

# Kelly M. Dorgan

Senior Marine Scientist II, Dauphin Island Sea Lab  
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## **Education**

- 2011–2013 Postdoctoral Researcher, Scripps Institution of Oceanography. Advisor: Greg Rouse  
2007–2010 Postdoctoral researcher, University of California, Berkeley. Advisor: Mimi Koehl  
2007 Ph. D. Oceanography, University of Maine. Advisor: Pete Jumars  
Dissertation: *Mechanics of burrowing in muddy sediments*  
2001 B.S. Marine Biology, University of California Santa Cruz.  
Regents' Scholar, Highest Honors

## **Professional Appointments**

- 2020–Present Associate Professor of Marine Sciences, University of South Alabama  
2019–Present Senior Marine Scientist II, Dauphin Island Sea Lab  
2014–2020 Assistant Professor of Marine Sciences, University of South Alabama  
2013–2019 Senior Marine Scientist I, Dauphin Island Sea Lab

## **Honors and Awards**

- 2022 SERDP Project of the Year award in Munitions Response (lead PI: Nina Stark)  
2020 Mobile Bay Magazine's 40 under 40  
2019 National Science Foundation CAREER Award  
2017 Office of Naval Research Young Investigator Program Award  
2015 National Academy of Sciences Gulf Research Program Early Career Research Fellowship  
2012 The Carl Gans Award "to an outstanding young investigator for distinguished contributions to the field of comparative biomechanics" from the Society for Integrative and Comparative Biology Division of Comparative Biomechanics  
2010 Selected as a participant in the International Antarctic Biology Course, McMurdo Station.  
2009 Selected as a participant in the FIRST IV (Faculty Institutes for Reforming Science Teaching) Workshop, Charleston, OR.  
2008 Selected as a participant in the Eco-DAS VIII (Ecological Dissertations in Aquatic Sciences) Symposium, Honolulu, HI.  
2007 Association for the Sciences of Limnology and Oceanography Raymond L. Lindeman Award for the outstanding paper in aquatic science by a young scientist  
2007 International Polychaete Association Student Award for Best Student Presentation  
2006 Popular Science's "Brilliant 10" Young Scientists

## **Publications (peer reviewed)**

1. Lockridge, G. and **K.M. Dorgan**. Accepted. Developing engineering skills through project-based learning: An Arduino-based submersible temperature and depth sensor. *Oceanography*.

2. **Dorgan, K.M.**, G. Lockridge, W.C. Clemo<sup>#</sup>. In press. Small-scale measurement of the elastic-granular transition of marine sediments. *Acta Geotechnica*.
3. Gadeken<sup>#</sup>, K.J., G. Lockridge, **K.M. Dorgan**. 2023. An in situ benthic chamber system to repeatedly measure sediment oxygen demand throughout a diel cycle. *Limnology and Oceanography: Methods* 21(11):645-655. doi: 10.1002/lom3.10571
4. **Dorgan, K.M.**, S.R. Arwade. 2023. Material properties of sediments steer burrowers and effect bioturbation. *JGR Biogeosciences* 128(6): e2022JG007269. doi.org/10.1029/2022JG007269
5. Ballentine<sup>#</sup>, W., **K.M. Dorgan**. 2023. Locomotory palp function in interstitial annelids. *Biological Bulletin*. <https://doi.org/10.1086/724580>
6. **Dorgan, K.M.**, K. A. Daltorio. 2023. Fundamentals of burrowing in animals and robots. *Frontiers in Robotics and AI* 10:1057876. <https://doi.org/10.3389/frobt.2023.1057876>
7. Gadeken<sup>#</sup>, K.J., **K.M. Dorgan**. 2023. Sediment macrofaunal behavioral response to the diel oxygen cycle. *Marine Ecology Progress Series* 703: 67-80. <https://doi.org/10.3354/meps14217>
8. Lee, K.M., G.R. Venegas, M.S. Ballard, **K.M. Dorgan**, E. Kiskaddon<sup>##</sup>, A.R. McNeese, P.S. Wilson. 2022. Impacts of infauna, worm tubes, and shell hash on sediment acoustic variability and deviation from the viscous grain shearing model. *Journal of the Acoustical Society of America* 152(4): 2456-2474. <https://doi.org/10.1121/10.0014907>
9. Gadeken<sup>#</sup>, K.J., E. Kiskaddon, J.M. Moore, **K.M. Dorgan**. 2022. The weird and wonderful world of worms. *Frontiers for Young Minds* 10: 902248. doi: 10.3389/frym.2022.902248
10. Clemo<sup>#</sup>, W.C., K.D. Giles\*, **K.M. Dorgan**. 2022. Biological influences on coastal muddy sediment structure following resuspension. *Limnology and Oceanography* 67(11): 2466-2482. <https://doi.org/10.1002/lno.12213>.
11. Berke, S.K., **K.M. Dorgan**, E. Kiskaddon<sup>##</sup>, S. Bell, K.J. Gadeken<sup>#</sup>, W.C. Clemo<sup>#</sup>, E. Keller\*, T. Caffray\*. 2022. Shallow infaunal responses to the Deepwater Horizon event: Implications for studying future oil spills. *Frontiers in Environmental Science* 10:950458. doi: 10.3389/fenvs.2022.950458.
12. Kiskaddon<sup>##</sup>, E., K.J. Gadeken<sup>#</sup>, S.K. Berke, S. Bell, J.M. Moore, **K.M. Dorgan**. 2022. Oil disturbance reduces infaunal family richness but does not affect phylogenetic diversity. *Frontiers in Environmental Science* 10:950493. doi: 10.3389/fenvs.2022.950493.
13. Alejandro Martinez; Jason DeJong; Idil Akin; Ali Aleali; Chloe Arson; Jared Atkinson; Paola Bandini; Tugce Baser; Rodrigo Borela; Ross Boulanger; Matthew Burrall; Yuyan Chen; Clint Collins; Douglas Cortes; Sheng Dai; Theodore DeJong; Emanuela Del Dottore; **Kelly Dorgan**; Richard Fragaszy; J. David Frost; Robert Full; Majid Ghayoomi; Daniel Goldman; Nicholas Gravish; Ivan Guzman; James Hambleton; Elliot Hawkes; Michael Helms; David Hu; Lin Huang; Sichuan Huang; Chris Hunt; Duncan Irschick; Hai Lin; Bret Lingwall; Allen Marr; Barbara Mazzolai; Benjamin McInroe; Tejas Murthy; Kyle O'Hara; Marianne Porter; Salah Sadek; Marcelo Sanchez; Carlos Santamarina; Lisheng Shao; James Sharp; Hannah Stuart; Hans Henning Stutz; Adam Summers; Junliang Tao; Michael Tolley; Laura Treers; Kurtis Turnbull; Rogelio Valdes; Leon van Passen; Gioacchino Viggiani; Daniel Wilson; Wei Wu; Xiong Yu; Junxing Zheng. 2022. Bio-inspired Geotechnical Engineering: Principles, Current Work, Opportunities and Challenges. *Geotechnique* 72(8): 687-705. <https://doi.org/10.1680/jgeot.20.P.170>
14. Gadeken<sup>#</sup>, K. J., W.C. Clemo<sup>#</sup>, S. Dykstra<sup>#</sup>, M. Fung<sup>#</sup>, W. Ballentine<sup>#</sup>, A. Hagemeyer<sup>#</sup>, **K.M. Dorgan**, B. Dzwonkowski. 2021. Transport and sediment footprint of oyster aquaculture biodeposits. *PeerJ* e11862. Doi: 10.7717/peerj.11862 \***MAS583 class project**
15. Jeffrey, C.J., **K.M. Dorgan**, L. Pysh. 2021. Promoting a more integrated approach to structure and function. *Integrative and Comparative Biology* 61(6): 2020-2030. <https://doi.org/10.1093/icb/icab144>
16. Gadeken<sup>#</sup>, K. J., **K.M. Dorgan**. 2021. A simple and inexpensive method to manipulate dissolved oxygen in the lab. *Oceanography* 34(2), 177-183.

