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Jorge Lorenzo-Trueba

Associate Professor
Department of Earth and Environmental Studies
Montclair State University, 302 Center for Environmental and Life Sciences
Montclair, NJ 07043
Phone: 973-655-5320
Email: lorenzotruej@montclair.edu
Coastal Dynamics Website
MSU drone lab YouTube Channel

EDUCATION

PhD, Civil Engineering, Saint Anthony Falls Laboratory, University of Minnesota, Feb 2012
Certificate in Stream Restoration Science and Engineering, University of Minnesota, May 2010
MSc, Civil Engineering, Saint Anthony Falls Laboratory, University of Minnesota, Feb 2010
BE and MSc in Civil Engineering, Technical University of Madrid, June 2006

EMPLOYMENT

Associate Professor, Montclair State University, Earth and Environmental Studies, Aug 2020–Present
Affiliated Professor, Montclair State University, Applied Mathematics and Statistics, Aug 2020–Present
Assist. Professor, Montclair State University, Earth and Environmental Studies, Sept 2014–Aug 2020
Visiting Scholar, Harvard University Center for the Environment, spring 2022
Postdoctoral Investigator, Rice University, Earth Science Department, Dec 2013 – Aug 2014
Postdoctoral Investigator, Woods Hole Oceanographic Institution, March 2012 – Dec 2013
Research and Teaching Assistant, University of Minnesota, Sept 2007 – March 2012
Research Assistant, Water and Environment Engineering (Madrid, Spain), Sept 2006 – August 2007
Research Intern at Saint Anthony Falls Laboratory, University of Minnesota, summer 2006

PUBLICATIONS (*Advised students)

Non-peer review

A. Janoff*, J. Lorenzo-Trueba, P. Hoagland, D. Jin, A.D. Ashton. From seaward growth to coastal retreat: Emergent behaviors from paired community beach nourishment choices. *Earth and Space Science Open Archive* [Link]. *In preparation for submission to peer-review journal*.

In print or in press

25) C. Tenebruso*, **J. Lorenzo-Trueba**, D.J. Ciarletta*, J. Miselis, Nichols-O'Neill (2022). Undeveloped and developed phases in the centennial evolution of a barrier-marsh-lagoon system: The case of Long Beach Island, New Jersey. *Frontiers in Marine Sciences - Coastal Ocean Processes. Research Topic: Coastal Environment in a Changing World* [Link].

24) Kollegger*, M., Lorenzo-Trueba, J., Fernandes, A. M., Singh, A., & Abeyta, A. (2022). Upstream propagation of sea-level signals in fluvio-deltaic environments: Time-lags and the dynamics of the fluvial surface. Geophysical Research Letters, 49, e2022GL097956 [Link].

23) J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton (2021). Artificial coastal berm-dune renourishment in New Jersey: Can coastal communities continue to hold the line? *Anthropocene Coasts* [Link].

22) D.A. Edmonds, A.J. Chadwick, M.P. Lamb, **J. Lorenzo-Trueba**, A.B. Murray, W. Nardin, G. Salter, and J.B. Shaw (2021). Morphodynamic modeling of river-dominated deltas: a review and

future perspectives. *Treatise on Geomorphology, 2nd edition (Book Chapter), Volume 10, 2022, Pages 110-140* [Link] [DOI].

21) J. Shawler, D. Ciarletta*, J. Connell, B. Boggs, **J. Lorenzo-Trueba**, C. Hein (2020) Relative influence of antecedent topography and sea-level rise on barrier-island migration. *Sedimentology* [Link].
20) J. H. Nienhuis, and **J. Lorenzo-Trueba** (2019). Can barrier islands survive sea-level rise? Quantifying the relative role of tidal and overwash fluxes. *Geophysical Research Letters* [Link].
19) R. Kopp, E. Gilmore, C. Little, **J. Lorenzo-Trueba**, V. Ramenzoni, W. Sweet (2019). AGU Centennial Grand Challenge: Sea-level science on the frontier of usability. *Earth's Future* [Link].
18) D. Ciarletta*, **J. Lorenzo-Trueba**, A. Ashton (2019). Interaction of Sea-Level Pulses with Periodically Retreating Barrier Islands. *Front. Earth Sci* [Link].
17) J. H. Nienhuis, and **J. Lorenzo-Trueba** (2019). Simulating barrier island response to sea-level rise with the barrier island and inlet environment (BRIE) model v1.0, *Geosci. Model Dev. Discuss.* [Link].
16) W. Anderson*, **J. Lorenzo-Trueba** and V. Voller (2019). A geomorphic enthalpy method: Description and application to the evolution of fluvial-deltas under sea-level cycles. *Computer and Geosciences* [Link].
15) D. Ciarletta*, J. Shawler, C. Tenebruso, C. Hein, **J. Lorenzo-Trueba** (2019) Reconstructing Coastal Sediment Budgets from Beach- and Foredune- Ridge Morphology: A Coupled Field and Modeling Approach. *Journal of Geophysical Research-Earth Surface* [Link].
14) D. Ciarletta*, **J. Lorenzo-Trueba**, A. Ashton (2019) A mechanism for autogenic formation of periodic deposits on continental shelves by retreating barriers, *Geology* [Link].
13) A.D. Ashton and **J. Lorenzo-Trueba** (2018), Morphodynamics of Barrier Response to Sea-level Rise, *Springer Science, Environmental Science collection: Barrier Dynamics and Response to Climate Change* [Link].
12) C.I. Odezulu, **J. Lorenzo-Trueba**, D.J. Wallace, and J.B. Anderson (2018), Stratigraphic and sedimentological evidence for unprecedented shoreline migration rate during historic time: Follets Island, Texas. *Springer Science, Environmental Science collection: Barrier Dynamics and Response to Climate Change* [Link].
11) J. Raff, J. Shawler, D. Ciarletta*, E. Hein, **J. Lorenzo-Trueba**, C. Hein (2018) Insights into barrier-island stability derived from transgressive/regressive state changes of Parramore Island, Virginia. *Marine Geology* [Link].
10) J. Miselis and **J. Lorenzo-Trueba** (2017) Natural and human-induced variability in barrier-island response to sea-level rise, *Geophysical Research Letters* [Link].
9) K. Anarde, S. Kameshwar, J.N. Irza, J.A. Nittrouer, **J. Lorenzo-Trueba**, J.E. Padgett, A. Sebastian, P. Bedient (2017), Impact of Hurricane Storm Surge on Infrastructure Vulnerability for an Evolving Coastal Landscape, *Natural Hazards Review* [Link].
8) **J. Lorenzo-Trueba**, G. Mariotti (2017), Chasing boundaries and cascade effects in a coupled barrier-marsh-lagoon system, *Geomorphology* [Link].
7) K.E. Moran, J.A. Nittrouer, M.M. Perillo, **J. Lorenzo-Trueba**, and J.B. Anderson (2016), Morphodynamic modeling of fluvial channel fill and avulsion timescales during early Holocene transgression, substantiated by the incised valley stratigraphy of the Trinity River, TX; *Journal of Geophysical Research* [Link].
6) L.J. Rogers, L.J. Moore, E.B. Goldstein, C.J. Hein, **J. Lorenzo-Trueba**, A.D. Ashton (2015), Anthropogenic Controls on Overwash Deposition: Evidence and Consequences; *Journal of Geophysical Research-Earth Surface* [Link].
5) **J. Lorenzo-Trueba**, A. D. Ashton (2014), Rollover, drowning, and discontinuous retreat: distinct modes of barrier response to sea-level rise arising from a simple morphodynamic model, *Journal of Geophysical Research-Earth Surface* [Link].

