

# Michael O'Connor

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## Education

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- The University of Texas at Austin, Jackson School of Geosciences** Expected May 2019  
Doctor of Philosophy in Geosciences; GPA: 3.65  
Dissertation: Understanding groundwater-facilitated soil carbon export by integrating novel observations and simulations
- The University of Texas at Austin, Jackson School of Geosciences** May 2014  
Masters of Science in Geological Sciences; GPA: 3.52  
Thesis: Shallow groundwater and unsaturated soil dynamics of a delta island in Southeastern Louisiana
- Amherst College, Amherst, MA** May 2012  
Bachelor of Arts *cum Laude* in Geology and Music  
Geology GPA: 3.60; Music GPA: 3.86  
Honors Thesis in Music: Composed, conducted, and produced an original musical, *Royal Blood*, which chronicled the impact of Hemophilia on the last years of the Romanov dynasty

## Publications and Presentations

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Neilson, B.T., Cardenas, M.B., **O'Connor, M.T.**, Rasmussen, M.T., King, T.V., Kling, G.W., **2018**, *Groundwater transport and exchange controls stream chemistry in continuous permafrost terrain*, Geophysical Research Letters, in press

**O'Connor, M.**, Cardenas, M.B., Nicholaides, K.D., Neilson, B.T., Kling, G.W., *Groundwater flow in areas of continuous permafrost: the dynamic effects of stratigraphy, thawing, and micro- and macro-topography*, in review, Water Resources Research

**O'Connor, M.**, Cardenas, M.B., Neilson, B.T., Nicholaides, K.D., Kling, G.W., **2017**, *Groundwater Dynamics and Export from Active Layer Aquifers Overlying Permafrost*, Talk at the American Geophysical Union 2017 Fall Meeting, New Orleans, LA

Nicholaides, K.D., **O'Connor, M.**, Cardenas, M.B., Neilson, B.T., Kling, G.W., **2017**, *The Effects of Different Scales of Topographic Variation on Shallow Groundwater Flow in an Arctic Watershed*, Poster Presentation at the American Geophysical Union 2017 Fall Meeting, New Orleans, LA

**O'Connor, M.**, **2017**, *What is Science Policy?*, Talk at the Jackson School Hydrology Brown Bag Seminar, September 22, 2017

**O'Connor, M.**, Cardenas, M.B., Neilson, B.T., Kaufman, M.H., Kling, G.W., **2016**, *Controls on shallow groundwater flow and its implications on carbon processing in an arctic watershed*, Poster at International Conference on Permafrost, Potsdam, Germany

**O'Connor, M.**, Cardenas, M.B., Neilson, B.T., Kling, G.W., **2015**, *Controls on Arctic groundwater flow and its impacts on carbon processing*, Talk at Geological Society of America Fall Meeting 2015, Baltimore MD

**O'Connor, M.**, Moffett, K., **2015**, *Groundwater dynamics and surface water-groundwater interactions in a prograding delta island, Louisiana, USA*, Journal of Hydrology, Volume 524, Pages 15-29, ISSN 0022-1694

**O'Connor, M.**, Moffett, K., **2013**, *Controls on groundwater dynamics and root zone aeration of a coastal fluvial delta island*, Wax Lake, Louisiana, Poster at American Geophysical Union Fall Meeting 2015

Moffett, K., Smith, B., **O'Connor, M.**, Mohrig, D., **2014**, *Evolution of subaerial coastal fluvial delta island topography into multiple stable states under influence of vegetation and stochastic hydrology*, Talk at American Geophysical Union Fall Meeting 2014

**O'Connor, M.**, **2010**, *Where am I now? A patient's perspective*, Talk at World Federation of Hemophilia International Congress, Buenos Aires, Argentina

## Academic Grants, Scholarships, and Fellowships

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Department of Energy Office of Science Graduate Student Research Scholar, 2018-19. Awarded \$12,000

CUAHSI 'Let's Talk about Water' Grant Recipient, 2018: *An Evening on Texas Water, featuring Yakona with a live score*. Awarded \$4,000

American Geophysical Union Horton Grant Recipient, 2017. Awarded \$10,000

CUASHI Pathfinder Fellow, 2016: *Constraining the relationship between thaw, soil properties, and groundwater flow in an Arctic watershed*. Awarded \$3,410

Soozie Courter Hemophilia Scholarship, 2011-2016. Awarded \$4,000 annually

American Association of Petroleum Geologists Grant-in-Aid Grant, 2016: *Effects of variable thaw on groundwater flow and carbon processing in permafrost environments*. Awarded \$750

Geological Society of America Research Grant Award, 2016: *Effects of variable thaw on groundwater flow and carbon processing in permafrost environments*. Awarded first-tier full funding of \$1,800

Ronald K. DeFord Field Scholarship, 2016: *Effects of variable thaw on groundwater flow and carbon processing in permafrost environments*. Awarded \$2,050

