

TIAN Y. DONG

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Appointments

2023–present	Assistant Professor , University of Texas Rio Grande Valley
2022	Postdoctoral Researcher , University of Texas at Austin
2020–2022	NSF Earth Sciences Postdoctoral Fellow , University of Texas at Austin
2015–2020	Laboratory Manager , Rice University
2013–2020	Graduate Research, Field, and Teaching Assistant , Rice University
2012–2013	Undergraduate Research Assistant , University of Texas at Austin

Education

2020	Ph.D. in Earth Science , Rice University, Houston, TX Dissertation: " <i>Dynamics of delta building across different scales as informed by the Selenga River Delta, Russia</i> "
2015	M.Sc. in Earth Science , Rice University, Houston, TX Thesis: " <i>Downstream elimination of gravel in multiple distributary channels on the Selenga River delta topset, Russia: a morphodynamics case study of fan delta at the Baikal Rift basin margin</i> "
2013	B.Sc. in Geological Sciences , University of Texas at Austin, TX

Funding

2020–2022	NSF Earth Sciences Postdoctoral Fellowship (EAR-PF 1952814), \$174,000
2018	GSA Graduate Student Research Grant, \$2,250
2018	AAPG Foundation Grants-in-Aid, \$1,900
2017	SIPES Foundation Earth Science Scholarship, \$2,500

Awards

2020	Outstanding graduate student award, Rice University
2018–2019	Mills Bennett Fellowship, Rice University
2017	Torkild Rieber Award in Earth Science, Rice University
2016–2017	Sam P. and Helen S. Worden Fellowship, Rice University
2013–2014	Graduate student merit fellowship, Rice University
2010–2012	Merit scholarship, Jackson School of Geosciences, University of Texas at Austin

Peer Reviewed Publications

In Revision

- [1] **Dong, Tian Y.**, J. A. Nittrouer, B. Carlson, B. McElroy, E. Il'icheva, M. Pavlov, and H. Ma. "Impacts of tectonic subsidence on basin depth and delta lobe building". *in revision at Journal of Geophysical Research: Earth Surface*. [link].

Under Review

- [2] T. A. Goudge, J. M. Swartz, **Dong, Tian Y.**, and D. Mohrig. "Characterizing the Response of the Coastal Rio Grande to Upstream Damming". *in revision at Geomorphology*. most recent version available upon request.
- [1] C. Wu, W. Kim, R. Herring, H. Ma, **Dong, Tian Y.**, B. Cardenas, A. J. Moodie, F. Tsai, A. Li, and J. A. Nittrouer. "Pace of meandering and avulsion set river sinuosity near coast on Earth and Mars". *in review at Nature Geoscience*.

Published

- [7] **Dong, Tian Y.** and T. A. Goudge. “Quantitative relationships between river and channel-belt planform patterns”. In: *Geology* 50.9 (2022), pp. 1053–1057. [link].
- [6] B. N. Carlson, J. A. Nittrouer, T. E. Swanson, A. J. Moodie, **Dong, Tian Y.**, H. Ma, G. C. Kineke, M. Pan, and Y. Wang. “Impacts of engineered diversions and natural avulsions on delta-lobe stability”. In: *Geophysical Research Letters* 48.13 (2021), e2021GL092438. [link].
- [5] **Dong, Tian Y.**, J. A. Nittrouer, B. McElroy, E. Il’icheva, M. Pavlov, H. Ma, A. J. Moodie, and V. M. Moreido. “Predicting water and sediment partitioning in a delta channel network under varying discharge conditions”. In: *Water Resources Research* 56.11 (2020), e2020WR027199. [link].
- [4] **Dong, Tian Y.**, J. A. Nittrouer, M. J. Czapiga, H. Ma, B. McElroy, E. Il’icheva, M. Pavlov, S. Chalov, and G. Parker. “Roles of bank material in setting bankfull hydraulic geometry as informed by the Selenga River delta, Russia”. In: *Water Resources Research* 55.1 (2019), pp. 827–846. [link].
- [3] C. Bai, B. Yu, **Dong, Tian Y.**, S. Han, J. Ge, and D. Zhu. “Wave-enhanced sediment-gravity flows in Bohai Bay lacustrine basin, eastern China”. In: *Acta Geologica Sinica-English Edition* 92.6 (2018), pp. 2416–2431. [link].
- [2] J. Pietroń, J. A. Nittrouer, S. R. Chalov, **Dong, Tian Y.**, N. Kasimov, G. Shinkareva, and J. Jarsjö. “Sedimentation patterns in the Selenga River delta under changing hydroclimatic conditions”. In: *Hydrological processes* 32.2 (2018), pp. 278–292. [link].
- [1] **Dong, Tian Y.**, J. A. Nittrouer, E. Il’icheva, M. Pavlov, B. McElroy, M. J. Czapiga, H. Ma, and G. Parker. “Controls on gravel termination in seven distributary channels of the Selenga River delta, Baikal Rift basin, Russia”. In: *Geological Society of America Bulletin* 128.7-8 (2016), pp. 1297–1312. [link].