4) **J. Lorenzo-Trueba**, V. R. Voller and C. Paola (2013), A geometric model of a fluvially dominated deltaic system under base-level change, *Computer & Geosciences*, Community Surface Dynamics Modeling System Special Issue: Modeling for Environmental Change [Link].
3) **J. Lorenzo-Trueba**, V. R. Voller, C. Paola, A.E. Bevington, and R.R. Twilley (2012), Exploring the role of organic matter accumulation on delta evolution, *Journal of Geophysical Research-Earth Surface*, Special Collection: Linking Physical, Chemical, and Biological Processes in Watersheds from the Cellular and Grain Scales to the Landscape Scale [Link].
2) **J. Lorenzo-Trueba**, and V. R. Voller (2010), Analytical and numerical solution of a generalized Stefan problem exhibiting two moving boundaries with application to ocean delta formation, *Journal of Mathematical Analysis and Applications*, 366, 538-549. [Link].
1) **J. Lorenzo-Trueba**, V. R. Voller, T. Muto, W. Kim, C. Paola, and J.B. Swenson (2009), A similarity solution for a dual moving boundary problem associated with a coastal-plain depositional system, *Journal of Fluid Mechanics*, 628, 427-443. [Link].

EXTERNAL RESEARCH GRANTS

Current Projects

National Science Foundation, FY 2021 Coastlines and People (CoPe) Awards, "Large-scale CoPe: Megalopolitan Coastal Transformation Hub (MACH): Researching complex interactions between climate hazards and communities to inform governance of coastal risk"; Lead PI: R. Kopp (Rutgers University); 1 August 2021 – 31 July 2026.

NJ Coastal Resilience Research Consortium (NJ CRRC). Partner institutions: Montclair State University, Stevens Institute of Technology, NJ Institute of Technology, Rutgers University, Stockton University; 01 Sept 2022 - 31 August 2023.

National Oceanographic and Atmospheric Administration, New Jersey Sea Grant Consortium (NJSGC), "Predicting the response of salt marsh methane emissions to sea-level rise through field and numerical experiments"; Charles Schutte (PI, Rowan University), Lauren Kipp (co-PI, Rowan University), J. Lorenzo-Trueba (co-PI, Montclair State University); 01 Feb 2022 - 31 January 2024.

National Aeronautics and Space Administration, "Exploring the Role of Evaporation and Precipitation on Mangrove Island Morphology". PI: J. Lorenzo-Trueba, Student: Isamar Cortés (funded by NASA Office of STEM Engagement's Minority Research and Education Project, MUREP); 1 September 2019 - 31 August 2023.

U.S. Department of the Interior - U.S. Geological Survey, "Support of research in coastal sediment supply and flux": PI: J. Lorenzo-Trueba; 27 March 2019 - 30 June 2023.

National Science Foundation, Geomorphology and Land Use Dynamics Program, "Collaborative Research: From Surface Dynamics to Strata: Quantifying the Signals of Surface Processes in Space and Time"; PIs: A. Abeyta (PI, University of New Mexico), A. Singh (Lead PI, University of Central Florida), Anjali Fernandes (PI, Denison University), J. Lorenzo-Trueba (PI, Montclair State University); 15 July 2019 – 30 June 2023.

Completed Projects

American Chemical Society, Petroleum Research Fund, "Exploring the role of organic sediment dynamics on channel clustering and alluvial architecture", PI: J. Lorenzo-Trueba; 01 January 2018 - 31 August 2021.

National Science Foundation, Dynamics of Coupled Natural and Human Systems Program, "Coastal processes and human response to shoreline change"; PIs: A. Ashton (Lead PI, WHOI), Di Jin (PI, WHOI), Porter Hoagland (PI, WHOI), J. Lorenzo-Trueba (PI, Montclair State University); John Duff, (PI, University of Massachusetts); 01 July 2015 – 31 July 2021.

