

Curriculum Vitae
David H. Richter
Updated: March 25, 2024

Education

2007-2011 Ph.D. Mechanical Engineering, Stanford University
2006-2007 M.S. Mechanical Engineering, Stanford University
2002-2006 B. S. Mechanical Engineering, University of Massachusetts, Amherst

Appointments/Positions

2019-present Associate Professor, Department of Civil & Environmental Engineering and Earth Sciences
Concurrent Associate Professor, Department of Aerospace and Mechanical Engineering
University of Notre Dame, Notre Dame, IN

2013-2019 Assistant Professor, Department of Civil & Environmental Engineering and Earth Sciences
Concurrent Assistant Professor, Department of Aerospace and Mechanical Engineering
University of Notre Dame, Notre Dame, IN

2011-2013 Advanced Study Program Postdoctoral Fellow, National Center for Atmospheric Research, Boulder, CO

2006-2011 Research Assistant, Mechanical Engineering Department, Stanford University, Stanford, CA

2005-2006 Undergraduate Research Assistant, Mechanical Engineering Department, University of Massachusetts, Amherst, MA

2005 Summer Engineering Intern, National Center for Atmospheric Research, Boulder, CO

Awards and Memberships

Notre Dame College of Engineering Outstanding Teaching Award	2021
Rev. Edmund P. Joyce, C.S.C. Award for Excellence in Teaching	2020
Chair, AMS Air-Sea Interaction Committee	2017-2023
Office of Naval Research Young Investigator Program Awardee	2016-2019
Elected CEEES Faculty Commencement Speaker	2015, 2019, 2022, 2023
Advanced Study Program Postdoctoral Fellowship	2011-2013
Stanford Graduate Fellowship	2008-2011
School of Engineering Graduate Fellowship, Stanford University	2006-2007
Graduated <i>Cum Laude</i> from University of Massachusetts	2006
Member, American Physical Society	2007-present
Member, American Geophysical Union	2012-present
Member, American Meteorological Society	2013-present

Refereed Publications

Under review

1. Menicali, L., Richter, D.H., Castruccio, S., Physics-informed priors with application to boundary layer velocity, Under review in *Bayesian Analysis*
2. Oguejiofor, C., Bryan, G., Rotunno, R., Sullivan, P., Richter, D.H., The role of turbulence in an intense tropical cyclone: Momentum diffusion, Under review of the *Journal of the Atmospheric Sciences*
3. Bonas, M., Richter, D.H., Castruccio, S., A physics-informed, deep double reservoir network for forecasting boundary layer velocity, Under review in *The Journal of the American Statistical Association*
4. Rodriguez Geno. C., Richter, D.H., The role of collision and coalescence on the microphysics of marine fog, Under review in the *Quarterly Journal of the Royal Meteorological Society*

Published

1. Grace, A., Richter, D.H., Bragg, A., 2024, A reinterpretation of phenomenological modeling approaches for Lagrangian particles settling in a turbulent boundary layer, *Boundary-Layer Meteorology*, **190**, 15, doi:10.1007/s10546-024-00858-w
2. Oguejiofor, C.N., Wainwright, C., Rudzin, J.E., Richter, D.H., 2023, Onset of tropical cyclone rapid intensification: Evaluating the response to length scales of sea surface temperature anomalies, *Journal of the Atmospheric Sciences*, **80**, 1971-1994, doi:10.1175/JAS-D-22-0158.1
3. Denzel, C., Bragg, A., Richter, D.H., 2023, Stochastic model for the residence time of solid particles in turbulent Rayleigh-Bénard flow, *Physical Review Fluids*, **8**, 024307, doi:10.1103/PhysRevFluids.8.024307
4. Gao, W., Samtaney, R., Richter, D.H., 2023, Direct numerical simulation of particle-laden flow in an open channel at $Re = 5186$, *Journal of Fluid Mechanics*, **957**, A3, doi:10.1017/jfm.2023.26
5. Richter, D.H., Wainwright, C., 2023, Large-eddy simulation of sea spray impacts on fluxes in the high-wind boundary layer, *Geophysical Research Letters*, **50**, e2022GL101862, doi:10.1029/2022GL101862
6. Wainwright, C., Volponi, S., Stepanian, P., Reynolds, D., Richter, D.H., 2023, Using cloud radar to investigate the effect of rainfall on migratory insect flight, *Remote Sensing in Ecology and Conservation*, **14**, 655-668, doi:10.1111/2041-210X.14023
7. Park, H., Reid, J., Freire, L., Jackson, C., Richter, D.H., 2022, Numerical experiments of in situ particle sampling relationships to surface and turbulent fluxes through Lagrangian

- coupled large eddy simulations, *Atmospheric Measurement Techniques*, **15**, 7171-7194, 10.5194/amt-15-7171-2022
8. Xing, L., Bolster, D., Liu, H., Sherman, T., Richter, D.H., Rocha-Brownell, K., Ru, Z., 2022, Markovian models for microplastic transport in open-channel flows, *Water Resources Research*, **58**, e2021WR031746, doi:10.1029/2021WR031746
 9. Soto Rivas, K., Richter, D.H., Escauriaza, C., 2022, Flow effects of finite-sized tidal turbine arrays in the Chacao Channel, Southern Chile, *Renewable Energy*, **195**, 637-647, doi:10.1016/j.renene.2022.05.150
 10. MacMillan, T., Shaw, R., Cantrell, W.H., Richter, D.H., 2022, Direct numerical simulation of turbulence and microphysics in the Pi Chamber, *Physical Review Fluids*, **7**, 020501, doi:10.1103/PhysRevFluids.7.020501
 11. Bragg, A., Richter, D.H., & Wang, G., 2021, Settling strongly modifies particle concentrations in wall-bounded turbulent flows even when the settling parameter is asymptotically small, *Physical Review Fluids*, **6**, 124301, doi:10.1103/PhysRevFluids.6.124301
 12. Richter, D.H., Spagnolie, S., Editorial: Introduction to the 38th annual Gallery of Fluid Motion, 2021, *Physical Review Fluids*, **6**, 110001, doi:10.1103/PhysRevFluids.6.110001
 13. Wainwright, C., Chang, R., Richter, D.H., 2021, Aerosol activation in radiation fog at the Atmospheric Radiation Program Southern Great Plains site, *Journal of Geophysical Research: Atmospheres*, **126**, e2021JD035358, doi:10.1029/2021jd035358
 14. MacMillan, T. & Richter, D.H., 2021, The most robust representations of flow trajectories are Lagrangian coherent structures, *Journal of Fluid Mechanics*, **927**, A26, doi:10.1017/jfm.2021.768
 15. Richter, D.H., Wainwright, C., Stern, D.P., Bryan, G.H., & Chavas, D., 2021, Potential low bias in high-wind drag coefficient inferred from dropsonde data in hurricanes, *Journal of the Atmospheric Sciences*, **78**, 2339-2352, doi:10.1175/JAS-D-20-0390.1
 16. Bragg, A., Richter, D.H., & Wang, G., 2021, Mechanisms governing the settling velocities and spatial distributions of inertial particles in wall-bounded turbulence, *Physical Review Fluids*, **6**, 064302, doi:10.1103/PhysRevFluids.6.064302
 17. Richter, D.H., MacMillan, T., & Wainwright, C., 2021, A Lagrangian cloud model for the study of marine fog, *Boundary-Layer Meteorology*, **181**, 523-542, doi:10.1007/s10546-020-00595-w
 18. Wright, E., Sund, N., Richter, D.H., Porta, G., & Bolster, D., 2021, Upscaling bimolecular reactive transport in highly heterogeneous porous media with the Lagrangian Transport Eulerian Reaction Spatial (LATERs) Markov model, *Stochastic Environmental Research and Risk Assessment*, **35**, 1529-1547, doi:10.1007/s00477-021-02006-z
 19. Wainwright, C. and Richter, D.H., 2021, Investigating the sensitivity of marine fog to physical and microphysical processes using large-eddy simulation, *Boundary-Layer Meteorology*, **181**, 473-498, doi:10.1007/s10546-020-00599-6

