

CURRICULUM VITAE

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Educational Diplomas

2010 PhD, Geological Sciences, University of Texas, Austin, USA

2006 MS, Earth and Environmental Sciences, Tulane University, New Orleans, USA

2003 BS, Geology, University of Washington, Seattle, USA

Snapshot: Research

- Focuses: understanding linkages between fluid dynamics, sediment transport processes, sediment accumulation patterns, and flooding of fluvial-deltaic and coastal systems
- Aims: to evaluate Earth's surface evolution, focusing on environments where changing boundary conditions, including water discharge and sediment supply, impact flooding hazards and landscape development
- Methods: detailed, targeted measurements from modern systems to inform numerical models; validated solutions to guide novel, theoretically based findings
- Ongoing and future directions: (1) evaluating the fate of fluvial-deltaic systems globally for changing climate conditions; (2) unraveling the impacts of natural variability and external perturbations (e.g., humans, tectonics, climate) on water movement and sediment transport; (3) assessing linkages between the biosphere and equilibrium states of hydrological of systems (e.g., river channel geometry)

Snapshot: Teaching

- Significant experience developing lecture, laboratory, and field-based courses across all student levels, from non-major undergraduates to advanced graduate students
- Classroom philosophy blends traditional lecture techniques (e.g., deriving analytical solutions), computational exercises (modeling), and new technology (e.g., machine learning) to expose students to a range of approaches that foster critical-thinking skills
- Extensive experience designing, planning, and leading national/international field trips to modern and ancient sedimentary systems. Leveraging field trips to demonstrate science research; for example, operating advanced instruments to collect data for basic science

Snapshot: Mentoring

- Aims: to educate, train and equip mentees who can independently solve science problems; provide an understanding of geosciences as inherently multidisciplinary, and as such, champion collaborations; leverage hydrology and sedimentology to inform about earth's evolution from minutes to millennia
- Successes: In ten years, six MSc students, and five PhD students completed. Four former PhD students were awarded NSF post-doctoral fellowships, with four having been recently hired as assistant professors (starting 2023/2024)

Employment History

Associate Professor

2021- Department of Geosciences, Texas Tech University, Lubbock

Assistant Professor

2012-2021 Department of Earth, Environmental and Planetary Sciences, Rice University, Houston

NSF Earth Sciences Post-doctoral Research Fellow and Assistant Instructor

2010-2012 Department of Geology, and Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign

Research and Teaching Assistantships

2006-2010 Jackson School of Geosciences, University of Texas, Austin

2003-2006 Department of Earth and Environmental Sciences, Tulane University, New Orleans

Professional Affiliations

American Geophysical Union

Geological Society of America

Professional References (listed alphabetically by last name)

Experts in the Field

Dr. James Best Professor, Depts. of Geology, Geography, Mechanical Science and Engineering, and Dept. of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign (jimbest@illinois.edu)
Fellow of the American Geophysical Union

Dr. Bill Dietrich Professor, Department of Earth and Planetary Sciences, University of California, Berkeley (bill@eps.berkeley.edu)
Member of the National Academy of Sciences

Dr. Ton Hoitink Professor, Department of Environmental Sciences, Wageningen University, Wageningen (ton.hoitink@wur.nl)
Editor, Journal of Geophysical Research Earth Surface

Dr. Gail Kineke Professor Emeritus, Dept. of Earth and Environmental Sciences, Boston College, Chestnut Hill (gail.kineke.1@bc.edu)
Former chair, Department Earth and Environmental Sciences

Dr. Michael Lamb Professor, Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena (mpl@gps.caltech.edu)
Fellow of the American Geophysical Union

Dr. David Mohrig* Professor and Associate Dean of Research, Department of Geological Sciences, Jackson School of Geosciences, University of Texas, Austin (mohrig@jsg.utexas.edu) [*PhD Mentor]
Fellow of the American Geophysical Union

Dr. Gary Parker Professor, Depts. of Civil and Environmental Engineering, and Geology, University of Illinois, Urbana-Champaign (parkerg@illinois.edu)
Member of the National Academy of Sciences

Former Departmental Colleagues

Dr. Gerald Dickens Professor, Department of Geology, Trinity College Dublin, formally at Rice University, Houston (dickensg@tcd.ie)

Dr. John Anderson Professor Emeritus, Department of Earth, Environmental and Planetary Sciences, Rice University, Houston (johna@rice.edu)

Dr. Richard Gordon Professor, Department of Earth, Environmental and Planetary Sciences, Rice University, Houston (rgg@rice.edu)

Administrative Experiences: International, Multidisciplinary Collaborations

My career goal is to continue pursuing top-tier scientific research, through organizing and leading international coalitions of scientists. I have held a wide variety of management positions: the demands of my research program have allowed me to amass such experiences and to thrive uniquely in these roles. I have developed programs worldwide with scientists studying a variety of disciplines. These include a five-year NSF-sponsored project for which I coordinated twelve principle investigators from the USA and China. I have developed and currently manage an international research consortium focusing on earth and environmental studies at Lake Baikal (a UNESCO World Heritage Site). This group includes bio-geochemists, hydrologists, and geomorphologists from five countries. These experiences require advanced interpersonal skills to integrate and synthesize science. My track record for research funding documents my ability to bridge disciplines: my collaborators include specialists from fields of engineering, biology, economics, and sociology. In today's highly competitive funding climate, it is critical to facilitate science research via interactions among traditionally and nontraditionally aligned fields.

