

# Andrew J. Moodie

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Department of Geography  
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TEXAS A&M UNIVERSITY  
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## Education

- Doctor of Philosophy, Earth Science from RICE UNIVERSITY 2020
- “Assessing deltaic landscape management strategies based on studies from the Yellow River delta, China”
  - Numerical modeling of delta growth through lobe development and avulsion
  - Field measurement of density stratification in the Yellow River
  - Socio-economic costs of deltaic diversions and river engineering
- Bachelor of Science, in Earth and Environmental Sciences, LEHIGH UNIVERSITY 2014
- Geology focus area, with High Honors
  - Economics minor
  - Senior Honors Thesis: “Exhumation, dynamic topography, and drainage divides of active and ancient orogenic settings: the Gibraltar Arc and Appalachians”

## Appointments

- Assistant Professor, TEXAS A&M UNIVERSITY 2023–
- Department of Geography, College of Arts & Sciences
- Distinguished Postdoctoral Fellow; JSG, UNIVERSITY OF TEXAS AT AUSTIN 2022–2023
- “Fluvial reworking creates size-dependent bias in Mars crater record”
  - Jackson School of Geosciences (JSG)
- Earth Sciences Postdoctoral Fellow; NATIONAL SCIENCE FOUNDATION 2020–2022
- “Quantifying heterogeneity in stratigraphy across scales”
  - Civil, Architectural & Environmental Engineering, UNIVERSITY OF TEXAS AT AUSTIN
  - Geological Sciences, STANFORD UNIVERSITY

## Refereed Publications

\* indicates mentee-led publication

### *In review and in preparation*

- [28] Carlson, Brandee N., Jeffrey A. Nittrouer, Tian Y. Dong, **Andrew J. Moodie**, Hongbo Ma, and Chen-liang Wu (in revision). “Abrupt and Transitional Deltaic Avulsions: Distinct Patterns of Stratigraphy due to Channel Connectivity.” In: *Geology*.
- [27] Harris, Makenna, Brandee Carlson, **Andrew J. Moodie**, Tian Dong, Richard S. Vachula, William Struble, and Benjamin Cordova (in review). “Sedimentary charcoal records poorly preserve the stratigraphic signal of grassland fire as informed by the 2024 Windy Deuce Fire, Texas Panhandle.” In: *Geomorphology*.

- [26] \*Lundeen, Elena and **Andrew J. Moodie** (in review). “Quantifying differences between floodplain waterbody connectivity and river-floodplain connectivity in a coastal meandering river.” In: *Water Resources Research*.
- [25] Ma, Hongbo, Tian Y. Dong, John Shaw, Lawrence M. Vulis, Matthew Czapiga, Alejandro Tejedor, **Andrew J. Moodie**, and Efi Foufoula-Georgiou (in preparation). “The Growth Rate of Delta Channel Networks.” In: *Nature Geoscience*.
- [24] Vanderheiden, Andrew, Billy Hales, **Andrew J. Moodie**, and İnci Güneralp (in review). “ScrollStats: a Python tool for quantifying scroll bar morphology on meandering rivers.” In: *Journal of Open Source Software*. [link].

**Published**

- [23] **Moodie, Andrew J.**, Eric Barefoot, Eric Hutton, Charles Nguyen, Andrew Wickert, and Jeffrey Marr (2026). “Short Communication: The need for open-source hardware, software, and data-sharing specifications in geomorphology.” In: *Earth Surface Dynamics* 14.1, pp. 85–94. DOI: 10.5194/esurf-14-85-2026.
- [22] **Moodie, Andrew J.** and Timothy A. Goudge (2025). “Fluvial reworking eliminates small craters, but does not meaningfully bias the Mars interbedded-crater record.” In: *Journal of Geophysical Research: Planets* 130. DOI: 10.1029/2023JE008183.
- [21] Tull, Nelson, **Andrew J. Moodie**, and Paola Passalacqua (2024). “River-Floodplain Connectivity and Residence Times Controlled by Topographic Bluffs Along a Backwater Transition.” In: *Frontiers in Water* 5. DOI: 10.3389/frwa.2023.1306481.
- [20] Hariharan, J., K. Wright, **A. Moodie**, N. Tull, and P. Passalacqua (2023). “Impacts of human modifications on material transport in deltas.” In: *Earth Surface Dynamics* 11.3, pp. 405–427. DOI: 10.5194/esurf-11-405-2023.
- [19] Limaye, Ajay B., Jacob B. Adler, **Andrew J. Moodie**, Kelin X. Whipple, and Alan D. Howard (2023). “Effect of Standing Water on Formation of Fan-Shaped Sedimentary Deposits at Hypanis Valles, Mars.” In: *Geophysical Research Letters* 50. DOI: 10.1029/2022GL102367.
- [18] Wu, Chenliang, Wonsuck Kim, Ryan Herring, Benjamin Cardenas, Tian Dong, Hongbo Ma, **Andrew J. Moodie**, Frank T.C. Tsai, An Li, and Jeffrey A. Nittrouer (2023). “Pace of meandering and avulsion set river sinuosity near coast on Earth and Mars.” In: *Nature Geoscience*. DOI: 10.1038/s41561-023-01231-1.
- [17] Hariharan, Jayaram, Paola Passalacqua, Zhongyuan Xu, Holly A. Michael, Elisabeth Steel, Austin Chadwick, Chris Paola, and **Andrew J. Moodie** (2022). “Modeling the Dynamic Response of River Deltas to Sea-Level Rise Acceleration.” In: *Journal of Geophysical Research: Earth Surface* 127.9. DOI: 10.1029/2022JF006762.
- [16] **Moodie, Andrew**, Brandee Carlson, Brady Foreman, Jeffrey Kwang, Kensuke Naito, and Jeffrey Nittrouer (2022). “SedEdu: software organizing sediment-related educational modules.” In: *Journal of Open Source Education* 5.56, p. 129. DOI: 10.21105/jose.00129.
- [15] Carlson, Brandee N., Jeffrey A. Nittrouer, Travis E. Swanson, **Andrew J. Moodie**, Tian Y. Dong, Hongbo Ma, Gail C. Kineke, Minglong Pan, and Houjie Wang (2021). “The effects of engineered diversions and natural avulsions on abandoned lobe development and shoreline stability.” In: *Geophysical Research Letters*. DOI: 10.1029/2021GL092438.