20. Fernando, H.J.S., Gultepe, I., Dorman, C., Pardyjak, E., Wang, Q., Hoch, S., Richter, D.H., Creegan, E., Gaberšek, S., Bullock, T., Chang, R., Alappattu, D., Dimitrova, R., Flagg, D., Grachev, A., Krishnamurthy, R., Singh, D.K., Lozovatsky, I., Nagare, B., Sharma, A., Wagh, S., Wainwright, C., Wroblewski, M., Yamaguchi, R., Bardeel, S., Coppersmith, R., Chisholm, N., Gonzalez, E., Gunawardena, N., Hyde, O., Morrison, T., Olson, A., Perelet, A., Perrie, W., Wang, S., Wauer, B., 2021, C-FOG: Life of coastal fog, *Bulletin of the American Meteorological Society*, **102**, E244-E272, doi:10.1175/bams-d-19-0070.1
21. MacMillan, T., Ouellette, N.T., Richter, D.H., 2020, Detection of evolving Lagrangian coherent structures: a multiple object tracking approach, *Physical Review Fluids*, **5**, 124401, doi:10.1103/PhysRevFluids.5.124401
22. Park, H., Sherman, T., Freire, L., Wang, G., Bolster, D., Xian, P., Sorooshian, A., Reid, J., and Richter, D.H., 2020, Predicting vertical concentration profiles in the marine atmospheric boundary layer with a Markov chain random walk model, *Journal of Geophysical Research: Atmospheres*, **125**, e2020JD032731, doi:10.1029/2020JD032731
23. Peng, T. and Richter, D.H., 2020, Influences of poly-disperse sea spray size distributions on model predictions of air-sea heat fluxes, *Journal of Geophysical Research: Atmospheres*, **125**, e2019JD032326, doi:10.1029/2019jd032326
24. Wang, G. and Richter, D.H., 2020, Multiscale interaction of inertial particles with turbulent motions in open channel flow, *Physical Review Fluids*, **5**, 044307, doi:10.1103/PhysRevFluids.5.044307
25. Wang, G., Park, H., and Richter, D.H., 2020, Effect of computational domain size on inertial particle one-point statistics in open channel flow, *International Journal of Multiphase Flow*, **125**, 103195, doi:10.1016/j.ijmultiphaseflow.2019.103195
26. Soto-Rivas, K., Richter, D.H., and Escauriaza, C., 2019, A formulation of the thrust coefficient for representing finite-sized farms of tidal energy converters, *Energies*, **12(20)**, 3861, doi:10.3390/en12203861
27. Wang, G., Fong, K.O., Coletti, F., Capecelatro, J., and Richter, D.H., 2019, Inertial particle velocity and distribution in vertical turbulent channel flow: a numerical and experimental comparison, *International Journal of Multiphase Flow*, **120**, 103105, doi:10.1016/j.ijmultiphaseflow.2019.103105
28. Richter, D.H., Dempsey, A.E., and Sullivan, P.P., 2019, Turbulent transport of spray droplets in the vicinity of moving surface waves, *Journal of Physical Oceanography*, **49**, 1789-1807, doi:10.1175/jpo-d-19-0003.1
29. Peng, T. and Richter, D.H., 2019, Sea spray and its feedback effects: Assessing bulk algorithms of air-sea heat fluxes via direct numerical simulations, *Journal of Physical Oceanography*, **49**, 1403-1421, doi:10.1175/JPO-D-18-0193.1
30. Wang, G. and Richter, D.H., 2019, Two mechanisms of modulation of very-large-scale motions by inertial particles in open channel flow, *Journal of Fluid Mechanics*, **868**, 538-559, doi:10.1017/jfm.2019.210

31. Sherman, T., Roche, K., Richter, D.H., Packman, A., and Bolster, D., 2019, A dual domain stochastic Lagrangian model for predicting transport in open channels with hyporheic exchange, *Advances in Water Resources*, **125**, 57-67, doi:10.1016/j.advwatres.2019.01.007
32. Wright, E.E., Sund, N.L., Richter, D.H., Porta, G., and Bolster, D., 2019, Upscaling mixing in highly heterogeneous porous media via a spatial Markov model, *Water*, **11**, 53, doi:10.3390/w11010053
33. Wang, G. and Richter, D.H., 2019, Modulation of the turbulence regeneration cycle by inertial particles in planar Couette flow, *Journal of Fluid Mechanics*, **861**, 901-929, doi:10.1017/jfm.2018.936
34. Nissanka, I.D., Park, H., Freire, L., Chamecki, M., Reid, J., and Richter, D.H., 2018, Parameterized vertical concentration profiles for aerosols in the marine atmospheric boundary layer, *Journal of Geophysical Research – Atmospheres*, **123**, 9688 - 9702, doi:10.1029/2018JD028820
35. Richter, D.H. and Gill, T., 2018, Challenges and opportunities in atmospheric dust emission, chemistry, and transport, *Bulletin of the American Meteorological Society*, 99(7), ES115-ES118, doi:10.1175/BAMS-D-18-0007.1
36. Park, H., O'Keefe, K., and Richter, D.H., 2018, Rayleigh-Bénard turbulence modified by two-way coupled inertial, non-isothermal particles, *Physical Review Fluids*, **3**, 034207, doi:10.1103/PhysRevFluids.3.034307
37. Richter, D.H. and Chamecki, M., 2018, Inertial effects on the vertical transport of suspended particles in a turbulent boundary layer, *Boundary-Layer Meteorology*, **167**(2), 235-256, doi:10.1007/s10546-017-0325-3
38. Sweet, J., Richter, D.H., and Thain, D., 2018, GPU acceleration of Eulerian-Lagrangian particle-laden turbulent flow simulations, *International Journal for Multiphase Flow*, **99**, 437-445, doi:10.1016/j.ijmultiphaseflow.2017.11.010
39. Wright, E., Richter, D.H., and Bolster, D., 2017, The effects of incomplete mixing on reactive transport in flows through heterogeneous porous media, *Physical Review Fluids*, **2**, 114501, doi:10.1103/PhysRevFluids.2.114501
40. Peng, T. and Richter, D.H., 2017, Influence of evaporating droplets in the turbulent marine atmospheric boundary layer, *Boundary-Layer Meteorology*, **165**(3), 497-518, doi:10.1007/s10546-017-0285-7
41. González, C., Richter, D.H., Bolster, D., Calantoni, J., Bateman, S., Escauriaza, C., 2017, Characterization of bedload intermittency near the threshold of motion using a Lagrangian sediment transport model, *Environmental Fluid Mechanics*, **17**, pp 111-137, doi:10.1007/s10652-016-9476-x
42. Richter, D.H., Veron, F., 2016, Ocean spray: An outsized influence on weather and climate, *Physics Today*, **69**(11), 34-39, 10.1063/PT.3.3363