National Oceanographic and Atmospheric Administration, Mid-Atlantic Regional Sea Grant, "Managing for biodiversity and blue carbon in the face of sea-level rise and barrier-island migration"; PIs: C.

Hein (PI, VIMS), Sunny Jardine (PI, University of Delaware), Keryn Gedan (PI, University of Maryland), J. Lorenzo-Trueba (PI, Montclair State University); 01 Feb 2016 - 31 January 2019.

SUPERVISORY DUTIES

Current PhD Students

Md Nurul Kadir (PhD student; January 2023 - present): Working on the development of a numerical model for the evolution of fluvial deltas under sea-level cycles to describe the evolution of estuaries under different scenarios of sea-level rise, water discharge, and tidal influence.

Isamar Cortés (PhD candidate; Sept 2019 - present): Studying the relationship between mangrove island vegetation, net evaporation rates, ocean salinity and hydraulic conductivity.

Shane Daiek (PhD candidate; Sept 2019 - present): Studying the role of vegetation con coastal dune morphodynamics along Long Beach Island, New Jersey, using drone technology.

Current MS Students

Shane Nichols-O'Neill, (MS Earth and Environmental Science; Sept 2021 - present): Development of a numerical modeling framework for the plan-view evolution of barrier islands and its coupling with historical maps that describe the evolution of Long Beach Island, New Jersey.

Current Undergraduate Researchers

Ingrid Witty (December 2021 – Present)

Eric Dammann (July 2022 – Present)

Eric Swanson (October 2022 – Present)

Former PhD Students

Daniel Ciarletta (PhD; Sept 2015 – May 2019): "Reconstructing Barrier Island Behavior from Overstepped Deposits and Relict Onshore Morphology: Modeling and Field Approaches". *Now USGS Mendenhall Postdoctoral fellow at the St. Petersburg Science Center, Florida.*

Arye Janoff (PhD; Sept 2016 – January 2021): "Community-scale beach nourishment and groin construction decisions along human-modified coasts: the interplay between socio-economics, coordination, tourism, and shoreline change". *NOAA Sea Grant Knauss Legislative Fellow after PhD. Now Environmental Manager at the US Army Corps of Engineers.*

Jesse Kolodin (PhD; Sept 2015 – July 2021): "A geo-economic framework for dune construction and long-term coastal resiliency in New Jersey." *Fellow at the Eagleton Institute of Politics after PhD. Now Gov. Rep 2 "Research Scientist" at the Department of Banking and Insurance, New Jersey.*

Former MS Students

William Anderson (MS Mathematical Sciences; May 2016 – June 2018): On the application of an enthalpy method to the evolution of fluvial deltas under sea-level variations. *Now a doctoral fellow in Applied Mathematics at North Carolina State University.*

Isamar Cortés (MS Earth and Environmental Science; May 2017 - present): Exploring the role of evaporation and precipitation on mangrove island morphology. *Now PhD student at Montclair State University.*

Christopher Tenebruso, (MS Earth and Environmental Science; Sept 2018 – Aug 2020): Modeling the Evolution of a Coupled Barrier-Marsh-Lagoon System: Insights from the New Jersey Coastline. *Environmental Scientist at GEI Consultants Inc. after MS. Now GIS Specialist 3 at NJDOT.*

Madeline Kollegger, (MS Earth and Environmental Science; Sept 2019 – May 2021): Upstream propagation of sea-level signals in fluvio-deltaic environments: time-lags, and the dynamics of the fluvial surface. *Now PhD student at University of Connecticut.*

Norjmaa Khosbaatar, (MS Earth and Environmental Science; Sept 2019 – August 2021): The role of organic sediment dynamics on paleo-sea level reconstruction from fluvio-deltaic stratigraphy: Insights from a geometric model. *Teaching assistant at CUNY and research assistant at MSU after MS.*

Former Undergraduate Researchers

Britnie Gonzalez-Moodie, Computer Science (June 2021 – Present)
Jakub Pecak, Computer Science (June 2021 – September 2021)
Norjmaa Khosbaatar, Earth Science (Jan 2019 – September 2019)
Christopher Tenebruso, Earth Science (May 2017 – September 2018)
Kevin Weatherwalks, Mathematical Sciences (May 2016 – August 2017)
James Kim, Computer Sciences (May 2016 – September 2016)
Matthew Cheung, Biological Sciences (Fall 2015 and Spring 2016)
Luis Germano Biolchi, Earth Science (Spring 2015).

Thesis committee member

Rose Palermo, Earth Science (PhD candidate MIT-WHOI joint program; *in progress*)
Sana Mirza (PhD candidate at MSU; *in progress*)
Matthew Sandefur (MSc at MSU; Summer 2019)
Alan Buob, Biological Sciences (MSc at MSU; Summer 2019)
Christopher Odezelu, Earth Science (PhD candidate at Rice University; graduated in Fall 2018)
Patrick Vojnyk, Biological Sciences (MSc at MSU; graduated in Summer 2017)
Joseph McGinnis, Biological Sciences (MSc at MSU; graduated in Summer 2016)
Vicky Sekkas, Earth Science (MSc at MSU; graduated in Spring 2015)
Sarah Huff, Earth Science (MSc at Rice University; graduated in Spring 2015)
Kaitlin Moran, Earth Science (MSc at Rice University; graduated in Spring 2015)

ACADEMIC SERVICE/ACTIVITIES

Reviewer:

Associate Editor for Computer & Geosciences (Oct 2020 – present)
Associate Editor for Frontiers in Sedimentology, Stratigraphy, and Diagenesis (June 2022 – present)
Selection committee member for the William R. Dickinson Medal [link]

Peer-Reviewed Journals: Proceedings of the National Academy of Sciences of the United States of America, Journal of Geophysical Research – Earth Surface; Geology; Geophysical Research Letters; Earth Surface Dynamics (ESurf); Earth's Future; Middle States Geographer; Marine Geology; Continental Shelf Research; PLOS One; Journal of Marine Science and Engineering; Frontiers in Earth Science; Geo-Marine Letters; Journal of Hydrology; GSA Bulletin; CATENA; Estuaries and Coasts; Journal of Coastal Research; Landscape Ecology; Global Change Biology; Terra Nova; Sustainability; Water; Remote Sensing; Regional Environmental Change; Environmental Sciences (Springer); Journal of Ecology and Environmental Sciences.