- [14] **Moodie, Andrew J.**, Jayaram Hariharan, Eric Barefoot, and Paola Passalacqua (2021). “pyDeltaRCM: a flexible numerical delta model.” In: *Journal of Open Source Software* 6.64, p. 3398. DOI: 10 . 21105/joss.03398.
- [13] **Moodie, Andrew J.** and Jeffrey A. Nittrouer (2021). “Optimized river diversion scenarios promote sustainability of urbanized deltas.” In: *Proceedings of the National Academy of Sciences* 118.27. DOI: 10.1073/pnas.2101649118.
- [12] **Moodie, Andrew J.**, Jeffrey A. Nittrouer, Hongbo Ma, Brandee N. Carlson, Yuanjian Wang, and Michael P. Lamb (2021). “Suspended-sediment induced stratification inferred from concentration and velocity profile measurements in the flooding lower Yellow River, China.” In: *Water Resources Research*. DOI: 10.1029/2020WR027192.
- [11] **Moodie, Andrew J.** and Paola Passalacqua (2021). “When does faulting-induced subsidence drive distributary network reorganization?” In: *Geophysical Research Letters* 48.22. DOI: 10 . 1029 / 2021GL095053.
- [10] Carlson, Brandee N., Jeffrey A. Nittrouer, **Andrew J. Moodie**, Gail C. Kineke, Lisa L. Kumpf, Hongbo Ma, Daniel R. Parsons, and Houjie Wang (2020). “Infilling Abandoned Deltaic Distributary Channels Through Landward Sediment Transport.” In: *Journal of Geophysical Research: Earth Surface* 125.2. DOI: 10.1029/2019JF005254.
- [9] de Leeuw, Jan, Michael P. Lamb, Gary Parker, **Andrew J. Moodie**, Daniel Haught, Jeremy G. Venditti, and Jeffrey A. Nittrouer (2020). “Entrainment and suspension of sand and gravel.” In: *Earth Surface Dynamics*. DOI: 10.5194/esurf-8-485-2020.
- [8] Dong, Tian Y., Jeffrey A. Nittrouer, Brandon J. McElroy, Elena Il’icheva, Maksim Pavlov, Hongbo Ma, and **Andrew J. Moodie** (2020). “Predicting water and sediment partitioning in a delta channel network under varying discharge conditions.” In: *Water Resources Research*. DOI: 10 . 1029 / 2020WR027199.
- [7] Lamb, Michael P., Jan de Leeuw, Woodward Fischer, **Andrew J. Moodie**, Jeremy G. Venditti, Jeffrey A. Nittrouer, Daniel Haught, and Gary Parker (2020). “Mud in rivers transported as flocculated and suspended bed-material.” In: *Nature Geoscience*. DOI: 10.1038/s41561-020-0602-5.
- [6] Ma, Hongbo, Jeffrey A. Nittrouer, Baosheng Wu, Michael P. Lamb, Yuanfeng Zhang, David Mohrig, Xudong Fu, Kensuke Naito, Yuanjian Wang, **Andrew J. Moodie**, Guangqian Wang, Chunhong Hu, and Gary Parker (2020). “Universal relation with regime transition for sediment transport in fine-grained rivers.” In: *Proceedings of the National Academy of Sciences*. DOI: 10 . 1073 / pnas . 1911225116.
- [5] Chadwick, Austin J., Michael P. Lamb, **Andrew J. Moodie**, Gary Parker, and Jeffrey A. Nittrouer (2019). “Origin of a Preferential Avulsion Node on Lowland River Deltas.” In: *Geophysical Research Letters* 46.8, pp. 4267–4277. DOI: 10 . 1029 / 2019GL082491.
- [4] **Moodie, Andrew J.**, Jeffrey A. Nittrouer, Hongbo Ma, Brandee N. Carlson, Austin J. Chadwick, Michael P. Lamb, and Gary Parker (2019). “Modeling Deltaic Lobe-Building Cycles and Channel Avulsions for the Yellow River Delta, China.” In: *Journal of Geophysical Research: Earth Surface* 124.11, pp. 2438–2462. DOI: 10 . 1029 / 2019JF005220.
- [3] An, Cheng, **Andrew J. Moodie**, Hongbo Ma, Xudong Fu, Yuanfeng Zhang, Kensuke Naito, and Gary Parker (2018). “Morphodynamic model of lower Yellow River: flux or entrainment form for sediment mass conservation?” In: *Earth Surface Dynamics* 6.4, pp. 989–1010. DOI: 10 . 5194 / esurf-6-989-2018.