43. Richter, D.H., Bohac, R., Stern, D., 2016, An assessment of the flux profile method for determining momentum and enthalpy fluxes from dropsonde data, *Journal of the Atmospheric Sciences*, **73**, pp 2665-2682, 10.1175/JAS-D-15-0331.1
44. Richter, D.H., Garcia, O., Astephen, C., 2016, Particle stress in dilute, polydisperse, two-way coupled turbulent flows, *Physical Review E*, **93**, pp 01311, doi:10.1103/PhsRevE.93.013111
45. Helgans, B., Richter, D.H., 2016, Turbulent latent and sensible heat flux in the presence of evaporative droplets, *International Journal of Multiphase Flow*, **78**, pp 1-11, doi:10.1016/j.ijmultiphaseflow.2015.09.010
46. Richter, D.H., 2015, Turbulence modification by inertial particles and its influence on the spectral energy budget in planar Couette flow, *Physics of Fluids*, **27**, pp 063304, doi:10.1063/1.4923043
47. Richter, D.H., Sullivan, P.P., 2014, Modification of near-wall coherent structures by inertial particles, *Physics of Fluids*, **26**, pp 103304, doi:10.1063/1.4900583
48. Richter, D.H., Stern, D.P., 2014, Evidence of spray-mediated air-sea enthalpy flux within tropical cyclones, *Geophysical Research Letters*, **41**, pp 2997-3003, doi:10.1002/2014GL059746
49. Richter, D.H., Sullivan, P.P., 2014, The sea spray contribution to sensible heat flux. *Journal of the Atmospheric Sciences*, **71**, pp 640-654, doi:10.1175/JAS-D-13-0204.1
50. Richter, D.H., Sullivan, P.P., 2013, Momentum transfer in a turbulent, particle-laden Couette flow. *Physics of Fluids*, **25**, pp 053304, doi:10.1063/1.4804391
51. Richter, D.H., Sullivan, P.P., 2013, Sea surface drag and the role of spray. *Geophysical Research Letters*, **40**, pp 656-660, doi:10.1002/grl.50163
52. Richter, D.H., Iaccarino, G., Shaqfeh, E.S.G., 2012, Effects of viscoelasticity in the high Reynolds number cylinder wake. *Journal of Fluid Mechanics*, **693**, pp 297-318
53. Richter, D.H., Shaqfeh, E.S.G., Iaccarino, G., 2011, Numerical simulation of polymer injection in turbulent flow past a circular cylinder. *Journal of Fluids Engineering*, **133**, pp 104501-(1-5)
54. Richter, D.H., Shaqfeh, E.S.G., Iaccarino, G., 2010, Floquet stability analysis of viscoelastic flow over a cylinder. *Journal of Non-Newtonian Fluid Mechanics*, **166**, pp 554-565
55. Richter, D.H., Iaccarino, G., Shaqfeh, E.S.G., 2010, Simulations of three-dimensional viscoelastic flows past a circular cylinder at moderate Reynolds numbers. *Journal of Fluid Mechanics*, **651**, pp 415-442
56. Teixeira, R., Dambal, A., Richter, D.H., Shaqfeh, E.S.G., Chu, S., 2007, The individualistic dynamics of entangled DNA in solution. *Macromolecules*, **40**, pp 2461-2476
57. Bhardwaj, A., Richter, D.H., Chellamuthu, M., Rothstein, J.P., 2007, The effect of pre-shear on the extensional rheology of wormlike micelle solutions. *Rheologica Acta*, **46**, pp 1435-1528

Refereed Conference Proceedings

1. Richter, D.H., Bragg, A., Wang, G., 2020, Particle settling and distribution in wall-bounded turbulence, in the Proceedings of the IUTAM Symposium on Turbulent Structure and Particles-Turbulence Interaction, Lanzhou, China
2. Rocha-Brownell, K., Dérian, P., Richter, D.H., Sullivan, P.P., Mayor, S.D., 2017, Evaluation of a wavelet-based optical flow algorithm through the use of large eddy simulations, in the Proceedings of the International Laser Radar Conference, Bucharest, Romania
3. Park, H., O’Keefe, K., Richter, D.H., 2017, Modification of buoyancy-driven turbulence by thermally and dynamically coupled inertial particles, in the Proceedings of the Tenth International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL
4. Richter, D.H., Garcia, O., Astephen, C., 2015, Turbulence modification in polydisperse, wall-bounded turbulence, In the Proceedings of the Ninth International Symposium on Turbulence and Shear Flow Phenomena, Melbourne, Australia

Scientific Reports

1. Clayson, C.A., DeMott, C.A., de Szoeko, S.P., Chang, P., Folta, G.R., Krishnamurthy, R., Lee, T., Molod, A., Ortiz-Suslow, D.G., Pullen, J., Richter, D.H., Seo, H., Taylor, P.C., Thompson, E., Bôas, B.V., Zappa, C.J., Zuidema, P., 2023: A New Paradigm for Observing and Modeling of Air-Sea Interactions to Advance Earth System Prediction. A US CLIVAR Report, US CLIVAR Project Office, 86pp, doi:10.5065/24j7-w583
2. Pressel, K.G., Heus, T., Zhang, Y., van Heerwaarden, C., Jaruga, A., Mathou, G., Witte, M., Fierce, L., Lundquist, K., Ghate, V., Yang, F., Chiu, C., Richter, D.H., 2023: Workshop Report: Department of Energy’s Atmospheric System Research (ASR) Program’s Workshop on the Future of Atmospheric Large Eddy Simulation (LES)

Invited Presentations

1. “Particle-turbulence interactions in high-Re flows: Can small particles influence large-scale motions?”, keynote lecture at the IUTAM Symposium on Turbulent Structures and Particles-Turbulence Interaction, Lanzhou University, China, July 9, 2023 (delivered online)
2. “Turbulence, droplets, and hurricanes: Using simulations to look where observations cannot”, presented at the Indiana University Department of Earth and Atmospheric Sciences, March 6, 2023
3. “Turbulence, droplets, and hurricanes: Using simulations to look where observations cannot”, presented at Stony Brook University School of Marine and Atmospheric Sciences, December 9, 2022
4. “What determines the settling rate of particles through wall-bounded turbulence?”, presented at the Stanford University Fluid Dynamics Seminar, April 19, 2022
5. “What can simulations tell us about air-sea transfer underneath a hurricane?”, presented virtually at the University of New Hampshire Department of Mechanical Engineering Graduate Seminar Series, November 19, 2021

