation of Vertebrate Fossils.* Mesa, AZ (talk)
L. Kronthal, C. Bisulca, **A.R. Davidson:** *The Use of Conservare OH-100 for the Stabilization of Particularly Fragile Dinosaur Bone.* Mesa, AZ (talk)
- 2004 **A.R. Davidson:** *Liquid to Solid and Back; Phase Change in Adhesives.* Denver, CO (talk)
R. Arenstein, **A.R. Davidson** & L. Kronthal: *An Investigation of Cyclododecane for Molding Fossil Specimens.* Denver, CO (poster)
- 2003 **A.R. Davidson:** *Adhesives as Liquids.* St. Paul, MN (talk)
- 2002 **A.R. Davidson:** *Preparation of Citipati osmolskae.* Norman, OK (talk)
- 2001 SVP Preparators' Symposium Convener. Bozeman, MT
- 2000 **A.R. Davidson:** *A Demonstration of Preparation Tools and Techniques for Gobi Material.* Mexico City, Mexico (talk)
- 1999 **A.R. Davidson:** *Seven years in Mongolia: Techniques.* Denver, CO (talk)
- 1998 **A.R. Davidson:** *A Foot-Controlled, Chip Blowing Needle for Micropreparation of Fossil Vertebrates.* Snowbird, UT (poster)
- 1997 **A.R. Davidson:** *A Wax Cast from an Alginate Mold: Replicating a Velociraptor from Ukhaa Tolgod, Mongolia.* Chicago, IL (talk)
- 1996 J. Levinson, **A.R. Davidson:** *Collection and Preparation of Specimens from Ukhaa Tolgod, Mongolia: a Collaboration.* New York, NY (talk)
- 1995 **A.R. Davidson:** *Collecting and Preparing the Ukhaa Tolgod Specimens.* Pittsburg, PA (talk)
- 1994 **A.R. Davidson:** *Modifying a Workstation for Micropreparation.* Seattle, WA (talk)

Additional Presentations

- 2005 L., Kronthal, C., Bisulca, **A.R. Davidson,** *Applying a Conservation Model to the Treatment of Fragile Dinosaur Bone.* Society for the Preservation of Natural History Collections Meeting. London, England (poster)
- 2004 **A.R. Davidson:** *Preparation of a Fossil Dinosaur: Learning from Conservation.* Society for the Preservation of Natural History Collections Meeting. New York, NY (talk)

- A.R. Davidson:** *Preparation of a Fossil Dinosaur: Learning from Conservation*, L. Kronthal, Natural Sciences Conservation at the American Museum of Natural History. Winterthur Museum/University of Delaware Art Conservation Program, Student's Choice Seminar. Winterthur, DE (joint talk)
- L. Kronthal, C. Bisulca, **A.R. Davidson:** *Conservation of Natural Science Collections, Highlighting the Preservation of the Gobi Desert Fossils* Metropolitan Museum of Art Conservation Seminar Series, New York, NY (joint talk)
- 2003 **A.R. Davidson:** *Preparation of a Fossil Dinosaur*, American Institute of Conservation Meeting, Objects Specialty Group, Creativity in Conservation Session. Arlington, VA (talk)

Teaching

- Sept. 22, 2009 University of Bristol, UK. Adhesives, Choice and Reason Workshop. *The Use of Cyanoacrylates and Butvar B-76 on a Specimen of Shuvuuia deserti (IGM 100/977) from Ukhaa Tolgod, Gobi Desert, Mongolia.* **A. R. Davidson.**
One of 5 invited speakers for a one day international workshop. 30 minute presentation on a case study.
- May 21, 2008 Royal Tyrrell Museum, Drumheller, Alberta, Canada. One Day Workshop on Materials for Fossil Preparation (Adhesives, Archival Marking and Archival Housings): **A.R. Davidson** instructor
A description of this workshop is included in Davidson, 2009 (see below)
- April 11, 2008 Petrified Forest National Park, Arizona. A One Hour MiniSeminar on Adhesives for Fossil Preparation: **A.R. Davidson** instructor
A description of this workshop is included in Davidson, 2009 (see below)
- Dec. 6-16, 2004 Museo Paleontologico Edigio Feruglio, Patagonia, Argentina. First International Workshop for Micropreparation of Fossil Vertebrates: **A.R. Davidson**, M. Fox, A. Kellner instructors
Provided training in micropreparation techniques to 19 Argentine and Brazilian participants in collaboration with two other instructors for moldmaking and acid preparation. Supervised hands-on training, demonstrated new equipment and materials, presented 5 powerpoint lectures and led group discussions on specific techniques. Workshop funded by the 2004 SVP Preparator's Grant.
- Oct. 20-22, 1998 Department of Geology and Paleontology, National Museum, Rio de Janeiro, Brazil. Workshop in the mechanical preparation of fossil vertebrates: **A.R. Davidson** instructor
Provided basic training to 6 students in a rudimentary lab being set up by Dr. Alex Kellner. Advised and assisted in the purchase of basic equipment and supplies.

Publications

- Jenkins, F.A., Shubin, N, H., Amaral, W.A., Gatesy, S.M., Schaff, C.R., Clemmensen, L.B., Downs, W.R., Davidson, A.R., Bonde, N., and F. Osbaeck. 1994. *Late Triassic continental vertebrates and depositional environments of the Fleming Fjord Formation, Jameson Land, East Greenland.* Meddelelser om Gronland, Geoscience 32.
- Dashzeveg, D., Novacek, M.J., Norell, M.A., Clark, J.M., Chiappe, L.M., Davidson, A., McKenna, M., Dingus, L., Swisher, C., and P. Altangerel. 1995 *Extraordinary preservation in a new vertebrate assemblage from the Late Cretaceous of Mongolia.* Nature 374: 446-449.
- Davidson, Amy R. 2003. *Preparation of a fossil dinosaur.* American Institute of Conservation, Objects Specialty Group Postprints 10: 49-61.
- Davidson, A.R. 2009. *A report on a mini-seminar on adhesives for fossil preparation.* In: Methods In Fossil Preparation: Proceedings of the First Annual Fossil Preparation and Collections Symposium, pp.111-122. Brown, M.A., Kane, J.F. and W.G. Parker eds.
- Davidson, A. and S. Alderson. 2009. *An introduction to solution and reaction adhesives for fossil preparation.* In: Methods In Fossil Preparation: Proceedings of the First Annual Fossil Preparation and Collections Symposium, pp 53-62. Brown, M.A., Kane, J.F. and W.G. Parker eds.

- Bisulca, C., Kronthal Elkin, L., and A. Davidson. 2009 *Consolidation of fragile fossil bone from Ukhaa Tolgod, Mongolia (late Cretaceous) with Conservare OH 100*. *Journal of the American Institute for Conservation* 48: 37–50.
- Brown, M and A. Davidson. In press. *The use of cyclododecane to protect delicate fossils during transportation*. *Journal of Vertebrate Paleontology*.