- [2] Ma, Hongbo, Jeffrey A. Nittrouer, Kensuke Naito, Xudong Fu, Yuanfeng Zhang, **Andrew J. Moodie**, Yuanjian Wang, Baosheng Wu, and Gary Parker (2017). “The exceptional sediment load of fine-grain dispersal systems: Example of the Yellow River, China.” In: *Science Advances* 3, p. 7. DOI: 10.1126/sciadv.1603114.
- [1] **Moodie, Andrew J.**, Frank J. Pazzaglia, and Claudio Berti (2017). “Exogenic forcing and autogenic processes on continental divide location and mobility.” In: *Basin Research*. DOI: 10.1111/bre.12256.

## External Grants and Fellowships

~\$4.5M total external funding, with ~\$1.4M to Moodie research program, and ~\$1.0M as Lead PI or institutional PI (excluding fellowships).

- **Fellowship.** \$75,000 to Moodie. 2025–2027. National Academies (NASEM) Gulf Research Program Early-Career Research Fellowship.
- **Lead PI.** \$300,887 to Moodie; \$986,688 total. 2025–2028. National Science Foundation, Geomorphology and Land-Use Dynamics and Human-Environment and Geographical Sciences. *Collaborative Research: Understanding cascading feedbacks between human decision making and delta morphodynamics with community-engaged modeling.*
- **Co-I.** \$7,500 to Moodie; \$146,895 total. 2024–2025. Texas Water Resources Institute / United States Geological Survey. *Evaluating river-floodplain connectivity and material movement in coastal zones.* Student-PI: Elena Lundeen, Master’s student.
- **Institutional PI, co-PI.** \$691,498 to Moodie; \$3,616,747 total. 2024–2028. National Science Foundation, CSSI Frameworks. *Collaborative Research: Frameworks: sandpiper - A community toolchain to support geomorphology from data acquisition to analysis.*
- **Institutional PI, co-PI.** \$13,475 to Moodie; \$47,341 total. 2024–2025. National Science Foundation, Geomorphology and Land-Use Dynamics. *RAPID: Collaborative Research: Investigating the magnitude and timing of post-fire sediment transport in the Texas Panhandle shrublands.*
- **Fellowship.** \$70,000. 2022–2023. UT AUSTIN, Jackson School of Geosciences, Distinguished Postdoctoral Fellowship.
- **Lead PI.** Compute resources. 2021–2023. EXXONMOBIL, Upstream Research Company.
- **Fellowship.** \$187,000. 2020–2022. NATIONAL SCIENCE FOUNDATION, EAR Postdoctoral Fellowship.
- **Lead PI.** GEOLOGICAL SOCIETY OF AMERICA, Graduate Research Grant. \$1,400. 2018.
- **Fellowship.** NATIONAL SCIENCE FOUNDATION, Graduate Fellowship. \$102,000. 2016–2019.

## Internal Grants and Fellowships

\$145k in total internal funding.

- **Co-PI.** \$85,000. 2025. Equipment Grant; TAMU CAS and VPR.
- **Co-I.** \$15,000. 2025–2026. Environment and Sustainability Initiative Faculty Planning Grant. *From Hybrid to Cyborg Landscapes: A Convergence Framework for the Sociogeomorphology of Future Lowlands.*
- **Co-I.** \$45,000. 2025–2026. Texas A&M University Targeted Proposal Teams (TPT). *Arsenic Sources And Transformations In Brahmaputra River Sediments.*

## Invited Presentations

### 2025

- **Moodie, Andrew J.** “Placing delta restoration efforts within the constraints of natural delta organization.” TULANE UNIVERSITY, Earth and Environmental Sciences McWilliams Seminar Series. New Orleans, LA, USA.
- **Moodie, Andrew J.** “Placing delta restoration efforts within the constraints of natural delta organization.” UNIVERSITY OF TEXAS RIO GRANDE VALLEY, RAISE Special Edition Seminar. Edinburg, TX, USA.
- **Moodie, Andrew J.** and Eric Barefoot. “Clinic: Using the Collaborative Sandpiper Toolchain to Support Interoperability in Geomorphology Research.” Community Surface Dynamics Modeling System Annual Meeting. Boulder, CO, USA.

