

MAJIE FAN

Assistant Professor

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APPOINTMENTS:

2011-present	Assistant Professor , Department of Earth and Environmental Sciences, University of Texas at Arlington
2009 fall	Lecturer , Department of Geosciences, University of Arizona
2009 summer	Intern Geologist , ExxonMobil Production Company, Houston, TX
2005-2009	Research Specialist , Environmental Isotope Laboratory, University of Arizona
2003-2005	Research Assistant , Department of Geosciences, University of Arizona

EDUCATION:

2010-2011	Postdoctoral Researcher , Department of Geology and Geophysics, University of Wyoming Advisors: Paul Heller, Barbara Carrapa
2006-2009	Ph.D. , Geosciences, University of Arizona, Tucson, AZ Advisors: Peter DeCelles, David Dettman
2003-2005	M.S. , Geosciences, University of Arizona, Tucson, AZ
2000-2003	M.S. , Geology, Lanzhou University, Lanzhou, China
1996-2000	B.S. , Geology, Lanzhou University, Lanzhou, China

PUBLICATIONS:

In Review/Revision (*indicates student and postdoc authors):

- **Fan, M.**, and Dettman, D.L., An alternative method for the determination of non-exchangeable hydrogen isotope values in feather keratin, in revision.
- **Fan, M.**, Heller, P., Allen, S.D.*, Hough, B.G. *, Middle Cenozoic Uplift and Concomitant Drying in the Central Rocky Mountains and Adjacent Great Plains, in review.
- **Fan, M.**, and Hough, B.G.*, Integrated stable isotope signatures of late Miocene atmospheric circulation and high topography in the central Rocky Mountains, in review.
- Li, X., Ren, J., **Fan, M.**, Xie, X., Tong, D., Xin, Y., Zhang, J., Quan, X., Cenozoic tectonostratigraphic framework and evolution of the East China Sea Shelf Basin, in review.

Published in Peer Review Journals:

- **Fan, M.**, and Carrapa, B., Late Cretaceous-early Eocene two-stage development of the Laramide deformation in Wyoming, *Tectonics*, in press.
- Hough, B.G.*, **Fan, M.**, and Passey, B.H., 2014, Calibration of the clumped isotope geothermometer in soil carbonate in Wyoming and Nebraska, USA: implications for paleoelevation and paleoclimate reconstruction: *Earth and Planetary Science Letters*, v.391, p.110-120.
- **Fan, M.**, 2014, The influence of reservoir stratigraphic heterogeneity on CO₂ sequestration capacity of depleted hydrocarbon reservoirs: a case study of the Lower Cretaceous Muddy Sandstone in the Powder River Basin, NE Wyoming, *Rocky Mountain Geology*, in press.
- Hyland, E., Sheldon, N.D., and **Fan, M.**, 2013, Terrestrial environment reconstructions indicate transient peak warming during the Early Eocene Climatic Optimum: *GSA Bulletin*, v.125, p.1338-1348.
- **Fan, M.**, DeCelles, P.G., Gehrels, G. E., Dettman, D.L., and Peyton, S. L., 2011, Sedimentology, detrital zircon geochronology, and stable isotope geochemistry of the lower Eocene strata in the Wind River Basin, central Wyoming: *GSA Bulletin*, v.123, p.979-996.
- **Fan, M.**, Quade, J., Dettman, D.L., and DeCelles, P.G., 2011, Widespread basement erosion in late Paleocene-early Eocene in the Laramide Rocky Mountains inferred from ⁸⁷Sr/⁸⁶Sr ratio of bivalve fossils: *GSA Bulletin*, v.123, p.2069-2082. **Cited by 2.**
- **Fan, M.**, and Dettman, D.L., 2009, Late Paleocene high Laramide ranges in northeast Wyoming: oxygen isotope study of ancient river water: *Earth and Planetary Science Letters*, v.286, p.110-121.
- DeCelles, P.G., Quade, J., Kapp, P., **Fan, M.**, Dettman, D.L., and Ding, L., 2007, High and dry in central Tibet during the late Oligocene: *Earth and Planetary Science Letters*, v.253, p.389-401.
- **Fan, M.**, Dettman, D.L., Song, C., Fang, X., and Garzione, C.N., 2007, Climatic variation in the Linxia Basin, NE Tibetan Plateau, from 13.1 to 4.3 Ma: The stable isotope record: *Paleogeography, Paleoclimatology, Paleoecology*, v.247, p.313-328.
- **Fan, M.**, Song, C., Dettman, D.L., Fang, X., and Xu, X., 2006, Intensification of the Asian winter monsoon after 7.4 Ma: grain-size evidence from the Linxia Basin, northeastern Tibetan Plateau, 13.1 Ma to 4.3 Ma: *Earth and Planetary Science Letters*, v.248, p.186-197.
- Fang, X., Garzione, C.N., Van der Voo, R., Li, J., and **Fan, M.**, 2003, Flexural subsidence by 29 Ma on the NE edge of Tibet from the magnetostratigraphy of Linxia Basin, China: *Earth and Planetary Science Letters*, v.210, p.545-560.
- **Fan, M.**, and Song, C., 2003, Sedimentary environment analysis and the tectonic

