

Julia Cisneros

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RESEARCH INTEREST:

My research seeks to identify the key mechanisms driving bedform formation and evolution across different environments. This is driven by my curiosity in how surface processes shape bedforms and how this can be used to excavate clues about the formative conditions of inaccessible and ancient environments.

EDUCATION:

Ph.D., Geology, University of Illinois Urbana-Champaign, Champaign, IL
Dissertation: *The morphology of alluvial sand dunes* May 2021
Ph.D. advisor: Dr. Jim Best

B.S., Geology (minor GIS), Magna Cum Laude, Texas A&M University, College Station, TX
Undergraduate Thesis: *Morphologic and computational fluid dynamic analysis of sand dune-topographic obstacle interactions on Earth and Titan.* May 2015
Advisor: Dr. Ryan Ewing

APPOINTMENTS:

Postdoctoral Fellow, Texas A&M University, UT Austin, Texas Tech Uni. June 2021-2023

Graduate Research Fellow, University of Illinois Urbana-Champaign August 2015-May 2021

Visiting Researcher, Utrecht and Delft, Netherlands, July-August 2018

Visiting Researcher, Cornell University, Ithaca, NY July 2014

PUBLICATIONS:

Published:

Ali, H., Sheffield, S. L., Bauer, J. E., Caballero-Gill, R. P., Gasparini, N. M., Libarkin, J., Gonzales, K. K., Willenbring, J., Amir-Lin, E., **Cisneros, J.**, Desai, D., Erwin, M., Gallant, E., Jeannelle Gomez, K., Keisling, B. A., Mahon, R., Marín-Spiotta, R., Welcome, L., Schneider, B. (2021), An actionable antiracism plan for geoscience organizations. *Nature Communications*.

Guhlincozzi, A. R, **Cisneros, J.** (2021), A framework for addressing the lack of diversity in the Geosciences through evaluating the current structure of institutional efforts. *GeoJournal*.

Cisneros, J. et al., (2020), Dunes in the World's big rivers are characterized by low-angle leeside slopes and a complex shape, *Nature Geoscience*, 13, 156–162.

Best, J., **Cisneros, J.**, Almeida, R., Galeazzi, C., Ianniruberto, M., Ma, H., Unsworth, C., van Dijk, T. (2020), Comment to: Why do large, deep rivers have low-angle dune beds?, *Geology*.

Galeazzi, C., Almeida, R., Mazoca, C., Best, J., Freitas, B., Ianniruberto, M., **Cisneros, J.**, Tamura, L. (2018). The significance of superimposed dunes in the Amazon River: Implications for how large rivers are identified in the rock record. *Sedimentology*, 65(7), 2388-2403.

In review:

Cisneros, J., Guhlincozzi, A. R. (revised and in review), Grappling with barriers in Geosciences from the lens of two Latina Geoscientists. *Journal of Geoscience Education*.

Ma, H., Nittrouer, J.A., Fu, X., Parker, G., Zhang, Y., Wang, Yuanjian, Wang, Yanjun, Lamb, M.P., Best, J.L., Parsons, D.R., Wu, B., **Cisneros, J.**, (accepted). Amplification of downstream flood stage due to damming of fine-grained rivers. *Nature Communications*.

Baar, A., **Cisneros, J.** (revise and resubmit), Influence of grain size-dependent bedform morphology on flow and transverse slope in river bends, *J. Geophys. Res. Earth Surf.*

In prep:

Cisneros, J., Best, J., van Dijk, T., Mosselman, E., Kleinhans, M., (in prep) Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, In preparation for submission to *J. Geophys. Res. Earth Surf.*

Cisneros, J. (in prep) Flow depth and transport stage controls on the development of low angle dunes in shallow laboratory flows, In preparation for submission to *J. Geophys. Res. Earth Surf.*

Lefebvre, A. and **Cisneros, J.** (in prep) The influence of lee side shape on flow over dunes, In preparation for submission to *Geo-marine Letters*

Cisneros, J. (in prep) The Bedform Analysis Method for Bathymetric Information (BAMBI), In preparation for submission to *Journal of Open Source Software*

Peer-reviewed undergraduate research publications:

Guhlin, A., Flores, J., and **Cisneros, J.** (2015), A Crumbling Campus, Explorations: The Texas A&M Undergraduate Journal

Cisneros, J., McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Sand Dunes: the Clue to Titan's Climate, Explorations: The Texas A&M Undergraduate Journal.

