

## JOEL E. SAYLOR

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### PROFESSIONAL PREPARATION

2001 B.A., Case Western Reserve University, Geology  
2008 Ph.D., University of Arizona, Geosciences

### APPOINTMENTS

2013-Present Assistant Professor, Department of Earth and Atmospheric Sciences, University of Houston  
2012-2013 Pioneer Natural Resources Assistant Research Professor, School of Earth Sciences and Environmental Sustainability, Northern Arizona University  
2008-2012 Post-doctoral Fellow, Department of Geological Sciences, Jackson School of Geosciences, The University of Texas at Austin  
2003-2008 Graduate Assistant, University of Arizona, Tucson, Arizona  
2005 Intern, Shell Research and Development, Houston, Texas  
1999-2001 Research Assistant, Case Western Reserve University, Cleveland, Ohio  
2000 Research Intern, Lunar and Planetary Institute, Houston, Texas

### PUBLICATIONS (underline: Graduate student advisee, double underline: Undergraduate student advisee) 2015

Horton, B.K., Perez, N.D., Fitch, J.D., and **Saylor, J.E.**, 2015, Punctuated shortening and subsidence in the Altiplano Plateau of southern Peru: Implications for early Andean mountain building, *Lithosphere*, doi:10.1130/L397.1.  
Huntington, K.W., **Saylor, J.E.**, Quade, J., and Hudson, A.M., 2014, High late Miocene–Pliocene elevation of the Zhada Basin, southwestern Tibetan Plateau, from carbonate clumped isotope thermometry, *Geological Society of America Bulletin*, v. 127, p. 200-210 doi:10.1130/B31000.1.

### 2014

Anderson, V.J., Shanahan, T.M., **Saylor, J.E.**, Horton, B.K., and Mora, A., 2014, Sources of local and regional variability in the MBT'/CBT paleotemperature proxy: Insights from a modern elevation transect across the Eastern Cordillera of Colombia, *Organic Geochemistry*, v. 69, p. 42-51.  
**Saylor, J.E.** and Horton, B.K., 2014, Nonuniform uplift of the Central Andean Plateau revealed by deuterium isotopes in Miocene volcanic glass from southern Peru, *Earth and Planetary Science Letters*, v. 387, p. 120-131.

### 2013

Wang, X., Li, Q., Xie, G., **Saylor, J.E.**, Tseng, Z.J., Takeuchi, G.T., Deng, T., Wang, Y., Hou, S., Liu, J., Zhang, C., Wang, N., and Wu, F., 2013, Mio-Pleistocene Zanda biostratigraphy and geochronology, pre-Ice Age fauna, and mammalian evolution in western Himalaya, *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 374, p. 81-95.  
**Saylor, J.E.**, Knowles, J.N., Horton, B.K., Nie, J., Mora, A., 2013, Mixing of source populations recorded in detrital zircon U-Pb age spectra from modern river sands, *The Journal of Geology*, v. 121, p. 17-33.

### 2012

**Saylor, J.E.**, Horton, B.K., Stockli, D.F., Corredor, J., and Mora, A., 2012, Structural and thermochronological evidence for Paleogene basement-involved shortening in the axial Eastern Cordillera, Colombia, *Journal of South American Earth Sciences*, v. 39, p. 202-215.

**Saylor, J.E.**, Stockli, D.F., Horton, B.K., Nie, J.S., and Mora, A., 2012, Discriminating rapid exhumation from syndepositional volcanism using detrital zircon double dating: Implications for the tectonic history of the Eastern Cordillera, Colombia, *Geological Society of America Bulletin*, v. 124, p. 762-779.

Nie, J., Horton, B.K., **Saylor, J.E.**, Mora, A., Mange, M., Garziona, C.N., Basu, A., Moreno, C.J., Caballero, V., and Parra, M., 2012, Integrated provenance analysis of a convergent retroarc foreland system: U-Pb ages, heavy minerals, Nd isotopes, and sandstone compositions of the Middle Magdalena Valley basin, northern Andes, Colombia, *Earth Science Reviews*, v. 110, p. 111-126.

