CURRICULUM VITAE

THOMAS W. STAFFORD, JR.
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EDUCATION

Ph.D.	Geosciences, University of Arizona	1984
M.S.	Geosciences, University of Arizona	1979
B.S.	Geology, University of Delaware	1971

EMPLOYMENT & ACADEMIC EXPERIENCE

RESEARCH GEOCHEMIST & PRESIDENT: Stafford Research LLC (1997-Present).

ASSOCIATE RESEARCH PROFESSOR: AMS ^{14}C Dating Centre, Department of Physics & Astronomy, University of Aarhus, Aarhus, Denmark (5/2013-12/2014)

VISITING SCIENTIST: Department of Geology & Geophysics, University of Wisconsin, Madison (November 2004-December 2005).

RESEARCH SCIENTIST: Director, Laboratory for AMS Radiocarbon Research, University of Colorado-INSTAAR (1989-1997).

VISITING ASSISTANT PROFESSOR: Department of Anthropology, University of New Mexico, Albuquerque (AY 88-89).

POSTDOCTORAL FELLOW: National Research Council, National Bureau of Standards, Department of Chemistry, Maryland (1987).

POSTDOCTORAL FELLOW: Geophysical Laboratory, Carnegie Institution of Washington. D.C. (1984-87).

RESEARCH ASSOCIATE: Department of Geosciences, University of Arizona (1981-1984).

EXPLORATION GEOLOGIST: (Uranium Exploration) Conoco Minerals Division, Albuquerque, NM (1979-1980).

RESEARCH AFFILIATIONS

Associate Research Professor, GeoGenetics, Natural History Museum of Denmark, Copenhagen, and AMS ^{14}C Dating Centre, Department of Physics & Astronomy, Aarhus University, Aarhus, Denmark 2013-2015.

Visiting Research Professor, Department of Population Health Sciences, School of Medicine and Department of Geology & Geophysics, University of Wisconsin-Madison, 2007-2010.

PROFESSIONAL SOCIETIES

Sigma Xi
AAAS

SCIENTIFIC SPECIALTIES

Accelerator ^{14}C dating and Quaternary geochronology
Stable sotope applications in paleoecology
Late Cenozoic sedimentology and stratigraphy
Proteomics of Cenozoic and late Mesozoic tooth proteins
Geoarchaeology
Organic geochemistry of vertebrate fossils and sediments
Cave stratigraphy and paleontology
Vertebrate paleobiology and anatomy
Vacuum instrumentation design
Database design and image storage
Paleoepidemiology and Evolutionary Medicine

AWARDS

Senior Fulbright Specialist, June 15-30, 2005.
Radiocarbon dating, stable isotope analyses, and Quaternary stratigraphy of fossil humans and mammals in North & South America. Lectures presented at Museo de Arte de Precolumbino and Universidad Bolivariana, Santiago, Chile.

CURRENT RESEARCH PROJECTS

- Supercritical fluid extraction (SCFE) for removing asphalt and tars from tar pit fossil bones, teeth, and insects to eliminate current toxic solvents used in paleontology and radiocarbon dating. With Dr. Ken James, Supercritical Fluid Technologies, Inc., Newark, Delaware.
- Digital osteological library and identification software for modern and Pleistocene mammals and birds using high resolution photographs, CT- and μCT-imaging. With Dr. Timothy Rowe, Univ. Texas-Austin.
- Human mammoth butchering 35,000 yr. ago at the Hartley mammoth site, New Mexico.
- Geochronology, stratigraphy and Upper Paleolithic archaeology of Alexana Ghuze Cave, Nagorno-Karabakh Republic. Directed by Levon Yepiskoposyan, Institute of Molecular Biology, National Academy of Sciences, Armenia.
- Paisley Caves, Oregon — Geochronology, stratigraphy, and taphonomy of cave deposits related to pre-Clovis occupation ca. 12-14,000 CAL. yr. BP. Directed by Dennis Jenkins, University of Oregon, Eugene.
- Pleistocene megafauna extinctions in Chile, Argentina and Uruguay. With Francisco Mena, Gustavo Politis, Jose Prado and Richard Fariña.
- Kennewick Man Skeleton — AMS ^{14}C dating, paleodiet stable isotope analysis and aDNA sequencing of human remains, Washington. Directed by Stafford; with Eske Willerslev, University of Copenhagen
- North American Late Pleistocene megafauna extinction — AMS ^{14}C chronology and population genetics (aDNA). Thomas Stafford, Jr., Russell Graham, Greg McDonald and Eske Willerslev.