17. **Dorgan, K.M.**, R.D. Moseley\*, E. Titus\*, H. Watson\*, S.M. Cole<sup>#</sup>, W. Walton. 2021. Dynamics of mud blister worm infestation and shell repair by oysters. *Biological Bulletin* 240: 118-131. doi: 10.1086/713145
18. Cole<sup>#</sup>, S.M., **K.M. Dorgan**, W. Walton, B. Dzwonkowski, J. Coogan<sup>#</sup>. 2020. Seasonal and spatial patterns of mudblister worm (*Polydora websteri*) infestation of farmed oysters in the northern Gulf of Mexico. *Aquaculture Environment Interactions* 12: 297-314.
19. **Dorgan, K.M.**, W. Ballentine\*, G. Lockridge, M. Ballard, K. Lee, P. Wilson. 2020. Impacts of simulated infaunal activities on acoustic wave propagation in sediments. *The Journal of the Acoustical Society of America* 147: 812-823. doi: 10.1121/10.0000558
20. **Dorgan, K.M.**, R. Parker<sup>#</sup>, R., W. Ballentine\*, S.K. Berke, E. Kiskaddon<sup>##</sup>, K. Gadeken<sup>#</sup>, E. Weldin\*, W.C. Clemo<sup>#</sup>, T. Caffray\*, S. Budai\*, S. Bell. 2020. Sublethal effects of oil exposure on infaunal behavior, bioturbation, and sediment oxygen consumption. *Marine Ecology Progress Series* 635: 9-24. doi: 10.3354/meps13215
21. Jacquot<sup>#</sup>, M., **K.M. Dorgan**, B. Mortazavi, A. Kleinhuizen, and W.C. Clemo<sup>#</sup>. 2018. Macrobenthic community structure and influence on denitrification in soft sediments (Mobile Bay, Alabama). *Marine Ecology Progress Series* 605: 17-35. <https://doi.org/10.3354/meps12759>
22. **Dorgan, K.M.** 2018. Kinematics of burrowing by peristalsis in granular sands. *Journal of Experimental Biology* 221(10): jeb167759. <https://doi.org/10.1242/jeb.167759>
23. Clemo<sup>#</sup>, W.C., and **K.M. Dorgan**. 2017. Functional morphology of Eunicidan (Polychaeta) Jaws. *Biological Bulletin* 233: 227-241. <https://doi.org/10.1086/696291>
24. **Dorgan, K.M.**, C. D'Amelio\*, S.M Lindsay. 2016. Strategies of burrowing in soft muds by diverse polychaetes. *Invertebrate Biology* 135(4): 287-301. <https://doi.org/10.1111/ivb.12131> **\*Top 20 downloaded articles for 2016-2017** (355 downloads)
25. Grill\*, S., **K. M. Dorgan**. 2015. Burrowing by small polychaetes - mechanics, behavior, and muscle structure of *Capitella* sp. *Journal of Experimental Biology* 218: 1527-1537. <https://doi.org/10.1242/jeb.113183>
26. **Dorgan, K.M.** 2015. Commentary: The biomechanics of burrowing and boring. *Journal of Experimental Biology* 218: 176-183. <https://doi.org/10.1242/jeb.086983>
27. Jumars, P.A., **K.M. Dorgan**, S.M. Lindsay. 2015. Diet of worms emended: An update of Polychaete feeding guilds. *Annual Review of Marine Science* 7: 497-520. <https://doi.org/10.1146/annurev-marine-010814-020007>
28. Francoeur\*, A.A., **K.M. Dorgan**. 2014. Burrowing behavior in mud and sand of morphologically divergent polychaete species (Annelida: Orbiniidae). *Biological Bulletin* 226: 131-145. <https://doi.org/10.1086/BBLv226n2p131>
29. Law, C.J.\*, **K.M. Dorgan**, G.W. Rouse. 2014. Relating divergence in polychaete musculature to different burrowing behaviors: a study using Opheliidae (Annelida). *Journal of Morphology* 275(5): 548-571. DOI: 10.1002/jmor.20237.
30. **Dorgan, K.M.**, C.J. Law\*, and G.W. Rouse. 2013. Meandering worms: Mechanics of undulatory burrowing in muds. *Proceedings of the Royal Society B* 280(1757): 20122948. <https://doi.org/10.1098/rspb.2012.2948>
31. Law\*, C.J., **K.M. Dorgan**, and G.W. Rouse. 2013. Validation of three sympatric *Thoracophelia* species (Annelida: Opheliidae) from Dillon Beach, CA using mitochondrial and nuclear DNA sequence data. *Zootaxa* 3608(1): 67-74. <https://doi.org/10.11646/zootaxa.3608.1.4>
32. Johnson, B.D., M. Barry, B.P. Boudreau, P.A. Jumars, **K.M. Dorgan**. 2012. In Situ Tensile Fracture Toughness of Surficial Cohesive Marine Sediments. *Geo-Marine Letters* 32(1): 39-48. DOI: 10.1007/s00367-011-0243-1.
33. **Dorgan, K.M.**, S. Lefebvre, J.H. Stillman, M.A.R. Koehl. 2011. Energetics of burrowing by the cirratulid polychaete, *Cirriformia moorei*. *Journal of Experimental Biology* 214: 2202-2214. <https://doi.org/10.1242/jeb.054700>
34. Denny, M., **K.M. Dorgan**, D. Evangelista, A. Hettinger, J. Leichter, W. Ruder, I. Tuval. 2011. Anchor ice and benthic disturbance in shallow Antarctic waters: Interspecific variation in