### 2024

- **Moodie, Andrew J.** “Leveraging natural delta land-building processes to enable coastal landscape sustainability.” UNIVERSITY OF ARKANSAS Geosciences Colloquium. Fayetteville, AR, USA.
- **Moodie, Andrew J.** “Planners’ Wishes, Needs, and Which are Which.” From Ice Sheets to the Coast: Sea-Level Rise Impacts. Presentation and Panel. Houston, TX, USA.

### 2022

- **Moodie, Andrew J.** “Leveraging natural delta land-building processes to enable coastal landscape sustainability.” UNIVERSITY OF TEXAS AT AUSTIN JSG Department of Geological Sciences DeFord Lecture. Austin, TX, USA.
- **Moodie, Andrew J.** “Keynote: Natural delta land-building processes enable coastal landscape sustainability.” LEHIGH UNIVERSITY Earth and Environmental Sciences, Undergraduate Symposium.
- **Moodie, Andrew J.**, Jay Hariharan, and Paola Passalacqua. “Keynote: A Flexible Delta Model to Assess Land Building Potential of Sediment Diversions under Various External Forcings.” Community Surface Dynamics Modeling System Annual Meeting. Boulder, CO, USA. [link].
- Hariharan, Jay and **Andrew J. Moodie.** “Clinic: Rapid hypothesis testing and analysis with the open-source delta model pyDeltaRCM.” Community Surface Dynamics Modeling System Annual Meeting. Boulder, CO, USA.
- **Moodie, Andrew J.** “Leveraging natural delta land-building processes to enable coastal landscape sustainability.” TEXAS A&M Department of Geography Special Seminar. College Station, TX, USA.
- **Moodie, Andrew J.** “Sustainability from surface to subsurface: modeling river delta evolution and stratigraphic heterogeneity.” TEXAS A&M Department of Geology & Geophysics Colloquium. College Station, TX, USA.

### 2021

- Hariharan, Jay, **Andrew J. Moodie,** and Eric Barefoot. “Building Modern Tools for River Delta Simulation and Analysis.” UT AUSTIN INSTITUTE FOR GEOPHYSICS Discussion Hour. [link].

### 2019

- **Moodie, Andrew J.** “Clinic: Developing and teaching interactive sedimentology and stratigraphy computer activities.” Community Surface Dynamics Modeling System Annual Meeting. Boulder, CO, USA. [link].
- **Moodie, Andrew J.** “StratGAN: synthetic realizations of experimental stratigraphy with generative adversarial networks and image quilting.” EXXONMOBIL QUANTITATIVE SEDIMENTOLOGY workshop. The Woodlands, TX, USA.

### 2018 and prior

- **Moodie, Andrew J.** (2018). “Measuring Density Stratification and Understanding its Impact on Sediment Transport in Fine-grained Rivers: Observations from the Lower Yellow River, China.” YELLOW RIVER INSTITUTE OF HYDROLOGIC RESEARCH, Special Seminar. Zhengzhou, China.
- **Moodie, Andrew J.** (2018). “Modeling deltaic lobe-building and channel avulsions for sustainable coastal management.” UNIVERSITY OF TEXAS AT AUSTIN, JSG Soft Rocks seminar.
- **Moodie, Andrew J.** (2017). “Morphodynamic modeling of the long-term deltaic and channel bed evolution of the Lower Huanghe (Yellow River), China.” Fu research group, TSINGHUA UNIVERSITY. Beijing, China.

- **Moodie, Andrew J.** (2016). “A quasi-2D delta-growth model accounting for multiple avulsion events, validated by robust data from the Yellow River delta, China.” EXXONMOBIL QUANTITATIVE SEDIMENTOLOGY workshop. The Woodlands, TX, USA.

## **Awards and Honors**

- 2020 Gibbon Award for Best Thesis in Earth Science Department, RICE UNIVERSITY
- 2019 Second Place, poster session, HOUSTON GEOL. SOCIETY
- 2018 First Place, poster session, HOUSTON GEOL. SOCIETY
- 2017 Chair’s Award for Departmental Service, RICE UNIVERSITY
- 2016 Alison Henning Teaching Award in Earth Science, RICE UNIVERSITY
- 2013 Vic Johnson Field Camp Scholarship, LEHIGH UNIVERSITY

## **Teaching Experience**

### ***Texas A&M University***

- 2026 GEOG 689: Sediment Transport and Morphodynamics
- 2025 GEOG 626: Fluvial Geomorphology
- 2024–26 GEOG 331: Geomorphology
- 2024 GEOG 491: Undergraduate Research (1 CR)
- 2023–25 ENSS 105: Introduction to Environmental Systems Science

### ***Rice University***

- 2018 Machine Learning in Geosciences; Organizer [link]
- 2018 Earth System Modeling, Supplementary Lecturer
- 2016, 20 Geological History and Methods, Teaching Assistant
- 2015–20 Geological History and Methods, Field Mapping Teaching Assistant

