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RESEARCH INTERESTS

I quantify feedbacks between tectonics, paleoclimate, fluid flow, and the deformation of granular media deposited within marine, lacustrine, and coastal environments. To conduct this research, I examine granular media using seismic reflection and refraction profiles, sediment cores, aerial imagery, trenches, and x-ray microtomography. I integrate these data with numerical, experimental, and theoretical rock physics, fluid flow, and heat flow models to study tectonics, paleoseismicity, and earthquake-triggered geohazards.

EDUCATION

2013 – 2019	Southern Methodist University, Dallas, TX Ph.D. in Geophysics Advisor: Professor Matthew Hornbach Dissertation: Assessing Quaternary Geohazards in Hispaniola and Jamaica
2008 – 2012	Calvin College, Grand Rapids, MI BSc. in Geology and Business Advisor: Professor Ralph Stearley Thesis: Sand Transport Rate Modelling at Lake Michigan Coastal Dunes

APPOINTMENTS

2020 –	Postdoctoral Investigator, Woods Hole Oceanographic Institution Supervisor: Dr. Juan Pablo Canales Focus: Feedbacks between Incipient Rifting and Climate Modulated Sedimentation
2020 –	Visiting Postdoctoral Scholar, University of California at Berkeley Supervisor: Dr. Michael Manga
2019	Visiting Researcher, The University of Texas at Austin Sponsors: Drs. Peter Clift and Daniel Stockli
2019 – 2020	Postdoctoral Researcher, Louisiana State University Supervisor: Dr. Peter Clift Focus: Continental Erosion in Response to Tectonism and Paleomonsoon History
2013 – 2019	Research Assistant, Southern Methodist University
2013	Hydrogeology Intern, Tesvc Environmental
2011 – 2012	Undergraduate Geology Student Researcher, Calvin College
2011 – 2012	Research Mentor for the First-Year Research Course, Calvin College
2011 – 2012	College Resident Assistant (RA), Calvin College
2009 – 2010	Seismic Lab Student Technician, Calvin College

PUBLICATIONS

Manuscripts in preparation:

Wright V., Hornbach M., and Papadopoulos I., (*in prep*). Time as a factor in Earthquake-Induced Liquefaction Events in Kingston, Jamaica. For Journal of Geophysical Research: Solid Earth.

Wright V., and Clift P., (*in prep*). Controls on continental erosions. For Earth-Science Reviews.

Wright V., and Canales J.P., (*in prep*). Seismic Stratigraphy of the Okavango Rift Zone. For Journal of Geophysical Research: Solid Earth

Wright V., and Kotowski A., (*in prep*). Evolution of Minoritized Students' Engagement, Interest, and Perception of Geoscience During Challenge-Based Courses. For GSA: Groundworks.

Manuscript(s) in Submission/Revision:

Wright V., Ferrick A., and Manga M., (submitted, preprinted at EarthArxiv). Coordination Numbers in Natural Beach Sand. EPJ Web of Conferences. <https://eartharxiv.org/repository/view/1857/>

Wright V., and Hornbach M., (submitted, preprinted at EarthArxiv). The Effect of 180 Years of Aging on the Physical and Seismic Properties of Partially Saturated Sands. Journal of Geophysical Research: Solid Earth. <https://eartharxiv.org/repository/view/1814/>

Wright V., and Hornbach M., (submitted, preprinted at EarthArxiv). On the use of rock physics models for studying the critical zone. Journal of Geophysical Research: Solid Earth. <https://doi.org/10.31223/X5RP51>

Peer-Reviewed Journal Articles:

Wright V., Hornbach M., Brown L., McHugh C., and Mitchell S., (2019). Neotectonics of Southeast Jamaica derived from Marine Geophysical Surveys and Gravity Cores, Tectonics, 38(11), 4010-4026

Park J., Che I., Stump B., Hayward C., Dannemann F., Jeong S., Kwong K., McComas S., Oldham H., Scales M., and **Wright V.**, (2018). Characteristics of Infrasound Signals from North Korean Underground Nuclear Explosions on January 6 and September 9 2016, Geophysical Journal International, 214(3), 1865-1885.

Wright V., Hornbach M., McHugh C., and Mann P., (2015). Factors Contributing to the 2005-present Rapid Rise in Lake Levels, Dominican Republic and Haiti (Hispaniola). Natural Resources, 6, 465-481.