- initiation and propagation of ice crystals. *Biological Bulletin* 221(2).  
<https://doi.org/10.1086/BBLv221n2p155> **\*\*Editor's pick and cover image**
35. Murphy\*, E.A.K., **K.M. Dorgan**. 2011. Burrow extension with a proboscis: Mechanics of burrowing by the glycerid, *Hemipodus simplex*. *Journal of Experimental Biology* 214: 1017-1027.  
<https://doi.org/10.1242/jeb.051227>
  36. Che\*, J., **K.M. Dorgan**. 2010. Mechanics and kinematics of backward burrowing by the polychaete, *Cirriformia moorei*. *Journal of Experimental Biology* 213: 4272-4277.  
<https://doi.org/10.1242/jeb.049320>
  37. **Dorgan, K.M.** 2010. Environmental constraints on the mechanics of crawling and burrowing using hydrostatic skeletons. *Journal of Experimental Mechanics* 50(9): 1373-1381. DOI:  
10.1007/s11340-010-9399-2
  38. Che\*, J. and **K.M. Dorgan**. 2010. It's tough to be small: Dependence of burrowing kinematics on body size. *Journal of Experimental Biology* 213: 1241-1250. <https://doi.org/10.1242/jeb.038661>  
**\*\*featured article in "Inside JEB"**
  39. **Dorgan, K.M.**, S.R. Arwade, and P.A. Jumars. 2008. Worms as wedges: Effects of the mechanical properties of the medium on burrowing behavior. *Journal of Marine Research* 66(2): 219-254.  
<https://doi.org/10.1357/002224008785837130>
  40. **Dorgan, K.M.**, S.R. Arwade, and P.A. Jumars. 2007. Burrowing in muddy sediments by crack propagation: forces and kinematics. *Journal of Experimental Biology* 210: 4198-4212.  
<https://doi.org/10.1242/jeb.010371>  
**\*\*F-1000 recommended** (Summers A: 2008. F1000.com/1116373)
  41. Jumars, P.A., **K.M. Dorgan**, L.M. Mayer, B.P. Boudreau and B.D. Johnson. 2007. Physical constraints on infaunal lifestyles: May the persistent and strong forces be with you. In: W. Miller, III, Ed. *Trace Fossils: Concepts, Problems, Prospects*. Elsevier, pp. 442-457.  
<https://doi.org/10.1016/B978-044452949-7/50152-2>
  42. **Dorgan, K.M.**, P.A. Jumars, B.P. Boudreau and B.D. Johnson. 2006. Macrofaunal burrowing: The medium is the message. *Oceanography and Marine Biology: An Annual Review* 44: 85-121.
  43. Boudreau, B.P., Algar, C., Johnson, B., Croudace, I., Reed, A., **Dorgan, K.M.**, Jumars, P.A., Grader, A.S., Gardiner, B.S., and Y. Furukawa. 2005. Bubble growth and rise in soft sediments. *Geology* 33 (6): 517-520. <https://doi.org/10.1130/G21259.1>
  44. **Dorgan, K.M.**, P.A. Jumars, B. Johnson, B.P. Boudreau, and E. Landis. 2005. Burrow extension by crack propagation. *Nature* 433: 475. <https://doi.org/10.1038/433475a>  
**\*\*ASLO Lindeman award recipient**
  45. **Dorgan, K.M.**, A. Valdes, and T.M. Gosliner. 2002. Phylogenetic systematics of the genus *Platydoris* (Mollusca, Nudibranchia, Doridoidea) with descriptions of six new species. *Zoologica Scripta* 31: 271-319. <https://doi.org/10.1046/j.1463-6409.2002.00105.x>

\* undergraduate student or post-B.S. intern or technician

# graduate student

## M.S. technician

^ postdoc

### **Publications (not peer reviewed)**

46. **Dorgan, K.M.**, G. Lockridge, M.R. Frey\*, W.C. Clemo#, G. Venegas, K.M. Lee, M.S. Ballard, N. Stark, N. Brilli, J. Calantoni. 2023. Relating tensile strength to other sediment properties along a sand-mud gradient in Mobile Bay, Alabama. *The Proceedings of the Coastal Sediments '23 Conference*, 1565-1575.