Supervised Students

- [14] Tusher Mohanta, PhD, 2023-, Texas Tech University
- [13] Hamidreza Azarmidokht (Shahrouz), MS, 2022-2024 (expected), Texas Tech University
- [12] John Nelson, MS, 2022-2024 (expected), Texas Tech University
- [11] Eric Barefoot, PhD, 2016-2021, currently NSF post-doc, University of Indiana
- [10] Chenliang Wu, PhD, 2015-2020, currently post-doc, Tulane University
- [9] Tian Dong, PhD, 2015-2020, currently assistant professor, University of Texas RGV
- [8] Andrew Moodie, PhD, 2014-2020, currently assistant professor, Texas A&M University
- [7] Brandee Carlson, PhD, 2015-2020, currently assistant professor, University of Houston
- [5] Brian Demet, MS, 2014-2016, currently Chief Geologist at Schuepbach Energy Exploration
- [4] Maya Stokes, honors thesis, 2014-2015, currently assistant professor Florida State University
- [3] Sarah Huff, MS, 2013-2015
- [2] Tian Dong, MS, 2013-2015
- [1] Kaitlin Moran, MS, 2013-2015

Visiting International Co-Supervised Students

- [3] 2017: Zhaoying Li (PhD), Ocean University of China, Dept. of Marine Geology Qingdao, China
- [2] 2016: Manuel Bagoni (PhD), Dept. of Civil, Environmental and Architectural Engineering, University of Padova, Padova, Italy
- [1] 2016: Jan Pietron (PhD), Dept. of Physical Geography, Stockholm University, Stockholm, Sweden

Post-doctoral Research Mentoring

- [6] Dr. Laura Bührig, 2022—(ongoing)
- [5] Dr. Julia Cisneros, 2020-2022, currently: assistant professor, Virginia Tech University
- [4] Dr. Kieran Dunne, 2019-2021, currently: assistant professor, Delft University, Netherlands
- [3] Dr. Hongbo Ma, 2014-2019, currently: assistant professor, Tsinghua University, China
- [2] Dr. Travis Swanson, 2016-2018, currently: assistant professor, Georgia Southern University
- [1] Dr. Jorge Lorenzo-Trueba, 2013-2014, currently: associate professor, Montclair State University

Funding Record: [total funds raised since 2010: \$2,119,000]

- 2024-2027 NASA; *Understanding the integrated ecosystem and geomorphologic evolution across the land-ocean gradient in response to dam disruptions*; **co-lead PI**, \$1,431,597 total award with \$377,051 to Texas Tech University
- 2023-2024 National Science Foundation; *RAPID: Rainbow Canyon and Panamint Valley, Death Valley National Park: Reconnaissance in response to the flood of August 20, 2023*; **lead PI**, \$20,000
- 2020-2023 National Science Foundation; *Geoscience Opportunities for Leadership in Diversity – Expanding the Network (GOLD-EN)*; **lead PI**, \$300,000
- 2018-2022 National Science Foundation; *Geomorphology and Land-use Dynamics: Collaborative Research: Flocculation Dynamics in the Fluvial to Marine Transition*; **lead PI**, \$290,000
- 2014-2018 National Science Foundation; *Coastal SEES Collaborative Research: Morphologic, Socioeconomic and Engineering Sustainability of Massively Anthropic Coastal Deltas: The Compelling Case of the Huanghe*; **lead PI**, \$2,000,000 total award with \$598,000 to Rice University
- 2014-2015 National Science Foundation; *Collaborative: International Deltas Meeting: Genesis, Dynamics, Modeling, and Sustainable Development*; **lead PI** \$32,000
- 2013-2015 Shell Center for Sustainability; *The stress nexus of coastlines: Population development, infrastructure security, and morphological dynamics of the Upper Texas Gulf Coast*; **lead PI**, \$207,000
- 2011-2012 National Science Foundation Rapid-Response Grant; *Mississippi Flood of 2011 - Investigation of Initial Impact on the Landscape*; \$125,000
- 2010-2012 National Science Foundation Earth Sciences Postdoctoral Research Fellowship; University of Illinois, Urbana-Champaign; *Field observations and modeling of backwater effects on bed material sequestration and fluvial kinematics in the lowermost Mississippi River*; **lead PI**, \$170,000

Teaching Experiences – evaluations available on request

Texas Tech and Rice Universities; Lead Instructor [2012-2024]:

- [1] Introductory Geological Sciences (eleven semesters, 50-180 students per semester, non-majors survey course)
- [2] Mechanics of Sediment Transport (four semesters, approximately 15 students per semester, graduate-student and advanced-undergraduate course)
- [3] Sedimentary Basin Analysis (eight semesters, approximately 15 students per semester, graduate-student and advanced-undergraduate course)
- [4] Advanced Geomorphology (two semesters, approximately 15 students per semester, graduate-student and advanced-undergraduate course)
- [5] Sedimentology, Stratigraphy and Earth Systems (six semesters, approximately 10 students per semester, sophomore/junior-level geosciences course)
- [6] Special Seminar on Artificial Intelligence and Machine Learning (one semester, approximately 30 students, graduate-student and advanced-undergraduate course)

University of Illinois, Assistant Instructor [2010-2012]

- [1] Sediment transport dynamics of large river systems and the stratigraphic record (one semester, approximately fifteen students, graduate-student and advanced-undergraduate course)