### ***Lehigh University***

- 2014 Introduction to Environmental Science, Grader
- 2012–14 Environmental Geology, Teaching Assistant and Grader

## **Mentoring**

### ***Postdoctoral scholar***

- Sarah Giles — NSF EAR Postdoctoral Fellow [awarded, but declined by researcher]  
*Impacts of extreme storms on delta channel mobility*

### ***Graduate***

#### ***Chair***

- Ujan Dey — PhD student, Geography, Texas A&M [2025–]  
*River-delta response to falling lake level*
- Lena Timko — MS student, Geography, Texas A&M [2024–]  
*Dynamics of interacting sedimentary fans*
- Zhilin Shi — MS student, Geography, Texas A&M [2024–]  
*Two-dimensional variability in marsh compaction during delta building*
- Elena Lundeen — MS student, Water Management and Hydrol Sciences, Texas A&M [2023–2025]  
*River-Floodplain Connectivity in a Lowland Meandering River*

#### ***Member***

- Makenna Harris — MS student, Earth and Atmospheric Sciences, Univ of Houston [2024–]
- Xiying (Cynthia) Sun — PhD student, Oceanography, Texas A&M [2024–]

Lauren Berger — PhD student, Geology and Geophysics, Texas A&M [2024–]  
Imran Hasan — PhD student, Geography, Texas A&M [2023–]

### ***Undergraduate***

Marcos Almanza — Undergraduate student [2024–]  
*Remote sensing Texas Panhandle fire intensity and shrubland recovery*  
Ben Cordova — Undergraduate student [2024–2025]  
*Runoff in post-fire Texas Panhandle shrublands*  
Jide Odobulu — Undergraduate student [2022]  
*Modeling the effect of marsh accretion processes on delta morphodynamics*

### **Additional Work Experience**

2019–20 Computational Science Intern, EXXONMOBIL, Houston, TX  
2015–16 Research Mentor, HART SafeClear, RICE UNIVERSITY, Houston, TX  
2013 Senior Intern and Field Tech., PEAK ENVIRONMENTAL, Woodbridge, NJ  
2012 Intern and Field Tech., PEAK ENVIRONMENTAL, Woodbridge, NJ

### **Professional Service and Involvement**

#### ***Internal Service***

##### *Texas A&M University*

2025 Department Head search committee  
2025– Graduate Committee  
2024 Tenure-track faculty search committee  
2023 Tenure-track faculty search committee

##### *Rice University*

2018 Summer Undergrad Lunch Seminar Series speaker  
2018 Journal Club, Organizer  
2017–19 GIESS Symposium, Founder and Chair [link]  
2016 Undergraduate Research Symposium, Judge  
2015 GeoUnion, Treasurer

#### ***External service***

2025 Convener of community data standardization workshop  
2023 NSF Panel member  
2022 Session convener for AGU Fall Meeting [link]  
2021 AGU EPSP Unlearning Racism in Geoscience  
2019 Session convener for GSA Annual Meeting [link]  
2018 AGU EPSP Twitter takeover, Fall Meeting

### **Peer reviewer**

- 2026 Journals: *Geophysical Research Letters*  
Agencies: *National Science Foundation*
- 2025 Journals: *Earth Surface Dynamics, Water Resources Research, Geophysical Research Letters, Scientific Reports*  
Agencies: *National Science Foundation*
- 2024 Journals: *Ecohydrology, Journal of Geophysical Research: Earth Surface, Water Resources Research*  
Agencies: *Agence Nationale de la Recherche, National Science Foundation, National Science Center Poland*
- 2023 Journals: *Journal of Geophysical Research: Earth Surface*  
Agencies: *National Academy of Sciences, National Science Foundation*
- 2022 Journals: *Water Resources Research, Geophysical Research Letters, Journal of Geophysical Research: Earth Surface*
- 2021 Journals: *Proceedings of the National Academy of Sciences, Journal of Geophysical Research: Earth Surface, Hydrology, Earth Surface Processes and Landforms, Marine and Petroleum Geology*
- 2020 Journals: *Sedimentology, Water Resources Research, Geophysical Research Letters*
- 2019 Journals: *Geophysical Research Letters, Journal of Geophysical Research: Earth Surface*

### **Letters of recommendation**

- 2025 13 letters for 5 students
- 2024 10 letters for 5 students
- 2023 3 letters for 2 students

### **Professional Development and Training**

- 2025 Early Career Workshop, NATIONAL ASSOCIATION OF GEOSCIENCE TEACHERS
- 2018 Graduate Pedagogy Institute, RICE CNTR. TEACHING EXCELLENCE
- 2018 Summer Institute for Earth-Surface Dynamics, NCED2
- 2014 Integrated Basin Analysis, EXXONMOBIL

### **Non-refereed Publications**

- [4] Passalacqua, Paola and **Andrew J. Moodie** (2022). “System-scale solutions for human-scale needs.” In: *Science* 376-6596. DOI: 10.1126/science.abq1166.
- [3] **Moodie, Andrew J.** (2020). *Yellow River Kenli-Lijin Station Survey*. DOI: 10.5281/zenodo.3457639.
- [2] **Moodie, Andrew J.** (2016). “Evaluating the long-term sustainability of deltas.” In: *Outcroppings: Rice Earth Science Newsletter* 1, pp. 30–33. [link].
- [1] **Moodie, Andrew J.** (2014). “Dynamic topography and drainage divides in active and ancient orogenic settings, the Gibraltar Arc and Appalachians.” Undergraduate Honors Thesis. Bethlehem, PA: Lehigh University.

