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EDUCATION

University of Miami, Ph.D. in Applied Marine Physics, May 2014

Dissertation Title: *Observations and Modeling of Microbial Water Quality at Recreational Beaches* Co-advisers: Professors Ad Reniers and Brian Haus

Louisiana State University, Master of Science in Oceanography and Coastal Sciences, August 2009

Thesis Title: *Hydrodynamic Response to Cold Fronts along the Louisiana Coast*
Adviser: Professor Chunyan Li

Nanjing University, Bachelor of Science in Geography, June 2007

Thesis Title: *An Estimate of the Tidal Flat Accretion and Shoreline Progradation in Central Jiangsu Coast, China*
Adviser: Professor Shu Gao

PROFESSIONAL EXPERIENCE

August 2014 – Present: Postdoctoral Investigator, Biology Department, Woods Hole Oceanographic Institution (WHOI), co-advised by Dr. Carin Ashjian and Dr. Rubao Ji.

August 2009 – July 2014: Research and teaching Assistantships, Rosenstiel School of Marine and Atmospheric Science (RSMAS), University of Miami.

August 2007 – June 2009: Research Assistant, Department of Oceanography and Coastal Sciences, Louisiana State University.

RESEARCH INTERESTS

Marine ecosystem dynamics, biological and physical interactions, ecological modeling, individual-based modeling, zooplankton biogeography, pelagic-benthic coupling, high-latitude shelf processes, recreational water quality, oceans and human health.

AWARDS & HONORS

- Travel support from Xiamen University for attending the Fourth Xiamen Symposium on Marine Environmental Sciences (XMAS-IV), 2018.
- Travel supports from the North Pacific Marine Science Organization (PICES) and the International Council for the Exploration of the Sea (ICES) for attending 3rd PICES/ICES Early Career Scientists Conference, 2017
- Graduate Student Scholarship for the Community Surface Dynamics Modeling Systems (CSDMS) Annual Meeting, 2014
- Excellent Graduate of Nanjing University, Nanjing University, 2007
- People's Scholarship Second Prize, Nanjing University, 2006
- Geography Scholarship Second Prize, Nanjing University, 2006
- Excellent Student of Nanjing University, Nanjing University, 2006
- People's Scholarship for Social Work First Prize, Nanjing University, 2005
- Geography Scholarship Second Prize, Nanjing University, 2005
- People's Scholarship Third Prize, Nanjing University, 2004

TEACHING & OTHER EXPERIENCE

- Teaching assistant in Fluid Mechanics, University of Miami, August-December 2010
- Visiting scholar at Deltares, Delft, Netherlands, June 2012
- Mentored undergraduate and graduate students at University of Miami (Matthew Phillips, Rafael Hernandez, Yasiel Hernandez, Allison Donohue, Elizabeth Kelly, Noha Abdel-Mottaleb, Laura Vogel, Yifang Zhang etc.) and WHOI-MIT Joint Program Students (Stephan Elliott, Benjamin Jones, and Justin Suca).

PROFESSIONAL AFFILIATIONS

- American Geophysical Union (AGU)
- Association for the Sciences of Limnology and Oceanography (ASLO)
- American Association for the Advancement of Science (AAAS)

PUBLICATIONS

First-authored Papers:

- **Feng Z.**, R. Ji, C.J. Ashjian, R.G. Campbell, and J. Zhang, 2018. Biogeographic responses of the copepod *Calanus glacialis* to a changing Arctic marine environment, *Global Change Biology*, 24, 159-170.
- **Feng Z.**, R. Ji, R.G. Campbell, C.J. Ashjian, and J. Zhang, 2016b. Early ice retreat and ocean warming may induce copepod biogeographic boundary shifts in the Arctic Ocean, *Journal of*

Geophysical Research-Oceans, 121, 6159-6183. doi: 10.1002/2016JC011784.

- **Feng Z.**, A. Reniers, B.K. Haus, H.M. Solo-Gabriele, and E.A. Kelly, 2016a. Wave energy level and geographic setting correlate with Florida beach water quality, *Marine Pollution Bulletin*, 104, 54-60.
- **Feng Z.**, A. Reniers, B.K. Haus, H.M. Solo-Gabriele, J.D. Wang, and L.E. Fleming, 2015. A predictive model for microbial counts on beaches where intertidal sand is the primary source, *Marine Pollution Bulletin*, 94, 37-47.
- **Feng Z.**, A. Reniers, B.K. Haus, and H.M. Solo-Gabriele, 2013. Modeling sediment-related enterococci loading, transport and inactivation at an embayed non-point source subtropical beach. *Water Resources Research*, 49, 693-712.
- **Feng Z.**, A. Reniers, B.K. Haus, H.M. Solo-Gabriele, L. Fiorentino, M. Olascoaga, and J. MacMahan, 2012. Modeling microbial water quality at a beach impacted by multiple nonpoint sources, *Coastal Engineering Proceedings*, 33, 1-13.
- **Feng Z.**, and C. Li, 2010. Cold-front-induced flushing of the Louisiana bays. *Journal of Marine Systems*, 82, 252-264.
- **Feng Z.**, X. Luo, and S. Gao, 2007. Dynamics in the Core Area of the Yancheng Natural Reserve, Jiangsu Province: A Preliminary Remote Sensing Study. *Marine Science Bulletin*, 26 (6), 68-74 (in Chinese).