47. Cox, C.E.<sup>#</sup>, **K.M. Dorgan**, N. Stark, G. Massey, A. Rodriguez-Marek, C. Friedrichs, E. Hunstein, M.R. Rahman. 2023. Influence of biogenic processes on seabed properties in the York River Estuary, Chesapeake Bay. *The Proceedings of the Coastal Sediments '23 Conference*, 1082-1094.
48. Clemo, W.C.<sup>#</sup>, **K.M. Dorgan**, D.J. Wallace, B. Dzwonkowski. 2023. Temporal changes to shallow offshore coastal sediment storm bed characteristics following hurricane Sally (2020). *The Proceedings of the Coastal Sediments '23 Conference*, 1055-1068. \*\*student award winner
49. Moore, J., N. Stark, G. Massey, C. Friedrichs, **K. Dorgan**, A. Rodriguez-Marek, C. Cox, M.R. Rahman, E. Hunstein. 2023. Investigating the relationship between geotechnical seabed properties and erodibility. *The Proceedings of the Coastal Sediments '23 Conference*, 2408-2419. \*\*student award winner
50. Rahman, M.R., E. Hunstein, A. Rodriguez-Marek, N. Stark, G. Massey, **K. Dorgan**, C. Cox. 2023. Probabilistic soil characterization based on portable free fall penetrometer measurements. *The Proceedings of the Coastal Sediments '23 Conference*, 2398-2407.
51. **Dorgan, K.M.**, S.R. Arwade. 2022. Linking Bioturbation to Geotechnical Properties of Sediments: A Modeling Approach (Benthic Poetry from the CERF meeting). *CERF's Up!* 48(2): 4-5.
52. Venegas, G.R., M.R. Frey, K.M. Lee, M.S. Ballard, W.C. Clemo, **K.M. Dorgan**. 2021. Relationships between sediment organic content and viscous grain shearing parameters in Mobile Bay, Alabama. *Proceedings of Meetings on Acoustics*, **45**, 070004. <https://doi.org/10.1121/2.0001538>
53. Lee, K.M., G.R. Venegas, M.S. Ballard, P.S. Wilson, **K.M. Dorgan**. 2018. Acoustics of biologically active marine sediments. *Proceedings of Meetings on Acoustics* 33: 005003.
54. Lee, K.M., M.S. Ballard, A.R. McNeese, **K.M. Dorgan**, W. Ballentine\*, G.R. Venegas, P.S. Wilson. 2017. Comparison between infauna abundance and seabed geoacoustic properties. *Proceedings of Meetings on Acoustics* 31: 005002.
55. Venegas, G.R., P.S. Wilson, K.M. Lee, M.S. Ballard, A.R. McNeese, **K.M. Dorgan**. 2017. Core and resonance logger (CARL) measurements of fine-grained sediments containing infauna. *Proceedings of Meetings on Acoustics* 31: 005001.
56. Lee, K.M., M.S. Ballard, G.R. Venegas, P.S. Wilson, **K.M. Dorgan**, A.H. Reed, and E. Roosen. 2016. Preliminary characterization of surficial sediment acoustic properties and infauna in the New England Mud Patch. *Proceedings of Meetings on Acoustics* 26: 070003. doi: 10.1121/2.0000486

### **Manuscripts submitted**

57. Stark, N., **K.M. Dorgan**, N.C. Brill, M.R. Frey\*, C. Cox<sup>#</sup>, J. Calantoni. Re-submitted. Observations of surficial seabed sediment strength and local infauna in sandy parts of Mobile Bay. *Acta Geotechnica*.
58. Gadeken<sup>#</sup>, K.J., **K.M. Dorgan**. In review. Effects of oxygen cycling and benthic macrofauna on sediment oxygen demand. *Estuaries and Coasts*.
59. Ballentine, W. <sup>#</sup>, **K.M. Dorgan**. In review. The meioflume: A new system for observing the interstitial behavior of meiofauna. *Integrative Organismal Biology*.
60. Clemo, W.C.<sup>#</sup>, **K.M. Dorgan**, D.J. Wallace, B. Dzwonkowski. Submitted. Spatially variable impacts of hurricanes on shallow sediment structure. *Journal of Geophysical Research: Oceans*.
61. Cho, A.S.\*<sup>#</sup>, **K.M. Dorgan**, G. Lockridge. Submitted. Small-scale measurement of fracture toughness of muddy marine sediments via bubble injection. *L&O Methods*.

### **Manuscripts in preparation**

62. Clemo, W.C.<sup>#</sup>, **K.M. Dorgan**, D.J. Wallace, B. Dzwonkowski. In prep. Impacts of repeated hurricane disturbance on shallow coastal sediment macrofaunal communities. In prep for *Marine Ecology Progress Series*.

63. Ballentine, W<sup>#</sup>, S. Dohner, **K.M. Dorgan**, A. Penko. In prep. Microalgae and meiofauna induce heterogeneous biostabilization in marine sediments. In prep for *Nature Communications*.
64. Wang, X., **K.M. Dorgan**, M. Rojas\*, S. Arwade, A. Louhghalam. In prep. Sediment heterogeneity affects navigation by burrowers: A modeling study. In prep for *Journal of the Royal Society Interface*.

### **Published Abstracts**

65. **Dorgan, K.M.**, W.M. Ballentine\*, G. Lockridge, M.S. Ballard, K.M. Lee, P.S. Wilson. 2018. Effects of burrow and tube construction by infauna on sound propagation through marine sediments. *The Journal of the Acoustical Society of America* 144: 1842.
66. Lee, K.M., M.S. Ballard, A.R. McNeese, **K.M. Dorgan**, G.R. Venegas, P.S. Wilson. 2018. Effects of benthic biology on geoaoustic properties of marine sediments. *The Journal of the Acoustical Society of America* 144: 1843.
67. Ballard, M.S., K.M. Lee, A.R. McNeese, J.D. Chaytor, A.H. Reed, **K.M. Dorgan**, G.R. Venegas, P.S. Wilson. 2018. Observations of the effects of benthic biology in measurements from the Acoustic Coring System collected in the New England Mud Patch. *The Journal of the Acoustical Society of America* 144: 1843.
68. Clemo<sup>#</sup>, W.C., **K.M. Dorgan**. 2017. Relating functional diversity of infauna and sediment geoaoustic properties. *The Journal of the Acoustical Society of America* 142: 2665.
69. Ballentine\*, W., **K.M. Dorgan**, K.M. Lee, M.S. Ballard, A.R. McNeese, P.S. Wilson, G.R. Venegas. 2017. Effects of marine infauna on the acoustic properties of sediment. *The Journal of the Acoustical Society of America* 142: 2693.
70. Zeh, M.C., P.S. Wilson, K.M. Lee, M.S. Ballard, **K.M. Dorgan**. 2016, Acoustic scattering by tube-building worms (Polychaeta: Maldanidae) of the New England Mud Patch. *The Journal of the Acoustical Society of America* 140: 3305.

### **Patents**

US 8561475 B2. Johnson, B.D., B.P. Boudreau, M.A. Barry, K.M. Dorgan, P.A. Jumars. Method and apparatus for investigating mechanical properties of soft materials. Filed on Mar. 18, 2011.