implications of the Linxia Basin in the northeast margin of the Tibetan Plateau: *Journal of Lanzhou University (Natural Science)*, v.3, p.88-93 (in Chinese with English abstract).

- Song, C., Fang, X., Li, J., Gao, J., Zhao, Z., and **Fan, M.**, 2001, Tectonic uplift and sedimentary evolution of the Jiuxi Basin in the northern margin of the Tibetan Plateau since 13 Ma BP: *Science in China, Series D, Earth Sciences*, v.44, p. 192-202.

Abstracts:

- Zamora, J.R. *, **Fan, M.**, Griffin, R., and Stern, R., 2014, Provenance of Pennsylvanian deltaic sandstone in the Fort Worth Basin: constraints from detrital zircon U-Pb geochronology: the Annual Celebration of Excellence by Students (ACES), UTA.
- Gao, M. *, and **Fan, M.**, 2014, Processes and mechanism of Laramide deformation: constraints from 2D flexural subsidence modeling of intermontane basins: the Annual Celebration of Excellence by Students (ACES), UTA.
- Alsalem, O.B.*, **Fan, M.**, Xie, X., and Berend, B., 2014, the subsidence evolution of the Fort Worth Basin in north-central Texas, U.S.A.: the Annual Celebration of Excellence by Students (ACES), UTA.
- Zamora, J.R. *, **Fan, M.**, Griffin, R., and Stern, R., 2014, Provenance of Pennsylvanian deltaic sandstone in the Fort Worth Basin: constraints from detrital zircon U-Pb geochronology: GSA South-Central Section 48th Annual Meeting (Fayetteville, AR).
- **Fan, M.**, Hough, B.G.*, and Passey, B.H., 2013, Late Miocene paleoclimate and high topography in the central Rocky Mountains: constraints from integrated carbonate clumped and oxygen isotope and volcanic glass hydrogen isotope studies: GSA Abstracts with Programs.
- Rowley, J.*, and **Fan, M.**, 2013, Timing, provenance, and paleoclimate implications of the late Cenozoic eolian deposition in the Central Rocky Mountains: GSA Abstracts with Programs.
- Wang, S., Heller, P., Jones, N., **Fan, M.**, 2013, Flexural modeling of Laramide Basins in Wyoming: a test of paleoaltimetric and rigidity estimates : GSA Abstracts with Programs.
- Al Salem, O.*, and **Fan, M.**, 2013, The subsidence evolution of the Paleozoic Fort Worth Basin in north-central Texas, USA: GSA South-Central Section 47th Annual Meeting (Austin, TX).
- Hough B.G. *, and **Fan, M.**, 2012, Variability of the isotopic lapse rate across the mountain ranges in Wyoming. AGU Fall Meeting (San Francisco, CA).
- **Fan, M.**, 2012, Sedimentary record of two-stage development of the Laramide deformation in Wyoming. MYRES (Meeting of Young Research in Earth Sciences) V-the Sedimentary Record of Landscape Dynamics (Salt Lake City, UT).