6. "How do turbulence and dust interact in the atmospheric surface layer?", presented virtually at the Arizona State University Fluids Seminar, February 5, 2021
7. "Sea spray and fluxes at the air-sea interface: DNS, observational evidence, and assessing bulk models", presented at the University of Texas at Arlington Tech Session series, Arlington, TX, October 25, 2019
8. "How do turbulence and dust interact in the atmospheric surface layer?", presented at the Army Research Laboratory White Sands Missile Range, White Sands, NM, October 21, 2019
9. "Turbulence and hurricanes: Using simulations to look where experiments can't", presented at the Environmental Change Initiative Brown Bag Seminar, Notre Dame, IN, September 18, 2019
10. "Spray effects at the air-sea interface: DNS, observational evidence, and assessing bulk models", presented at the Dynamics Happy Hour Seminar, National Center for Atmospheric Research, Boulder, CO, August 2, 2019
11. "A persisting gap: What happens to droplets after they are formed?", presented at *Twixt Wind and Waves*, a Symposium Honoring Edward Monahan, University of Connecticut Avery Point, Groton, CT, July 25 2019
12. "Spray effects at the air-sea interface: DNS, observational evidence, and assessing bulk models", presented at the Naval Research Laboratory, Monterey, CA, June 12, 2019
13. "DNS and Lagrangian tracking of droplet activation and growth in Rayleigh-Bénard turbulence", presented at the Pi Chamber Modeling Workshop, Houghton, MI, May 24, 2019
14. "Coupling of droplets and turbulence: numerical techniques and insights", presented at the International Workshop on Cloud Dynamics, Microphysics, and Small-Scale Simulation, Indian Institute of Tropical Meteorology, Pune, India, August 14, 2018
15. "Droplets and dust in atmospheric turbulence: Insight from numerical simulations", presented at the University of Waterloo Applied Mathematics seminar series, Waterloo, ON, Canada, October 19, 2017
16. "Understanding multiphase turbulence in the environment using numerical simulations", presented at the University of Notre Dame Applied and Computational Mathematics and Statistics seminar series on statistics, Notre Dame, IN, October 10, 2017
17. "Investigating the basic fluid mechanics of multiphase geophysical flows", presented at the University of Minnesota Mechanical Engineering Lecture Series, Minneapolis, MN, April 18, 2017
18. "Using DNS to investigate multiphase turbulence in the environment", presented at the Pennsylvania State University Fluid Dynamics Research Consortium Seminar Series, Penn State University, State College, November 10, 2016
19. "Using direct numerical simulations to investigate multiphase turbulence in the atmosphere", presented at the Mechanical Engineering Departmental Seminar, University of Texas at Dallas, September 30, 2016
20. "The turbulent atmospheric boundary layer", a lecture given to students at the California State University at Chico, Chico, CA, April 22, 2016

21. "Investigating the basic fluid mechanics of multiphase geophysical flows", presented at the Stanford University Fluid Dynamics Seminar Series, Stanford, CA, March 29, 2016
22. "How far does a dispersed phase influence turbulence?", presented as an invited speaker at the Fundamental Aspects of Geophysical Turbulence II Conference, National Center for Atmospheric Research, Boulder, CO, August 5, 2015
23. "Dispersed phase effects on wall-bounded turbulence and its upscale influence", presented at the University of Illinois Department of Mechanical Science and Engineering Fluid Dynamics Seminar, Urbana, IL, November 7, 2014
24. "A small-scale perspective on turbulent fluxes in the spray-laden marine boundary layer: Results from DNS", presented at the Pennsylvania State University Meteorology Colloquium, State College, PA, October 8, 2014
25. "A small-scale perspective of the spray-laden marine atmospheric boundary layer", Space and Atmospheric Physics (Dept. of Physics) research seminar, Imperial College London, London, UK, June 13, 2014
26. "Spray-modified fluxes in the marine atmospheric boundary layer", presented at Brookhaven National Labs, Upton, NY, December 23, 2013
27. "Turbulent transport at the spray-laden air-sea interface", seminar at the Naval Research Labs, Monterey, CA, May 21, 2013
28. "Turbulent transport in the spray-laden, high-wind marine boundary layer", Mechanical & Aerospace Engineering Departmental Seminar, University of Florida, Gainesville, FL, April 16, 2013
29. "Sea-spray and its effects on near-surface turbulence", invited lecture at the Multiphase Turbulent Flows in the Atmosphere and Ocean Workshop at the National Center for Atmospheric Research, Boulder, CO, August 15, 2012
30. "Transition to turbulence in the viscoelastic bluff body wake", Department of Applied Math Departmental Seminar, University of California Davis, Davis, CA, October 20, 2010

Posters and Presentations

(boldface indicates presenter)

1. **Richter, D.H.**, Bryan, G., Sun, J., Dennis, J., Voelz, S., Wainwright, C., "Spray and turbulence impacts on air-sea momentum and enthalpy transfer at high winds", presentation at the Ocean Sciences Meeting, New Orleans, LA, February 19, 2024
2. **Rocha-Brownell, K.**, Seh, R., Erinin, M., Jaquette, R., Veron, F., Deike, L., Sullivan, P., Richter, D.H., "Investigating the dynamics of sea spray droplets near real multispectral waves: A combined numerical and experimental study", presentation at the Ocean Sciences Meeting, New Orleans, LA, February 19, 2024
3. **Rodriguez Geno, C.**, Richter, D.H., Chang, R., VandenBoer, T., Giacosa, G., Salehpoor, L., "Investigating aerosol activation and microphysics in marine fog using a Lagrangian cloud modelling framework", presentation at the American Meteorological Society Annual Meeting, Baltimore, MD, January 29, 2024

4. **Richter, D.H.**, Bryan, G., Sun, J., Dennis, J., Voelz, S., Wainwright, C., “Understanding the fate of spray, aerosols, and fluxes in the tropical cyclone boundary layer via a Lagrangian superdroplet method”, presentation at the American Meteorological Society Annual Meeting, Baltimore, MD, January 29, 2024
5. **Grace, A.**, Richter, D.H., Bragg, A., “Comparing phase-space and phenomenological modeling approaches for Lagrangian particles settling in a turbulent boundary layer”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 15, 2023
6. **Zhang, Y.**, Grace, A., Richter, D.H., Bragg, A., “PDF-based model for inertial particles settling in a turbulent boundary layer using an asymptotic closure approximation”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Washington, D.C., November 21, 2023
7. **Grace, A.**, Richter, D.H., Bragg, D., “Comparing phase-space and phenomenological modeling approaches for Lagrangian particles settling in a turbulent boundary layer”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Washington, D.C., November 20, 2023
8. **Swartz-Schult, K.**, Anderson, J., Sadi, H., Sulaiman, S., Cantrell, W., Shaw, R., Richter, D.H., “The settling rates of particles in Rayleigh-Bénard turbulence”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Washington, D.C., November 20, 2023
9. **Richter, D.H.**, Oguejiofor, C., and Wainwright, C., “Large eddy simulation of sea spray in the high-wind boundary layer and its influence on air-sea fluxes”, presentation at the American Meteorological Society 23rd Conference on Air-Sea Interaction, Denver, CO, January 12, 2023
10. **Park, H.**, Reid, J., Freire, L., Jackson, C., and Richter, D.H., “Stability, aerosol particle size, and in-situ observations cause aerosol surface flux variability in the marine atmospheric boundary layer”, presentation at the American Meteorological Society 23rd Conference on Air-Sea Interaction, Denver, CO, January 12, 2023
11. **Rocha-Brownell, K.**, Jaquette, R., Veron, F., Deike, L., Erinin, M., Sullivan, P., and Richter, D.H., “Turbulent transport of spray droplets in the wave boundary layer”, presentation at the American Meteorological Society 23rd Conference on Air-Sea Interaction, Denver, CO, January 12, 2023
12. **Seh, K.H.**, Rocha-Brownell, K., Wells, S., Bruch, W., Piazzola, J., Sullivan, P., and Richter, D.H., “Numerical investigation of sea spray turbulent transport in the marine atmospheric boundary layer”, presentation at the American Meteorological Society 23rd Conference on Air-Sea Interaction, Denver, CO, January 12, 2023
13. **Oguejiofor, C.**, Richter, D.H., Wainwright, C., and Rudzin, J., “Tropical cyclone rapid intensification: Evaluating the response to length scales of the sea surface temperature anomalies”, presentation at the American Meteorological Society 23rd Conference on Air-Sea Interaction, Denver, CO, January 10, 2023
14. **Rodriguez Geno, C.**, Richter, D.H., “On the effect of particle collisions on fog development”, presentation at the American Meteorological Society Annual Meeting, Denver, CO, January 9, 2023