### **2011**

Deng, T., Wang, X., Fortelius, M., Qiang, L., Wang, Y., Tseng, Z.J., Takeuchi, G.T., **Saylor, J.E.**, Säila, L.K., Xie, G., 2011, Out of Tibet: Pliocene woolly rhino suggests high-plateau origin of Ice Age megaherbivores, *Science*, v. 333, p. 1285-1288.

**Saylor, J.E.**, Horton, B.K., Nie, J.S., Corredor, J., and Mora, A., 2011, Evaluating foreland-basin partitioning in the northern Andes using Cenozoic fill of the Floresta basin, Eastern Cordillera, Colombia, *Basin Research*, v.23, p. 377-402.

### **2010**

Horton, B.K., **Saylor, J.E.**, Nie, J.S., Mora, A., Parra, M., Reyes-Harker, A., Stockli, D.F., 2010, Linking sedimentation in the northern Andes to basement configuration, Mesozoic extension, and Cenozoic shortening: Evidence from detrital zircon U-Pb ages, Eastern Cordillera, Colombia, *Geological Society of America Bulletin*, v. 122, p. 1423-1442.

Horton, B.K., Parra, M., **Saylor, J.E.**, Nie, J.S., Mora, A., Torres, V., Stockli, D.F., Strecker, M.R., 2010, Resolving uplift of the northern Andes using detrital zircon age signatures, *GSA Today*, v. 20, p. 4-9.

Nie, J.S., Horton, B.K., Mora, A., **Saylor, J.E.**, Housh, T.B., Rubiano, J., and Naranjo, J., 2010, Tracking exhumation of Andean ranges bounding the Middle Magdalena Valley basin, Colombia, *Geology*, v. 38, p. 451-454.

**Saylor, J.E.**, DeCelles, P.G., Gehrels, G., Murphy, M., Zhang, R., and Kapp, P., 2010, Basin formation in the High Himalaya by arc-parallel extension and tectonic damming: Zhada basin, southwestern Tibet, *Tectonics*, v. 29, TC1004, 24 pp.

**Saylor, J.E.**, DeCelles, P.G., and Quade, J., 2010, Climate-driven environmental change in the Zhada basin, southwestern Tibetan plateau, *Geosphere*, v. 6, p 74-92.

### **2009**

**Saylor, J.E.**, Mora, A., Horton, B.K., and Nie, J., 2009, Controls on the isotopic composition of surface water and precipitation in the northern Andes, Colombian Eastern Cordillera, *Geochimica et Cosmochimica Acta*, v. 73, p 6999-7018.

Murphy, M.A., **Saylor, J.E.**, and Ding, L. 2009, Late Miocene topographic inversion in southwest Tibet based on integrated paleoelevation reconstructions and structural history, *Earth and Planetary Science Letters*, v. 282, p. 1-9.

**Saylor, J.E.**, Quade, J., Dettman, D.L., DeCelles, P.G., Kapp, P.A., and Ding, L., 2009, The late Miocene through present paleoelevation history of southwestern Tibet, *American Journal of Science*, v. 309, p. 1-42.

### **GRANTS**

COLLABORATIVE RESEARCH: High-resolution, multi-proxy Miocene-Pleistocene climate and environmental records from the high-elevation Zhada basin, SW Tibetan Plateau, 2013-2015, *National Science Foundation*, PIs, T.M. Shanahan, **J.E. Saylor**, University of Texas at Austin X. Wang, LA County Museum of Natural History, \$225,800.

Evaluating along-strike variations in surface uplift of the Andes: Constraints from molecular paleoaltimetry in the Eastern Cordillera of Colombia, 2010-2012, *National Science Foundation*.

PIs: B.K. Horton, **J.E. Saylor**, and T. Shanahan, University of Texas at Austin, EAR-1019857, \$246,578.

**ABSTRACTS** (underline: Graduate student advisee, double underline: Undergraduate student advisee)  
**2014**

**Saylor, J.E.**, and Sundell, K.E., 2014, Statistics of large detrital geochronology datasets, *American Geophysical Union, Fall Meeting 2014*

Bershaw, J., **Saylor, J.E.**, Garziona, C., Leier, A., 2014, The isotopic evolution of modern water ( $\delta^{18}\text{O}$  and  $\delta\text{D}$ ) across the Andean plateau controlled by easterly-derived precipitation modified by surface water recycling, *American Geophysical Union, Fall Meeting 2014*