- Pre-Clovis archaeology of North America — AMS ^{14}C geochronology and Quaternary geology of artifact-bearing sites throughout North America.
- Ancient origins of cystic fibrosis in Europe — Geochronology and stable isotope analysis of CF-positive humans from Bronze and Iron Age sites, Western Europe. Directed by Philip Farrell, MD University of Wisconsin-Madison.
- Nanodiamonds as proxies for an extraterrestrial (comet) impact ca. 12,900 CAL BP — ^{14}C AMS chronologies and Quaternary geology of North American sites.
- Chromatographic isolation and purification of collagen and small collagen-derived peptides, and purified hydroxyproline from fossil bone, and proteomics of Pleistocene-Holocene proteins, with Jan Enghild, Aarhus University, Department of Molecular Biology, Denmark.

RESEARCH GRANTS RECEIVED

GOVERNMENTAL AGENCIES & PRIVATE FOUNDATIONS

1. LEAKEY FOUNDATION ($2500) "Geochronology of the Tepexpan Site, Mexico" 1986
2. AMERICAN PHILOSOPHICAL SOCIETY ($3500) "AMS ^{14}C dating of the Tepexpan human remains, Valley of Mexico, Mexico." 1986
3. UTAH GEOLOGICAL SURVEY ($9800) "Accelerator ^{14}C dating of specific organic chemical fractions from buried soils associated with Holocene faulting events in the Weber segment of the Wasatch Fault zone, Utah."
4. WENNER-GREN FOUNDATION ($7000) "Composition of human diets determined by $\delta^{13}C$ analysis of individual amino acids from bone collagen."
5. FONDECYT, Chile. "Geochronology and Stratigraphy of Baño Nuevo Cave." Principal Investigator: Dr. Francisco Mena, Santiago. $182,000 (Funded 2004-2006)
6. HILLCREST FOUNDATION, Texas ($65,000) "Radiocarbon Dating and Isotopic Analysis of the Kennewick Skeleton." 2006

NATIONAL SCIENCE FOUNDATION

1. "Radiocarbon dating of amino acids by accelerator mass spectrometry" BNS 86-16891. Archaeometry Program, with P.E. Hare. ($27,800)

2. "Development of chromatography and vacuum apparatus for the AMS ^{14}C dating of microgram carbon samples." Earth Sciences-Instrumentation. EAR 90-18678 ($59,120)

3. "Accelerator ^{14}C dating of individual species of small animals for reconstructing paleoclimates 20,000-8000 yr. BP in North America." Geology and Paleontology. EAR 90-18958 ($119,000)

4. "Dynamics of Late Pleistocene Vertebrate Extinctions: Absolute chronologies based on AMS ^{14}C dating." NSF EAR 91-18683 Geology and Paleontology ($140,000)

5. "Defining the Characteristics Essential for Biomolecular Preservation: A Systematic Study of Bone Diagenesis." Principal Investigator: Dr. Peggy H. Ostrom, Michigan State University $356,000 (Funded 2003-2004).

PUBLICATIONS

Stafford, Thomas W., Jr. (1981) Alluvial geology and archaeological potential of the Texas Southern High Plains. *American Antiquity* **46**:548-565.

Stafford, T.W., Jr., Duhamel, R.C., Haynes, C.V. and Brendel, K. (1982) Isolation of proline and hydroxyproline from fossil bone. *Life Sciences* **31**:931-938.

Stafford, T.W., Jr., Jull, A.J.T., Zabel, T., Donahue, D., Duhamel, R., Brendel, K., Haynes, C.V., Bischoff, J., Payen, L. and Taylor, R. (1984) Holocene age of the Yuha burial: direct radiocarbon determinations by accelerator mass spectrometry. *Nature* **308**:446-447.