Teaching Experience

Lecturer

Spring 2023 GEOL 1403 Physical Geology, University of Texas Rio Grande Valley

Guest Lecturer

Fall 2020 GEO 416M Sedimentary Rocks, University of Texas at Austin

Fall 2017, 2018, 2019 ESCI 321 Earth System Evolution/Cycles, Rice University

Teaching Assistant

Spring 2020 ESCI 406 Current Research in Earth Sciences Seminar, Rice University

Spring 2016 ESCI 546 Basin Sedimentology and Stratigraphy, Rice University

Spring 2015 ESCI 101 the Earth, Rice University

Mentoring Experience

Undergraduate

2022 Benjamin A. Chapa, Texas A&M University - Kingsville

Project: ”*Characterizing the relationships between channel-belt planform patterns and drainage basin characteristics*”, poster at GSA Fall Meeting 2022. [pdf link].

2020 Cheyenne Hibbitts, Angelo State University

Project: ”*Quantitative comparison between the probability distribution of channel belt properties on Earth and Mars*”, poster at GSA Fall Meeting 2020. [pdf link].

Now Ph.D. student at Michigan State University

Service and Outreach

University Service

2020, 2022 *Mentor*, RTX summer research program, University of Texas at Austin

2021 *Poster Judge*, JSG Research Symposium, University of Texas at Austin

2016–2020 *Writer, [Outcroppings]* (departmental magazine), Rice University
2017 *Treasurer*, GeoUnion (graduate student organization), Rice University
2015 *Vice President*, GeoUnion, Rice University
2009–2013 *Tour Guide*, Prospective student visits, Jackson School of Geosciences
2010, 2011 *Mentor*, Incoming freshmen NeoGeo Field Trips, Jackson School of Geosciences

Professional Service

2021 *Panelist*, NASA ROSES 2020 programs
2021, 2022 *OSPA Judge*, AGU Fall Meeting
2021 *Mentor*, On to the Future Program, Geological Society of America
2021-present *Peer Reviews* [Publons]: Computers & Geosciences; Earth Surface Processes and Landforms; Journal of Hydrology: Regional Studies; Environmental Earth Sciences; Journal of Geophysical Research: Earth Surface; Geophysical Research Letters; Journal of Geophysical Research: Planets; Nature Communications; The Sedimentary Record

Conference and Workshop Service

2022 *Convener*, AGU Fall Meeting Session EP026, "*The Morphodynamic Trinity: Linkages among fluid flow, sediment transport, and morphology in fluvial systems across scales*", Chicago, IL
2022 *Convener*, AGU Fall Meeting Session EP010, "*Earth and Planetary Surface Processes General Contributions*", Chicago, IL
2019 *Convener*, GSA Fall Meeting Session T8, "*Statistical and Mathematical Approaches to Understanding Surface Processes and Stratigraphy*", Phoenix, AZ
2016 *Co-organizer*, BaSeNet Workshop, Lake Chelan, WA
2014 *Co-organizer*, International Delta Meeting, Istomino, Russia

Outreach

2022 *Presenter*, JSG Around the World Seminar, University of Texas at Austin
2018, 2019 *Exam writer, proctor, and grader*, Science Olympiad, Rice University
2018 *Presenter*, ["*Science in a Flash*"] talk, Weiss School of Natural Science, Rice University
2018 *Lecturer*, 7th grade science class, Lanier Middle School, Houston
2017 *Presenter*, Ocean's Day science booth, Houston Museum of Natural Science
2010, 2011 *Presenter*, Geology booth, *Explore UT* event, University of Texas at Austin

Invited Talks

2022 AGU Fall Meeting Session EP020, "*Quantifying the drivers of landscape evolution across spatial and temporal scales*
2022 School of Earth, Environmental, and Marine Sciences, University of Texas Rio Grande Valley
2022 School of the Environment, Washington State University
2021 Geology Exhibition Organization, Angelo State University
2021 World Large River and Delta Systems Source-to-Sink Webinar, NC State University [link]
2021 University of Texas Institute for Geophysics, University of Texas at Austin [link]

Professional Development

2022 Community Surface Dynamics Modeling System (CSDMS) Spring School
2022 Mentoring Pods Program, AAPI in Geosciences
2021 Earth 4D Trainee Day, Canadian Institute for Advanced Research
2021 Bystander Intervention Training, University of Texas at Austin
2021 Unlearning Racism in Geoscience, University of Texas at Austin
2019 ExxonMobil Bighorn Basin Field School