Bartschi, N., **Saylor, J.E.**, Blum, M., 2014, Discriminating sediment supply versus accommodation controls on foreland basin stratigraphic architecture in the Book Cliffs, central Utah using detrital double dating, *American Geophysical Union, Fall Meeting 2014*

Sundell, K.E., **Saylor, J.E.**, Horton, B.K., 2014, Testing geodynamic models for surface uplift of the central Andean plateau through volcanic glass paleoaltimetry and basin analysis in southern Peru, *American Geophysical Union, Fall Meeting 2014*

**Saylor, J.E.**, Sundell, K.E., Horton, B.K., 2014, Constraints on geodynamic models of surface uplift from hydrogen isotopes of volcanic glass in southern Peru, *Geological Society of America Abstracts with Programs*.

Sundell, K.E., **Saylor, J.E.**, Villarreal, D., 2014, Basin evolution and surface uplift of the Huacochullo and Puquio regions in southern Peru through zircon U-Pb geochronology and volcanic glass paleoaltimetry, *Geological Society of America Abstracts with Programs*

Saadeh, C.M., **Saylor, J.E.**, Shanahan, T.M., Nie, J., 2014, Stable isotopic record of monsoon intensity and paleoenvironmental change in the Zhada basin, SW Tibet, *Geological Society of America Abstracts with Programs*, v. 46, p. 507.

Casturi, L., **Saylor, J.E.**, Nie, J., Saadeh, C.M., 2014, Monsoon modulation of Milankocitch frequency Mio-Pliocene environmental changes in Zhada basin, SW Tibet, *Geological Society of America Abstracts with Programs*, v. 46, p. 507.

**2013**

**Saylor, J.E.**, Nie, J., and Shanahan, T. M., 2013, Sequence stratigraphy and the stable isotope record of the Zhada Basin, SW Tibet: Implications for paleoelevation research, *Geological Society of America Abstracts with Programs*, v. 45, p. 358.

Winton, R., **Saylor, J. E.**, and Horton, B. K., 2013, Evidence of the Timing and Rate of Uplift of Central Peruvian Andes from Deuterium Isotopes in Volcanic Glass: *American Geophysical Union, Fall Meeting 2013*, Abstract #T41B-2571.

Bush, M. A., Horton, B. K., **Saylor, J. E.**, and Nie, J., 2013, Protracted depositional and provenance record of Cenozoic orogenesis in northern Tibet: New evidence from the Qaidam basin: *Geological Society of America Abstracts with Programs*, v. 45, p. 890.

Anderson, V. J., Horton, B. K., and **Saylor, J. E.**, 2013, Constraining basement uplift in the northern Andes using detrital zircon provenance analysis: U-Pb geochronological record of exhumation of the Garzon massif, Colombia: *Geological Society of America Abstracts with Programs*, v. 45, p. 889.

**Saylor, J.E.**, Mora, A. Anderson, V.J., Caballero, V., Horton, B.K., Shanahan, T.M., Parra, M., Nie, J., Quintero, I., and Ramirez, J.C., 2013, Tectonic and climatic signatures of Cenozoic mountain building in the Colombian Andes, *AAPG International Conference and Exhibition*, Cartagena,

**2012**

Anderson, V.J., Shanahan, T.M., **Saylor, J.E.**, and Horton, B.K., 2012, The isolation of the temperature effect on branched GDGT distribution in an elevation transect of the Eastern Cordillera, Colombia, *American Geophysical Union, Fall Meeting 2012*, Abstract #PP31F-05.

**Saylor, J.E.,** Horton, B.K., and Stockli, D.F., 2012, Stable isotopic signatures of diachronous Andean mountain building from volcanic glass, Condorama Basin, northern Altiplano, Peru, *American Geophysical Union, Fall Meeting 2012*, Abstract #T21E-2608.

### **2011**

Anderson, V.J., **Saylor, J.E.,** Shanahan, T.M., and Horton, B.K., 2011, New Constraints on the Paleoelevation History of the Eastern Cordillera of Colombia from Lipid Biomarkers: *Eos Transactions AGU*, v. 92, p. T13F-2449.