University of Texas, Laboratory Instructor [2006-2010]

[1] Sedimentary Rocks (two semesters, approximately thirty students, undergraduate course)

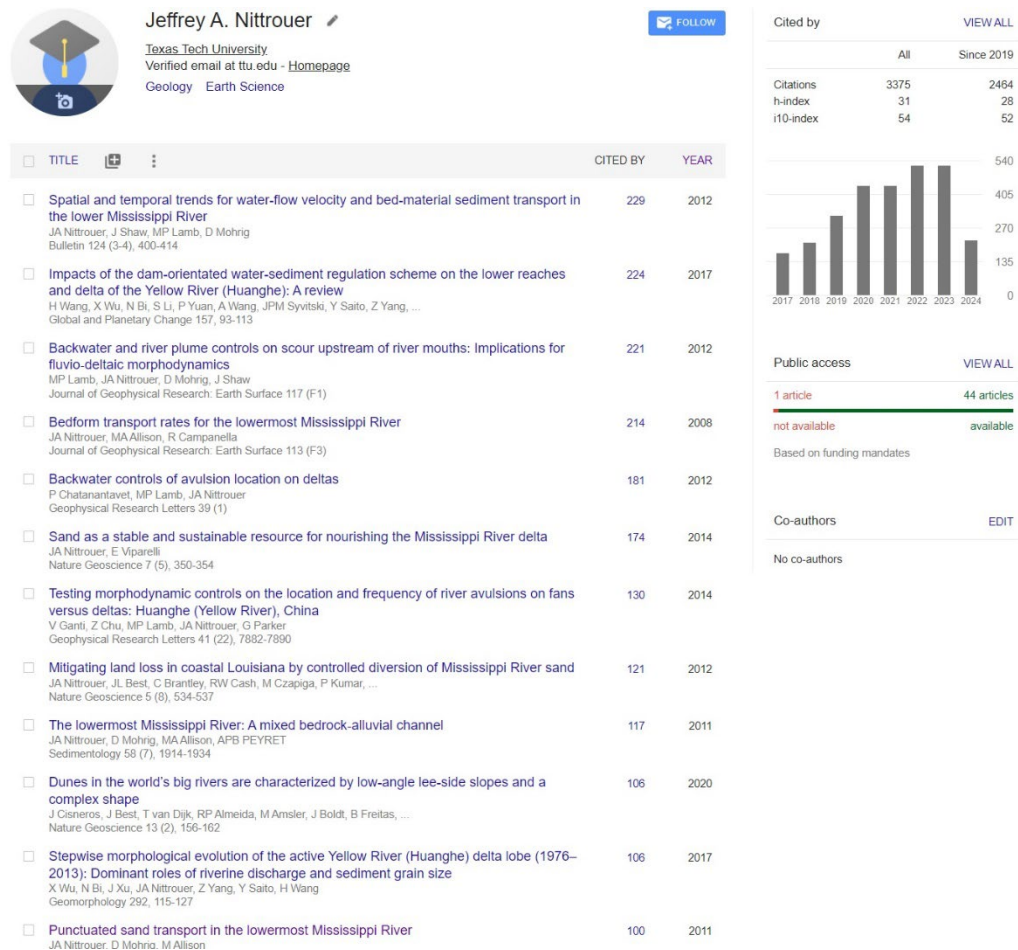
Tulane University, Laboratory Instructor [2003-2006]

[1] Survey of Geology (two semesters, approximately thirty students, undergraduate course)

Publications (published, accepted, in review/revision, in prep)

* [asterisk] indicates supervised student or post-doc effort, † indicates student-led effort.

Please note: DOI links to manuscripts. Google Scholar snapshot: 29 April, 2024



[74] *Bühlig, L., Nittrouer, J. A., Simmons, S., Parsons, D. R., Jenkins, M. and A. Droxler “Controlling factors on the geomorphology of mixed siliciclastic-carbonate source-to-sink systems: A case study from the modern Belize margin”, in preparation for submission to *Geomorphology*

[73] †Baykut, T., Droxler, A., Nittrouer, J. A., Moodie, A. J., and D. Parsons “3D modern reef morphologies along the upper slope of the Lighthouse Reef (Belize): Potential archive of punctuated sea level fluctuations”, in preparation for submission to *Sedimentology*

[72] Gaku, T., Parker, G., and Nittrouer, J. A., “Geometric and hydraulic characteristics of wetland streams with zigzag bends”, revise and resubmit, *Earth and Planetary Science Letters*

[71] *Carlson, B., **Nittrouer, J. A.**, Dong, T. Y., Moodie, A. J. Ma, H., and C. Wu “Stratigraphy of an abandoned deltaic distributary channel and implications for assessing avulsion style”, *in review at Geology*

[70] *Li, Z., **Nittrouer, J. A.**, Bi, N., and H. J. Wang, “Machine learning application for evaluating river plume spreading: identification and modeling”, *in revision, Transactions on Geoscience and Remote Sensing*

[69] †Abolfazli, E., Osborn, R., Dunne, K., **Nittrouer, J. A.**, and K. Strom (2024), “Flocculation characteristics of suspended Mississippi River mud under variable turbulence, water and salt sources, and salinity: a laboratory study”, *Frontiers in Earth Science*, DOI: 10.3389/feart.2024.1268992