Peer-Reviewed Conference Paper(s):

McDonald R., **Wright V.**, Hornbach M., Carris G., Flynn C., Frone Z., Fontana J., Giddens E., Klauser A., Mattingly B., Mauroner C., Phrampus B., Brown L., Mann P., and McHugh C., (2013). New insights into geohazard risks in Jamaica, Haiti, and the Dominican Republic: A compendium of recent Geoscientists without Borders results, 2013 Fall Meeting, SEG Technical Program Expanded Abstracts 2013: pp. 1234-1238, Houston, Texas, 22-27 Sept.

Dissertation and Theses:

Wright V., (2019). Assessing Quaternary Geohazards in Hispaniola and Jamaica Using Seismic, Sediment Coring, and Remote Sensing Data. Dissertation

INVITED TALKS

11/2020	University of Minnesota at Duluth, Department Seminar
09/2020	University of Wisconsin Madison, Department Seminar
07/2020	Woods Hole Oceanographic Institution, Partnership Education Program Talk
05/2020	Scripps Institution of Oceanography, Department Seminar
04/2020	University of California at Santa Cruz, Department Seminar
03/2020	San Francisco State University, Department Seminar
02/2020	California Institute of Technology, Seismo Lab Seminar
02/2020	University of California at Berkeley, Berkeley Seismological Lab Seminar
02/2020	Louisiana State University, Department Seminar
10/2019	University of Texas Institute for Geophysics, Postdoc Preview Seminar
09/2018	Woods Hole Oceanographic Institution, Department Seminar
03/2016	COCONet Community Workshop, Plenary Talk
04/2015	Calvin College, Department Seminar

CONFERENCE PRESENTATIONS

Tectonics, Geohazards, and Paleoclimate Research:

Wright V., Clift P., and Altouqi A., (2019). Spatiotemporal Changes to Tectonism and Paleo-Monsoon Histories within the South China Sea derived from a Sea-wide Geoacoustic Map. 2019 Fall Meeting, American Geophysical Union (AGU), San Francisco, California, 9-13 Dec.

Wright V., Hornbach M., McHugh C., and Brown L., (2017). Fault Reactivation and Ground Shaking in the Kingston Metropolitan Area, CARIUSA Meeting, Kingston, Jamaica, March 13-15.

Wright V., Hornbach M., McHugh C., Asilis Y., and Montes M., (2013). Lake Enriquillo Water Level History and Its Implications for Future Flooding in Southwestern Dominican Republic, 2013 Fall Meeting, American Geophysical Union (AGU), San Francisco, California, 9-13 Dec.

Rios J., McHugh C., Hornbach M., Mann P., **Wright V.**, and Gurung D., (2013). Holocene Activity of the Enriquillo-Plantain Garden Fault in Lake Enriquillo Derived from Seismic Stratigraphy, 2013 Fall Meeting, American Geophysical Union (AGU), San Francisco, California, 9-13 Dec.

Wright V., and van Dijk D., (2012). Can the Use of Hsu's Model for Sand Transport Rates Help Scientist Understand Lake Michigan Coastal Dunes?, 2012 Spring Meeting, Michigan Academy of Science, Arts and Letters, Alma, Michigan, 02 Mar.

Diversity and STEM Education Research: (multiple first authors)*

Kotowski A*., and **Wright V***., (2020). Mirroring minoritized students' cultures in the classroom and field can improve Geoscience diversit. 2020 Summer Meeting, Earth Educators' Rendezvous, Virtual, 13-17 Jul.

Wright V., Kotowski A., Ellins K., Gonzalez E., Hsia S., and Thomas D., (2019). The Evolution of Student Engagement, Interest and Perception of Geoscience During Challenge-Based Courses: Insights from the GeoFORCE Texas Program. 2019 Fall Meeting, American Geophysical Union (AGU), San Francisco, CA, 9-13 Dec.

Kotowski A., **Wright V.**, Soltis N., Ramos E., and Thomas D., (2019). Assessing the impact of a challenge-based, Collectivist approach to learning on minority student engagement in the Geosciences. 2019 Fall Meeting, American Geophysical Union (AGU), San Francisco, CA, 9-13 Dec.

Kotowski A*, **Wright V***, Soltis N., and Ellins K., (2018). Engaging high school students from underrepresented minorities in the geosciences through graduate student-led, challenge-based learning. 2018 Fall Meeting, American Geophysical Union (AGU), Washington DC, 10-14 Dec.

Ellins K., Thomas D., Campos D., George S., Goldfarb E., Kotowski A., McCall L., Soltis N., Stocks E., and **Wright V.**, (2018). Using the STAR Legacy Cycle to Promote Student-Centered Field Learning in GeoFORCE and STEMFORCE 12th Grade Summer Academies. Geological Society of America Abstracts with Programs, v. 50, no.6.