**Saylor, J.E.,** Stockli, D.F., Horton, B.K., Nie, J., Mora, A., 2011, Detrital zircon double dating as a tool for identifying volcanic zircons and exhumation patterns in the Eastern Cordillera of Colombia, *Geological Society of America Abstracts with Programs*, v. 43, p. 653

**Saylor, J.E.,** DeCelles, P.G., Quade, J., 2011, A high-elevation terrestrial records of orbital cyclicity driven environmental change from the Zhada Basin, southwestern Tibetan Plateau: *Geological Society of America Abstracts with Programs*, v. 43, p. 148.

**Saylor J.E.,** Horton, B.K., Mora, A., Nie, J., Bande, A.E., Moreno, C.J., Parra, M., Housh, T.B., Caballero, V., Ramirez, J.C., Corredor, J., 2011, Cenozoic foreland basin evolution in Colombia: Evidence from the Middle Magdalena, Floresta, and Llanos basins, *Penrose Conference: Neotectonics of arc-continent collision*, Manizales, Colombia, Jan. 2011.

**Saylor J.E.,** Horton, B.K., Mora, A., Nie, J., Bande, A.E., Moreno, C.J., Parra, M., Housh, T.B., Caballero, V., Ramirez, J.C., Corredor, J., 2011, Multiple deformation styles during Cenozoic Andean shortening: Evidence from the Middle Magdalena, Floresta, and Llanos basins, Colombia: *Conference on Thick-skin-dominated orogens; from initial inversion to full accretion*, Barichara, Colombia, Jan 2011

### **2010**

Knowles, J. N.\*, **Saylor, J. E.,** Bande, A., Ramirez, J. C., Mora, A., Horton, B. K., and Nie, J., 2010, Are detrital zircon age spectra from modern sands representative of the catchment sources? An empirical test from the Eastern Cordillera of Colombia: *Eos Transactions AGU*, p. T11A-2056.

**Saylor, J.E.,** Stockli, D.F., Corredor, J., and Horton, B.K., 2010, Detrital zircon (U-Th)/He and U/Pb geochronology of the Floresta basin, Eastern Cordillera, Colombia: *American Association of Petroleum Geologists Annual Convention*, Abstracts with Programs.

### **2009**

**Saylor, J.E.,** Stockli, D.F., Mora, A., 2009, Timing and style of deformation in the Floresta massif, Axial Eastern Cordillera, Colombia: *Eos, Trans., AGU 90 (54), Fall Meet. Suppl.*, Abstract T32B-05

Horton, B.K., Parra, M., **Saylor, J.E.,** Nie, J. Mora, A., 2009, Resolving uplift of the Eastern Cordillera in the Colombian Andes using detrital zircon U-Pb age signatures: *Geological Society of America Abstracts with Programs*, v. 41, p.514.

### **2008**

**Saylor, J.E.,** DeCelles, P.G., Quade, J., 2008, Sequence Stratigraphy and Frequency Analysis of the Zhada Basin, SW Tibet: *Eos Trans. AGU 89 (53), Fall Meet. Suppl.*, Abstract T23C-1544.

### **2007**

**Saylor, J.E.,** DeCelles, P. G., Gehrels, G., Kapp, P., 2007, Provenance and Basin Evolution, Zhada Basin, Southwest Tibet: *Eos Trans. AGU 88 (52), Fall Meet. Suppl.*, Abstract T23C-1544.

**Saylor, J.E.,** DeCelles, P.G., Gehrels, G., 2007, Origin of the Zhada Basin, SW Tibet: A tectonically dammed paleo-river valley: *Geological Society of America Abstracts with Programs*, v. 39, p. 437.

### **2005**

**Saylor, J.E.,** DeCelles, P.G., Quade, J., Kapp, P., 2005, Deconvoluting Himalayan Climate and Tectonics Based on Zada Basin Sediments, Southwestern Tibet, *Eos Trans. AGU, 86(52), Fall Meet. Suppl.*, Abstract T32C-05.

### **2001**

**Saylor, J.E.**, Zolensky, M. E., Bodnar, R. J., Le, L.; Schwandt, C, 2001, Fluid inclusions in carbonaceous chondrites, *Lunar and planetary science, XXXII; Papers presented to the Thirty-second lunar and planetary science conference*, abstr. no. 1875.