Stafford, T.W., Jr., Jull, A.J.T., Brendel, K., Duhamel, R. and Donahue, D. (1987) Study of bone radiocarbon dating accuracy at the University of Arizona NSF accelerator facility for radioisotope analysis. *Radiocarbon* **29**:24-44.

James, H., Stafford, T.W., Jr., Steadman, D., Olson, S., Martin, P.S. and McCoy, P.C. (1987) Radiocarbon dating of bones of extinct birds from Hawaii. *Proceedings of the National Academy of Sciences* **84**:2350-2354.

Stafford, T.W., Jr. (1988) Accelerator radiocarbon dating of late Pleistocene megafauna. *Current Research in the Pleistocene* **5**:41-43.

Stafford, T.W., Jr., Brendel, K. and Duhamel, R. (1988) Radiocarbon, ^{13}C, and ^{15}N analysis of fossil bone: removal of humates with XAD-2 resin. *Geochimica Cosmochimica Acta* **52**:2257-2267.

Stafford, T.W., Jr. and Tyson, R.A. (1988) Accelerator dates on charcoal, shell, and human bone from the Del Mar early Man site, California. *American Antiquity* **54**:389-395.

Dansie, A. J., Davis, J. O., and Stafford, T.W., Jr. (1988) The Wizards Beach recession: Farmdalian (25,500 yr. B.P.) vertebrate fossils co-occur with Early Holocene artifacts. In: J. A. Willig, C. M. Aikens and J. L. Fagan (Eds). Early human occupation in far Western North America: the Clovis-Archaic interface. *Nevada State Museum Anthropological Papers Number* 21, pp. 153-200.

Currie, L.A., Stafford, T.W., Jr., Sheffield, A.E., Klouda, G.A., Wise, S.A., Fletcher, R.A., Donahue, D.J., Jull, A.J.T., and Linick, T.W. (1989) Microchemical and molecular dating. *Radiocarbon* **31**:448-463

Stafford, T.W., Jr., Hare, P.E., Currie, L.A., Jull, A.J.T. and Donahue, D. (1990) Accelerator ^{14}C dating of fossil-bone amino acids: accuracy of North American Human skeletal ages. *Quaternary Research* **34**:111-120.

Stafford, T. W., Jr. (1990) Late Pleistocene Megafauna Extinctions and the Clovis culture: absolute ages based on accelerator ^{14}C dating of skeletal remains. In (L. Agenbroad, J. I. Mead, and L.

Nelson Eds.) Megafauna and Man: Discovery of America's Heartland. The Mammoth Site of Hot Springs, South Dakota, Inc. Scientific Papers, Volume 1. pp. 118-122. Hot Springs, S.D.

Stafford, T. W., Jr. and Semken H. (1990) Accelerator ^{14}C dating of two micromammal species representative of the Late Pleistocene disharmonious fauna from Peccary Cave, Newton, County, Arkansas. *Current Research in the Pleistocene* **7**:129-132.

Stafford, T.W., Jr., Hare, P.E., Currie, L.A., Jull, A.J.T. and Donahue, D. (1991) Accelerator radiocarbon dating at the molecular level. *Journal of Archaeological Science* **18**:35-72.

Hare, P. E., Fogel, M. F., Stafford, T. W., Jr., Mitchell, A. D., and Hoering, T. C. (1991) The isotopic composition of carbon and nitrogen in individual amino acids isolated from modern and fossil protein. *Journal of Archaeological Science* **18**:277-292.

Steadman, D. W., Stafford, T. W., Jr., Donahue, D. J., and Jull, A. J. T. (1991) Chronology of Holocene vertebrate extinction in the Galapagos Islands. *Quaternary Research* **35**:126-133.

Stafford, T. W. Jr. (1992) Radiocarbon Dating Dinosaur Bone: More Pseudoscience from Creationists. *Creation/Evolution* **12**:13-16.

Bischoff, J.L., Stine, S., Rosenbauer, R.J., Fitzpatrick, J.A., & Stafford, T.W., Jr. (1993) Ikaite precipitation by mixing of shoreline springs and lake water, Mono Lake, California, USA. *Geochimica et Cosmochimica Acta* **57**:3855-3865.