[68] †McDonnel, M., Strom, K., **Nittrouer, J. A.**, and G. Mariotti (2024), “Quantifying mud settling velocity as a function of turbulence and salinity in a deltaic estuary”, *Continental Shelf Research*, DOI: 10.1016/j.csr.2024.105180

[67] *Dunne, K. B. J., **Nittrouer, J. A.**, Abolfazli, E., Osborn, R., and K. Strom (2024), “Hydrodynamically-driven deposition of mud in river systems”, *Geophysical Research Letters*, DOI: 10.1029/2023GL107174

[66] †Osborn, R., Dunne, K. B. J., Ashley, T., **Nittrouer, J. A.**, and K. Strom (2023), “The flocculation state of mud in the lowermost freshwater reaches of the Mississippi River: spatial distribution of sizes, seasonal changes, and their impact on vertical concentration profiles”, *Journal of Geophysical Research Earth Surface*, DOI: 10.1029/2022JF006975

[65] Wu, C., Kim, W., Herring, R., Cardenas, B., Dong, T., Ma, H., Moodie, A., **Nittrouer, J. A.**, Tsai, F., and A. Li, “Pace of meandering and avulsion set lowland river sinuosity on Earth and Mars” (2023), *Nature Geoscience*, DOI: 10.1038/s41561-023-01231-1

[64] *Barefoot, E. J., **Nittrouer, J. A.**, and K. M. Straub (2023), “Time dilation in the stratigraphic record”, *Geophysical Research Letters*, DOI: 10.1029/2023GL103925

[63] *Dong, T., **Nittrouer, J. A.**, Carlson, B., McElroy, B. J., Il’icheva, E., Pavlov, M., and H. Ma (2023), “Impacts of tectonic subsidence on basin depth and delta lobe building”, *Journal of Geophysical Research Earth Surface* DOI: 10.1029/2022JF006819

[62] *Wu, C., **Nittrouer, J. A.**, Barefoot, E. J., and K. Burmeister (2022), “Reconstructing backwater hydrodynamics from fluvial-deltaic deposits using stratigraphic inversion: an example from the Tullig Sandstone, Western Irish Namurian Basin, Co. Clare, Ireland”, *Geological Society of America Bulletin* DOI: 10.1130/B36475.1

[61] *Dunne, K. B. J., Dee, S. G., Reinders, J., Munoz, S. E., and **J. A. Nittrouer** (2022), “Enhanced probability of catastrophic Mississippi River floods under high emissions scenarios”, *Environmental Research Communications*, DOI: 10.1088/2515-7620/ac8d53

[60] *Ma, H., **Nittrouer, J. A.**, Fu, X., Parker, G. Zhang, Y., Wang, Y., Wang, Y., Lamb, M. P., Best, Cisneros, J., Best, J. L., Parsons, D. R., and B. Wu (2022), “Amplification of downstream

flood stage due to damming of fine-grained rivers”, *Nature Communications* DOI: 10.1038/s41467-022-30730-9

[59] *Moodie, A. J., Carlson, B., Foreman, B. Z., Kwang, J., Naito, K., and **J. A. Nittrouer** (2022) “SedEdu: a suite of sediment-related educational modules.” *Journal of Open Source Education*, 5(56), 129. DOI: 10.21105.jose.00129

[58] *Moodie, A. J., and **J. A. Nittrouer** (2021), “Optimized river diversion scenarios promote sustainability of urbanized deltas”, *Proceedings of the National Academy of Sciences*, DOI: 10.1073/pnas.2101649118

[57] *Carlson, B. N., **Nittrouer, J. A.**, Swanson, T., Moodie, A. J., Dong, T., Kineke, G. C., Pan, M., and Y. Wang (2021), “Impacts of engineered diversions and natural avulsions on delta-lobe stability”, *Geophysical Research Letters*, DOI: 10.1029/2021GL092438

[56] *Barefoot, E. J., **Nittrouer, J. A.**, and K. M. Straub (2021), “Non-monotonic responses to changes in flooding intensity”, *Journal of Geophysical Research Earth Surface*, DOI: 10.1029/2021JF006310

[55] *Barefoot, E. J., **Nittrouer, J. A.**, Foreman, B. Z., Hajek, E. A., and G. R. Dickens (2021), “Evidence for enhanced lateral mobility and grain-size sorting in floodplain deposits due to precipitation seasonality during the PETM”, *Geology* DOI: 10.1130/G49149.1

[54] †Osborn, R., Dillon, B., Tran, D., Abolfazli, E., Dunne, K. B. J., **Nittrouer, J. A.**, and Strom, K. (2021), “FlocARAZI: An In-Situ, Image-Based Profiling Instrument for Sizing Solid and Flocculated Suspended Sediment”, *Journal of Geophysical Research Earth Surface*, DOI: 10.1029/2021JF006210

[53] Dubravko, J., Kourafalou, V., Mariott, G., He, S., Weisberg, R., Adroulidakis, Y., Barker, C., Bracco, A., Dzwonkowski, B., Hu, C., Huang, H., Jacobs, G., Le Henaff, M., Liu, Y., Morey, S., **Nittrouer, J.**, Overton, E., Paris, C., Roberts, B., Rose, K., Valle-Levinson, A., and J. Wiggert (2021), “Transport Processes in the Gulf of Mexico Along the River-Estuary-Shelf-Ocean Continuum: a Review of Research from the Gulf of Mexico Research Initiative”, *Estuaries and Coasts*, DOI: 10.1007/s12237-021-01005-1