CURRENT PROJECTS:

'The Morphodynamics of Giant Dunes in Wind and Water' funded by NSF EAR Postdoctoral Fellowship' in collaboration with Drs Ryan Ewing, Jeff Nittrouer, and David Mohrig

'Geoscience Camps as a Tool for Generating Long-term Institutional Partnerships and Commitment to JEDI in Geosciences' supported by the Departments of Women's and Gender Studies and Geography at University of Missouri in collaboration with Dr. Aída Guhlincozzi

INVITED TALKS:

Presented:

'Dune morphology and dynamics in alluvial channels', Soft Sediment Seminar, Jackson School of Geosciences, UT Austin March 2020

'How do weirdly-shaped dunes both see into the past and predict the future, and why?', Earth Symposium Keynote Presentation, Departments of Environmental Science and Ecology and Geological Sciences, UTSA September 2020

<i>'How do weirdly-shaped dunes inform us about the landscapes of the past, present, and future?'</i> , Department of Geology and Geophysics, Texas A&M University	October 2020
<i>'Looking Forward: How do we encourage young BIPOC and Latinx students to be Geoscientists?'</i> , Geological Society of America Pardee Symposium, The Next Generation of Geoscience Leaders: Strategies for Excellence in Diversity and Inclusion	October 2020
<i>'What controls the shape of dunes in alluvial channels?'</i> , American Geophysical Union Fall Meeting 2020, EP004. Autogenic dynamics of bedrock and sedimentary systems	December 2020
<i>'The shape of dunes in rivers and possible controls on their formation'</i> , Department of Geology, Western Washington University	February 2021
Department of Geoscience, University of Wisconsin-Madison	February 2021
Department of Earth, Atmospheric, and Planetary Sciences, Purdue University	February 2021
<i>'What controls the shape of dunes in alluvial channels?'</i> , Department of Geography, Durham University	May 2021
<i>'The shape of dunes in rivers and possible controls on their formation'</i> , University of Engineering and Technology, Peru	August 2021
<i>'The Morphology of Alluvial Sand Dunes'</i> , Department of Geography, UW Madison	October 2021
Marine, Earth & Atmospheric Sciences, North Carolina State University	November 2021
Department of Earth and Environmental Sciences, Tulane University	November 2021
Department of Geosciences, Texas Tech University	November 2021
Department of Earth and Space Sciences, University of Washington	November 2021
Department of Geology and Environmental Science, University of Pittsburgh	January 2022

HONORS:

University of Illinois Urbana-Champaign:

AGU 2020 Presidential Citation (Call for a Robust Anti-Racist Action Plan)	December 2020
Young Researcher Spotlight - AGU EPSP (nominated award)	July 2019
Award for Best Presentation at the Marine and River Dune Dynamics Conf.	April 2019
Academic Excellence through Office of Diversity, Equity & Inclusion	March 2018
Ranked as Outstanding (top 10%) TA by students	May 2017
Campus Insights student representative for Board of Trustees dinner	April 2017
Graduate College Distinguished Fellow	August 2015 to August 2017
Academic Excellence through Office of Diversity, Equity & Inclusion	March 2017
ASPIRE Graduate Student Panelist for students underrepresented in academia	August 2016
Co-Chair at Marine and River Dune Dynamics Workshop	April 2016

Texas A&M University:

College of Geosciences Distinguished Student Award	May 2015
Geology and Geophysics Outstanding Senior Award for Academic Excellence	May 2015
Keynote Speaker at Geology and Geophysics Scholarship Dinner Banquet	May 2015
2nd Place Best Paper Award for Undergraduate Research Scholar Thesis	May 2015
1st Place Geology and Geophysics Department Research Symposium Oral	April 2015
1st Place Geology and Geophysics Department Research Symposium Poster	April 2014

FELLOWSHIPS, GRANTS, AND SCHOLARSHIPS:

NSF EAR Postdoctoral Fellowship (\$174,000)	June 2021-2023
NSF Graduate Research Fellowship (\$138,000)	August 2017 to August 2020
Harriet Wallace Geology Graduate Student Service Award (\$750)	April 2020
Marine and River Dune Dynamics International Travel Student Award (€500)	April 2019
NSF Graduate Research Opportunities Worldwide (\$5,000 + €4,500)	June 2018
Outstanding Women Geology Graduate Student (\$2,000)	April 2018
UIUC Graduate College Distinguished Fellowship (\$75,000)	August 2015 to August 2017
GSA Graduate Research Grant (\$1,550)	March 2017
International Association of Sedimentologists Research Grant (€1,000)	July 2016
Marine and River Dune Dynamics International Travel Student Award (€500)	April 2016
ExxonMobil Field Camp Scholar Award (\$2,000)	May 2014
Will Rogers Memorial Scholarship	August 2014 to May 2015
Murry D Page Endowed Scholarship	August 2014 to May 2015
B P Loughnane Scholarship Fund	August 2013 to May 2015
Michael K Endowed Scholarship	August 2012 to May 2013
Geosciences Department Scholarship	August 2011 to May 2015
Texas Top 10% Award (\$8,000)	August 2011 to May 2015
Devon Energy Corporation Foundation Excellence Award	August 2011 to May 2015