Stafford, T. W., Jr. (1994) Accelerator C-14 dating of human fossil skeletons: assessing accuracy and results on New Worlds Specimens. Method and Theory for Investigating the Peopling of the Americas. (R. Bonnichsen and G. Steele, Eds). Oregon State University, pp. 45-55.

Bradley, Lee-Ann and Stafford, T.W., Jr. (1994) Comparison of manual and automated pretreatment methods for AMS radiocarbon dating of plant fossils. *Radiocarbon* **36**:399-405.

Nelson, A.R., Atwater, B.F., Bobrowsky, P.T., Bradley, L., Clague, J.J., Carver, G.A., Darienzo, M.E., Grant, G.A., Krueger, H.W., Sparks, R., Stafford, T.W., Jr. and Stuiver, M. (1995) Radiocarbon evidence for extensive plate-boundary rupture about 300 years ago at the Cascadia subduction zone. *Nature* **378**:371-374.

Forman, S.L., Oglesby, R., Markgraf, V., and Stafford, Thomas (1995) Paleoclimatic significance of Late Quaternary eolian deposition on the Piedmont and High Plains, Central United States. *Global and Planetary Change* **11**:35-55.

Burney, D.A., DeCandido, R.V., Burney, L.P., Kostel-Hughes, F.N., Stafford, T.W., Jr. and James, H.F. (1995) A Holocene record of climate change, fire ecology and human activity from montane Flat Top Bog, Maui. *Journal of Paleolimnology* **13**:209-217.

Muhs, D.R., Stafford, Thomas W. Jr., Cowherd, S.D., Mahan, S.A., Kihl, R, Maat, P.B., Bush, C.A., and Nehring, J. (1996) Origin of the late Quaternary dune fields of northeastern Colorado. *Geomorphology* **17**:129-149.

Dallman, John E., D. Overstreet, and T.W. Stafford, Jr. (1996) A revised chronology for cultural and non-cultural mammoth and mastodon fossil in the southwestern Lake Michigan basin. *Current Research in the Pleistocene* **13**:10-12.

Abbott, M. and Stafford, T.W., Jr. (1996) Radiocarbon geochemistry of modern and ancient arctic lake systems, Baffin Island, Canada. *Quaternary Research* **45**:300-311.

Bischoff, J.L., T.W. Stafford, Jr., and M. Rubin (1997) A time-depth scale for Owens Lake sediments of core OL-92: Radiocarbon dates and constant mass-accumulation rate. In: G.I. Smith and J. L. Bischoff (Eds) "An 800,000-Year Paleoclimatic record from Core PL-92, Owens Lake, Southeast California." *GSA Special Paper* 317, pp. 91-98.

Steadman, D.W., Stafford, T.W., Jr., and Funk, R.E. (1997) Direct radiocarbon dating of late Pleistocene mammals from the Dutchess Quarry Caves, New York: lack of evidence for association with paleoindians. *Quaternary Research* **47**:105-116.

Muhs, D.R, T. W. Stafford, Jr., J.B. Swinehart, S.D. Cowherd, S.A. Mahan, and C.A. Bush, R. Madole, and P. Maat (1997) Late Holocene eolian activity in the mineralogically mature Nebraska Sand Hills. *Quaternary Research* **48**:162-176.

Muhs, D. R., Stafford, Thomas W., Jr., Been, J., Mahan, S. A., Burdett, J. A., Skipp, G., and Rowland, Z. M. (1997) Holocene eolian activity in the Minot dune field, North Dakota. *Canadian Journal of Earth Sciences* **34**:1442-1459.

Rosenswig, Robert M. and Thomas W. Stafford, Jr. (1998) Archaic Component Beneath a Postclassic Terrace at Suboperation 19, Laguna de On Island. In Belize Postclassic Project 1997: Laguna de On, Progresso Lagoon, Laguna Seca, edited by M. Masson and R. Rosenswig, pp. 81-89. Institute of Mesoamerican Studies Occasional Publication No. 2. University of Albany – SUNY, Albany.