15. **Denzel, C.**, Bragg, A., and Richter, D.H., “Evolution of superdroplets and their lifetimes in the turbulent Rayleigh Bénard flow of the Pi Chamber”, presentation at the American Meteorological Society Annual Meeting, Denver, CO, January 9, 2023
16. **Seh, K.H.**, Rocha-Brownell, K., Wells, S., Bruch, W., Piazzola, J., and Richter, D.H., “Numerical simulation of sea spray turbulent transport at the marine boundary layer”, presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Indianapolis, IN, November 22, 2022
17. **Rocha-Brownell, K.**, Wells, S., Seh, K.H., Erinin, M., Deike, L., Jaquette, R., Veron, F., and Richter, D.H., “Large eddy simulation of droplet transport near real multispectral waves”, presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Indianapolis, IN, November 22, 2022
18. **Jaquette, R.**, Richter, D.H., and Veron, F., “Near surface dynamics of inertial droplets produced by wind forced mechanical breaking waves”, presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Indianapolis, IN, November 22, 2022
19. **Richter, D.H.**, Wang, G., and Gao, W., “Multiscale influences of particles in high-Re wall turbulence”, presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Indianapolis, IN, November 20, 2022
20. **Denzel, C.**, Richter, D.H., and Bragg, A., “Physics informed stochastic model for the residence of solid particles in turbulent Rayleigh-Bénard flow”, presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Indianapolis, IN, November 20, 2022
21. **Denzel, C.**, Bragg, A., and Richter, D.H., “Droplet and aerosol lifetimes in the turbulent Rayleigh-Bénard flow of the Pi Chamber”, poster presentation at the American Meteorological Society 16th Conference on Cloud Physics, Madison, WI, August 9, 2022
22. **Rodriguez Geno, C.** and Richter, D.H., “On the effects of collision-coalescence on the formation and development of fog”, poster presentation at the American Meteorological Society 16th Conference on Cloud Physics, Madison, WI, August 9, 2022
23. **Krueger, S.**, Chen, S., Dziekan, P., MacMillan, T., Richter, D.H., Schmalfluss, S., Shima S.I., Yang, F., Anderson, W., Cantrell, W., and Shaw, R., “Intercomparison of model simulations of cloudy Rayleigh-Bénard convection in a laboratory chamber”, poster presentation at the American Meteorological Society 16th Conference on Cloud Physics, Madison, WI, August 8, 2022
24. **Richter, D.H.**, Gao, W., and Wang, G., “Multiphase influences of particles in high-Re wall turbulence”, virtual presentation at the European Mechanics Society Colloquium on Advances in LES of Turbulent Multiphase Flows, Udine, Italy, June 22, 2022
25. **Wainwright, C.**, Oguejiofor, C., and Richter, D.H., “Quantifying spray mediation of air-sea fluxes in tropical cyclones using a coupled large-eddy simulation and Lagrangian cloud model”, presentation at the 2022 American Meteorological Society Conference on Hurricanes and Tropical Meteorology, New Orleans, LA, May 11, 2022
26. **Oguejiofor, C.**, Richter, D.H., Wainwright, C., “Investigating the sensitivity of hurricane intensification to length scales of sea surface temperature (SST) heterogeneities”, presentation at the 2022 American Meteorological Society Conference on Hurricanes and Tropical Meteorology, New Orleans, LA, May 11, 2022

27. **Richter, D.H.**, Wainwright, C., Chavas, D., Stern, D.P., Bryan, G., “Potential low bias in high-wind drag coefficient inferred from dropsonde data in hurricanes”, presentation at the 2022 American Meteorological Society Conference on Hurricanes and Tropical Meteorology, New Orleans, LA, May 9, 2022
28. **Richter, D.H.**, “Lagrangian cloud modeling in the cloudy and foggy boundary layer”, poster presentation at the Department of Energy Atmospheric System Research Future of LES Workshop, held virtually April 25-26, 2022
29. **Oguejiofor, C.**, Richter, D.H., Wainwright, C., “Investigating the dependence of hurricane intensity on varying SST patterns using idealized model simulations”, oral presentation at the 2022 Ocean Sciences Meeting, held virtually on March 3, 2022
30. **Richter, D.H.**, Wainwright, C., Chavas, D., Stern, D., Bryan, G., “Potential low bias in high-wind drag coefficient inferred from dropsonde data in hurricanes”, oral presentation at the 2022 Ocean Sciences Meeting, held virtually on March 2, 2022
31. **Rocha-Brownell, K.**, Wells, S., Richter, D.H., “Large eddy simulation of droplet transport near multispectral waves”, oral presentation at the 2022 Ocean Sciences Meeting, held virtually on February 28, 2022
32. **Wainwright, C.**, Oguejiofor, C., Richter, D.H., “Quantifying spray mediation of air-sea fluxes in tropical cyclones using a coupled large eddy simulation and Lagrangian cloud model”, oral presentation at the 2022 Ocean Sciences Meeting, held virtually on February 28, 2022
33. **Oguejiofor, C.**, Richter, D.H., Wainwright, C., “Investigating the dependence of hurricane intensity on varying SST patterns using idealized model simulations”, oral presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 14, 2021
34. **Bragg, A.**, Richter, D.H., Wang, G., “When is settling important for particle concentrations in wall-bounded turbulent flows?”, oral presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Phoenix, AZ, November 23, 2021
35. **Krueger, S.**, Chen, S., Dziekan, P., MacMillan, T., Richter, D.H., Schmalfuß, S., Shima, S., Yang, F., Shaw, R.A., Cantrell, W., “Intercomparison of model simulations of cloudy Rayleigh-Bénard convection in a laboratory chamber”, oral presentation at the American Physical Society Division of Fluid Dynamics annual meeting, Phoenix, AZ, November 22, 2021
36. **Oguejiofor, C.**, Wainwright, C., Richter, D.H., “Investigating the dynamical response of hurricane intensity to realistic spatial perturbations in sea surface temperature”, oral presentation at the Midwest Student Conference on Atmospheric Research, held virtually on September 25, 2021
37. **MacMillan, T.** & Richter, D.H., “Evaluating cloud droplet spectrum broadening with an analysis of coherent structures in Rayleigh-Benard convection”, oral presentation at the International Conference on Clouds and Precipitation, held virtually on August 6, 2021
38. **Wainwright, C.** & Richter, D.H., “Understanding the sensitivity of marine fog to microphysical processes via large-eddy simulation”, oral presentation at the International Conference on Clouds and Precipitation, held virtually on August 6, 2021