Co-authored papers:

- Kvile, K. Ø., C. Ashjian, **Z. Feng**, J. Zhang and R. Ji., 2018. Pushing the limit: resilience of an Arctic copepod on environmental fluctuations, *Global Change Biology*, doi: 10.1111/gcb.14419.
- Kelly E.A., **Z. Feng**, M.L. Gidley, C.D. Sinigalliano, N. Kumar, A.G. Donahue, A. Reniers, and H.M. Solo-Gabriele, 2018. Effect of beach management policies on recreational water quality, *Journal of Environmental Management*, 212, 266-277.
- Donahue A., **Z. Feng**, E. Kelly, A. Reniers, and H.M. Solo-Gabriele, 2017. Significance of beach geomorphology on fecal indicator bacteria levels, *Marine Pollution Bulletin*, 121, 160-167.
- Ji. R., **Z. Feng**, B.J. Jones, C. Thompson, C. Chen, N.R. Record, and J.A., Runge, 2017. Coastal Amplification of Supply and Transport (CAST): a new hypothesis about the persistence of *Calanus finmarchicus* in the Gulf of Maine, *ICES Journal of Marine Science* 74(7), 1865-1874.
- Elliott S.M., C.J. Ashjian, **Z. Feng**, B. Jones, C. Chen, and Y. Zhang, 2017. Physical control on distributions of a key Arctic copepod in the northeast Chukchi Sea, *Deep Sea Research II*, 144, 37-51.
- Phillips, M.C., **Z. Feng**, L.J., Vogel, A.J.H.M. Reniers, B.K. Haus, A.A. Enns, Y. Zhang, D.B. Hernandez, and H.M. Solo-Gabriele, 2014. Microbial release from seeded beach sediments during wave conditions, *Marine Pollution Bulletin*, 79, 114-122.
- Hernandez, R.J., Y. Hernandez, N.H. Jimenez, A.M. Piggot, J.S. Klaus, **Z. Feng**, A. Reniers, and H.M. Solo-Gabriele, 2014. Effect of full-scale beach renovation on fecal indicator levels in shoreline sand and water, *Water Research*, 48, 579-591.
- Fiorentino, L.A., M.J. Olascoaga, A. Reniers, **Z. Feng**, F.J. Beron-Vera, and J.H. MacMahan,

2012. Using Lagrangian coherent structures to understand coastal water quality, *Continental Shelf Research*, 47, 145-149.

- Enns, A.A., L.J. Vogel, A.M. Abdelzaher, H.M. Solo-Gabriele, L.R.W. Plano, M.L. Gidley, M.C. Phillips, J.S. Klaus, A.M. Piggot, **Z. Feng**, A.J.H.M. Reniers, B.K. Haus, S.M. Elmir, Y. Zhang, N.H. Jimenez, N. Abdel-Mottaleb, M.E. Schoor, A. Brown, S.Q. Khan, A.S. Dameron, N.C. Salazar, and L.E. Fleming, 2012. Spatial and temporal variation in indicator microbe sampling is influential in beach management decisions, *Water Research*, 46, 2237-2246.

Pending Manuscripts:

- Feng et al. 2018. Benthic biological hotspots in the Northern Bering and Chukchi continental shelf: spatial distributions and environmental drivers, in preparation for *Progress in Oceanography*.

GRANTS & PROPOSALS

- *Formation and persistence of benthic biological hotspots in the Pacific Arctic*, NSF Polar Programs, 08/01/2016 - 07/31/2019, co-PI, in collaboration with Rubao Ji, Carin Ashjian, Jinlun Zhang, Robert Campbell, and Jackie Grebmeier.