CONFERENCE PRESENTATIONS:

Cisneros, J., Ewing R., Mohrig, D., Nittrouer, J. (2021), Preliminary assessment of giant dune morphology in fluvial and aeolian environments, submitted, American Geophysical Union Fall Conference, New Orleans, LA, Dec.

Cisneros, J., Best, J. L., Garcia, M. H. (2019), The Formation of Dunes under Unidirectional Flows in Coarse Silts and Fine Sands, accepted, American Geophysical Union Fall Conference, San Francisco, CA, Dec.

Cisneros, J., Guhlincozzi, A. R. (2019), Geoscience Camp! Methods for Introducing Geosciences to Middle School Girls, poster presentation, American Geophysical Union Fall Conference, San Francisco, CA, Dec.

Guhlincozzi, A. R., **Cisneros, J.** (2019), Geoscience Camp! Methods for Introducing Geosciences to Middle School Girls, oral presentation, Latinx Excellence in the Midwest Conference, Iowa City, IA, Oct.

Cisneros, J., Best, J. L, van Dijk, T., Mosselman, E. (2019), Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, oral presentation, Marine and River Dune Dynamics Conference VI, Bremen, Germany, Apr.

Cisneros, J., Best, J. L, van Dijk, T., Mosselman, E. (2018), Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, oral presentation, American Geophysical Union, Washington DC, Dec.

Cisneros, J., Best, J. L. (2018), Quantifying the morphology of dunes in big rivers, oral PICO presentation, European Geophysical Union, Vienna, Austria, Apr.

Cisneros, J., Best, J. L. (2017), Quantifying the morphology of dunes in big rivers using automated bedform analysis, oral presentation, 11th International Conference on Fluvial Sedimentology, Calgary, Alberta, Canada, Jul.

Cisneros, J., Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, American Geophysical Union Fall Meeting, San Francisco, CA, Dec.

Cisneros, J., Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, Marine and River Dune Dynamics Conference V, Bangor, Wales, United Kingdom, Apr.

Cisneros, J., Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, North Central GSA, Champaign, IL, Apr.

Cisneros, J., McDonald, G. D., Hayes Jr., A. G., Smyth, T. and Ewing, R. C. (2015), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, oral presentation, Department of Geology and Geophysics Symposium, Texas A&M University, College Station, TX, Apr.

Cisneros, J., McDonald, G. D., Hayes Jr., A. G., Smyth, T. and Ewing, R. C. (2015), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, Abstract 45756 oral presentation, Lunar and Planetary Science Conference, Houston, TX, Mar.

Cisneros, J., McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, Abstract 18472 presented at 2014 Fall Meeting, AGU, San Francisco, CA, Dec.

Cisneros, J., McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Sand Dunes: the Clue to Titan's Climate, poster presentation, Department of Geology and Geophysics Symposium, Texas A&M University, College Station, TX, Apr.

Cisneros, J., Rivers, C., Skrla, B., Ortiz, M., Moore, C., Price, A. E., and Johnson II, H. (2013), Gaining International Experience through a Bi-National Mapping Team Approach between Texas A&M University and the University of Costa Rica: The Student Perspective, Abstract 125-16 presented at 2013 Fall Meeting, GSA, Denver, CO, Oct.

TEACHING:

Teaching Assistant, University of Illinois Urbana Champaign **January-May 2017**
Taught the laboratory section of the upper-level undergraduate course Sedimentology and Stratigraphy.

Teaching Assistant, Dept of Geology, Texas A&M University **May-June 2015**
Taught the 6-week field methods camp for upper-level undergraduates.

FIELD EXPERIENCE:

Field Researcher, Amazon River, Manaus and Tefé, Brazil **June 2016 & November 2017**
Conducted two-week river field surveys by deploying acoustic Doppler current velocimeter (ADCP) and multibeam echosounder (MBES) systems and conducting sedimentological investigation of riverbanks on the Amazon River during the wet and dry season.

Field Researcher, Huang He (Yellow) River, Huayuankou, China **July 2016**
Conducted a two-week river field survey deploying parametric echosounder (PES) and MBES on the Huang He River during the wet season.