- Allen, S.D.*, **Fan, M.**, and Hough B.G. *, 2012, Evaluating the influence of complete clay removal on the δD values of volcanic glass and its application to the late Cenozoic paleotopography in the central Rocky Mountains. GSA Rocky Mountain Section Meeting (Albuquerque, NM).
- **Fan, M.**, and Hough*, B.G., 2011, Constraints on late Cenozoic elevation and climate in the central Rockies from integrated carbonate clumped and oxygen isotopes and volcanic glass hydrogen isotope studies. AGU Fall Meeting (San Francisco, CA).
- Hyland, E.*, **Fan, M.**, and Sheldon, N.D., 2011, Paleoenvironmental reconstruction of the Early Eocene Wind River Formation in the Wind River Basin, Wyoming. AGU Fall Meeting (San Francisco, CA).
- **Fan, M.**, and DeCelles, P.G., 2010, Late Paleocene-early Eocene accelerated Laramide deformation, exhumation, and elevation gain in Wyoming: GSA Abstracts with Programs, v.42, p.186.
- Constenius, K.N., Dawson, M.R., **Fan, M.**, and Pierce, H.G., 2010, Paleogene faunas from the Kishenehn Formation in and around Glacier National Park: GSA Abstracts with Programs, v.42, p.661.
- Becker, T.P., McGroder M.F., Rudolph, K., Hauge T.A., and **Fan, M.**, 2010, Paleogene influence of the Moxa arch on the architecture of the composite Darby-Hogsback-Prospect (DHP) thrust sheet near LaBarge, WY, U.S.A.: AAPG Annual Convention and Exhibition Abstracts, New Orleans, Louisiana, v.19, p.23.
- Dettman, D.L., and **Fan, M.**, 2009, Isotope hydrology of the western Williston Basin, latest Maastrichtian: 9th North American Paleontological Convention, v.9, p.140.
- **Fan, M.**, Quade, J., DeCelles, P.G., and Dettman, D.L., 2009, Widespread basement erosion in late Paleocene-early Eocene in the Laramide Rocky Mountains inferred from $^{87}\text{Sr}/^{86}\text{Sr}$ ratio of bivalve fossils: GSA Abstracts with Programs, v. 41, p.429.
- **Fan, M.**, DeCelles, P.G., Gehrels, G. E., Dettman, D.L., and Peyton, S. L., 2008, Sedimentology, detrital zircon geochronology, and stable isotope paleoaltimetry of the early Eocene Wind River Basin: AGU Fall Meeting (San Francisco, CA). Abstract T53B-1936.
- **Fan, M.**, and Dettman, D. L., 2006, Late Cretaceous-early Eocene isotope paleohydrology and paleoelevation of the Laramide Rocky Mountains using oxygen isotope ratios of geographically widespread freshwater bivalves: AGU Fall Meeting (San Francisco, CA). Abstract T32C-0528.
- Quade, J., Saylor, J., **Fan, M.**, Dettman, D., DeCelles, P., and Kapp, P., 2006, Calibration and application of the Tibetan paleoaltimeter: AGU Fall Meeting (San Francisco, CA). Abstract T31E-02.