PRESENTATIONS & CONFERENCES

Invited Seminars

- Modeling biogeographical boundary shifts of copepod species in a rapidly changing Arctic, University of Connecticut Department of Marine Sciences Fall Seminar Series, October 26, 2018, Groton, CA.
- Biological and physical interactions in a rapidly changing Arctic, State Key Laboratory of Estuarine and Coastal Science (SKLEC), East China Normal University, April 28, 2018, Shanghai, China.
- Physical and biological coupling in the Arctic marine ecosystem, University of Massachusetts Dartmouth, School for Marine Science & Technology (SMAST) invited seminar, September 6, 2017, New Bedford, MA.
- Life beneath the ice: how tiny ocean “bugs” fuel Arctic Ocean ecosystems, WHOI Science Made Public Lecture Series, August 22, 2017, Woods Hole, MA.
- Copepod biogeography in a changing Arctic Ocean, WHOI Biology Thursday Seminar, Department of Biology, February 23, 2017, Woods Hole, MA.
- Copepod biogeography in a changing Arctic marine environment, Institute of Physical Oceanography Seminar, Ocean College, Zhejiang University, November 15, 2016, Zhoushan, China.
- Copepod biogeography in a changing Arctic marine environment, State Key Laboratory of Estuarine and Coastal Science (SKLEC), East China Normal University, June 26, 2016, Shanghai, China.

- Observations and modeling of microbial water quality at Florida recreational beaches, WHOI Biology Thursday Seminar, Department of Biology, January 15, 2015, Woods Hole, MA.
- Microbial water quality studies: from a case study beach to the entire state of Florida, South China Sea Institute, Chinese Academy of Science, June 16, 2014, Guangzhou, China.
- Microbial water quality studies: from a case study beach to the entire state of Florida, WHOI COFDL (Coastal & Ocean Fluid Dynamics Laboratory) Seminar, Department of Applied Ocean Physics and Engineering, November 8, 2013, Woods Hole, MA.
- Microbial water quality modeling with XBeach, Deltares Lunch Seminar, Deltares, June 21, 2012, Delft, Netherlands.
- Recent progress in beach water quality modeling, Coastal Ocean Science Seminar, School of Geographic and Oceanographic Sciences, Nanjing University, January 6, 2012, Nanjing, China.
- Observations and modeling of microbial water quality at a non-point source subtropical marine beach, Third Institute of Oceanography, State Oceanic Administration, December 25, 2011, Xiamen, China.

Conference Presentations

- Biological Hotspots in the Northern Bering and Chukchi Seas: Spatial Distributions and Environmental Drivers, Ocean Carbon & Biogeochemistry (OCB) Summer Workshop, June 25-28, 2018, Woods Hole, MA, USA (poster).
- Physical and biological coupling processes in the St. Lawrence Island Polynya, northern Bering Sea: observational and modeling synthesis, 2018 Ocean Sciences Meeting, February 11-16, 2018, Portland, OR, USA (oral).
- Pelagic-benthic coupling processes in the St. Lawrence Island Polynya region, northern Bering Sea: modeling and observational synthesis, 6th Forum for Arctic Modeling and Observational Synthesis (FAMOS), October 23-27, 2017, Woods Hole, MA (poster). Co-led a session and panel discussion for Bio-geo-eco systems coordinated experiments.
- Modeling the sympagic-pelagic-benthic coupling processes in the St. Lawrence Island Polynya region, northern Bering Sea, Ocean Carbon & Biogeochemistry (OCB) Summer Workshop 2017, June 26-29, 2017, Woods Hole, MA (poster).
- Modeling the sympagic-pelagic-benthic coupling processes in the St. Lawrence Island Polynya region, northern Bering Sea, 2017 ESSAS Open Science Meeting, June 11-15, 2017, Tromsø, Norway (poster).
- Benthic biological hotspots in the Pacific Arctic Region: distribution and potential drivers, 3rd PICES/ICES Early Career Scientists Conference, May 30-June 2, 2017, Busan, South Korea (oral).
- Contrast two major benthic biological hotspots in the Pacific Arctic Region: St. Lawrence Island Polynya versus Northeast Chukchi Sea, Gordon Research Conference in Polar Marine Science, March 26-31, 2017, Ventura Beach, CA (poster).
- Copepod biogeography in a changing Arctic marine environment: interannual variability and decadal trends. Gordon Research Seminar: Advancing the Physical-Biological Understanding of

Polar Marine Ecosystems Through Innovative Technology, March 25-26, 2017, Ventura Beach, CA (poster). Invited to serve as a session discussion leader.