### **Grants and Fellowships**

- |           |   |
|-----------|---|
| 2022-2025 | Alabama Center of Excellence, “Meiofaunal diversity as a tool for understanding and monitoring northern Gulf of Mexico environments” (PIs: K. Dorgan, K. Halanych, K. Kocot; \$147,801 to KD of \$399,953 total)                                |
| 2021-2024 | Strategic Environmental Research and Development Program (SERDP), “Rapid soil classification and integration of soil characteristics for UXO site characterization and risk assessment” (PI: N. Stark, Virginia Tech; \$279,969 subaward to KD) |
| 2021-2024 | Office of Naval Research, Code 32, Division 322, Ocean Acoustics, Award # N00014-21-1-2214 “Impacts of infaunal organisms and organic matter on acoustic wave propagation through near-surface sediments” (PI: K. Dorgan; \$259,994)            |
| 2020-2023 | Office of Naval Research, Code 341, “Sensing sediment properties with soft robotic worms” (PI: K. Dorgan; \$450,533)  |
| 2019-2024 | National Science Foundation CAREER Grant, Biological Oceanography (co-funded by IOS and Marine Geology), “CAREER: Mechanisms of bioturbation and ecosystem engineering by benthic infauna” (PI: K. Dorgan; \$863,786)                           |
| 2019-2020 | University of South Alabama Center for Environmental Resiliency “Effects of diel oxygen cycling and macrofaunal communities on sediment oxygen demand in  |

- shallow seagrass beds” (PI: K. Gadeken<sup>#</sup>, K. Dorgan; \$19,910)
- 2018 Office of Naval Research, Instrumentation grant, “Field instruments for in situ measurement of geotechnical properties of sediments” #N00014-18-1-2806 (PI: K. Dorgan, G. Lockridge; \$147,797)
- 2017 - 2020 Office of Naval Research, Young Investigator Program “Impacts of infauna on acoustic and geotechnical properties of sediments” #N00014-17-1-2625 (PI: K. Dorgan; \$509,995)
- 2016 Volkswagon Stiftung “The Ocean’s Seafloor - One Bio-Geo-System Symposium (PI: A. Kopf, T. Wever, C. Jenkins, K. Dorgan; no direct funds to KD)
- 2016-2018 Mississippi-Alabama Sea Grant “Maximizing the return on investment of oyster aquaculture by managing mud blister worm infestations” (PI: K. Dorgan and W. Walton; \$113,872 to KD of \$149,540 total)
- 2015-2016 University of South Alabama Center for Environmental Resiliency “Characterization of hypoxia vulnerabilities in the Mobile Bay Estuary” (PI: B. Dzwonkowski and K. Dorgan; \$10,750 to DISL (shared) of \$19,595)
- 2015-2017 Office of Naval Research, Code 32, Division 322, Ocean Acoustics, Award #N00014-15-1-2602 “Impacts of infaunal organisms on acoustic wave propagation through sediments” (PI: K. Dorgan; \$148,446)
- 2015-2017 National Academy of Sciences Gulf Research Program Early Career Research Fellowship (\$75,000)
- 2015-2017 Gulf of Mexico Research Initiative; Alabama Center for Ecological Resilience (ACER) Consortium (co-PI and project lead investigator; Director: J. Valentine; \$435,455 to KD of \$693,293 for project, of \$6.3M total award)
- 2010-2013 NSF Biological Oceanography Award #1029160 “Functional diversity of infaunal burrowers: Towards a mechanistic understanding of animal-sediment interactions” (with PI: G. Rouse; \$527,281)
- 2007-2010 NSF Integrative Organismal Systems Award #0642249 “QEIB: Energetic cost of burrowing” (with PI: M.A.R. Koehl; ~\$500K)
- 2002-2007 NSF Graduate Fellowship (~\$135K)
- 2002-2004 National Defense Science and Engineering Graduate (NDSEG) Fellowship (~\$80K)

### **Mentoring and other activities to promote Justice, Inclusion, Equity, and Diversity**

- 2020-current Developed and organized DISL Undergraduate Mentoring Program - Trained 15, 21, and 18 graduate student mentors, paired with 15, 23, 18, and 20 undergraduate students in years 2020, 2021, 2022, 2023 respectively (2020: including 3 under-represented minorities who are the first in their family to go to college, 2 additional students first in their family to go to college; 2021 – 4 URMs, 1 veteran, 4 first gen students; 2022 – 3 URMs, 3 first gen students; 2023 – 6 URMs, 3 first gen students).
- 2023 - Co-organizer, Mentoring program for Society of Integrative and Comparative Biology (SICB) Meeting 2024, Division of Invertebrate Zoology
- 2023 Mentor, Millennium Scholars Program <<https://starscholars.org/millennium-scholars/>>
- 2023 Hosted Tarah Keech for workshop for graduate students on "Coaching Skills for Collaboration & Burnout Prevention" (May 26, 2023)
- 2022 Hosted Dr. Kim Mulligan-Guy for Mentoring workshop for graduate students and departmental seminar on DEI (April 22, 2022)
- 2021 Unlearning Racism in Geosciences (URGE) pod leader (spring 2021)
- 2020-2021 Co-organized the DISL Summer Events to promote inclusion and career development, 2020 - including 9 Career nights and 8 Thursday social events (panels, art nights, trivia nights). 2021 – 4 Career nights and 4 social events.