#### **HONORS AND AWARDS**

2008 Peter J. Coney Fellowship, Department of Geosciences, University of Arizona  
2006, 2008 Galileo Circle Scholarship, University of Arizona  
2004, 2005, 2007, 2008 Chevron-Texaco Research Grant.  
2004 Graduate Student Scholarship, Department of Geosciences, University of Arizona.  
2004 Geological Society of American Field Research grant.  
2001 Carol Walker Award for Outstanding Contributions to the Department of Geology, Case Western Reserve University.

#### **SYNERGISTIC ACTIVITIES**

##### **(i) Integration of Research and Education.**

2013 Faculty advisor, International Barrel Award competition team, Northern Arizona University  
2005, 2007, 2008, Helped organize “Geodaze”, a student lead science conference at the University of Arizona.  
2003-2008, Taught and redesigned, as part of a team, undergraduate introductory and upper level labs (Geological Perspectives, Physical Geology, Principles of Sedimentology and Stratigraphy, Structural Geology, Field Methods, Field Camp).

##### **(ii) Enhancing Infrastructure for Research and Education**

2008 Participated in ExxonMobil workshop focusing on applications of ArcGIS to geological problems.  
2007 Participation in NSF sponsored workshop on Critical Transitions in Earth History focusing on developing and coordinating collaborations with Chinese colleagues.

##### **(iii) Service to Scientific community**

2014 Session Chair, GSA Annual Meeting: “Stable and Clumped Isotope Record of Topography, Climate, and Environments: Challenges and Recent Advances,” Co-conveners: Fan, M. Leier, A.L., **Saylor, J.E.**  
2013 NSF *Graduate Research Fellowship Program* Reviewer  
2013 Session Chair, GSA Annual Meeting: “Advances in Quantitative Sediment Provenance Research: Novel Approaches from Multi-Proxy Provenance Data to Provenance Modeling,” Co-conveners: **Saylor, J.E.**, Barbeau, D.L. Jr., Stockli, D.F.  
2010, 2012 Official Judge, AGU Annual Meeting, Tectonophysics sessions: evaluation of student presentations.  
2009 Session Chair, GSA national meeting: “Uplift or Climate Change? Evaluating Surface Uplift and Deformation in Light of Climate Change in the Andes,” Co-conveners: **Saylor, J.E.**, Mora, A., Hoke, G.D.  
2009–2014 Journal Reviewer (2014 n=9, 2013 n=9, 2012 n=6, 2011 n=5, 2010 n=2, 2009, n=1) for Basin Research, Earth and Planetary Science Letters, Geological Society of America Bulletin, Geological Society of London, Geology, Geochemistry, Geophysics, Geosystems, Geophysical Research Letters, Journal of Asian Earth Sciences, Journal of South American Earth Sciences, Lithosphere, Sedimentary Geology, and Tectonophysics

##### **(iv) Outreach/Broadening Participation**

2014 Volunteer judge for the Science Writing Contest of the Science and Engineering Fair of Houston  
2013 Middle school sedimentology and tectonics presentation at Western Academy

2012 Invited lecture at Lanzhou University, Lanzhou, China, “Sequence stratigraphic and source-to-sink insights into climatic and tectonic forcing in hinterland basin evolution, Zhada Basin, SW Tibetan Plateau” July, 2012

**COLLABORATORS AND OTHER AFFILIATIONS**

- (i) Collaborators (last 48 months):** Veronica J. Anderson, Brian K. Horton, Timothy Shanahan (U.Texas), Katharine W. Huntington (U. Washington), Andres Mora (Colombian Institute of Petroleum), (U. Texas), Jay Quade (U. Arizona), Z. Jack Tseng, Xiaoming Wang (Natural History Museum, L.A.), Tao Deng, Qiang Li (Inst. Vert. Paleontology & Paleoantropology), Yang Wang (Florida St. U.), Jennifer Knowles (Zephyr Environmental), Junsheng Nie (Lanzhou U.)
- (ii) Graduate and Postdoctoral Advisors:** Peter DeCelles and Jay Quade (Ph.D., U. Arizona), Brian Horton (U. Texas)
- (iii) PhD Dissertation Advisees:** Kurt Sundell (University of Houston), Tyson Smith, Yipeng Li (U. Houston, Fall 2014)
- (iv) MS Thesis Advisees:** Nicholas Bartschi (University of Houston), Soty Odoh (University of Houston, fall 2014)