[52] *Moodie, A. J., **Nittrouer, J. A.**, Ma, H., Carlson, B., Lamb, M. P., and G. Parker, “Suspended-sediment induced stratification inferred from concentration and velocity profile measurements in the flooding lower Yellow River, China” (2020), *Water Resources Research* DOI: 10.1029/2020WR027192

[51] *Dong, T. Y., **Nittrouer, J. A.**, McElroy, B., Il'icheva, E., Pavlov, M., Ma, H., and A. Moodie (2020), “Predicting water and sediment partitioning in a delta channel network under varying discharge conditions”, *Water Resources Research* DOI: 10.1029/2020WR027199

[50] Wu, X., Bi, N., Syvitski, J., Saito, Y., Xu, J., **Nittrouer, J. A.**, Bianchi, T. S., Yang, Z., and H. Wang (2020), “Can reservoir regulation along Yellow River be a sustainable way to save a sinking delta?”, *Earth's Future* DOI: 10.1029/2020EF001587

[49] *Wu, C., **Nittrouer, J. A.**, Swanson, T., Ma, H., Barefoot, E., Best, J., and M. Allison (2020), “Dune-scale cross-strata across the fluvial-deltaic backwater regime: preservation potential of an autogenic stratigraphic signature”, *Geology* DOI: 10.1130/G47601.1

- [48] Lamb, M. P., Leeuw, J. D., Fischer, W., Moodie, A. J., Venditti, J. G., **Nittrouer, J. A.**, Haught, D., and G. Parker (2020), “Mud in rivers transported as flocculated, suspended bed material” *Nature Geoscience* DOI: 10.1038/s41561-020-0602-5
- [47] † Zhang, L., Li, T., Wang, G., Kwang, J. S., **Nittrouer J. A.**, Fu, X., and G. Parker (2020), “How canyons evolve by incision into bedrock: Rainbow Canyon, Death Valley National Park, USA” *Proceedings of the National Academy of Sciences* DOI: 10.1073/pnas.1911040117
- [46] *Wu, C., **Nittrouer, J. A.**, Muto, T., Naito, K., and G. Parker (2020), “Morphodynamic equilibrium of lowland river systems during autoretreat” *Geology* DOI: 10.1130/G47556.1
- [45] *Li, Y., Wang, H. J., **Nittrouer, J. A.**, Bi, N., Wu, X., and B. Carlson (2020), “Modeling the filling process of abandoned fluvial-deltaic distributary channel: An example from the Yellow River delta, China”, *Geomorphology* 361 DOI: 10.1016/j.geomorph.2020.107204
- [44] Leeuw, J. D., Lamb, M. P., Parker, G., Moodie, A. J., Haught, D., Venditti, J. G., and **J. A. Nittrouer** (2020), “Entrainment and suspension of sand and gravel” *Earth Surface Dynamics* 8, pp. 485–504, DOI: 10.5194/esurf-8-485-2020
- [43] Hoitink, A. J. F., **Nittrouer, J. A.**, Passalacqua, P., Shaw, J. B., Langendoen, E. J., Huismans Y., and D. S. van Maren (2020), “Grasping River Delta Resilience in the Anthropocene”, *Journal of Geophysical Research Earth Surface*, DOI: 10.1029/2019JF005201
- [42] *Carlson, B. N., **Nittrouer, J. A.**, Moodie, A. J., Kineke, G. C., Kumpf, L. L., Ma H., Parsons, D. R., and H. Wang (2020) “Infilling abandoned deltaic channels through tidal sedimentation: a case study from the Huanghe (Yellow River) delta, China”, *Journal of Geophysical Research Earth Surface*, DOI: 10.1029/2019JF005254
- [41] Dingle, E., Sinclair, H., Venditti, J., Attal, M., Kinnaird, T., Creed, M., Quick, L., **Nittrouer, J. A.**, and D. Gautam (2020), “Sediment dynamics across gravel-sand transitions: Implications for river stability and floodplain recycling” *Geology*, DOI: <https://doi.org/10.1130/G46909.1>
- [40] Wu, X., Bi, N., **Nittrouer, J. A.**, Xu, J., Cong, S., Carlson, B., Lu, T., Li, Z., and H. Wang (2020) “Evolution of a tide-dominated abandoned channel: a case of the abandoned Qingshuigou course, Yellow River”, *Marine Geology* (422) DOI: 10.1038/s41561-019-0511-7
- [39] †Cisneros, J., Best, J., van Dijk, T., Paes de Almeida, R., Amsler, M., Boldt, J., Frietas, B., Galeazzi, C., Huizinga, R., Ianniruberto, M., Ma, H., **Nittrouer, J. A.**, Oberg, K., Orfeo, O., Parsons, D., Szupiany, R., Wang, P., and Y. Zhang (2020) “The Shape of Dunes in the World’s Big Rivers”, *Nature Geoscience* DOI: 10.1038/s41561-019-0511-7
- [38] *Ma, H., **Nittrouer, J. A.**, Wu, B., Zhang, Y., Mohrig, D., Lamb, M. P., Wang, Y., Fu, X., Moodie, A. J., Naito, K., Wang, G., Hu, C., and G. Parker (2019) “Universal sediment transport relation for fine-bed rivers with phase transition”, *Proceedings of the National Academy of Sciences* DOI: 10.1073/pnas.1911225116
- [37] *Moodie, A. J., **Nittrouer, J. A.**, Ma, H., Carlson, B. N., and G. Parker (2019) “Modeling deltaic lobe-building cycles and avulsions of the Yellow River delta, China” *Journal of Geophysical Research Earth Surface* DOI: 10.1029/2019JF005220
- [36] *Wu, C. and **J. A. Nittrouer** (2019), “Impacts of backwater hydrodynamics on fluvial-deltaic stratigraphy”, *Basin Research* DOI: 10.1111/bre.12385