## **Awards to my students**

- 2023 MS student Chesna Cox awarded Sea Grant Knauss Fellowship
- 2023 PhD student Kara Gadeken selected as University of South Alabama's nominee for the CSG/ProQuest Distinguished Dissertation Award
- 2023 PhD student Cy Clemo received student paper award from Coastal Sediments 2023
- 2023 PhD student Cy Clemo received NRC Research Associate award at the Naval Research Laboratory in Stennis Space Center, MS.
- 2023 PhD student Cy Clemo received 2023 Shipp Award for Outstanding PhD student, School of Marine and Environmental Sciences, University of South Alabama
- 2023 Post-BS Technician Moey Rojas awarded \$500 from Society for Integrative and Comparative Biology Broadening Participation Committee for conference costs
- 2023 PhD student Will Ballentine awarded runner-up for student talk, Division of Invertebrate Zoology, Society for Integrative and Comparative Biology
- 2022 PhD student Will Ballentine selected as Society for Integrative and Comparative Biology Division of Invertebrate Zoology representative to the Student and Postdoctoral Affairs Committee
- 2022 Post-BS Technician Maddy Frey received poster award at Nereis Park VI conference
- 2022 PhD student Will Ballentine selected as NREIP intern at the Naval Research Lab, Stennis, MS
- 2022 PhD student Will Ballentine awarded runner-up for student talk, Division of Invertebrate Zoology, Society for Integrative and Comparative Biology
- 2021 PhD student Kara Gadeken received NSF OCE Postdoctoral Fellowship
- 2021 PhD student Kara Gadeken received 2021 Shipp Award for Outstanding PhD student, Department of Marine Sciences, University of South Alabama
- 2021 PhD student Kara Gadeken received 2021 Lou Burnett Award funding through Southern Association of Marine Laboratories Student Support
- 2020 PhD student Kara Gadeken awarded 2<sup>nd</sup> place, Oral Presentation, Bays and Bayous meeting
- 2019 PhD student Cy Clemo received Prism Award for Most Inspiring Film, Coastal and Estuarine Research Federation
- 2018 PhD student Kara Gadeken awarded Best Student Poster at Bays and Bayous meeting
- 2017 MS student Ryan Parker selected for Coastal and Estuarine Research Federation (CERF) Rising Tides program
- 2014 Undergraduate student Susann Grill awarded Division of Invertebrate Zoology Best Student Poster at the Society for Integrative and Comparative Biology meeting
- 2010 Manuscript by undergraduate student, James Che, featured in "Inside JEB"

## **Other Professional Appointments**

- Sept–Oct 2007 Research Assistant, University of Maine
- 2002–2007 NSF Graduate Research Fellow. Darling Marine Center, University of Maine
- 2002–2004 National Defense Science and Engineering Graduate Fellow,  
Darling Marine Center, University of Maine
- 2000 (Fall) NSF REU Intern, Bermuda Biological Station
- 2000 (Summer) NSF REU Intern, Darling Marine Center, University of Maine
- 1999 (Summer) NSF REU Intern, Summer Systematics Institute, California Academy of Sciences
- 1995–1998 Intern, Virginia Institute of Marine Sciences

## **Invited Lectures**



- 2022 Acoustical Society of America Fall Meeting 2022, “Mud Acoustics” session, K.M. Dorgan and W.C. Clemo<sup>#</sup>. “The role of biological processes in muddy sediments,” Dec. 6, 2022, Nashville, TN.
- 2022 RoboSoft 2022 Conference Workshop: Grand Challenges for Burrowing Soft Robots, “How muds fail – a burrower’s perspective” (virtual), April 4, 2022
- 2021 Graduate Student Symposium, Keynote speaker, “What I’ve learned about being a scientist (so far),” Dauphin Island Sea Lab (virtual), April 16, 2021
- 2020 Panel member, “Lessons Learned from DoD Grantees” at (DEPSCoR) DoD Day Southern Regional Meeting, February 20, 2020, Louisiana State University, Baton Rouge, LA.
- 2019 Bio-Inspired Geotechnics Workshop, “Burrowing in Marine Sediments” May 19-22, 2019, Pacific Grove, CA.
- 2016 The Ocean’s Seafloor - One Bio-Geo-System, October 12-14, 2016, Hannover, Germany
- 2016 Puget Sound Icarus Workshop on Species Traits, March 2-4, 2016, Lacey, WA.
- 2014 SoftComp Topical Workshop: Fracture of Soft Materials: from soft solid to complex fluids, October 15-18, 2014, Palavas-les-Flots, France.
- 2011 Aspen Ocean Symposium: Microenvironments modulating biological interactions in the ocean, Aspen Center for Physics, January 17-21, 2011, Aspen, CO.
- 2008 Nereis Park Bioturbation Meeting, August 23-27, 2008, Renesse, Netherlands.
- 2007 Raymond Lindeman Award Plenary Talk, ASLO 2007 Aquatic Sciences Meeting, February 4-9, 2007, Santa Fe, NM.

### **Invited Departmental Seminars**

- 2019 Naval Postgraduate School, Oceanography Department, May 23, 2019, Monterey, CA.
- 2017 University of Alabama, Birmingham, Biology Department, October 30, 2017, Birmingham, AL.
- 2015 University of Alabama, Marine Science Club, October 6, 2015 (via skype).
- 2015 Valdosta University, Biology Department, October 1, 2015, Valdosta, GA.
- 2015 University of West Florida, Biology Department, March 20, 2015, Pensacola, FL.
- 2014 University of Virginia, Department of Environmental Sciences, December 4, 2014, Charlottesville, VA.
- 2014 Environmental Protection Agency Gulf Ecology Division, March 19, 2014, Gulf Breeze, FL.
- 2014 Whitney Lab, University of Florida, February 21, 2014, St. Augustine, FL.
- 2014 Gulf Coast Research Laboratory, University of Southern Mississippi, February 13, 2014, Ocean Springs, MS.
- 2013 Bigelow Laboratory for Ocean Sciences, East Boothbay, ME. October 3, 2013.
- 2011 University of California, Los Angeles, Department of Ecology and Evolutionary Biology Seminar, November 30, 2011, Los Angeles, CA.
- 2011 Scripps Institution of Oceanography, Marine Biology Seminar, April 1, 2011, La Jolla, CA.
- 2010 Bodega Marine Laboratory, October 20, 2010, Bodega Bay, CA.
- 2010 Romberg Tiburon Center for Environmental Studies, October 6, 2010, Tiburon, CA.
- 2010 University of Southern Mississippi, Department of Marine Science Seminar, April 29, 2010, Stennis, MS.
- 2009 Friday Harbor Laboratories, October 6, 2009, Friday Harbor, WA.
- 2009 Hopkins Marine Station, July 29, 2009, Monterey, CA.
- 2007 Unity College Women’s Environmental Leadership Group, March 6, 2007, Unity, ME.
- 2006 Bowdoin College, Biology Department Seminar, November 2, 2006, Bowdoin, ME.