### **Scientific Presentations with Abstracts**

\* indicates mentee-led presentation

- [46] Harris, Makenna, Brandee Carlson, **Andrew J. Moodie**, Tian Dong, Richard S. Vachula, William Struble, and Benjamin Cordova (2025). “Sedimentary charcoal records poorly preserve the stratigraphic signal of grassland fire as informed by the 2024 Windy Deuce Fire, Texas Panhandle.” In: American Geophysical Union Annual Meeting. Poster. [link].

- [45] **Moodie, Andrew J.** and Elena Lundeen (2025). “Quantifying differences between floodplain and intra-floodplain connectivity in a lowland meandering river.” In: American Geophysical Union Annual Meeting. Oral. [link].
- [44] **Moodie, Andrew J.** and Elena Lundeen (2025). “River-Floodplain Connectivity in a Lowland Meandering River.” In: 14th Symposium on River, Coastal, and Estuarine Morphodynamics, RCEM2025. Oral. [link].
- [43] \*Shi, Zhilin and **Andrew J. Moodie** (2025). “Assessing the Influence of Spatially Heterogeneous Shallow Compaction on Delta Morphodynamics.” In: American Geophysical Union Annual Meeting. Poster. [link].
- [42] \*Timko, Lena and **Andrew J. Moodie** (2025). “Morphology and Dynamics of Interacting Sedimentary Fans.” In: American Geophysical Union Annual Meeting. Poster. [link].
- [41] Tull, Nelson, **Andrew J. Moodie**, and Paola Passalacqua (2025). “Longitudinal Floodplain Disconnectivity Drives Lateral River-Floodplain Connectivity in Unmodified River Systems.” In: American Geophysical Union Annual Meeting. Oral. [link].
- [40] Ma, Hongbo, Lawrence M. Vulis, Alejandro Tejedor, Tian Y. Dong, Matthew Czapiga, **Andrew J. Moodie**, Dongmei Feng, and Efi Foufoula-Georgiou (2023). “Growing or Stagnant? Predict the kinematic status of a deltaic distributary channel network with a single hydrodynamic variable.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [39] **Moodie, Andrew J.** and Timothy A. Goudge (2023). “Fluvial activity preferentially removes smaller craters (<50 m) from Mars interbedded-crater record, but atmospheric paleo-pressure interpretations are robust.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [38] **Moodie, Andrew J.** and Timothy A. Goudge (2023). “Fluvial Reworking Eliminates Small Craters, but does not Meaningfully Bias the Mars Interbedded-Crater Record.” In: Lunar and Planetary Science Conference. Poster. [link].
- [37] Tull, Nelson, **Andrew J. Moodie**, and Paola Passalacqua (2023). “Investigating Topographic and Backwater Controls on River-Floodplain Exchange and Residence Times.” In: 13th Symposium on River, Coastal, and Estuarine Morphodynamics. Oral.
- [36] Carlson, Brandee, Irina Overeem, Ethan Pierce, **Andrew J. Moodie**, and Gwyn Lintern (2022). “Linking Subaerial and Subaqueous Channel Dynamics in Fluvio-glacial Fjord Deltas.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [35] **Moodie, Andrew J.**, Abdul Wahab, David C. Hoyal, Mrugesh Shringarpure, and Kyle Straub (2022). “Inferring optimal input parameters for a process-based deep-water siliciclastic sedimentary system model of East Breaks, GOM.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [34] Tull, Nelson, **Andrew J. Moodie**, Hima Hassenruck-Gudipati, Paola Passalacqua, and David C. Mohrig (2022). “Connecting Floodplain Form and Function Through the Backwater Transition.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [33] Carlson, Brandee, Minglong Pan, Jeffrey A. Nittrouer, Travis Swanson, **Andrew J. Moodie**, Tian Dong, Hongbo Ma, and Gail C. Kineke (2021). “Antecedent channel bed elevation dictates stability of delta lobes after avulsions and diversions.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [32] **Moodie, Andrew J.** and Jeffrey A. Nittrouer (2021). “Linking natural delta development and artificial river diversion scenarios to promote sustainability of urbanized deltaic coastlines.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [31] **Moodie, Andrew J.** and Paola Passalacqua (2021). “Faulting-induced subsidence can reorganize distributary networks downstream of deltaic sediment diversions.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [30] Wu, Chenliang, Wonsuck Kim, **Andrew J. Moodie**, Benjamin Cardenas, Ryan Herring, Tian Y. Dong, Hongbo Ma, Frank T.C. Tsai, An Li, and Jeffrey A. Nittrouer (2021). “Pace of Meandering and Avulsion Set River Sinuosity near Coast on Earth and Mars.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [29] Baykut, Tanyel, Joshua Johnson, André W. Droxler, Daniel Parsons, **Andrew J. Moodie**, and Jeffrey A. Nittrouer (2020). “Upper slope 3D morphologies along the Lighthouse Reef margin (Belize): punctuated global record of last deglacial sea level fluctuations?” In: Geological Society of America Abstracts with Programs. Vol. 52-6. Oral. DOI: 10.1130/abs/2020AM-357483. [link].
- [28] Baykut, Tanyel, Joshua Johnson, André W. Droxler, Daniel Parsons, **Andrew J. Moodie**, and Jeffrey A. Nittrouer (2020). “Upper slope 3D morphologies along the Lighthouse Reef margin (Belize): punctuated global record of last deglacial sea level fluctuations?” In: American Geophysical Union Fall Meeting. Oral. [link].
- [27] Carlson, Brandee, Jeffrey A. Nittrouer, **Andrew J. Moodie**, Eric A. Barefoot, and Tian Dong (2020). “Stratigraphy of abandoned deltaic distributary channels and implications for assessing avulsion style.” In: American Geophysical Union Fall Meeting. Oral. [link].