Funding Agencies: National Science Foundation (Geomorphology and Land-use Dynamics, Marine Geology and Geophysics Program, Geography and Spatial Sciences Program, CAREER program, Engineering Education and Centers); NOAA's Ecological Effects of Sea Level Rise (EESLR) research program; American Chemical Society (Petroleum Research Fund); Florida Sea Grant College Program; National Research Network for Low Carbon Energy and the Environment (UK).

Workshop Coordination:

CSDMS Roadshow in the spring of 2023 [link]. 3-day workshop (March 7-9, 2023) for graduate students at MSU co-organized by J. Lorenzo-Trueba.

Investigating Connections between Barriers Beaches and Mainland Marshes, Jacques Cousteau National Estuarine Research Reserve, 12 October 2018. 1-day workshop for coastal managers organized by J. Lorenzo-Trueba and L. Auermuller.

Conference Coordination:

Plans to co-organize a conference in the spring of 2024 at MSU in collaboration with the Community Surface Dynamics Modeling System (CSDMS) NSF-funded scientific center.

Convener and Chair (with A. Singh and A. Fernandes), session: "Forensic Earth: Novel Approaches to Reading Environmental Signals and Quantifying Surface Processes in the Geological Record", Fall meeting AGU, Washington DC, 2018.

Chair, session on "Storm Resilience and Climate Change", AAG Middle States Division Annual Meeting, Montclair, 2018.

Chair, session on "Climate Modelling", SIAM Planet Earth meeting, Philadelphia, 2018.

Convener and Chair (with C. Hein), session: "Field and Modeling Approaches to Understanding the Response of Coupled Barrier - Backbarrier Systems to Coastal Change", Fall meeting Geological Society of America, Baltimore, 2015.

Convener and Chair (with L. Larsen and P. Limber), Special Session: "Coastal Geomorphology and Morphodynamics", Fall meeting AGU, San Francisco, 2014

Symposia and Workshop Participation:

NSF Coastlines and People workshop: Atlanta, GA, September 2018.

Community Surface Dynamics Modeling System (CSDMS) annual meetings 2018, 2017, 2013, 2011, and 2010.

Joint Penrose/Chapman Conference, Coastal Processes and Environments Under Sea-Level Rise and Changing Climate: Science to Inform Management, 14–19 April 2013, Galveston, Texas, USA.

Reduced Complexity Modeling Workshop: Boulder, Colorado, March, 2013.

Meeting of Young Researchers in Earth Science (MYRES), The Sedimentary Record of Landscape Dynamics, August 8-12, 2012, Salt Lake City, Utah, USA.

Sediment Experimentalists Network (SEN) workshop, December 2012, Austin, Texas.

National Center for Earth-Surface Dynamics (NCED) Summer Institutes 2009, 2010, and 2011.

Recent Invited Research Talks:

Harvard University, BiSEPPS (Bi-weekly Solid Earth Planetary Physics Seminar), May 2022, Title: "Modeling barrier islands and fluvio-deltaic systems across time scales: Insights from a moving-boundary approach".

University of Delaware, School of Marine Science and Policy, April 2022, Title: "Modeling barrier islands and fluvio-deltaic systems across time scales: Insights from a moving-boundary approach".

Tulane University, McWilliams Seminar Series, March 2022, Title: "An enthalpy model for fluvio-deltaic evolution: Insights and implications for sea-level reconstruction".

SIAM Student Chapter, March 2022. Title: "Modeling the Dynamic Landscape Evolution of Coastal Environments Under Sea-level Variations".

Texas A&M University, Department of Geography, February 2022, Title: "Modeling the evolution of fluvial deltas and barrier islands across time scales".

Hispanic Professional Engineers' Latinxs, June 2021. Title: "Past, present and future evolution of barrier islands: Insights from Long Beach Island, New Jersey".

Rutgers University, Department of Earth and Planetary Sciences, April 2021. Title: "Modeling the evolution of fluvial deltas under sea-level cycles: A moving boundary framework".

University of Texas Institute for Geophysics, November 2020. Title: "A moving boundary framework for the evolution of fluvio-deltaic environments across time scales".

GSA Annual Meeting, October 2020. Title: The effect of development and engineering activities on the evolution of a barrier-backbarrier system: Insights from Long Beach Island, New Jersey. Session: "Forecasting the coastal response to sea-level rise: Integrating the past and present to inform the future".