### **Contributed Presentations**

1. **Dorgan, K.M.**, G. Lockridge, M.R. Frey\*, W.C. Clemo<sup>#</sup>, G. Venegas, K.M. Lee, M.S. Ballard, N. Stark, N. Brilli, J. Calantoni. 2023. Relating tensile strength to other sediment properties along a sand-mud gradient in Mobile Bay, Alabama. Coastal Sediments '23 Conference, New Orleans, LA, April 11-15, 2023 (poster).
2. **Dorgan, K.M.**, S.R. Arwade, A. Louhghalam, X. Wang. 2023. How the worm turns: impacts of geotechnical properties on burrower navigation. Society for Integrative and Comparative Biology 2023, Austin, TX, Jan. 3-7, 2023 (oral).
3. **Dorgan, K.M.**, M.R. Frey\*, W.C. Clemo<sup>#</sup>, G.R. Venegas, K.M. Lee, M.S. Ballard, P.S. Wilson. 2022. Impacts of infauna on sediment heterogeneity and acoustic propagation. Acoustical Society of America 2022 Fall Meeting, Nashville, TN, Dec. 5-9, 2022 (oral).
4. **Dorgan, K.M.**, S.R. Arwade. 2022. Bioturbation in cohesive sediments: the role of geotechnical properties in resisting particle mixing. 6<sup>th</sup> Nereis Park International Conference, Lagonna-Daoulas, France, August 22-26, 2022 (oral).
5. **Dorgan, K.M.**, S.R. Arwade, M.R. Frey\*. 2022. Bioturbation depends on geotechnical properties of sediments. Benthic Ecology Meeting 2022, Portsmouth, NH, March 29 – April 2, 2022 (oral).
6. **Dorgan, K.M.**, G. Lockridge, C. Cox<sup>#</sup>, W.C. Clemo<sup>#</sup>, A. McKee<sup>^</sup>. 2022. How muds fail – implications for burrowers. Society for Integrative and Comparative Biology 2022, virtual, January, 2022 (oral).
7. **Dorgan, K. M.**, G. Lockridge, M.R. Frey\*, W.C. Clemo<sup>#</sup> (presenting author), K.M. Lee, M.S. Ballard, G.R. Venegas, N. Stark, N. Brilli<sup>#</sup>, J. Calantoni. 2021. Relating tensile strength to acoustic and biological properties of sediments along a mud-sand gradient in Mobile Bay, AL. Acoustical Society of America Meeting, Dec. 3, 2021 (oral).
8. **Dorgan, K.M.**, S.R. Arwade. 2021. Linking bioturbation to geotechnical properties of sediments: A modeling approach. Coastal and Estuarine Research Federation 2021 Conference, virtual, Nov. 1-11, 2021 (oral). \*\* featured in CERF's Up 48(2), p. 4
9. **Dorgan, K.M.**, S. K. Berke, E. Kiskaddon<sup>##</sup>, K. Gadeken<sup>#</sup>, S. Bell. 2019. Linking infauna to sediment oxygen demand. Coastal and Estuarine Research Federation 2019 Conference, Mobile, AL, Nov. 3-7, 2019 (oral).
10. **Dorgan, K.M.**, G. Lockridge, W. Ballentine<sup>#</sup>, E. Kiskaddon<sup>##</sup>, W.C. Clemo<sup>#</sup>. 2019. Mechanical properties of muds: A worm's perspective. Society for Integrative and Comparative Biology Meeting, January 3-7, 2019, Tampa, FL (oral).
11. **Dorgan, K.M.**, W. Ballentine<sup>#</sup>, G. Lockridge, E. Kiskaddon<sup>##</sup>. Effects of burrow and tube construction by infauna on sound propagation through marine sediments. Bays and Bayous, Mobile, AL, November 29-30, 2018 (oral).
12. **Dorgan, K.M.**, W. Ballentine<sup>#</sup>, G. Lockridge, M.S. Ballard, K.M. Lee, P.S. Wilson. 2018. Effects of burrow and tube construction by infauna on sound propagation through marine sediments. Acoustical Society of America Meeting, Nov. 5-9, 2018, Victoria, BC, Canada (oral, invited symposium).
13. **Dorgan, K.M.**, G. Lockridge, W. Ballentine\*, P. Wilson, M. Ballard, K. Lee. 2017. Acoustics as a tool for studying infaunal impacts on sediments. Nereis Park Conference. August 8-11, 2017, Southampton, NY (oral).
14. **Dorgan, K.M.** 2017. Worms in gelatin. Nereis Park Film Festival. August 8-11, 2017, Southampton, NY (film).
15. **Dorgan, K.M.**, G. Lockridge, W. Ballentine\*, P. Wilson, M. Ballard, K. Lee. 2017. Acoustics as a tool for studying infaunal impacts on sediments. Benthic Ecology Meeting. April 12-16, 2017, Myrtle Beach, SC (oral).
16. **Dorgan, K.M.**, S. Berke, W.C. Clemo<sup>#</sup>, K. Gadeken<sup>#</sup>, E. Keller\*, T. Caffray\*, A. Robinson, S. Bell. 2017. Sediment oxygen demand in shallow seagrass beds in the Chandeleur Islands. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Feb. 6-9, 2017, New Orleans, LA (poster).