Field Experience

Research Campaigns

2022 Trinity River, Texas, USA
 2020, 2021 Pedernales River, Texas, USA
 2013, 2014, 2016, 2018 Selenga River delta, Russia
 2016, 2017, 2018 Yellow River delta, China
 2013, 2014, 2016, 2017 Brazos Delta, Texas, USA

Class Trips

2017 Clastic Sedimentology, Parachute, Colorado, USA
 2014, 2016 Clastic Sedimentology and Structural Geology, County Clare, Ireland
 2016 Carbonate Sedimentology, Belize
 2016 Carbonate Sedimentology, Mason, Texas, USA
 2016 Glacial Sedimentology, Whidbey Island, Washington, USA
 2013, 2015 Surface Processes, White Sand National Monument, New Mexico, USA
 2015 Surface Processes, Seattle area, Washington, USA
 2015 Surface Processes, Mississippi River Delta, Louisiana, USA
 2014 Clastic Sedimentology, San Juan Basin, New Mexico, USA

Other Publications

Selected Conference Abstracts and Publications

- [20] **Dong, Tian Y.**, T. A. Goudge, and B. A. Chapa. “Using channel-belt planform patterns to reconstruct river channel patterns and drainage basin characteristics (Invited)”. In: *2022 AGU Fall Meeting*. 2022, EP16B–03. [link].
- [19] B. Carlson, M. Pan, J. A. Nittrouer, T. Swanson, A. J. Moodie, **Dong, Tian Y.**, H. Ma, and G. C. Kineke. “Antecedent channel bed elevation dictates stability of delta lobes after avulsions and diversions”. In: *AGU Fall Meeting 2021*. 2021, EP51C–01. [link].
- [18] **Dong, Tian Y.** and T. A. Goudge. “Characterizing the relationship between river branch number and water discharge using distributions of channel belt properties”. In: *AGU Fall Meeting 2021*. 2021, H15M–1192. [link].
- [17] **Dong, Tian Y.**, J. Nittrouer, B. Carlson, B. McElroy, E. Il’icheva, M. Pavlov, and H. Ma. “Impacts of tectonic subsidence and variable basin depth on delta lobe building as informed by the Selenga River delta, Lake Baikal, Russia”. In: (2021), EP51C–06. [link].
- [16] C. Wu, W. Kim, A. J. Moodie, B. T. Cardenas, R. Herring, **Dong, Tian Y.**, H. Ma, F. T. Tsai, A. Li, and J. A. Nittrouer. “Pace of Meandering and Avulsion Set River Sinuosity near Coast on Earth and Mars”. In: *AGU Fall Meeting 2021*. 2021, EP31A–07. [link].
- [15] B. Carlson, J. A. Nittrouer, A. J. Moodie, E. A. Barefoot, and **Dong, Tian Y.** “Stratigraphy of abandoned deltaic distributary channels and implications for assessing avulsion style”. In: *AGU Fall Meeting 2020*. 2020, EP064–06. [link].
- [14] **Dong, Tian Y.** and T. A. Goudge. “Quantifying the distributions of channel geometry and channel belt properties for single-thread and braided rivers”. In: *AGU Fall Meeting 2020*. 2020, EP015–05. [link].
- [13] C. S. Hibbitts, **Dong, Tian Y.**, and T. A. Goudge. “Quantitative comparison between the probability distribution of channel belt properties on Earth and Mars”. In: *Geological Society of America Abstracts with Programs* 52.6 (2020). [link].
- [12] E. Il’icheva, M. Pavlov, B. McElroy, J. A. Nittrouer, and **Dong, Tian Y.** “Formation of the floodplains of the Selenga River delta”. In: *Geography and Natural Resources* 5 (2020), pp. 113–119. [link].
- [11] H. Ma, J. Shaw, **Dong, Tian Y.**, M. J. Czapiga, and C. Cathcart. “Progradation and termination of subaerial river-dominated delta networks”. In: *AGU Fall Meeting 2020*. 2020, EP045–06. [link].
- [10] M. Pavlov, E. Ilicheva, D. Kobylkin, B. Mcelroy, J. A. Nittrouer, and **Dong, Tian Y.** “Radiocarbon dating of lake bottom sediments and river bank sections of the Selenga River delta”. In: *Environmental transformation and sustainable development in the Asian region*. 2020, pp. 118–118. [link].
- [9] C. Wu, A. J. Moodie, **Dong, Tian Y.**, A. Li, F. T. Tsai, H. Ma, and J. A. Nittrouer. “Spatial Variability in River Sinuosity across the Backwater Regime”. In: *AGU Fall Meeting 2020*. 2020, EP004–0002. [link].