Service at Montclair State University:

Co-organizer of the "Sustainability Seminar Series", a weekly Colloquium in Environmental Science and Management at Montclair State University (Fall 2017 – Spring 2021 and Fall 2022 – present).
EAES sabbatical committee member (Fall 2022 – present)
DPAC Physics department; Department Personnel Action Committee (Fall 2022 – present)
CSAM research committee member (Fall 2022 – present).
Graduate Council Alternate (Fall 2020 – Spring 2021).
Graduate Curriculum Committee (Fall 2018 – Summer 2020)
Graduate Council (Fall 2018 – Summer 2020)
Senior Personnel, NSF-MRI for the Acquisition of a Multimodal Collaborative Robot System (MCROS) to Support Cross-Disciplinary Human-Centered Research and Education at Montclair State University, CNS-2117308, 10/01/2021 ~ 09/30/2024.
Senior Personnel, NSF GPU-based cluster proposal award from 2019 to present.
Senior Personnel, DoD Human Systems Integration award (2017 award), Actionable Decision-Making for Flooding Events utilizing a small UAV Platform with LiDAR and Multispectral Instruments.
Senior Personnel, NSF Major Research Instrumentation Program awarded on 2016, CPU-based Computer Cluster.
Faculty Search Committee Member, Sustainability Science position, 2015-2016 and 2016-2017.
Faculty Search Committee Member, Paleoclimate/Geochemistry position, 2017-2018.

Professional Affiliations:

American Geophysical Union (AGU); Geological Society of America (GSA); Society for Industrial and Applied Mathematics (SIAM); International Association of Sedimentologists (IAS), American Shore and Beach Preservation Association (ASBPA), the Society for Sedimentary Geology (SEPM).

TEACHING (Courses at Montclair State University)

EAES 530, Numerical Modeling of Earth Systems
EAES 551, Coastal Geomorphology
EAES 250, Introduction to Marine Science
EAES 790, Colloquium in Environmental Science and Management

RECENT CONFERENCE PRESENTATIONS/PROCEEDINGS (* Advised students)

S. Nichols-O'Neill*, **J. Lorenzo-Trueba**, D.J. Ciarletta, J. Miselis, 2023. Exploring centennial barrier-inlet evolution: Insights from undeveloped and developed phases at Barnegat Inlet, New Jersey; Coastal Sediments, New Orleans, Louisiana, USA.

R. Palermo, A.D. Ashton, D. Jin, P. Hoagland, **J. Lorenzo-Trueba**, 2023. The evolution of natural and developed barriers under accelerating sea levels; Coastal Sediments, New Orleans, Louisiana, USA.

J. Lorenzo-Trueba and Vaughan Voller, 2022. An enthalpy method to study the coupled subaerial/subaqueous evolution of fluvial-deltas under sea-level variations; American Geophysical Union, Fall Meeting, Chicago.

S. Nichols-O'Neill*, **J. Lorenzo-Trueba**, D.J. Ciarletta, J. Miselis, 2021. Natural and developed centennial evolution of a barrier-inlet system: a case study from the New Jersey coast; American Geophysical Union, Fall Meeting, Chicago.

S. Daiek*, **J. Lorenzo-Trueba**, D.J. Ciarletta, J. Miselis, 2021. Can Changes in Storm Frequency Alter the Drowning Fate of Barrier Islands? American Geophysical Union, Fall Meeting, Chicago.

B. Gonzalez-Moodie*, S. Daiek*, **J. Lorenzo-Trueba**, A. Varde. Multispectral Drone Data Analysis on Coastal Dunes; 2021 IEEE International Conference on Big Data (Big Data), virtual event.

S. Nichols-O'Neill *, **J. Lorenzo-Trueba**, D.J. Ciarletta*, J. Miselis, 2021. On the transition from undeveloped to developed barrier island behavior: The case of Long Beach Island, New Jersey; American Geophysical Union, Fall Meeting, New Orleans.

S. Daiek*, **J. Lorenzo-Trueba**, D.J. Ciarletta*, J. Miselis, 2021. Can Changes in Storm Frequency Alter the Drowning Fate of Barrier Islands? American Geophysical Union, Fall Meeting, New Orleans.

I. Cortés*, **J. Lorenzo-Trueba**, T. Fatoyinbo, R. Twilley, A. Rovai, M. Chopping, 2021. On the interplay between mangrove canopy height, salinity, and net evaporation rates: Insights from Florida and Puerto Rico. American Geophysical Union, Fall Meeting, New Orleans.

N. Khosbaatar* and **J. Lorenzo-Trueba**, 2021. The role of organic matter accumulation and degradation on the evolution of a coastal-plain depositional system under sea-level cycles. American Geophysical Union, Fall Meeting, New Orleans.

M. Kollegger*, **J. Lorenzo-Trueba**, A. M. Fernandes, A. Singh, A. Abeyta, 2021. Time-lags in the upstream response of fluvio-deltaic environments under sea-level cycles: the role of changes in the curvature and relief. American Geophysical Union, Fall Meeting, New Orleans.

J. Nienhuis, A. Ashton, **J. Lorenzo-Trueba**, Leoni Heijkers, Gerben Ruessink, 2021. Data-model integration to better understand the formation and dynamics of tidal inlets and barrier islands. American Geophysical Union, Fall Meeting, New Orleans.

N. Khosbaatar* and J. Lorenzo-Trueba, 2021. The role of organic sediment dynamics on paleo-sea level reconstruction from fluvio-deltaic stratigraphy: Insights from a geometric model. Community Surface Dynamics Modeling System (CSDMS), Annual Meeting, online conference.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2021. A geo-economic model to explore community responses to downdrift groin-induced erosion. Geological Society of America, Northeastern Online Section Meeting.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2020. Coastal community couplets: how alongshore wealth disparities can lead to suboptimal beach nourishment and increased erosion risks in the long term. American Geophysical Union, Fall Meeting, online conference.

A. Ashton and **J. Lorenzo-Trueba**, 2020. Reef island response to sea-level rise explored through a simple morphodynamic model. American Geophysical Union, Fall Meeting, online conference.

I. Cortés*, **J. Lorenzo-Trueba**, T. Fatoyinbo, R. Twilley, A. Rovai, M. Chopping, 2020. Quantifying the Role of the Net Evaporation Rates and Salt Concentrations on Mangrove Canopy Height across Mangrove Islands in Florida and Puerto Rico. American Geophysical Union, Fall Meeting, online conference.