- [26] **Moodie, Andrew J.**, Jayaram Hariharan, Jef Caers, and Paola Passalacqua (2020). “Constraining autogenic smaller-scale stratigraphic variability via information theoretic relationships with larger-scale observations.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [25] Wu, Chenliang, **Andrew J. Moodie**, Tian Dong, An Li, Frank T-C Tsai, Hongbo Ma, and Jeffrey A. Nittrouer (2020). “Spatial Variability in River Sinuosity across the Backwater Regime.” In: American Geophysical Union Fall Meeting. Poster. [link].
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- [23] Dong, Tian Y., Nittrouer Jeffrey A., Brandon J. McElroy, Elena Il’icheva, Maksim Pavlov, Hongbo Ma, and **Andrew J. Moodie** (2019). “Practical framework for predicting water and sediment partitioning in a delta under varying discharge conditions.” In: American Geophysical Union Fall Meeting. Oral. [link].
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- [19] Ma, Hongbo, Jeffrey A. Nittrouer, Brandon J. McElroy, Yuanjian Wang, **Andrew J. Moodie**, Xingyu Chen, Xudong Fu, Baosheng Wu, and Gary Parker (2018). “Turbidity currents in Xiaolangdi reservoir, Yellow River, China: dynamics and geomorphic expression.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [18] Ma, Hongbo, Jeffrey A. Nittrouer, Yuanfeng Zhang, Xudong Fu, Yuanjian Wang, **Andrew J. Moodie**, Yanjun Wang, Baosheng Wu, and Gary Parker (2018). “Change in downstream bedform type, bed material sediment transport regime and flood potential in response to sediment blockage by a dam: can bed degradation increase flooding risk?” In: American Geophysical Union Fall Meeting. Oral. [link].
- [17] **Moodie, Andrew J.** and Brady Foreman (2018). “SedEdu: developing and testing a suite of computer-based interactive educational activities for introductory sedimentology and stratigraphy courses.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [16] **Moodie, Andrew J.**, Jeffrey A. Nittrouer, Hongbo Ma, Brandee N. Carlson, Michael P. Lamb, and Yuanjian Wang (2018). “Suspended-sediment induced stratification inferred from concentration and velocity profile measurements in the flooding lower Yellow River, China.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [15] An, Cheng, Gary Parker, Hongbo Ma, Kensuke Naito, **Andrew J. Moodie**, and Xudong Fu (2017). “Morphodynamic Modeling of the Lower Yellow River, China: Flux (Equilibrium) Form or Entrainment (Nonequilibrium) Form of Sediment Mass Conservation?” In: American Geophysical Union Fall Meeting. Poster. [link].
- [14] Barefoot, Eric A., Jeffrey A. Nittrouer, Brady Z. Foreman, **Andrew J. Moodie**, and Gerald R. Dickens (2017). “Towards a mechanistic understanding of the linkages between PETM climate modulation and stratigraphy, as discerned from the Piceance Basin, CO, USA.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [13] Carlson, Brandee N., Jeffrey A. Nittrouer, **Andrew J. Moodie**, and Hongbo Ma (2017). “Tie channels on deltas: A case study from the Huanghe (Yellow River) delta, China.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [12] Kineke, Gail C., Brandee N. Carlson, Austin J. Chadwick, Liang Chen, Benjamin Hobbs, Lisa Kumpf, Michael P. Lamb, Hongbo Ma, **Andrew J. Moodie**, Michelle Mullane, Kensuke Naito, Jeffrey A. Nittrouer, and Gary Parker (2017). “Morphodynamics and Sediment Transport on the Huanghe (Yellow River) Delta: Work in Progress.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [11] Ma, Hongbo, Jeffrey A. Nittrouer, Baosheng Wu, Yuanfeng Zhang, David C. Mohrig, Michael P. Lamb, Yuanjian Wang, Xudong Fu, **Andrew J. Moodie**, Kensuke Naito, and Gary Parker (2017). “Phase transition behavior of sediment transport at the sandmud interface, across scales from flumes to the large rivers.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [10] **Moodie, Andrew J.**, Jeffrey A. Nittrouer, Hongbo Ma, Michael P. Lamb, Brandee N. Carlson, Gail C. Kineke, and Gary Parker (2017). “Measuring Density Stratification and Understanding its Impact on Sediment Transport in Fine-grained