39. **Richter, D.H.**, MacMillan, T., Wainwright, C., “A Lagrangian cloud model for the study of marine fog”, oral presentation at the International Conference on Clouds and Precipitation, held virtually on August 6, 2021
40. **MacMillan, T.** & Richter, D.H., “Pi chamber DNS overview”, oral presentation at the International Cloud Modeling Workshop, held virtually on July 26, 2021
41. **Park, H.**, Sherman, T., Freire, L., Wang, G., Bolster, D., Xian, P., Sorooshian, A., Reid, J., Richter, D.H., “Using a Markov chain random walk model to predict aerosol transport in the marine atmospheric boundary layer”, poster presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 12, 2021. *This presentation won 2nd place for best student poster presentation*
42. **Rocha-Brownell, K.**, Laquette, R., Veron, F., Richter, D.H., “Turbulent transport of spray droplets near realistic multispectral surface waves”, poster presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 12, 2021
43. **Peng, T.**, Richter, D.H., “Influences and modeling strategies for polydisperse sea spray droplets in air-sea heat exchange”, oral presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 12, 2021
44. **Wainwright, C.**, Richter, D.H., “Understanding the sensitivity of marine fog to microphysical processes via large-eddy simulation”, oral presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 12, 2021
45. **Richter, D.H.**, MacMillan, T., Wainwright, C., “A Lagrangian cloud model for the study of marine fog”, oral presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 12, 2021
46. **Richter, D.H.**, Wainwright, C., Stern, D., Bryan, G., Chavas, D., “Predictions of the high-wind drag coefficient and potential underestimates using dropsonde data”, oral presentation at the American Meteorological Society Air-Sea Interaction Conference, held virtually on January 11, 2021
47. **MacMillan, T.**, Richter, D.H., “Minimal representations of flow trajectories reveal Lagrangian coherent structures”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, held virtually on November 23, 2020
48. **Richter, D.H.**, Bragg, A., Wang, G., “Mechanisms governing the settling velocities of inertial particles in wall-bounded turbulence”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, held virtually on November 23, 2020
49. **Rocha-Brownell, K.**, Jaquette, R., Veron, F., Richter, D.H., “Turbulent transport of spray droplets near realistic multispectral surface waves”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, held virtually on November 22, 2020
50. **MacMillan, T.**, Richter, D.H., “Pi Chamber Transient Case”, presented at the International Cloud Modeling mini-Workshop, held virtually on November 16, 2020. *This was an invited presentation*
51. **Peng, T.**, Richter, D.H., “Parameterizing thermodynamic feedback of sea spray at the air-sea interface: A small-scale perspective via direct numerical simulations”, oral presentation at the 2020 Ocean Sciences Meeting, San Diego, CA, February 19, 2020

52. **Richter, D.H.**, Dempsey, A., and Sullivan, P.P., “Turbulent transport of spray droplets in the vicinity of moving surface waves”, oral presentation at the 2020 Ocean Sciences Meeting, San Diego, CA, February 19, 2020
53. **Ling, G.**, Wiraset, D., Westerink, J., Richter, D.H., Joyce, B., Pringle, W., Contreras Vargas, M.T., Steffen, K., Dawson, C., Fujisaki-Manome, A., Myers III, E., Moghimi, S., Vinogradov, S., Van der Westhuysen, A., Abdolali, A., and Grumbine, R., “Studies on the parameterizations of sea ice effect in a storm surge model for Western Alaska”, oral presentation at the American Meteorological Society Annual Meeting, Boston, MA, January 14, 2020
54. **Fernando, H.J.S.**, Gultepe, I., Dorman, C., Pardyjak, E., Richter, D.H., Wang, Q., Hoch, S., Gaberseck, S., Bullock, T., and Chang, R., “C-FOG observations: Mechanisms of coastal fog genesis”, oral presentation at the American Meteorological Society Annual Meeting, Boston, MA, January 15, 2020
55. **Peng, T.**, Richter, D.H., “Sea spray and its feedback effects in the marine atmospheric boundary layer: A small-scale perspective”, e-Lightning presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 9, 2019, *This is an invited presentation*
56. **Gabersek, S.**, Flagg, D., Doyle, J., Fernando, H.J.S., Gultepe, I., Dorman, C., Pardyjak, E., Richter, D.H., Wang, Q., Hoch, S., Bullock, T., Chang, R., “Fog prediction by COAMPS during C-FOG field experiment”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 11, 2019
57. Richter, D.H., Park, H., **Wainwright, C.**, “Investigating the sensitivity of marine fog to physical and microphysical processes using large-eddy simulation”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 11, 2019
58. **Fernando, H.J.S.**, Gultepe, I., Dorman, C., Pardyjak, E., Richter, D.H., Wang, Q., Hoch, S., Gaberseck, S., Bullock, T., and Chang, R., “The C-FOG Project: Toward improving coastal fog prediction”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 11, 2019
59. **Wang, G.**, Chavas, D., Bryan, G., Stern, D., Richter, D.H., “Log-law wind profiles for the prediction of the drag coefficient and their radial dependence in tropical cyclones”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 10, 2019
60. **Wainwright, C.**, Richter, D.H., “A novel method for deriving supersaturation in marine fog using kappa-Köhler theory”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 10, 2019
61. **Peng, T.**, Richter, D.H., “Assessing spray-mediated heat transfer and feedback effects in bulk air-sea models via direct numerical simulation”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 10, 2019
62. **Park, H.**, Reid, J., Freire, L., Richter, D.H., “Inferred sea spray generation functions in the marine atmospheric boundary layer using an Eulerian-Lagrangian model”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 9, 2019

63. Wang, G. and **Richter, D.H.**, “Transport and two-way coupling effect of inertial particles by large-scale and very-large-scale motions in turbulence”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, Seattle, WA, November 25, 2019
64. **Richter, D.H.**, Wang, G., Fong, K.O., Coletti, F., and Capecelatro, J., “Inertial particle velocity and distribution in vertical turbulent channel flow: A numerical and experimental comparison”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, Seattle, WA, November 23, 2019
65. **MacMillan, T.** and Richter, D.H., “A Lagrangian network-based analysis of evaporative droplets in Rayleigh-Benard convection”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, Seattle, WA, November 23, 2019
66. **Peng, T.** and Richter, D.H., “Parameterizing thermodynamic feedback effects of sea spray under high winds: A small-scale perspective”, oral presentation at the Midwest Student Conference on Atmospheric Research, University of Illinois at Urbana-Champaign, October 6, 2019
67. **MacMillan, T.** and Richter, D.H., “Network science and unsupervised machine learning in cloud microphysics”, oral presentation at the Midwest Student Conference on Atmospheric Research, University of Illinois at Urbana-Champaign, October 5, 2019. *This presentation won 3rd place for best student oral presentations.*
68. **Richter, D.H.** and Wang, G., “Modulation of very large scale motions by inertial particles”, presentation at the 17th European Turbulence Conference, Torino, Italy, September 5, 2019
69. **MacMillan, T.** and Richter, D.H., “Numerical simulation of cloud droplets in flow: Resolving activation from a Lagrangian perspective”, poster presentation at the Pi Chamber Modeling Workshop, Houghton, MI, May 24, 2019
70. **Fernando, H.J.S.**, Gultepe, I., Dorman, C., Pardyjak, E., Richter, D.H., Wang, Q., Hoch, S., Creegan, E., Gabersek, S., Chang, R., and Bullock, T., “The C-FOG Project: Toward improving coastal fog prediction”, oral presentation at the American Meteorological Society Annual Meeting, Phoenix, AZ, January 8, 2019
71. **Peng, T.** and Richter, D.H., “The importance of sea-spray timescales on the parameterization of air-sea heat fluxes”, oral presentation at the American Geophysical Union Annual Meeting, Washington D.C., December 14, 2018
72. **Wang, G.** and Richter, D.H., “Turbulent transport and turbulence modulation due to large particles in the lower atmospheric boundary layer”, poster presentation at the American Geophysical Union Annual Meeting, Washington D.C., December 14, 2018
73. **Richter, D.H.**, Nissanka, I., Park, H., Freire, L., Reid, J., and Chamecki, M., “Parameterized vertical concentration profiles for aerosols in the marine atmospheric boundary layer”, poster presentation at the American Geophysical Union Annual Meeting, Washington D.C., December 12, 2018
74. **Soto, K.**, Escauriaza, C., and Richter, D.H., “Numerical simulations of marine hydrokinetic devices for improving their representation in ocean circulation models”, oral presentation at the American Geophysical Union Annual Meeting, Washington D.C., December 11, 2018