Thomas D., Ellins K., Campos D., George S., Goldfarb E., Kim W., Kotowski A., McCall L., and **Wright V.**, (2018). Student Exploration of Geoscience Careers Through Challenge-Based Field Learning in GeoFORCE and STEMFORCE 12th Grade Summer Academies. Geological Society of America Abstracts with Programs, v. 50, no.6.

Berry M., **Wright V.**, Ellins K., Browder M., Castillo R., Kotowski A., Libarkin J., Lu J., Maredia N., and Butler N., (2017). Transitioning from Faculty-Led Lecture to Student-Centered Field Learning Facilitated by Near-Peer Mentors: Preliminary Findings from the GeoFORCE/ STEMFORCE Program. 2017 Fall Meeting, American Geophysical Union (AGU), New Orleans, 11-15 Dec.

Garza E., Ellins K., Hofer M., Monte A., **Wright V.**, Arratia M., Oefinger L., Maye C., Reyes E., Gomez K., and Hibbits M., (2017), A Comparison of two Pedagogical Approaches, Traditional Lecture vs. Project-based, and How Their Approach Affects Student Engagement: Geological Society of America Abstracts with Programs, v. 49, no. 6.

Wright V., and van Dijk D., (2011). Creating a Mentor Program for a First-Year Research in Earth Sciences Course, 2011 Fall Meeting, West Michigan Regional Undergraduate Science Research Conference, Grand Rapids, Michigan, 12 Nov.

Pop-Up Talk(s)

Wright V., and Kwong K., (2018). The After Seminar: A Community Building Effort Inside SMU Earth Science Department. 2018 Fall Meeting, American Geophysical Union (AGU), Washington DC, 10-14 Dec.

HONORS AND AWARDS

2019	Most Outstanding Student in Field Research, SMU Earth Science Department
2013 – 2014	Richards-Goodell Award for Excellence in Graduate Student Teaching
2011 – 2012	Calvin Honors Scholarship for Excellent Academic Performance
2011 – 2012	Michigan Intercollegiate Athletic Association Tennis Academic Honor Roll
2010 – 2012	Van Dellen Award for Excellence in Geology
2008 – 2009	Calvin Honors Scholarship for Excellent Academic Performance
2009 – 2011	Calvin Knollcrest Scholarship for Excellent Academic Performance

GRANTS/FUNDED RESEARCH

- 2020 – 2021 Supplement to Collaborative Research: Interactions Between Incipient Continental Rifting, Fluvial Systems, and Regional Climate in Southern Africa: The Okavango-Makgadikgadi Complex, Botswana for Creating Geoscience-wide journal club meant to improve justice, diversity, equity, and inclusion, *supported by the National Science Foundation*, *role*: Main writer and contributor [advisor's grant], \$37041
- 2019 – 2021 Earthquake shaking effects on unconsolidated sediments, *supported by the Advanced Light Synchrotron* for two years of beam time, *role*: Principal Investigator
- 2018 The effects of aging on the physical properties of sediments, *supported by Southern Methodist University's Institute for Earth Science and Man Grant* for software purchase, *role*: Principal Investigator, \$800
- 2017 – 2019 Modifying the STAR Legacy Cycle to improve diversity and retention of high students in Geosciences, *supported by GeoFORCE Texas Program*, *role*: Principal Investigator, \$9000
- 2014 – 2016 Assessing geohazards near Kingston Jamaica: Earthquakes, Tsunamis, and Slope Failures, *supported by NSF COCONet Graduate Research Fellowship*, *role*: Principal Investigator, \$20000

ONGOING COLLABORATIONS

- 2019 – Present Nick Sitar, Professor at University of California at Berkeley
Project: Earthquake Shaking Effects on Granular Media
- 2018 – Present Illias Papadopoulos, Professor at University of the West Indies Trinidad
Project: Shear Wave Velocity Mapping of the Palisadoes Complex Spit, Jamaica
- 2018 – Present Leonardo Seeber, Research Scientist at Lamont Doherty Earth Observatory
Project: Hypsometric Analyses of the Brahmaputra Delta
- 2017 – Present Kathy Ellins, Research Scientist at University at Texas Institute for Geophysics
Project: Inquiry-Based Approaches for Improving Retention Rates of Minorities

SELECTED FIELD EXPERIENCES

Seismic Imaging of the Okavango Rift Zone in Botswana, Role: Research Assistant (October 2019)

- Collected seismic reflection profiles using the HMS-620 Bubble Gun System
- Performed brief, in field, interpretation of the collected seismic reflection profiles

Sediment Analysis of Beach Sands in Jamaica, Role: Principal Investigator (February 2018)