- Rivers, Based on Observations from the Lower Yellow River, China.” In: American Geophysical Union Fall Meeting. Oral. [link].
- [9] **Moodie, Andrew J.**, Frank J. Pazzaglia, and Claudio Berti (2017). “Exogenic forcing and autogenic processes on continental divide location and mobility.” In: Geological Society of America Abstracts with Programs. Vol. 49-6. Oral. [link].
- [8] Carlson, Brandee N., Jeffrey A. Nittrouer, Gail C. Kineke, **Andrew J. Moodie**, Hongbo Ma, and Lisa Kumpf (2016). “The coastline evolution of an abandoned deltaic lobe and the fate of its relict distributary channel: a case study from the Huanghe (Yellow River) delta, China.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [7] Ma, Hongbo, Jeffrey A. Nittrouer, Kensuke Naito, **Andrew J. Moodie**, and Gary Parker (2016). “The exceptional sediment load of a fine-grain meandering river and relation to bedform geometry: an appealing example from the lower Yellow River, China.” In: Geological Society of America Abstracts with Programs. Vol. 48-7. Oral. [link].
- [6] **Moodie, Andrew J.**, Jeffrey A. Nittrouer, Hongbo Ma, Brandee N Carlson, and Gary Parker (2016). “A quasi-2d delta-growth model accounting for multiple avulsion events, validated by robust data from the Yellow River delta, China.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [5] Carlson, Brandee N., Jeffrey A. Nittrouer, Hongbo Ma, and **Andrew J. Moodie** (2015). “Channel infilling processes on the Huanghe (Yellow River) deltaic coastal plain, China.” In: Geological Society of America Abstracts with Programs. Vol. 47-7. Oral. [link].
- [4] Ma, Hongbo, Jeffrey A. Nittrouer, **Andrew J. Moodie**, Brandee N. Carlson, and Gary Parker (2015). “Role of river bends for the formation and evolution of channel bedforms: Combined field studies and numerical modeling from the tidally influenced zones of the Yellow River, China and Mississippi River, USA.” In: American Geophysical Union Fall Meeting. Poster. [link].
- [3] **Moodie, Andrew J.**, Hongbo Ma, Jeffrey A. Nittrouer, Brandee Carlson, and Gail C. Kineke (2015). “Spatiotemporal channel-bed evolution patterns observed for the Huanghe (Yellow River), China: Implications for evaluating system response and complexity to external perturbations.” In: Geological Society of America Abstracts with Programs. Vol. 47-7. Poster. [link].
- [2] Berti, Claudio, David J. Anastasio, Frank J. Pazzaglia, Gilles Y. Brocard, **Andrew J. Moodie**, Josep M. Pares, Paseo S. d. A. Cenieh, and Juan I. Soto (2014). “Drainage network reorganization and divide migration in response to active tectonics in the Betic Range, Spain.” In: Geological Society of America Abstracts with Programs. Vol. 46-6. Oral. [link].
- [1] **Moodie, Andrew J.** and Frank J. Pazzaglia (2014). “Exhumation, dynamic topography, and drainage divides in active and ancient orogenic settings: the Gibraltar Arc and Appalachians.” In: Geological Society of America Abstracts with Programs. Vol. 46-2. Oral. [link].

### Additional Scientific Presentations

Poster	Annual Meeting [link]; CSDMS	2021
Poster	Rice Night; HOUSTON GEOLOGICAL SOCIETY	2019
Poster	Industry-Rice Earth Science Symposium	2019
Poster	Summer Institute for Earth Surface Dynamics; UMN	2018
Poster	Rice Night; HOUSTON GEOLOGICAL SOCIETY	2018
Poster	Industry-Rice Earth Science Symposium	2018
Poster	Int’l Workshop for Socioeconomic Sustainability of Large River Deltas	2017
Poster	AAPG Rice Industry Geoscience Series	2016
Poster	Industry-Rice Earth Science Symposium	2016
Poster	International Workshop of the Yellow River Delta	2015
Poster	Industry-Rice Earth Science Symposium	2015
Poster	Lehigh College of Arts and Sciences Symposium	2014
Oral	Lehigh EES Undergraduate Research Symposium	2014

### Selected Media

- Beurteaux, D. (2021), Building a better river delta, *Eos*, 102, doi: 10.1029/2021EO163008. Published on 08 September 2021.

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