R. Palermo, A.D. Ashton, D. Jin, P. Hoagland, **J. Lorenzo-Trueba**, 2020. The effect of accelerating sea levels on the evolution of natural and developed barriers. American Geophysical Union, Fall Meeting, online conference.

P. Orton, S. Chan, L. F. Pareja-Roman, C. Massey, **J. Lorenzo-Trueba**, 2020. The effect of accelerating sea levels on the evolution of natural and developed barriers. American Geophysical Union, Fall Meeting, online conference.

N. Khosbaatar* and **J. Lorenzo-Trueba**, 2020. The role of organic matter accumulation and degradation on the evolution of a coastal-plain depositional system under sea-level cycles. American Geophysical Union, Fall Meeting, online conference.

M. Kollegger*, **J. Lorenzo-Trueba**, A. M. Fernandes, A. Singh, A. Abeyta, 2020. Upstream propagation of sea-level signal under high and low amplitude sea level oscillations in fluvio-deltaic transport systems: The dynamics of the fluvio-deltaic surface. American Geophysical Union, Fall Meeting, online conference.

J. Lorenzo-Trueba, C. Tenebruso*, D.J. Ciarletta*, J. Miselis, 2020. The effect of development and engineering activities on the evolution of a barrier-backbarrier system: Insights from Long Beach Island, New Jersey. Geological Society of America, Annual meeting, online conference.

A. Abeyta, A. M. Fernandes, R.C. Mahon, T. Swanson, **J. Lorenzo-Trueba**, A. Singh, 2020. Remote research opportunities expand reach and increase diversity - a need to expand and continue after COVID 19. Geological Society of America, Annual meeting, online conference.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, and A. Ashton, 2020. Centennial-scale Impacts of Meltwater Pulses on Periodically Retreating Barrier Islands. Geological Society of America, Annual meeting, online conference.

J. L. Shawler, D.J. Ciarletta*, J.E. Connell, B.Q. Boggs, **J. Lorenzo-Trueba**, and C.J. Hein, 2020. New insights into the coupled influence of antecedent geology and sea-level rise on barrier island dynamics. Geological Society of America, Annual meeting, online conference.

R. Kopp, E. Gilmore, C. Little, **J. Lorenzo-Trueba**, V. Ramenzoni, W. Sweet, 2020. Usable science for managing the risks of sea-level rise. Geological Society of America, Annual meeting, online conference.

M. Kollegger*, **J. Lorenzo-Trueba**, A. M. Fernandes, A. Singh, A. Abeyta, 2020. Upstream propagation of sea-level signal under high and low amplitude sea level oscillations in fluvio-deltaic transport systems: The dynamics of the fluvio-deltaic surface. Geological Society of America, Annual meeting, online conference.

N. Khosbaatar* and **J. Lorenzo-Trueba**, 2020. Modeling the effect of organic sediment dynamics on coastal plain depositional systems under sea-level cycles. Geological Society of America, Annual meeting, online conference.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2020. Quantifying the effect of recreational versus protective beach value on community-scale beach nourishment decisions. ASBPA 2020 National Coastal Conference, online conference.

J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2020. Understanding The Relationship Between Artificial Berm-Dune Construction and Coastal Property Values: A Hedonic Case Study from Long Beach Island, New Jersey. ASBPA 2020 National Coastal Conference, online conference.

P. Orton, S. Chan, L. F. Pareja-Roman, C. Massey, **J. Lorenzo-Trueba**, 2020. Can anthropogenic barrier island and shelf modifications alter estuary storm tides? ASBPA 2020 National Coastal Conference, online conference.

I. Cortés*, **J. Lorenzo-Trueba**, R. Twilley, A. Rovai, M. Chopping, 2020. Net evaporation rates and mangrove island morphology: Caribbean examples; Community Surface Dynamics Modeling System (CSDMS), Summer Science Series II.

J. Lorenzo-Trueba, W. Anderson*, and V. Voller, 2019. A geomorphic enthalpy method to explore the evolution of fluvial deltas under spatially variable ocean depths and sea-level changes; American Geophysical Union, Fall Meeting, San Francisco.

T. Swanson; Palermo, R.; **Lorenzo-Trueba, J.**; Ma, H.; Anderson, J. B.; Nittrouer, J. A, 2019. Chaotic barrier island behavior driven by steady sea-level rise and variable bay accommodation; American Geophysical Union, Fall Meeting, San Francisco.

I. Cortés*, **J. Lorenzo-Trueba**, R. Twilley, A. Rovai, M. Chopping, 2019. Net evaporation rates and mangrove island morphology: Caribbean examples; American Geophysical Union, Fall Meeting, San Francisco.

C. Tenebruso*, **J. Lorenzo-Trueba**, D.J. Ciarletta*, J. Miselis, 2019. Quantifying historic barrier island geomorphology to differentiate natural and anthropogenic processes at Long Beach Island, New Jersey; American Geophysical Union, Fall Meeting, San Francisco.

A. Abeyta, A. Fernandes, **J. Lorenzo-Trueba**, A. Singh, 2019. Removing geographic barriers in research experiences for undergraduate (REU) programs: a remote participation model with minority serving institutions; American Geophysical Union, Fall Meeting, San Francisco.

J. Apura, A. Abeyta, A. Fernandes, **J. Lorenzo-Trueba**, A. Singh, 2019. Relating and comparing the stratigraphic record of experimental deltas to artificial stratigraphy generated by image analysis of surface conditions over time; American Geophysical Union, Fall Meeting, San Francisco.