International Conference on Permafrost Travel Grant, 2016. Awarded €310

Geological Society of America Research Grant Award, 2015: *Estimating hydrogeologic properties of the active layer*. Awarded first-tier full funding of \$2,710

Dean's Fellowship, 2015: *Estimating hydrogeologic properties of the active layer*. Awarded \$3,900

Albert W. and Alice M. Weeks Centennial Fellowship for Graduate Study, 2012. Awarded \$36,000

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## Awards and Honors

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Dolores Zahreb Liebmann Fellowship Finalist, 2018 (selected as a top-three applicant across the entire University of Texas Graduate School)

Jackson School of Geosciences Outstanding Teaching Assistant, 2016. Awarded \$750

Geological Society of America Hydrogeology Division Outstanding Grant Proposal, 2015. Awarded \$200

Alexander Sisson Research Grant Award, 2015. Awarded \$500

Sylvia and Irving Lerner Piano Prize, 2012. Awarded \$500

CSCAA All-American Scholar-Athlete, 2009-2012

NCAA Division III All-American and Team Record Holder, 2009-2010

Friends of Amherst College Athletics Award, 2012

Inducted into Cold Spring Harbor High School Seahawk Hall of Fame, 2008

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## Teaching Experience

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Introduction to Physical and Chemical Hydrogeology – Fall 2017 (Teaching Assistant)

Field Methods in Hydrology – Summer 2016, 2017 (Teaching Assistant)

Physical Hydrogeology – Fall 2016 (Teaching Assistant)

Earth, Wind, and Fire (Introduction to Geology for Nonmajors) – Spring 2016 (Teaching Assistant)

Physical Hydrology – Fall 2015 (Teaching Assistant)

Introduction to Geology for Majors – Fall 2014 (Teaching Assistant)

Introduction to Physical and Chemical Hydrogeology – Spring 2014 (Teaching Assistant)

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## Field Experience

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Leader and organizer, Kuparuk Watershed Stratigraphy Study. North Slope, AK. August 2017, 2018

Leader and organizer, Imnavait Creek Groundwater Study. North Slope, AK. June 2015, August 2015, June 2016, August 2016

Teaching Assistant, Field Methods in Hydrogeology. Valles Caldera, NM. May 2016, May 2017

Leader and organizer, Wax Lake Delta Groundwater Study. Wax Lake/Atchafalaya Delta Wildlife Management Area. 8 visits from 2012 – 2014

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## Work Experience

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**Legislative Intern**, *United States House of Representatives Subcommittee on Water, Power, and Oceans, 115<sup>th</sup> Congress, Washington, D.C.* **Jun. – Aug. 2017**

- Worked closely with Committee minority staff (led by Rep. Jared Huffman, D-CA) to help craft legislation devoted to water resource security in the Western United States.
- Created a comprehensive report of water resource strategies to be utilized in the 21<sup>st</sup> Century

**Research Analyst**, *Texas Desal, Austin, TX*

**Jan. 2017 – Present**

- Creating summaries of desalination and ASR regulatory structures throughout Texas and other Western states
- Aiding in the organization of TexasDesal 2017, bringing together academia and industry to focus on the future of desalination in Texas

**Legislative Intern**, *Texas State Senate Committee on Agriculture, Water, and Rural Affairs, 84<sup>th</sup> Legislature, Austin, TX*

**Jan. – Jun. 2015**

- Prepared a series of 9 memos explaining: groundwater, surface water, unsaturated zone science, mathematical modeling, desalination, environmental flows, and conservation, written from the perspective of a policymaker
- Shadowed and prepared agendas for weekly Committee staff briefings and Committee hearings

**Board Member**, *B2B (Pfizer) Consumer Advisory Board*

**Oct. 2012 – Present**

- Advises Pfizer International on productive developments in the treatment and management of Hemophilia

**Teaching Assistant and Lecturer**, *Department of Geological Sciences, The University of Texas at Austin, Austin, TX*

**Jan. 2014 – Present**

- Organized, coordinated, and helped lead all six hydrology-related courses offered within the Department of Geosciences at the undergraduate level
- Organized, constructed, and taught the two largest classes in the department, 'Earth, Wind, and Fire' (GEO 302) and 'Introduction to Geology' (GEO 401), each with over 200 enrolled students.
- Awarded The University of Texas Department of Geoscience 'Outstanding TA Award' as lead TA of 'Earth, Wind, and Fire'.

**Tutor**, *Encompass Tutorial Services*

**Oct. 2013 – May 2016**

- Work with students struggling with learning disabilities in the STEM fields.
- Develop unique time-management strategies designed to help students take control of their own work.