Stafford, Thomas W., Jr. (1998) Radiocarbon Chronostratigraphy. In: Wilson-Leonard: An 11,000-year Archeological Record of Hunter-Gatherers in Central Texas, assembled and edited by Michael B. Collins. Vol. 4, Chapter 25, pp. 1039-1066. Studies in Archeology 31, Texas Archeological Research Laboratory, The University of Texas at Austin & Archeology Studies Program, Report 10, Texas Department of Transportation, Austin.

Stafford, Thomas W., Jr., Holmes A. Semken, Jr., Russell Wm. Graham, Walter F. Klippel, Anastasia Markova, Nikolai G. Smirnov and John Southon (1999) First AMS ^{14}C dates documenting contemporaneity of non-analog species in late Pleistocene mammal communities. *Geology* **27**:903-906

Schild, Romuald, Tobolski, Kazimierz, Kubiak-Martens, Lucyna, Pazdur, Mieczyslaw, Pazdur, Anna, Vogel, J.C., and Stafford, Jr., Thomas W. (1999) Stratigraphy, paleoecology and radiochronology of the site of Calowanie. *Folia Quaternaria* **70**:239-268.

Holiday, Vance T., Eileen Johnson and Thomas W. Stafford, Jr. (1999) AMS radiocarbon dating of the type Plainview and Firstview (Paleoindian) assemblages: the agony and the ecstasy. *American Antiquity* **64**:444-454.

Johnson, J. R., T. W. Stafford, Jr., H. O. Ajie, and D. P. Morris. (2000) Arlington Springs Revisited. In: Proceedings of the Fifth California Islands Symposium, D. R. Brown, K. C. Mitchell and H. W. Chaney, eds., pp. 541-545. U.S. Department of the Interior Minerals Management Service, Pacific OCS Region. OCS Study MMS 99-0038.

Montet-White, A, J. Evin, & T. Stafford (2002) Les datations radiocarbone de amas osseux. In: Solutre 1968-1998, *Société Préhistorique Française, Mémoire* **30**:181-189.

Bousman, C.B., M.B. Collins, P. Goldberg, T. Stafford, J. Guy, B. Baker, D.G. Steele, M. Kay, A. Kerr, G. Fredlund, P. Dering, V. Holliday, D. Wilson, W. Gose, S. Dial, P. Takac, R. Balinsky, M. Masson, and J.P. Powell (2002) The Palaeoindian-Archaic transition in North America: new evidence from Texas. *Antiquity* **76**:980-990.

Mena, Francisco L., Omar Reyes, Thomas W. Stafford, Jr., and John Southon (2003) Early human remains from Baño Nuevo-1 cave, central Patagonian Andes, Chile. *Quaternary International* **109-110**:113-121.

Cooke, M. Jennifer, Libby A. Stern, Jay L. Banner, Lawrence Mack, Thomas W. Stafford, Jr., and Rickard S. Toomey III (2003) Precise timing and rate of massive late Quaternary soil denudation. *Geology* **31**:853-856.

Ostrom, Peggy H. and Thomas W. Stafford, Jr. (2004) Paleoecology of Mineral Hill Cave: Interpretations Based on Stable Isotope Data. In: Bryan Hockett and Eric Dillingham (Eds.) Paleontological Investigations at Mineral Hill Cave. Chapter 9: 150-153. Contributions to the Study of Cultural Resources Technical Report No. 18. U.S. Department of the Interior, Bureau of Land Management, Nevada.

Schubert, Blaine W., Russell Wm. Graham, H. Gregory McDonald, Eric C. Grimm, and Thomas W. Stafford, Jr. (2004) Latest Pleistocene paleoecology of Jefferson's ground sloth (*Megalonyx jeffersonii*) and elk-moose (*Cervalces scotti*) in northern Illinois. *Quaternary Research* **61**:231-240.

Núñez, Herman Thomas W. Stafford, Jr. and Daniel Frassinetti (2006) Primer registro fosil de Liolaemus en Chile (Reptilia, Sauria). *Noticiario Mensual del Museo Nacional de Historia Natural*, **356**:3-7.