SERVICE, OUTREACH AND PUBLIC ENGAGEMENT:

Panelist, AGU Townhall **December 2021**
Invited panelist at the AGU Fall meeting Hydrology Townhall event 'Finding Your Place for Change: How and Where to Take an Active Role in DEI Initiatives as Early-Career Researchers and Students'

Panelist, AGU Earth and Planetary Surface Processes **April 2021**
Invited panelist at the AGU EPSP Connects event 'Building a supportive research community'

Panelist, Geological Society of America Pardee Symposium, **October 2020**
Invited speaker and panelist at the GSA Pardee Symposia 'The Next Generation of Geoscience Leaders: Strategies for Excellence in Diversity and Inclusion'

Writer and Signatory, Geoscience AntiRacism Petition @ Change.org, **June 2020**
Contributed writing actions on the petition, '[Call for a Robust Anti-Racism Plan for The Geosciences](http://tiny.cc/4w2crz)' (<http://tiny.cc/4w2crz>), which was led by Dr. Hendratta Ali and has garnered more than 20,000 signatures as of July 2020. This petition has created discourse and opportunities for Geoscience societies, institutions, and research labs to engage in antiracism literature, ideas, and take antiracist action.

Curator and Contributor, GeosciencesLearners and GeoReadingForEquity **June 2020**
Curated, organized, and offered literature regarding diversity, equity, and inclusion research in the Geosciences. This resource was offered online via my initiative GeoscienceLearners resulting in over 25,000 impressions and 300 link clicks of the organized database (<https://tinyurl.com/yafwro3h>). In addition, these resources were then compiled with other resources following my original organizational scheme, and launched on the website, <https://www.georeadingforequity.com>

Mentor, CU One-to-One Program, Champaign, IL **August 2015 – Present**
Mentor a young, middle-school aged girl once a week during the school year through the CU One-

to-One mentoring program.

Hydro-Geo Discussion Group Leader, UIUC

August 2017 – May 2020

Lead a weekly discussion group between Geology, Geography, and Hydrosystems departments. This discussion group is meant to foster real collaboration and academic/personal relationships among those working on fluvial related topics on campus, by having a regular, student-driven discussion group. Duties include moderating discussion, confirming dates and speakers, and sending weekly reminders.

Created, organized and led the Geoscience Camp for Girls

August 2019

Developed the first ever Geoscience Camp for Girls, recruited 30 girls to attend camp, and c. 70 girls to take an IRB approved survey focused on young girl's interest and knowledge levels of Geoscience in order to increase diversity and inclusion in Geoscience at the School of Earth, Society and Environment at the University of Illinois at Urbana Champaign (see story below).

LAS News (2019) 'Getting more girls into geoscience - Students organize unique summer camp for middle schoolers', news article, University of Illinois College of Liberal Arts and Sciences, (<https://las.illinois.edu/news/2019-08-16/getting-more-girls-geoscience>), Aug.

Science exhibitor, Engineering Open House, UIUC

March 2017, 2018, and 2019

Created the 'Journey through the Amazon' exhibit to share my research about the Amazon River with young kids and non-science adults.

Peer mentor, Sloan UCEM, UIUC

August 2017 - May 2018

Peer mentor to an incoming graduate student through the Sloan University Center of Exemplary Mentoring (UCEM) at Illinois. Met with mentee twice a semester to check in and offer advice or resources. Attended workshops, presentations, and mini-conferences related to diversity and inclusion, professional development, and effectively mentoring.

Invited speaker, Campus Insights, UIUC

April 2017

I was the *first ever* student invited to share my research via Pecha Kucha style presentation to the President, the Chancellor, and the Board of Trustees of the University of Illinois at the annual Campus Insights event. This event is meant share the learning, research, public engagement and social activities on campus. YouTube link: <https://www.youtube.com/watch?v=q3MUCgaogBs>

Science communicator, UIUC

November 2017

Wrote a blog (link below) and did a 'snapchat takeover' about my field work in the Amazon River to share with students and alumni at the University of Illinois Urbana Champaign.

LAS News (2017) 'Journey to the riverbank and back in time', news article, University of Illinois College of Liberal Arts and Sciences' (<https://las.illinois.edu/news/blog/2017-02-20/journey-riverbank-and-back-time>), Feb.

Campus infrastructure consultant, Texas A&M University

July 2015

Conducted a GPS survey and GIS analysis of areas of disrepair on campus as an undergraduate class project and published in a peer-reviewed undergraduate research journal. Subsequently, this garnered interest of the university's third-party contractor of campus infrastructure who asked to meet about our methods and offered funding to the Geography Society to continue our methods to produce a campus-wide map.