75. **Wright, E.**, Porta, G., Sund, N., Richter, D.H., and Bolster, D., “Upscaling mixing-driven processes in heterogeneous porous media”, poster presentation at the American Geophysical Union Annual Meeting, Washington D.C., December 11, 2018
76. **Wang, G.**, Richter, D.H., “Modulation of the turbulence regeneration cycle by inertial particles in planar Couette flow”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, Atlanta, GA, November 20, 2018
77. Richter, D.H., **Wang, G.**, and Chamecki, M., “Vertical dispersion of inertial particles in wall-bounded turbulence”, oral presentation at the American Physical Society Division of Fluid Dynamics meeting, Atlanta, GA, November 19, 2018
78. **Peng, T.** and Richter, D.H., “Feedback of sea-spray on air-sea heat fluxes and the influence of droplet lifetime”, oral presentation at the 23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction, Oklahoma City, OK, June 11, 2018. *This presentation won 2nd place for best student oral presentations.*
79. **Park, H.J.**, Nissanka, I.D., Richter, D.H., “An Eulerian-Lagrangian model to simulate sea spray transport in the marine atmospheric boundary layer”, oral presentation at the 23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction, Oklahoma City, OK, June 11, 2018. *This presentation won 1st place for best student oral presentation.*
80. Nissanka, I. D., Park, H., Freire, L., Chamecki, M., **Richter, D.H.**, “Development of an analytical profile for vertical concentration of sea spray aerosols in the marine atmospheric boundary layer”, oral presentation at the 23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction, Oklahoma City, OK, June 11, 2018
81. **Richter, D.H.** and Chamecki, M., “Turbulent fluxes and inertial effects of spray and aerosols in the marine boundary layer”, oral presentation at the 23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction, Oklahoma City, OK, June 11, 2018
82. **Peng, T.** and Richter, D.H., “Influence of sea-spray on the air-sea heat fluxes”, oral presentation at the 8th International Symposium on Environmental Hydraulics, Notre Dame, IN, June 7, 2018
83. **Wright, E.**, Richter, D.H., Bolster, D., “Mixing and reactions in heterogeneous flows”, oral presentation at the 8th International Symposium on Environmental Hydraulics, Notre Dame, IN, June 6, 2018
84. **Soto, K.**, Richter, D.H., Escauriaza, C., “A new parameterization of hydrokinetic devices for large-scale ocean models”, oral presentation at the 8th International Symposium on Environmental Hydraulics, Notre Dame, IN, June 6, 2018
85. Richter, D.H., **Stern, D.P.**, Bryan, G.H., “Boundary layer structure and surface flux estimates in tropical cyclones”, oral presentation at the 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, April 20, 2018
86. **Nissanka, I.**, Park, H., Chamecki, M., Freire, L., Richter, D.H., “Parameterized vertical concentration profile of sea spray aerosols in the marine atmospheric boundary layer”, poster presentation at the Ocean Sciences Meeting, Portland, OR, February 14, 2018

87. **Peng, T.** and Richter, D.H., “Physical mechanisms and influence of sea-spray on the air-sea heat fluxes”, poster presentation at the Ocean Sciences Meeting, Portland, OR, February 14, 2018
88. **Richter, D.H.**, Bohac, R., Stern, D., “Uncertainty and reliability of using dropsondes for air-sea flux estimates in tropical cyclones”, oral presentation at the Ocean Sciences Meeting, Portland, OR, February 15, 2018
89. **Wright, E.**, Hansen, S.K., Bolster, D., Richter, D.H., Vesselinov, V., “Predicting upscaled behavior of aqueous reactants in heterogeneous porous media”, poster presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 12, 2017
90. **Nissanka, I.**, Park, H., Freire, L., Chamecki, Richter, D.H., “Understanding spatial and temporal behavior of sea spray droplets in the marine atmospheric boundary layer using and Eulerian-Lagrangian model”, poster presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 15, 2017
91. **Peng, T.** and Richter, D.H., “Insights into evaporative droplet dynamics in the high-wind atmospheric boundary layer”, poster presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 15, 2017
92. **Richter, D.H.** and Chamecki, M., “Turbulent transport of large particles in the atmospheric boundary layer”, presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 12, 2017
93. **Richter, D.H.**, Sweet, J., and Thain, D., “GPU acceleration of Eulerian-Lagrangian particle-laden turbulent flow simulations”, presentation at the American Physical Society Division of Fluid Dynamics meeting, Denver, CO, November 19, 2017
94. **Park, H.**, O’Keefe, K., and Richter, D.H., “Rayleigh-Benard turbulence modified by two-way coupled particles”, presentation at the American Physical Society Division of Fluid Dynamics meeting, Denver, CO, November 21, 2017
95. **Richter, D.H.**, “Inertial sand and dust in the atmospheric boundary layer”, presentation at the Workshop on Dust Emission, Transport, and Chemistry, Chicago, IL, September 26, 2017
96. **Park, H.**, O’Keefe, K., and Richter, D.H., “Modification of buoyancy-driven turbulence by thermally and dynamically coupled inertial particles”, presentation at the 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL, July 8, 2017
97. **Rocha-Brownell, K.**, Dérian, P., Richter, D.H., Sullivan, P.P., and Mayor, S.D., “Evaluation of a wavelet-based optical flow algorithm through the use of large eddy simulations”, presentation at the 28th International Laser Radar Conference, Bucharest, Romania, June 27-30, 2017
98. **Wright, E.**, Bolster, D., and Richter, D.H., “The impact of incomplete mixing on reactive transport through heterogeneous porous media”, poster presentation at the 9th International Conference on Porous Media, Thursday, May 11, 2017
99. **Rocha-Brownell, K.**, Dérian, P., Richter, D.H., Sullivan, P.P., and Mayor, S.D., “Evaluation of a wavelet-based optical flow algorithm through the use of large eddy simulations”, presentation at the American Meteorological Society Annual Meeting, Seattle, WA, Wednesday, January 25, 2017