- Copepod biogeography in a changing Arctic marine environment. 5th Forum for Arctic Modeling and Observational Synthesis (FAMOS) School and Meeting, November 1-4, 2016, Woods Hole, MA (oral).
- The response of the biogeographic distribution of the copepod *Calanus glacialis* to a changing Arctic marine environment, ICES/PICES 6th Zooplankton Production Symposium, May 9-13, 2016, Bergen, Norway (poster).
- The response of the biogeographic distribution of the copepod *Calanus glacialis* to a changing Arctic marine environment, 2016 Ocean Sciences Meeting, February 21-26, 2016, New Orleans, LA, USA (oral).
- Early ice retreat and ocean warming may shift copepod biogeographic boundaries in the Arctic Ocean, 4th FAMOS School and Meeting, November 3-6, 2015, Hyannis, MA, USA (poster).
- Upstream sources that sustain diapausing copepod populations in the Gulf of Maine: an individual-based modeling study, Regional Association for Research on the Gulf of Maine (RARGOM) Annual Science Meeting, October 14, 2015, Portsmouth, NH, USA (poster).
- Early ice retreat may shift biogeographic boundary of *Calanus glacialis* in the Arctic Ocean, Ecosystem Studies of Sub-Arctic Seas (ESSAS) Annual Science Meeting, June 15-17, 2015, Seattle, WA, USA (poster).
- Modeling sediment-related loading, transport, and inactivation of fecal indicator bacteria at a nonpoint source beach, Community Surface Dynamics Modeling System (CSDMS) Annual Meeting, May 20-22, 2014, Boulder, CO, USA (poster).
- What we learned from ten years of water quality monitoring through the Florida Healthy Beaches Program, 2014 Ocean Sciences Meeting, February 23-28, 2014, Honolulu, HI, USA (poster).
- Impact of climate change, hydrology, and beach characteristics on microbial water quality throughout the Florida coast, 7th Graduate Climate Conference, November 1-3, 2013, Woods Hole, MA, USA (poster).
- Modeling microbial water quality at a beach impacted by multiple non-point sources, 33rd International Conference on Coastal Engineering (ICCE), July 1-6, 2012, Santander, Spain (oral).
- Modeling release, transport, and inactivation of fecal indicator bacteria at an embayed non-point source subtropical beach, 2012 Ocean Sciences Meeting, February 19-24, 2012, Salt Lake City, UT, USA (oral).
- Observations and modeling of enterococci release and transport in the inter-tidal zone of a non-point source subtropical recreational beach, EPA National Beach Conference, March 15-17, 2011. Miami, FL, USA (poster).
- Modeling of the release of enterococci from beach sands by waves and currents, 2010 Ocean Sciences Meeting, February 22-26, 2010, Portland, OR, USA (poster).
- Cold-front-induced flushing of the Louisiana estuaries, Northern Gulf Institute Annual Conference, May 20-21, 2009, Mobile, AL, USA (oral).

- Cold-front-induced water exchange between bays and inner shelf along the Louisiana Coast, Northern Gulf of Mexico, 2008 AGU Fall Meeting, December 15-19, 2008, San Francisco, CA, USA (poster).

FIELDWORK PARTICIPATION

- August 2016, 4-day zooplankton net tows and Video Plankton Recorder (VPR) sampling in the Gulf of Maine, R/V Gulf Challenger, New Hampshire, USA.
- May 2012, Office of Naval Research (ONR) tidal inlet experiment at New River Inlet, North Carolina, USA.
- June 2010, 10-day intensive field experiment of hydrodynamics, hourly water and sand sampling for beach water quality assessment at Hobie Beach, Miami, Florida, USA.
- January 2009, hydrographic measurements (ship-mounted ADCP surveys and CTD casts) in the Gulf of Mexico, R/V Pelican, Louisiana, USA.
- October and November 2007, ADCP hydrographic surveys at Port Fourchon and Grand Isle, Louisiana, USA.
- July 2007, soil and plant sampling in *Spartina alterniflora* salt marshes at Dafeng, Jiangsu Province, China.
- January 2007, State Oceanic Administration Project-908 Comprehensive Investigation of Coastal Resources in Yellow Sea, China
- October 2006, sediment coring on tidal flats of central Jiangsu coast, China.

PROFESSIONAL SERVICES

- October 2016 – October 2017, WHOI Postdoctoral Association secretary and department representative.
- August 2010 – May 2013, Committee member of RSMAS Student Travel Fund.
- Reviewer for the following journals: Environmental Science & Technology, Journal of Environmental Informatics, Journal of Water and Health, Biogeosciences, Progress in Oceanography, Fisheries Oceanography, and Ocean Science Discussion.
- Proposal reviewer for the funding agency: Northern Pacific Research Board (NPRB) in 2016, 2017 and 2018, and National Science Foundation (NSF) in 2016.
- Outreach lecture in WHOI's 2017 Science Made Public Lecture Series.