D. Benally, A. Abeyta, A. Fernandes, **J. Lorenzo-Trueba**, A. Singh, 2019. Indigenous concepts and oral history integrated with western science in order to promote the interest in STEM fields in Indigenous communities through stratigraphy; American Geophysical Union, Fall Meeting, San Francisco.

B. Padilla, A. Abeyta, A. Fernandes, **J. Lorenzo-Trueba**, A. Singh, 2019. Statistical Analysis of Delta Morphology and Stratigraphic Preservation Using Field, Experimental, and Numerical Data; American Geophysical Union, Fall Meeting, San Francisco.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2019. Suboptimal beach nourishment decisions: When self-interested actions enhance a neighbor's welfare; Community Surface Dynamics Modeling System (CSDMS), Annual meeting, Boulder, Colorado.

R. Palermo, A. D. Ashton, **J. Lorenzo-Trueba**, T. Swanson, 2019. Barrier island stability and evolution driven by the competition between overwash and alongshore sediment transport; Coastal Sediments, Tampa/San Petersburg, Florida, USA.

J. Shawler, D. Ciarletta*, **J. Lorenzo-Trueba,** C. Hein, 2019. Drowned foredune ridges as evidence of pre-historical barrier-island state changes between migration and progradation. Coastal Sediments, Tampa/San Petersburg, Florida, USA.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, A.D. Ashton, 2019. Periodic Barrier Overstepping on Variable Shelf Slopes; Coastal Sediments, Tampa/San Petersburg, Florida, USA.

J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2019. A Coastal Geo-economic model for Artificial Dune Management in New Jersey; Coastal Sediments, Tampa/San Petersburg, Florida, USA.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2019. Coupling Geomorphology and Socio-economics to Account for Groin Downdrift Erosion; Coastal Sediments, Tampa/San Petersburg, Florida, USA.

J. Shawler, C. Hein, D. Ciarletta*, **J. Lorenzo-Trueba**, 2019. Beyond storms and sea level: the imprints of antecedent geology and sediment supply on the evolution of the Virginia Barrier Islands; Geological Society of America, Charleston, South Carolina (Southeastern Section).

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2018. Exploring Optimal Community Coordination along Developed Sandy Coasts: Long-term Management within a Groin Field; American Geophysical Union, Fall Meeting, Washington DC.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, A.D. Ashton, 2018. Exploring the interaction of autogenic and allogenic forcing on the deposition of remnant barrier sands in transgressive systems; American Geophysical Union, Fall Meeting, Washington DC.

C. Tenebruso*, **J. Lorenzo-Trueba**, D.J. Ciarletta*, 2018. Modeling the Evolution of Coupled Barrier-Marsh-Lagoon Systems: Insights from the New Jersey Coastline; American Geophysical Union, Fall Meeting, Washington DC.

I. Cortés*, **J. Lorenzo-Trueba**, R. Twilley, A. Rovai, M. Chopping, 2018. Exploring the role of evaporation and precipitation on mangrove island morphology; American Geophysical Union, Fall Meeting, Washington DC.

J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A.D. Ashton, 2018. Using a Hedonic Pricing Model (HPM) to Evaluate a "Geo-Economic" framework for Artificial Berm-Dune Management Along New Jersey's Coastline; American Geophysical Union, Fall Meeting, Washington DC.

D.J. Ciarletta*, C. Tenebruso, **J. Lorenzo-Trueba**, 2018. Mapping Barrier Island Foredune Ridge Development and Shoreline Change in New Jersey; Middle States Division American Association of Geographers, Annual meeting, Montclair, New Jersey.

W. Anderson*, **J. Lorenzo-Trueba** and V. Voller, 2017. A geomorphic enthalpy method in 3D: Application to the evolution of delta under sea-level cycles; American Geophysical Union, Fall Meeting, Washington DC.

J. Nienhuis* and **J. Lorenzo-Trueba**, 2017. Can barrier islands survive sea level rise? Tidal inlets versus storm overwash. American Geophysical Union, Fall Meeting, New Orleans, LA.

J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A. D. Ashton, 2017. A Coastal Geo-Economic Model for Artificial Dune Management in New Jersey. American Geophysical Union, Fall Meeting, New Orleans, LA.

R. Palermo*, A. D. Ashton, **J. Lorenzo-Trueba**, D. Jin, P. Hoagland, 2017. Evaluating the role of overwash in a human-coupled coastline evolution model; American Geophysical Union, Fall Meeting, New Orleans, LA.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A. D. Ashton, 2017. A Geo-economic Model to Explore Hard Structure Impacts on Coastal Evolution, Real Estate Markets, and Community Abandonment in New Jersey. American Geophysical Union, Fall Meeting, New Orleans, LA.

T. Swanson, **J. Lorenzo-Trueba**, K. Anarde, C. Odezulu, J. Anderson, J. Nittrouer, 2017. Exploring the morphodynamic response of coastal barriers to sea-level rise along the Texas Gulf Coast. American Geophysical Union, Fall Meeting, New Orleans, LA.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, C. Tenebruso, J.L. Shawler, C.J. Hein. Coupled modeling and field approach to explore patterns of barrier ridge and swale development. American Geophysical Union, Fall Meeting, New Orleans, LA.

S. Jardine, **J. Lorenzo-Trueba**, 2017. Optimal marsh restoration in barrier-backbarrier systems; Ecological Society of America, Portland, Oregon.

R. Palermo, A.D. Ashton, **J. Lorenzo-Trueba**, 2017. Coupling coastal processes and human interactions within a littoral cell; Community Surface Dynamics Modeling System (CSDMS), Annual meeting, Boulder, Colorado.

A.D. Ashton, A. Ortiz, **J. Lorenzo-Trueba**, E. Goldstein, 2017. Modeling Reef Island Profile Morphodynamics; Community Surface Dynamics Modeling System (CSDMS), Annual meeting, Boulder, Colorado.