Chase, P. G., A. Debénath, H. L. Dibble, S. P. McPherron, H. P. Schwarcz, T. W. Stafford, Jr., and J.-F. Tournepiche (2006) New Dates for the Fontéchevade (Charente, France) Homo Remains. *Journal of Human Evolution* **52**:217-221.

Ostrom, Peggy H., Hasand Gandhi, John R. Strahler, Angela K. Walker, Philip C. Andrews, Joseph Leyman, Thomas W. Stafford, Jr., Robert Kelly, Danny N. Walker, Mike Buckley and James Humpula (2006) Unraveling the sequence and structure of the protein osteocalcin from a 42 ka fossil horse. *Geochimica et Cosmochimica Acta* **70**:2034-2044.

Mena, Francisco. & Thomas W Stafford, Jr. (2006) Contexto estratigráfico y fechación directa de esqueletos humanos del Holoceno temprano en Cueva Baño Nuevo (Patagonia Central, Chile), in: J. Jiménez, S. González, J. Pompa & F. Ortíz (ed.) 2° Simposio Internacional del Hombre Temprano en América: 139-54. Ciudad de México: INAH.

Waters, Michael R. and Thomas W. Stafford, Jr. (2007) Redefining the Age of Clovis: Implications for the Peopling of the Americas. *Science* **315**:1122-1126.

Humpula, James F., Ostrom, Peggy H., Gandhi, Hasand, Strahler, John R., Walker, Angela K., Stafford, Thomas W., Smith, James J., Voorhies, Michael R., George Corner, R., Andrews, Phillip C. (2008) Investigation of the protein osteocalcin of

Camelops hesternus: Sequence, structure and phylogenetic implications. *Geochimica Cosmochimica Acta* **71**:5956-5967.

Waters, M. R., J. Wierseman and T. W. Stafford, Jr. (2008) A geoarchaeological evaluation of an early human burial from Brazoria County, Texas. *Journal of Archaeological Science* **35**:2425-2433.

Rick, T.C., J. M. Erlandson, R.L. Vellanoweth, T.J. Braje, P.W. Collins, D. A. Guthrie, and T.W. Stafford, Jr. (2009) Origins and antiquity of the island fox (*Urocyon littoralis*) on California's Channel Islands. *Quaternary Research* **71**:93-98.

Tankersley, K. B., Michael R. Waters, and Thomas W. Stafford, Jr. (2009) Clovis and the American Mastodon at Big Bone Lick, Kentucky. *American Antiquity* 74:1-10.

Michael R. Waters, Thomas W. Stafford, Jr., Brian G. Redmond, K.B. Tankersley (2009) The Age of the Paleoindian Assemblage at Sheriden Cave, Ohio. *American Antiquity* **74**:107-111.

Kennett, D.J., J.P. Kennett, G.J. West, J.M. Erlandson, J.R. Johnson, L.L. Hendy, A. West, B.J. Culleton, T.L. Jones, and Thomas W. Stafford, Jr. (2008) Wildfire and abrupt ecosystem disruption on California's Northern Channel Islands at the Alleröd Younger Dryas boundary (13.0-12.9 ka). *Quaternary Science Reviews* **27**:2528-2543.

Saulnier-Talbot, Émilie, Reinhard Pienitz and Thomas W. Stafford, Jr. (2009) Establishing Holocene sediment core chronologies for northern Ungava lakes, Canada, using humic acids (AMS ^{14}C) and ^{210}Pb. *Quaternary Geochronology* **4**:278-287.

Kurbatov, Andrei, Paul A. Mayewski, Jorgen P. Steffensen, Allen West, Douglas Kennett, James P. Kennett, Ted E. Bunch, Mike Handley, Douglas Introne, Shane S. Que Hee, Christopher Mercer, Marilee Sellers, Feng Shen, Sharon B. Sneed, James Weaver, James Witttke, Thomas W, Stafford, Jr., John Donovan, Sujing Xie, Joshua J. Razink, Adrienne Stich, Charles R. Kinze and Wendy S. Wolbach (2010) Discovery of a nanodiamond-rich layer in the Greenland ice sheet. *Journal of Glaciology* **56**:749-759.