100. **Wright, E.**, Bolster, D., and Richter, D.H., “The effects of incomplete mixing on reactive transport in flows through heterogeneous porous media using a Lagrangian particle tracking method”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, Friday, December 16, 2016
101. **Richter, D.H.**, “Heavy particle transport in the turbulent boundary layer”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, Tuesday, December 13, 2016
102. **Peng, T.** and Richter, D.H., “Impact of droplets on turbulent latent and sensible heat flux at the air-sea boundary”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, Tuesday, December 13, 2016
103. **Rocha-Brownell, K.**, Dérian, P., Richter, D.H., Sullivan, P.P., and Mayor, S.D., “Evaluation of a wavelet-based optical flow algorithm through the use of large eddy simulations”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, Tuesday, December 13, 2016
104. **Richter, D.H.**, Garcia, O., and Astephen, C., “Momentum transfer and particle stress in polydisperse, particle-laden flow”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Portland, OR, Monday, November 21, 2016
105. **Richter, D.H.** and Helgans, B., “Dispersed phase effects on boundary layer turbulence”, poster presentation at the American Physical Society Division of Fluid Dynamics Meeting, Portland, OR, Monday, November 21, 2016
106. **Soto, K.**, Escauriaza, C., Richter, D.H., “Multiscale simulations for the study of marine hydrokinetic devices”, poster presentation at the 2016 International Network on Offshore Renewable Energy North American Symposium, Orono, ME, October 29, 2016
107. **Peng, T.**, and Richter, D. H., “Impact of droplets on latent and sensible heat flux at the air-sea interface”, presentation at the American Meteorological Society Conference on Air-Sea Interaction, Madison, WI, Monday, August 15, 2016
108. **Richter, D.H.** Bohac, R., and Stern, D. P., “The reliability of using dropsondes for high-wind air-sea flux estimates”, presentation at the American Meteorological Society Conference on Air-Sea Interaction, Madison, WI, Monday, August 15, 2016
109. **Richter, D.H.** and Helgans, B., “Dispersed phase effects on boundary layer turbulence”, poster presentation at the American Meteorological Society Symposium on Boundary Layer Turbulence, Salt Lake City, UT, Monday, June 22, 2016
110. **Richter, D.H.**[#] and Helgans, B., “Turbulent heat fluxes under the influence of evaporating droplets”, presentation at the 9th International Conference on Multiphase Flow, Wednesday, May 25, 2016 ([#] presented in absentia by colleague Filippo Coletti of U. of Minnesota due to paternity leave)
111. **Wright, E.**, Bolster, D., and Richter, D.H., “Lagrangian models to study incomplete mixing of reactive transport in heterogeneous velocity fields”, presentation at the 8th International Conference on Porous Media, Thursday, May 2, 2016
112. **Richter, D.H.**, Bohac, R., Stern, D., “Using dropsondes to estimate surface fluxes in tropical cyclones: Uncertainty and reliability”, presentation at the American Meteorological Society 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, Puerto Rico, April 19, 2016

113. **González, C.**, Richter, D.H., Bolster, Bateman, S., D., Calantoni, J., Escauriaza, C., “Statistical characterization of the motion of sediment particles in oscillatory flows”, poster presentation at the Ocean Sciences Meeting, New Orleans, LA, February 22, 2016
114. **Richter, D.H.**, Bohac, R., Stern, D., “Determining high-wind enthalpy fluxes from dropsonde profiles in tropical cyclones”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 18, 2015
115. **Soto, K.**, Escauriaza, C., Richter, D.H., “Interactions of marine hydrokinetic devices in complex bathymetries: Numerical simulations in the Chacao Channel in Southern Chile”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 18, 2015
116. **González, C.**, Richter, D.H., Bolster, D., Calantoni, J., Bateman, S., Escauriaza, C., “Statistical characterization of the intermittency of bedload transport in conditions near the threshold of motion”, poster presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 15, 2015
117. González, C., Escauriaza, C., **Richter, D.H.**, Bolster, D., Calantoni, J., “On the intermittency of sediment transport in conditions near the threshold of motion”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Boston, MA, November 24, 2015
118. **Richter, D.H.**, “Particle-induced influences on the spectral TKE budget in wall-bounded turbulence”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Boston, MA, November 22, 2015
119. **Richter, D.H.**, Garcia, O., Astephen, C., “Turbulence modification in polydisperse, wall-bounded turbulence”, presentation at the 9th International Symposium on Turbulence and Shear Flow Phenomena (TSFP-9), Melbourne, Australia, July 2, 2015
120. **Richter, D.H.**, “The large-scale influence of small-scale dispersed phase elements in turbulence”, presentation at the International Conference on Model Integration Across Disparate Scales in Complex Turbulent Flow Simulation, State College, PA, June 16, 2015
121. **Richter, D.H.**, Bohac, R., Stern, D.P., “Air-sea thermodynamic fluxes and a signature of spray effects”, presentation at the American Meteorological Society Conference on Air-Sea Interaction, Phoenix, AZ, January 6, 2015
122. **Richter, D.H.**, Bohac, R., Stern, D.P., “Air-sea enthalpy fluxes and evidence of spray effects within tropical cyclones”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 15, 2014
123. **González, C.**, Escauriaza, C., Richter, D.H., Calantoni, J., Bolster, D., “Characterization of the intermittent behavior of sediment transport from numerical simulations on a flat bed channel”, poster at the American Geophysical Union Annual Meeting, San Francisco, CA, December 18, 2014
124. **Richter, D.H.**, Sullivan, P.P., “Spray-mediated sensible heat flux in shear-driven turbulence”, presentation at the American Meteorological Society Symposium on Boundary Layer Turbulence, Leeds, UK, June 9, 2014
125. **Richter, D.H.**, Stern, D.P., “Tropical cyclone air-sea enthalpy flux estimates from dropsonde profiles”, presentation at the American Meteorological Society Conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 31, 2014

126. **Richter, D.H.**, Stern, D.P., “Sensible heat flux at the spray-laden air-sea interface”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 13, 2013
127. **Richter, D.H.**, “Near-wall particle-laden turbulent transport”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Pittsburgh, PA, November 26, 2013
128. **Richter, D.H.**, Sullivan, P.P., “Sea spray dynamics in the marine boundary layer”, presentation at the American Geophysical Union Annual Meeting, San Francisco, CA, December 3, 2012
129. **Richter, D.H.**, Sullivan, P.P., “Near-surface sea spray dynamics via simulations of particle-laden, turbulent Couette flow”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, San Diego, CA, November 19, 2012
130. **Richter, D.H.**, Sullivan, P.P., “Turbulence and momentum flux modification in the presence of sea spray”, presentation at the American Meteorological Society’s 18th Conference on Air-Sea Interaction, Boston, MA, July 10, 2012
131. **Richter, D.H.**, Sullivan, P.P., “Sea spray dynamics in the marine boundary layer”, poster at the Ocean Sciences Meeting, Salt Lake City, UT, February 21, 2012
132. **Richter, D.H.**, Iaccarino, G., Shaqfeh, E.S.G., “Simulations of high Reynolds number wake transition in the presence of viscoelasticity”, presentation at the American Physical Society Division of Fluid Dynamics Meeting, Long Beach, CA, November 23, 2010
133. **Richter, D.H.**, Iaccarino, G., Shaqfeh, E.S.G., “Simulations of wake stabilization in viscoelastic flow past a cylinder”, presentation at the American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 8, 2010
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