- [35] Petter, A. L., Steel, R. J., Mohrig, D., and **J. A. Nittrouer**, “The stratigraphic consequences of long-term river aggradation, part I: the importance of backwater hydraulic conditions for downstream sediment fractionation and changes in fluvial style in the Campanian Lower Castlegate Sandstone of Utah”, *accepted at Journal of Sedimentary Research*
- [34] Venditti, J. G., **Nittrouer, J. A.**, Allison, M. A., Humphries, R. P., and M. Church (2019) “Supply Limited Bedform Patterns and Scaling through a Gravel-Sand Transition”, *Sedimentology* DOI: 10.1111/sed.12604
- [33] †Chadwick, A. J., Lamb, M. P., Moodie, A. J., Parker, G. and **J. A. Nittrouer** (2019) “Origin of a preferential avulsion node on lowland river deltas”, *Geophysical Research Letters*, 46, 4267-4277 DOI: 10.1029/2019GL082491
- [32] †Naito, K., Ma, H., **Nittrouer, J. A.**, Zhang, Y., Wu, B., Wang, Y., Fu, X., and G. Parker (2019) “Extended Engelund-Hansen type sediment transport relation for mixtures based on the sand-silt-bed lower Yellow River, China”, *Journal of Hydraulic Research* DOI: 10.1080/00221686.2018.1555554
- [31] *Dong, T. Y., **Nittrouer, J. A.**, Il’icheva, E., Pavlov, M., McElroy, B., Czapiga, M., Ma, H., and G. Parker (2019) “Roles of bank material in setting bankfull hydraulic geometry as informed by the Selenga River delta, Russia”, *Water Resources Research* DOI: 10.1029/2017WR021985
- [30] †Phillips, J. D., Ewing, R. C., Bowling, R., Weymer, B. A., Barrineau, P., **Nittrouer, J. A.**, and M. E. Everett (2019) “Low-angle eolian deposits formed by protodune migration, and insights into slipface development at White Sands Dune Field, New Mexico”, *Aeolian Research*, 36, pp. 9-26. DOI: 10.1016/j.aeolia.2018.10.004
- [29] *Demet, B. P., **Nittrouer, J. A.**, Anderson, J. A, and L. M. Simkins (2018) “Sedimentary processes at ice sheet grounding-zone wedges: comparing planform morphology from the western Ross Sea (Antarctica) to internal stratigraphy from outcrops of the Puget Lowlands (Washington State, U.S. A.)”, *Earth Surface Processes and Landforms* DOI: 10.1002/esp.4550
- [28] Maselli, V., Pellegrini, C., Del Bianco, F., Mercorella, A., Nones, M., Crose, L., Guerrero, M., and **J. A. Nittrouer** (2018) “River morphodynamic evolution under dam-induced backwater: an example from the Po River (Italy)”, *Journal of Sedimentary Research*, v. 88, pp. 1190-1204. DOI: 10.2110/jsr.2018.61
- [27] †Liu, Z., Dugan, B., Masiello, C. A., Wahab, L. M., Gonermann, H. M., and **J. A. Nittrouer** (2018) “Effect of freeze-thaw cycling on grain size of biochar”, *PLOS One*, 13(1): e0191246. DOI: 10.1371/journal.pone.0191246
- [26] *Pietron, J., **Nittrouer, J. A.**, Jarso, J., Chalov, S. R., and T. Y. Dong (2017) “Sedimentation processes in the Selenga River delta: implications for sequestering particle-reactive metals”, *Hydrological Processes*, v. 32, pp. 278-292. DOI: 10.1002/hyp.11414
- [25] *Ma, H., **Nittrouer, J. A.**, Naito, K., Fu, X., Zhang, Yuanfeng, Moodie, A., Y. Wang (2017) “The exceptional sediment load of fine-grain dispersal systems”, *Science Advances*, v. 3, pp. 1-7. DOI: 10.1126/sciadv.1603114

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Conference/Meeting Abstracts

Full citation list available upon request. Synopsis: 134 conference abstracts in total, from 2003-2022, including more than 50 presentations by supervised students and post-doctoral research scientists. Conferences include: American Geophysical Union Fall Meeting (AGU), European Geophysical Union (EGU) General Assembly, Geological Society of America (GSA) Annual Scientific Meeting, International Geographical Union (IGU) Regional Conference, Canadian Geophysical Union (CGU) Annual Meeting, Lunar and Planetary Science Conference, American Association of Petroleum Geologists (AAPG) Annual Convention and Exhibition, Society for Sedimentary Geology (SEPM) Gulf Coast Section Annual Meeting, Coastal and Estuarine Research Foundation (CERF) Conference, and River, Coastal Estuarine Morphodynamics (RCEM) Symposium