- Dug 4 trenches along a transect of Port Royal beach, Jamaica
- Collected and quantified sediment physical properties within trenches
- Surveyed the elevation profile of the beach

Near Surface Imaging of Beach Sands in Jamaica, Role: Principal Investigator (March 2017)

- Estimated Vp and Vs using travel time and surface wave tomography

Paleoseismic Analysis of Hebgen Lake in Montana, Role: Research Assistant (June 2015)

- Collected and interpreted chirp seismic-reflection and air gun data
- Numerically model fault scarp evolution and heat flow

Heat Flow Analysis in Jamaica, Role: Principal Investigator (December 2014)

- Logged over 20 wells to a max depth of 225 meters below the surface
- Modeled heat flow and advection across Jamaica

Flooding Analysis of Lake Enriquillo in the Dominican Republic, Role: Research Assistant (May 2013)

- Collected and interpreted chirp seismic reflection data
- Collected gravity cores for climate and age-dating analyses

WORKSHOPS ATTENDED

2019	The Dissemination of Undergraduate Research Initiatives that Support Diversity and Inclusion in the Geosciences, City University of New York
2018	High-Resolution X-ray CT of Geologic Samples, University of Texas at Austin
2016	Caribbean GPS Network Community Workshop, Dominican Republic

COMPUTER/TECHNICAL SKILLS

Programming and Numerical Modeling

- MatLab
- Visual Basic
- Unix Terminal Systems
- Python
- Julia

Seismic Processing and Interpretation

- SeisSpace ProMax
- Kingdom 8.8-2019
- OpendTect
- PostSurvey
- Geopsy
- SeisImager

Remote Sensing

- ArcGIS
- ArcView
- ArcGIS extensions (ArcHydro, ArcSwat)
- Trimble GPS Handheld Units
- QGIS

Lab Tools

- Divided Bar Thermal Conductivity Apparatus
- X-ray Diffraction
- X-ray Fluorescence
- X-ray Microtomography

Illustrations and Image Processing

- Adobe Illustrator
- Adobe Photoshop
- Image J
- GIMP
- SPAM

3D Visualization and Quantification

- Blob3D
- Quant 3D
- Aviso
- ArcScene

TEACHING AND MENTORSHIP

Main Instructor

- Introduction to Sedimentation and Stratigraphy, Spring 2019
- GeoFORCE High School Geology Instructor, The University of Texas at Austin, 2017-2019
- Geographic Information Systems and Cartography in Earth Sciences (Graduate level), Fall 2015
- Calvin College's Nature Preserve Tour Guide Leader, Calvin College, Spring 2010

Teaching Assistant

- Computer Methods in Earth Science, Southern Methodist University, Spring 2018
- Introduction to Sedimentation and Stratigraphy, Southern Methodist University, Spring 2013, 2014
- Introduction to Mineralogy, Calvin College, Fall 2012
- First-Year Research in Earth Sciences: Dunes, Calvin College, Fall 2011

Undergraduate Students Mentored

- Amy Ferrick, University of California at Berkeley – Analyses of microtomography images
- Sophie Vincent, LSU – Seismic stratigraphy of the Sunda shelf
- Ahmed Altouqi, LSU – Petrophysical properties of the South China Sea
- Alex Santos, SMU (now at Penn State University) – Jamaica heat flow and advection modeling
- Wynne Casteel, SMU (now at Baylor University) – Planning and executing refraction surveys

SERVICE/SYNERGISTIC ACTIVITIES

2019 – Present	Journal Article Reviewer: Geophysical Journal International (1x); Journal of Geophysical Research: Solid Earth (1x); Water (1x); Geochemistry, Geophysics, Geosystems(1x)
2020 – Present	Second Vice Chair, Marine and Coastal Division, Geological Society of America
2020	Racial, health & Environmental Justice in Stem Panel, University of Washington
2020	Woods Hole Oceanographic Institution Seismology Faculty Search Committee
2017 – 2019	Creator and Leader of the SMU's Graduate Student Earth Science Seminar Series
2017 – 2018	Student Representative on SMU's Graduate Research Funding Committee
2013 – 2014	Secretary for SMU Pulse Student Fellowship Group
2008 – 2012	Calvin College Varsity Tennis Team
2009 – 2010	Multicultural Student Association Student Representative
2008 – 2009	International Student Association Committee Caribbean Student Representative

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Geological Society of America (GSA)
 International Association of Sedimentologists (IAS)
 American Geophysical Union (AGU)
 Society of Exploration Geophysicists (SEG)
 Dallas Geological Society Young Professionals (DGS)

LANGUAGES SPOKEN FLUENTLY

English

Spanish

Jamaican Patois