**Head Swim Coach**, *Dripping Springs Tiger Splash, Dripping Springs, TX*

**May 2014 – August 2015**

- Managed and ran a summer swim team of 180 athletes aged 6-15, introduced a new practice and meet schedule, and managed coaching

**Summer Intern, Dawn Homes Realty Investors, New York, NY**

**Summers 2009 - 2010**

- Researched due diligence for potential real estate acquisitions, including reviews of underwriting statements
- Created offering memoranda for potential investors

## **Outreach, Volunteer, and Extracurricular Activities**

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**Producer and Panel Moderator, *Let's Talk About Water: An Evening on Texas Water***

**April 21, 2018**

- Co-wrote a grant to fund a large public outreach event in which we brought together members of the scientific, visual arts, and performance arts communities to highlight the need to protect and understand water in the state of Texas
- Event consisted of a film screening, accompanied by a live-scored orchestra, followed by an expert panel discussion with leaders in the academic and political communities of Texas water. I moderated that panel
- Event was free and open to the public, and attended by over 200 people

**Producer and Panel Moderator, *Climate Change and Policy, featuring Dr. Michael Mann and Joseph Kopser***

**February 16, 2018**

- Organized, created, and moderated a lunchtime discussion with climate scientist Dr. Michael Mann and Democratic Congressional candidate Joseph Kopser (TX-21), in which we discussed the challenges and strategies regarding crafting effective science policy
- Event was free and open to the public, and attended by over 60 people

**Producer, *Science as a Policy Priority***

**January 24, 2018**

- Organized and created an evening event in which we gathered STEM-trained political office-holders and candidates at municipal, state, and federal levels to discuss how effective science policy can be implemented at each distinct level of government
- Event featured former City Councilwoman and Austin Mayoral Candidate Laura Morrison, Texas State Representative Donna Howard, and Congressional Candidate Joseph Kopser, and was moderated by Dr. Michael Weber of the University of Texas Energy Institute
- Event was free and open to the public, and attended by over 100 people

**Organizer, *314 Action Central Texas***

**Jan. 2017 - present**

- Local leader for 314 Action, the largest STEM advocacy organization in the United States
- Organized multiple panels, tabling events, and voter registration drives at the Women's March, March for Science, and other dates focused on increasing voter participation among the STEM community and communication of science to the policy community

**Panelist, *Undergraduate Geological Society***

**Oct. 2017**

- Graduate student panelist in a seminar advising undergraduates pursuing graduate school.

**Member, *Geoscience Advocacy of Texas, Austin, TX***

**Feb. 2017 – present**

- Founding member of an independent advocacy group of student and professional geoscientists dedicated to the implementation of scientifically-based policy within Texas
- Helped organize a public panel event, "The Future of Environmental Policy in Texas", in which experts in Texas policymaking discussed the challenges associated with environmental policy from the government, industry, and academic realms

**Composer, Musical Director, and Pianist, *'Over the Lege', a Satiric Look at the Texas Legislature, The Institution Theater, Austin, TX***

**October 2016**

- Composed original songs to be included in the political comedy variety show 'Over the Lege', the state's only legislative satire show
- Show was featured on local media, sold over 500 seats, garnished the Austin Women's Federation Communication Award, and interviewed figures such as Texas Gubernatorial Candidate Wendy Davis and Texas Democratic Caucus Chair Kirk Watson.

**Guest Lecturer, *The Urban Assembly New York Harbor School, Governor's Island, New York, New York***

**December 2016**

- Presented findings of Masters research on coastal hydrodynamics to 9<sup>th</sup> and 10<sup>th</sup> grade classrooms within the public charter high school

**Graduate K-12 Associate, *Environmental Sciences Institute, The University of Texas at Austin, Austin, TX***

**Aug. 2014 – present**

- Manned interactive stations designed to educate public school students on scientific topics ranging from robotics to climate change

**Guest Lecturer, *Austin Children's Museum, Austin, TX***

**June 2014**

- Organized and ran a series of local field trips for 2<sup>nd</sup> and 3<sup>rd</sup> graders in the Austin Children's Museum Science Camp
- Field trip investigated the importance of streams in urban settings and an introduction to environmental science

**Guest Lecturer, *Canyon Vista Middle School, Round Rock, TX***

**Fall 2013**

- Organized and taught lesson plans and laboratory demos for 160 eighth-grade students across six classes regarding the connectivity between surface water and groundwater and the implications of pollution to such systems

**Student Teacher, *'Reading, Writing, Teaching', Holyoke High School, Holyoke, MA***

**Fall 2011**

- Assisted high school history teacher Mr. Kevin Donohue in his American History class as part of a program partnering local undergraduates with high schoolers in need

**Executive Board Member, *Amherst College Jazz Ensemble, Amherst College, Amherst, MA***

**Sep. 2008 - May 2012**

- Lead pianist, tour coordinator, and webmaster, Amherst College Jazz Ensemble
- Co-founder of inaugural Jazz Executive Board