J. Lorenzo-Trueba, J. Kolodin*, A. Janoff*, P. Hoagland, D. Jin, A.D. Ashton, 2017. Using coupled geo-economic models to explore the interplay between coastal protection, natural processes, and economic values along developed shorelines; Community Surface Dynamics Modeling System (CSDMS), Annual meeting, Boulder, Colorado.

A. Janoff*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, A. D. Ashton, 2017. A Geo-economic Model to Explore Hard Structure Impacts on Coastal Evolution and Management; Association of American Geographers (AAG). Boston, Massachusetts.

J. Kolodin*, **J. Lorenzo-Trueba**, P. Hoagland, D. Jin, 2017. The Relationship between Dune Morphodynamics and Economic Values along the New Jersey Shoreline; Association of American Geographers (AAG). Boston, Massachusetts.

K. Moran, J. Nittrouer, M. Perillo, **J. Lorenzo-Trueba**, J. Anderson, 2017. Linking grain size and sedimentary structure to autogenic and allogenic processes associated with Holocene valley infill and evolution, Brazos River, TX; American Association of Petroleum Geologists (AAPG).

J. L. Shawler, J. L. Raff, D. Ciarletta*, **J. Lorenzo-Trueba**, C. Hein, 2017. Holocene backbarrier development in response to sea-level rise, antecedent topography, and barrier geomorphic change: Parramore and Cedar islands, Virginia's Eastern Shore. Geological Society of America, Southeastern section, Richmond, Virginia, USA.

J. Lorenzo-Trueba and G. Mariotti, 2016. Exploring the effect of backbarrier dynamics on barrier island response to sea-level rise, American Geophysical Union Fall Meeting.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, A.D. Ashton, 2016, Using a Morphodynamic Model to Explore the Key Controls on the Geometry and Spacing of Ancient Barrier Deposits on the Continental Shelf, American Geophysical Union Fall Meeting.

J.L. Miselis and **J. Lorenzo-Trueba**, 2016, Barrier island response modes interpreted from geomorphological and storm-response observations coupled with a morphodynamic model, American Geophysical Union Fall Meeting.

A.D. Ashton, A. Ortiz, and **J. Lorenzo-Trueba**, 2016, Modeling Reef Island Morphodynamics in Profile and Plan View, American Geophysical Union Fall Meeting.

K. Anarde, S. Kameshwar, J.N. Irza, **J. Lorenzo-Trueba**, J. Nittrouer, J. Padgett, P. Bedient, 2016, Extreme storms, sea level rise, and coastal change: implications for infrastructure reliability in the Gulf of Mexico, American Geophysical Union Fall Meeting.

A.D. Ashton, A.Ortiz, **J. Lorenzo-Trueba,** and Jeff Donnelly, 2016, Modeling Motu: Using hydrodynamic modeling to parameterize morphodynamic interactions between reef flats and reef islands, Ocean Sciences, New Orleans, USA.

J. Lorenzo-Trueba and G. Mariotti, 2015, Chasing boundaries and cascade effects in a coupled barrier – marshes – lagoon system, American Geophysical Union Fall Meeting.

A. Ashton and **J. Lorenzo-Trueba**, 2015. Complex responses of barriers to sea-level rise emerging from a model of alongshored-coupled dynamic profile evolution. Coastal Sediments 2015, San Diego, USA. doi: 10.1142/9789814689977_0003

J. Lorenzo-Trueba and G. Mariotti, 2015. Chasing boundaries and cascade effects in a coupled barrier-marsh lagoon system. Coastal Sediments 2015, San Diego, USA. doi: 10.1142/9789814689977_0010

A.D. Ashton, A. Ortiz, **J. Lorenzo-Trueba,** and J. Donnelly, 2015, Modeling Motu: Using hydrodynamic modeling to parameterize morphodynamic interactions between reef flats and reef islands American Geophysical Union Fall Meeting.

D.J. Ciarletta*, **J. Lorenzo-Trueba**, and S. Passchier, 2015. Estimating sediment transport in the lower shoreface, Mantolonking, New Jersey. Geological Society of America, Annual meeting, Baltimore, USA.

C.I. Odezulu, J.B. Anderson, **J. Lorenzo-Trueba**, and D.J. Wallace, 2015. Follets Island: A case study of a dying barrier island. AAPG, Annual meeting, Houston, Texas.

J. Lorenzo-Trueba, D. Jin, P. Hoagland, and A.D. Ashton, 2015. The role of shoreface dynamics on beach nourishment decisions: Insights from a simple model. Geological Society of America, Annual meeting, Baltimore, USA.

J.B. Anderson, **J. Lorenzo-Trueba**, D.J. Wallace, and C.I. Odezulu, 2015. Variable responses of Texas coast to sea-level rise. Geological Society of America, Annual meeting, Baltimore, USA.

C.I. Odezulu, **J. Lorenzo-Trueba**, D.J. Wallace, and J.B. Anderson, 2015. Stratigraphic and sedimentological evidence for unprecedented shoreline migration rate during historic time: Follets Island, Texas. Geological Society of America, Annual meeting, Baltimore, USA.

K. Moran, J. Nittrouer, **J. Lorenzo-Trueba**, J. Anderson, 2014. Linking grain size and sedimentary structure to autogenic and allogenic processes associated with Holocene valley infill and evolution, Brazos River, TX. American Geophysical Union Fall Meeting.

S. Huff, J. Nittrouer, **J. Lorenzo-Trueba**, 2014. The influence of large woody debris on the geometry of the subaerial Brazos river delta, as demonstrated through field observations and a first order coastal model. Geological Society of America, Annual meeting, Vancouver, Canada.