Community and University Service

2012-2022: Solicited Reviews for Community Journals: 1. *Estuarine, Coastal and Shelf Science*, 2. *Geology*, 3. *Journal of Geophysical Research*, *Earth Surface*, 4. *Geophysical Research Letters*, 5. *Journal of Hydrology*, 6. *Sedimentology*, 7. *Marine Geology*, 8. *Proceedings of the National Academy of Science*, 9. *Water Resources Research*, 10. *Nature*, 11. *China Ocean Engineering*

2018: American Geophysical Union Fall Meeting (Washington, D. C.), session convener: [1] *River deltas: sediment accumulators and biogeochemical reactors*, Earth and Planetary Surface Processes Section;

2018: American Geophysical Union Fall Meeting (Washington, D. C.), session convener: [2] *Further research into the cause and impacts of the 2017 hurricanes with applications of flood warning and inundation mapping during storms*, Natural Hazards Section

2017: American Geophysical Union Fall Meeting (New Orleans), session convener: [1] *Sediment transport mechanics, morphologic expressions and depositional patterns of fine-grained dispersal systems*, Earth and Planetary Surface Processes Section;

2017: American Geophysical Union Fall Meeting (New Orleans), session convener: [2] *Dynamic Atmosphere, Oceans, and Landscapes: Impacts of the 2017 Atlantic Hurricane Season on Earth's Surface*, Earth and Planetary Surface Processes Section;

2017: American Geophysical Union Fall Meeting (New Orleans), session convener: [3] *The Sustainability and Resilience of Coastal Systems; Creating Synergy Among Federal, State, and NGO Initiatives*, Global Environmental Change Section

2017: Geological Society of America Annual Scientific Meeting (Seattle), session convener: *Fluvio-deltaic processes and their stratigraphic record*, Clastic Sedimentology, Stratigraphy

2017: Lead Organizer: “The Second International Science Workshop of Huanghe (Yellow River) Delta”, Qingdao, China

2017: Participant, National Science Foundation Panel, Geomorphology and Land-use Dynamics

2016: Lead Organizer: “Bringing Together Selenga-Baikal Research Conference”, Chelan, Washington; meeting of international scientists to evaluate the state of hydrological, geomorphological, and sedimentological sciences for the Selenga River basin and Lake Baikal system

2016: Participant, National Science Foundation Panel, Coastal SEES

2016: Co-Editor, “Sustainable Water Management in Central Asia”, in *Environmental Earth Sciences*

2016: Geological Society of America South-Central Section Meeting (Baton Rouge), session convener, “Fluvial Forms and Processes and Gulf Coast Rivers and Groundwater”

2015: Participant, National Science Foundation Virtual Panel, Coastal SEES

2015: Lead Organizer: “The First International Science Workshop of Huanghe (Yellow River) Delta”, Zhengzhou, China

2015: Lead Organizer, Shell Oil workshop on river deltas at Rice University

2014: Lead Organizer, Hess Oil Company workshop on river deltas at Rice University

2014: Lead Organizer: “International Deltas Meeting: Genesis, dynamics, modelling, and sustainable development”, Istomino, Russia, an academia-industry sponsored workshop

2014: American Geophysical Union Fall Meeting, session convener: *Advances in understanding fluvial-deltaic processes and their interactions with tectonic settings* Earth and Planetary Surface Processes Section

2014: Geological Society of America Annual Scientific Meeting, session convener: *Bedforms: genesis and development processes, morphology, stratigraphy, and insights into planetary environment* Clastic Sedimentology, Stratigraphy

2014: Lead Organizer: ExxonMobil workshop on river deltas, Upstream Research Laboratory, Houston, Texas

2014: Lead Organizer: Industry-Rice Earth Sciences Symposium I (IRESS) “Imaging and sedimentary basin modeling”, Houston

2013: American Geophysical Union Fall Meeting, session convener: *Morphodynamic characteristics of non-normal flow conditions* Earth and Planetary Surface Processes Section

2011: American Geophysical Union Fall Meeting, session convener: *Evaluating Hydrodynamics and Sediment Transport in Lowland Rivers* Earth and Planetary Surface Processes Section

2011: American Geophysical Union Fall Meeting, session convener: *The Great Mississippi Flood of 2011: geomorphological, ecological and engineering effects and consequences*

2007-2010: Organizer: Softrock Seminar Brownbag Series, the Jackson School of Geosciences at the University of Texas

Awards and Fellowships

- 2019 Wageningen Institute for Environment and Climate Research (WIMEK) Fellowship, Wageningen University, The Netherlands
- 2018 111 Distinguished Foreign Expert, Tsinghua University (as administered by the Foreign Expert Bureau, and Ministry of Education, People's Republic of China)
- 2014 Editors' Choice Award, paper published in *Water Resources Research*
- 2013 Luna B. Leopold Award, American Geophysical Union, Earth and Planetary Surface Processes focus group, "to a young scientist for making a significant and outstanding contribution that advances the field of Earth and planetary surface processes"
- 2013 Sharp Lectureship, American Geophysical Union, Earth and Planetary Surface Processes focus group
- 2013 Thomas A. Philpott Excellence of Presentation Award, Gulf Coast Section, SEPM Annual Convention
- 2012 AGU editors' citation for excellence in refereeing: *Water Resources Research*