- [8] **Dong, Tian Y.**, J. A. Nittrouer, B. J. McElroy, E. Il'icheva, M. Pavlov, H. Ma, and A. J. Moodie. "Practical framework for predicting water and sediment partitioning in a delta under varying discharge conditions". In: *AGU Fall Meeting 2019*. 2019, EP32A–02. [link].
- [7] J. A. Nittrouer, **Dong, Tian Y.**, and B. McElroy. "Stratomorphodynamics of the Selenga River Delta, Lake Baikal: the Premier Modern System for Investigating Autogenic and Allogenic Influences on Stratigraphy". In: *The 11th Symposium on River, Coastal and Estuarine Morphodynamics*. 2019, p. 22. [link].
- [6] **Dong, Tian Y.**, J. A. Nittrouer, B. J. McElroy, E. Il'icheva, and M. Pavolv. "Evaluating delta lobe evolution from the tectonically active Selenga River delta: a case study of auto and allogenic controls on sedimentation patterns". In: *AGU Fall Meeting 2018*. 2018, EP31D–2385. [link].
- [5] **Dong, Tian Y.**, J. A. Nittrouer, B. J. McElroy, H. Ma, M. J. Czapiga, E. Il'icheva, M. Pavlov, and G. Parker. "Length scale hierarchy and spatiotemporal change of alluvial morphologies over the Selenga River delta, Russia". In: *2017 AGU Fall Meeting*. 2017, EP21B–1847. [link].
- [4] J. A. Nittrouer and **Dong, Tian Y.** "Sediment Dispersal on the Topset of a Tectonically Active Shelf-edge Delta: an Interplay Between Sediment Supply and Subsidence, as Demonstrated for the Selenga River, Lake Baikal, Russia". In: *2017 AGU Fall Meeting*. 2017, EP13D–01. [link].
- [3] **Dong, Tian Y.**, J. A. Nittrouer, M. J. Czapiga, H. Ma, B. J. McElroy, E. Il'icheva, M. Pavlov, and G. Parker. "The signature of bankfull hydraulic conditions reflected by properties of the channel bank: a case study from the Selenga River delta, Lake Baikal, Russia". In: *2016 AGU Fall Meeting*. 2016, EP53C–0982. [link].
- [2] **Dong, Tian Y.**, J. A. Nittrouer, B. J. McElroy, M. J. Czapiga, E. Il'icheva, M. Pavolv, and G. Parker. "Sediment transport dynamics linked to morphological evolution of the Selenga River delta, Lake Baikal, Russia". In: *2014 AGU Fall Meeting*. 2014, EP41A–3508. [link].
- [1] **Dong, Tian Y.**, E. Il'icheva, J. A. Nittrouer, and M. Pavlov. "Morphology and sediment transport dynamics of the Selenga River delta, Lake Baikal, Russia". In: *2013 AGU Fall Meeting*. 2013, EP31A–0844. [link].

Theses

- [2] **Dong, Tian Y.** "Dynamics of delta building across different scales as informed by the Selenga River Delta, Russia". Ph.D. dissertation. Rice University, 2020. [link].
- [1] **Dong, Tian Y.** "Downstream elimination of gravel in multiple distributary channels on the Selenga River delta topset, Russia: a morphodynamics case study of fan delta at the Baikal Rift basin margin". M.Sc. thesis. Rice University, 2015. [link].

Magazine Articles, [*Outcroppings*]

- [6] B. Carlson and **Dong, Tian Y.** "The Nittrouer Lab". In: *Outcroppings 2.3* (2019), pp. 58–60.
- [5] **Dong, Tian Y.** "A Fork in the Road: Understanding division of flow in river bifurcations". In: *Outcroppings 2.3* (2019), pp. 61–63.
- [4] **Dong, Tian Y.** "What sets the Shape of Rivers?" In: *Outcroppings 2.3* (2019), pp. 78–80.
- [3] B. Carlson and **Dong, Tian Y.** "Meet Mark Torres... an interview". In: *Outcroppings 2.1* (2018), pp. 18–21.
- [2] S. Saha and **Dong, Tian Y.** "The Martian geologist, New Faculty Interview: Kirsten Siebach". In: *Outcroppings 2.2* (2018), pp. 18–21.
- [1] J. A. Nittrouer and **Dong, Tian Y.** "Destination Lake Baikal: in search of the "ideal" modern shelf-edge delta." In: *Outcroppings 1.1* (2016), pp. 23–24.

Professional Organizations

American Geophysical Union
Geological Society of America