Scott, Eric, Thomas W. Stafford, Jr., Russell W. Graham, and Larry D. Martin (2010) Morphology, metrics, isotopes, and dates: determining the validity of *Equus laurentius* Hay, 1913. *Journal of Vertebrate Paleontology* **30**(6):1-8.

Semken, Jr., Holmes A., Russell W. Graham and Thomas W. Stafford, Jr. (2010) AMS ^{14}C analysis of Late Pleistocene non-analog faunal components from 21 cave deposits in southeastern North America. *Quaternary International* **217**:240-255.

Waters, Michael R., Thomas W. Stafford, Jr., H. Gregory McDonald, Carl Gustafson, Morten Rasmussen, Enrico Cappellini, Jesper V. Olsen, Damian Szklarcyk, Lars Juhl Jensen, M. Thomas P. Gilbert, and Eske Willerslev (2011) Pre-Clovis Mastodon Hunting 13,800 Years Ago at the Manis Site, Washington. *Science* **334**:351-353.

Lorenzen, Eline D. et al., Species-specific responses of Late Quaternary megafauna to climate and humans. (2011) *Nature* **479**:359-364.

Cappellini, Enrico, Lars J. Jensen, Damian Szldarczyk, Aurelien Ginolhac, Rute A.R. da Fonseca, Thomas W. Stafford, Jr., Steven R. Holen, Matthew J. Collins, Ludovic Orlando, Eske Willerslev, M. Thomas P. Gilbert and Jesper V. Olsen (2012) Proteomic Analysis of a Pleistocene Mammoth Femur Reveals More than One Hundred Ancient Bone Proteins. *Journal of Proteome Research*. Vol. 11, pp. 917-926.

MacFadden, Bruce J., Barbara A. Purdy, Krista Church, and Thomas W. Stafford, Jr. (2012) Humans were contemporaneous with late Pleistocene mammals in Florida: evidence from rare earth elemental analysis. *Jour. Vert. Paleontology*: **32**:708-716.

Welch, Andreanna J., Anne E. Wiley, Helen F. James, Peggy H. Ostrom, Thomas W. Stafford, Jr. and Robert C. Fleischer (2012) Ancient DNA reveals resilience despite the threat of extinction: 3,000 years of population history in the endemic Hawaiian petrel. *Molecular Biology and Evolution* doi: 10.1093/molbev/mss185

Dennis L. Jenkins, Loren G. Davis, Thomas W. Stafford Jr., Paula F. Campos, Bryan Hockett, George T. Jones, Linda Scott Cummings, Chad Yost, Thomas J. Connolly, Robert M. Yohe II, Summer C. Gibbons, Maanasa Raghavan, Morten Rasmussen, Johanna L. A. Paijmans, Michael Hofreiter, Brian M. Kemp, Jodi Barta, Cara Monroe, M. Thomas P. Gilbert, and Eske Willerslev (2012) Clovis Age Western Stemmed Projectile Points and Human Coprolites at the Paisley Caves. (2012) *Science* **337**:223-228.

Stanford, Dennis, Darrin Lowery, Margaret Jodry, Bruce A Bradley, Marvin Kay, Thomas W. Stafford, Jr., and Robert J. Speakman (2013) New Evidence for a possible Paleolithic occupation of the Eastern North American continental shelf at the last glacial maximum. In: Amanda Evans, Joe Flatman, Nic Flemming, Eds., *Prehistoric Archaeology on the Continental Shelf*, pp. 73-93. Springer

Rowe, Marvin W., Jenny Phomakay, Jackson O. Lay, Oscar Guevara, Keerthi Srinivas, W. Kirk Hollis, Karen L. Steelman, Thomas Guilderson, Thomas W. Stafford Jr., Sarah L. Chapman, and Jerry W. King (2013) Application of supercritical carbon dioxide–co-solvent mixtures for removal of organic material from archeological artifacts for radiocarbon dating. *The Journal of Supercritical Fluids* **79**:314-323.

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MANUSCRIPTS IN PRESS

McDonald, H. Gregory, David L. Dyer, Linda C.K. Shane, Brian Haskell, Thomas W. Stafford, Jr., The Woodland Muskox, *Bootherium bombifrons* (Artiodactyla, Bovidae) from Hebron, Licking County Ohio, USA and its Paleoecology in the Great Lakes Region.