- DeCelles, P.G., Kapp, P., Quade, J., **Fan, M.**, and Ding, L., 2005, High and dry: central Tibetan Plateau during the mid-Tertiary: AGU Fall Meeting (San Francisco, CA). Abstract T32C-03.
- **Fan, M.**, Song, C., and Dettman, D. L., 2005, A late Miocene-early Pliocene record of atmospheric circulation change from the Linxia Basin, NW China: GSA Abstracts with Programs, v.37, p.363.
- DeCelles, P.G., Kapp, P., Leier, A., Quade, J., and **Fan, M.**, 2004, Cretaceous-Tertiary basin evolution in the Lhasa terrane of southern Tibet: Responses to terrane collision, arc-trench tectonics, and progressive underthrusting of Greater India: GSA Abstracts with Programs, v.36, p.50.
- Garzzone, C.N., Song, C., Fang, X., Dettman, D.L., and **Fan, M.**, 2001, Oligocene-Pleistocene sedimentation in Linxia Basin on the northeastern edge of the Tibetan Plateau, Gansu Province, China: GSA Abstracts with Programs, v.33, p.356.
- Dettman, D.L., Fang, X., Song, C., Garzzone, C.N., Li, J., and **Fan, M.**, 2001, Using isotope paleohydrology to constrain the uplift of the Tibetan Plateau: the view from the northeast: GSA Abstracts with Programs, v. 33, p.259.

FUNDED RESEARCH GRANTS:

- UTA Research Enhancement Program grant: \$10,000, evaluating two tectonic models forming the high central Rockies by paleoelevation reconstruction, 2013-2014.
- NSF Tectonics EAR-1119005: *Reconstructing the late Cenozoic history of surface uplift and climate change in the central Rockies*, \$304,179. PI: Paul Heller (University of Wyoming), CO-PI: M. Fan (\$223,530 is subcontracted to UTA), May 2011-May 2014.

COURSE TAUGHT:

Year	Semester	Course No./Title	Hrs	Enrollment
13	Fall	Stable Isotope Geochemistry (GEOL 4350/5332)	3	8
12	Fall	Basin Analysis (GEOL 4346/5371)	3	19
12, 13	Fall	Sedimentary System (GEOL5370)	3	13-15
12-14	Spring	Sedimentology and Stratigraphy (GEOL 3442)	4	28-40
11	Fall	Sequence Stratigraphy (GEOL 4307, 5369)	3	12

INVITED TALKS:

07/2013	Institute of Tibetan Plateau Research, Chinese Academy of Science, China
07/2013	Lanzhou University, China
11/2012	University of Oklahoma
08/2012	MYRES (Meeting of Young Research in Earth Sciences) V-the Sedimentary Record of Landscape Dynamics (Salt Lake City, UT).
01/2012	University of Texas at Dallas
03/2011	University of Texas at Arlington
03/2011	Northern Illinois University
02/2011	University of Alabama
10/2010	Georgia State University
04/2010	Missouri University of Science and Technology
03/2010	University of Kentucky

PROFESSIONAL SERVICES:**Department services:**

- 2013-2014: Manage UTA Light Stable Isotope Laboratory
- 2012-2013: Attain 21 Petromod 1D and 2D licenses (A total value of \$2,649,600) from Schlumberger for teaching and research
- 2011-2012: Member of search committee for department chair
- 2011-2012: Member of search committee for junior faculty in the broad field of geoscience

Reviewer:

- Proposal Reviewer for: National Science Foundation (Tectonics (2), Instrumentation and Facilities (1), Early-Career(1), Postdoc-Fellowship(1)).
- Manuscript Reviewer for: Geology; American Journal of Science; Earth and Planetary Science Letters; Journal of Asian Earth Science; Gondwana Research; Geochimica et Cosmochimica Acta; Sedimentology; Tectonics; Aeolian Research.

Meeting Convener:

- 2011, AGU Fall Meeting (San Francisco, CA, USA) Session Co-convener, *Tectonics, Erosion and Paleoclimate: Insights from Geochemistry, Paleobiology, Geochronology, and Modeling.*
- 2014, GSA National Meeting (Vancouver, BC, Canada) Session Co-convener, *Stable and clumped isotope record of topography, climate, and environments: challenges and recent advances.*