Invited Presentations: Academia

- 2022: Louisiana State University, Department of Geology and Geophysics
- 2021: Texas Tech University, Department of Geosciences
- 2020: University of Münster, Germany
- 2020: University of Tübingen, Germany
- 2020: University of Hull, United Kingdom
- 2019: Wageningen University, The Netherlands
- 2018: University of Minnesota, Alvin G. Anderson Award Keynote Speaker
- 2018: Faculty of Geography, Lomonosov Moscow State University
- 2017: American Geophysical Union Annual Fall Meeting
- 2017: University of Wyoming, Department of Geology and Geophysics
- 2017: Tulane University, Department of Earth and Environmental Sciences
- 2017: The University of British Columbia, Canadian Geophysical Union Meeting
- 2016: Ocean University of China, Department of Marine Sciences, Qingdao, China
- 2016: University of Houston, Department of Earth and Atmospheric Sciences
- 2015: Bureau of Economic Geology, University of Texas at Austin
- 2015: Louisiana State University, Department of Geography
- 2014: Ocean University of China, Department of Marine Sciences, Qingdao, China
- 2014: Helmholtz Centre for Environmental Research, Leipzig, Germany
- 2014: University of Houston, Department of Civil and Environmental Engineering
- 2013: Sharp Lecture, American Geophysical Union, Earth and Planetary Sciences focus group capstone lecture, Fall Meeting
- 2013: International Association of Hydrological Sciences Assembly, Gothenburg, Sweden
Keynote speaker and invited paper
- 2013: Gulf Coast Associate of Geological Societies Annual Meeting, New Orleans, LA
- 2012: Louisiana State University, Department of Oceanography and Coastal Studies
- 2012: Rice University, Department of Earth Science
- 2012: Texas A&M University, Department of Geology and Geophysics
- 2012: Saint Louis University, Department of Earth and Atmospheric Sciences
- 2012: Massachusetts Institute of Technology, Department of Earth and Planetary Sciences
- 2012: University of Washington, Department of Earth and Space Sciences
- 2011: Coastal Estuarine Research Foundation 21st Biennial Conference, Daytona Beach FL
- 2011: Geological Society of America Annual Convention, Minneapolis MN
- 2011: Woods Hole Oceanographic Institute

Invited Presentations: Industry

2019: ExxonMobil Upstream Research Laboratory, Houston, TX

2016: ExxonMobil Upstream Research Laboratory, Houston, TX

2014: Chevron Research Group, Houston, TX

2013: ExxonMobil Upstream Research Laboratory, Houston, TX

2012: Shell Research Group, Houston, TX

Media

- [16] National Public Radio KJZZ 91.5: “Some dams might worsen flooding”
<https://kjzz.org/content/1788738/some-dams-might-worsen-flooding>, June 20, 2022
- [15] Phys.Org: “How do silt and sand differ when going with the flow?”,
<https://phys.org/news/2019-12-silt-sand-differ.html>, December 16, 2019
- [14] Eureka Alert! AAAS: “How do silt and sand differ when going with the flow?”,
https://www.eurekaalert.org/pub_releases/2019-12/ru-hds121619.php, December 16, 2019
- [13] The New York Times: “A new formula to help tame China’s Yellow River”,
https://www.nytimes.com/2017/06/02/science/china-yellow-river-xiaolangdi-dam.html?_r=0, June 2, 2017
- [12] China Daily: “Analytical tool may improve prediction of flooding”;
http://usa.chinadaily.com.cn/world/2017-05/23/content_29466587.htm
May 23, 2017
- [11] The Times of India: “Now, a tool that can help prevent surging waters in flood plains”,
<http://timesofindia.indiatimes.com/home/science/now-a-tool-that-can-help-prevent-surging-waters-in-flood-plains/articleshow/58668978.cms>, May 14, 2017
- [10] Phys.Org: “Yellow River formula addresses flood risk, sustainability”,
<https://phys.org/news/2017-05-yellow-river-formula-sustainability.html> May 12, 2017
- [9] Water Online: “New Tool Could Help Predict, Prevent Surging Waters in Flood Plains”,
<https://www.wateronline.com/doc/new-tool-could-help-predict-prevent-surging-waters-in-flood-plains-0001>, May 12, 2017
- [8] Futurity: “Dams won’t starve Mississippi Delta of Sand” <http://bit.ly/1i8O6Jn>, April 21 2014
- [7] Phys.org: “Centuries of sand to grow Mississippi Delta” <http://bit.ly/1h5lEwg> April 21, 2014
- [6] The Times-Picayune: “Mississippi River will carry enough sand needed to build new Louisiana wetlands for at least 600 years, new study says” <http://bit.ly/1lvBQLd>
April 20, 2014
- [5] New Scientist: “Mississippi dams aren't to blame for flood risks” <http://bit.ly/1i3rXkD>
April 20, 2014
- [4] The New York Times: “How to Rebuild the Mississippi Delta”
<http://green.blogs.nytimes.com/2012/07/25/how-to-rebuild-the-mississippi-delta/>
July 25, 2012
- [3] Discovery News: “Can Sand Stop New Orleans From Drowning?”
<http://news.discovery.com/earth/can-sand-stop-new-orleans-from-drowning-120723.html>
July 23, 2012
- [2] Phys.ORG: “Investigative team finds river spillway flooding caused new land formation in Louisiana” <http://phys.org/news/2012-07-team-river-spillway-formation-louisiana.html>
July 23, 2012
- [1] Science, News Focus: “Rebuilding Wetlands by Managing the Muddy Mississippi” v. 335,
pp. 520-521, February 3, 2012