MANUSCRIPTS IN PREPARATION

Stafford, Thomas W., Jr., Dennis Jenkins, Jan J. Enghild, and John Southon. Accuracy of ^{14}C measurements on cave coprolites as controlled by physical and chemical factors in sediments with natural chromatographic behavior.

RECENT FIELD PROJECTS

December 2022	Hartley Mammoth, NM
July 2018	Hall's Cave, Texas Geology & Paleontology
June 2018	Rimrock Draw Alluvial Geology, Oregon
October 2017	Rimrock Draw Rockshelter, Oregon
July 1- August 10	Hall's Cave, Kerrville, Texas
June 2017	Paisley Caves, Oregon
August-Sept 2016	Hall's Cave, Texas

TECHNOLOGY TRANSFER

Designed, and constructing AMS ^{14}C prep-lab, Texas A&M (2020-2021)

Trained and installed AMS ^{14}C bone dating capabilities at Department of Geology, Michigan State University, in collaboration with Division of Birds, Smithsonian Institution. (2008 to 2009)

Designed, Constructed and Installed the AMS Sample Preparation Laboratory for the Radiocarbon Laboratory, Department of Geography Université Laval (2005)

Designed, Constructed and Installed the AMS Sample Preparation Laboratory for the Limnological Research Center, University of Minnesota.

Advised the USGS Radiocarbon Lab-Reston, VA on methods for retrofitting their lab for AMS capabilities.

Exchange information with the UC-Irvine AMS facility regarding improvements in chemical techniques for ^{14}C AMS dating.

Instructed geochemists at AMS-Direct, Inc., Bothell, Washington in chemical protocols for AMS ^{14}C dating, and designed and constructed instrumentation for gas handling and graphite production.

INNOVATIONS

Developed Quality Assurance/Quality Control (QA/QC) software used in the AMS laboratory. The software automates all tracking, data input, report writing, and accounting for Stafford Research Laboratories.

Developing with James Cook, Hindsight Ltd., Colorado, a digital encyclopedia of anatomy for identifying and archiving specimens of modern and fossil mammals and birds. The software replaces numerous, poor-quality textbooks, and will be marketed for education (paleontology, medical, veterinary programs), museums (interactive exhibits and sample identification) and research (paleontology, zoology, archaeology).

Designed and constructed an automated chemical pretreatment instrument (Lavachron^{TM}) to process plant macrofossils for AMS ^{14}C dating. The design and engineering were a collaboration with Chris Clark, Bolder Software, Colorado.

COLLABORATIVE ACTIVITIES

Emphasis is placed on dispersing AMS ^{14}C dating technology to scientists throughout the U.S., Canada, Chile and Argentina. AMS vacuum systems were built at the Limnology Research Center-University of Minnesota, Pittsburgh University and Lavalle University-Quebec Canada. Collaborative research in AMS dating has been done with Lawrence Livermore National Lab-CAMS for the past fourteen years and now with UC-Irvine.

Extensive worldwide collaborations are with archaeologists and paleontologists to assist and train them in interpreting lithostratigraphy, biostratigraphy, soils processes, stable isotope applications and radiocarbon dating procedures. The goal is to educate archaeologists in chemistry, physics and geology as it applies to their research endeavors. This goal is further accomplished by serving as an assistant editor (geology & geochemistry) for *Current Research in the Pleistocene*.

Over the past seven years work has been underway, with James Cook, on development of Digital Linnaeus™. This software is a text and graphic database for identifying modern and fossil vertebrate remains without resorting to extensive museum travel. Users range from geologists, paleontologists, archaeologists, and biologists to secondary education students needing greater access to osteological data.

Fourteen years of pro bono work dedicated to the Kennewick Man lawsuit, Bonnichsen, *et al. v.* U.S. Work supporting the plaintiffs includes site geology, expert witness testimony, and interpretation of geochemical and geological data to support the scientists' goal of protecting research in human prehistory in the United States.

COLLABORATORS & CO-AUTHORS - Last 60 mo.

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