17. **Dorgan, K.M.**, W. Walton, S. Cole<sup>#</sup>. 2016. Maximizing the Return on Investment of Oyster Aquaculture by Managing Mud Blister Worm Infestation. Bays and Bayous. Nov. 30-Dec. 1, 2016, Biloxi, MS (oral).
18. **Dorgan, K.M.** 2016. Biological-physical interactions at organismal scales from sediments to the water column: a celebration of the career of Pete Jumars. Ocean Sciences Meeting. February 21-26, 2016, New Orleans, LA (oral).
19. **Dorgan, K.M.**, C. D'Amelio<sup>\*</sup>, S.M. Lindsay. 2016. Strategies of burrowing in soft muds by diverse polychaetes. Society for Integrative and Comparative Biology Meeting. January 3-7, 2016, Portland, OR (oral).
20. **Dorgan, K.M.**, P.A. Jumars, S.M. Lindsay. 2015. Polychaete Feeding - Synthesized and updated - New diet of worms. Coastal and Estuarine Research Federation Meeting, November 8-13, 2015, Portland, OR (oral).
21. **Dorgan, K.M.**, C. D'Amelio<sup>\*</sup>, S.M. Lindsay. 2015. Strategies of burrowing in soft muds by diverse polychaetes. Southeastern Regional Society for Integrative and Comparative Biology Meeting. October 12, 2015, Atlanta, GA (short oral).
22. **Dorgan, K.M.** 2015. Food webs in marine sediments: A case study using inquiry-based learning. Conference on Teaching and Learning, University of South Alabama. May 11-12, 2015, Mobile, AL (poster).
23. **Dorgan, K.M.**, P.A. Jumars, S.M. Lindsay. 2014. Revisiting the Diet of Worms. Society for Integrative and Comparative Biology Meeting. January 3-7, 2014. Austin, TX (poster).
24. **Dorgan, K.M.** 2013. Peristaltic burrowing in beach sands. ASLO 2013 Aquatic Sciences Meeting, February 17-22, 2013, New Orleans, LA (oral).
25. **Dorgan, K.M.**, C.J. Law<sup>\*</sup>, G.W. Rouse. 2013. Meandering through marine muds: kinematics of burrowing and swimming by the polychaete *Armandia brevis*. Society for Integrative and Comparative Biology 2013 Annual Meeting, January 3-7, 2013, San Francisco, CA (oral).
26. **Dorgan, K.M.**, G. Rouse. 2012. Peristaltic burrowing in beach sands by the polychaete, *Thoracophelia mucronata*. Society for Integrative and Comparative Biology 2012 Annual Meeting, January 3-7, 2012, Charleston, SC (oral).
27. **Dorgan, K.M.**, S. Lefebvre, J.H. Stillman, M.A.R. Koehl. 2011. Energetics of burrowing by the cirratulid polychaete, *Cirriiformia moorei*. Society for Integrative and Comparative Biology 2011 Annual Meeting, January 3-7, 2011, Salt Lake City, UT (oral).
28. **Dorgan, K.M.** 2010. The role of anaerobic metabolism in burrowing energetics. Ocean Sciences Meeting, February 22-26, 2010, Portland, OR (oral).
29. **Dorgan, K.M.**, S. Arwade, P.A. Jumars. 2009. Worms as wedges: Effects of sediment mechanics on burrowing behavior. Society for Integrative and Comparative Biology 2009 Annual Meeting, January 3-7, 2009, Boston, MA (oral).
30. **Dorgan, K.M.**, P.A. Jumars. 2007. Burrowing by crack propagation: Why worms are wedges. 9<sup>th</sup> International Polychaete Conference, August 13-17, 2007, Portland, ME (oral).
31. **Dorgan, K.M.**, P.A. Jumars, S. Arwade. 2007. Burrowing in muddy sediments by crack propagation. Society for Integrative and Comparative Biology 2007 Annual Meeting, January 3-7, 2007, Phoenix, AZ (oral).
32. **Dorgan, K.M.**, P.A. Jumars, S. Arwade. 2006. Burrowing by fracture: Application of fracture models to bioturbation. Ocean Sciences Meeting, February 20-24, 2006, Honolulu, HI (poster).
33. **Dorgan, K.M.**, and P.A. Jumars. 2005. Mechanical constraints on marine burrowers. Estuarine Research Federation 2005, October 16-20, 2005, Norfolk, VA (oral).
34. **Dorgan, K.M.**, P.A. Jumars, S. Arwade. 2005. Mechanical constraints on burrowing in marine sediments. Jacques Monod Conference on Physico-Chemical Ecology of Organisms, September 24-28, 2005, Roscoff (Brittany), France (poster).
35. **Dorgan, K.M.**, P.A. Jumars, B.P. Boudreau, B.D. Johnson, & E. Landis. 2005. Mechanics of burrowing: Implications for benthic studies. ASLO Summer Meeting 2005, June 19-24, 2005, Santiago de Compostela, Spain (poster).

36. **Dorgan, K.M.**, and P.A. Jumars. 2005. Burrowing in mud and sand: Different mechanisms in different media. 34<sup>th</sup> Annual Benthic Ecology Meeting, April 6-10, 2005, Williamsburg, VA (poster).
37. **Dorgan, K.M.**, and P.A. Jumars. 2004. Unsteady burrowing by crack propagation. ASLO/TOS Ocean Sciences Meeting, February 15-20, 2004, Honolulu, HI (oral).

\* undergraduate student or post-B.S. intern or technician

# graduate student

## M.S. technician

^ postdoc

### **Presentations by my students / lab members**

1. Cox, C.E.<sup>#</sup>, **K.M. Dorgan**, N. Stark, G. Massey, C. Friedrichs, A. Rodriguez-Marek, M.R. Rahman. 2023. Evaluating the Influence of Infauna on Seabed Properties in the York River Estuary, Chesapeake Bay. Coastal and Estuarine Research Federation 2023, Portland, OR, Nov. 12-16, 2023 (oral).
2. Cox, C.E.<sup>#</sup>, **K.M. Dorgan**, N. Stark, G. Massey, A. Rodriguez-Marek, C. Friedrichs, E. Hunstein, M.R. Rahman. 2023. Investigating Changes in Seabed Properties Due to Biogenic Processes in the York River Estuary, Chesapeake Bay. Engineering Mechanics Institute Conference, Atlanta, GA, June 6-9, 2023 (oral).
3. Cox, C.E.<sup>#</sup>, **K.M. Dorgan**, N. Stark, G. Massey, A. Rodriguez-Marek, C. Friedrichs, E. Hunstein, M.R. Rahman. 2023. Influence of biogenic processes on seabed properties in the York River Estuary, Chesapeake Bay. Coastal Sediments '23 Conference, New Orleans, LA, April 11-15, 2023 (oral).
4. Clemo, W.C.<sup>#</sup>, **K.M. Dorgan**, D.J. Wallace, B. Dzwonkowski. 2023. Temporal changes to shallow offshore coastal sediment storm bed characteristics following hurricane Sally (2020). Coastal Sediments '23 Conference, New Orleans, LA, April 11-15, 2023 (poster). \*\*student award winner
5. Ballentine<sup>#</sup>, W., **K.M. Dorgan**, K. Kocot, K. Halanych. 2023. Meiofaunal Diversity as a Tool for Understanding and Monitoring Northern Gulf of Mexico Environments. Bays and Bayous, Mobile, AL, Jan. 24-25, 2023 (oral).
6. Cox<sup>#</sup>, C., **K.M. Dorgan**, N. Stark. 2023. Influence of Biogenic Processes on Seabed Properties in the York River Estuary, Chesapeake Bay. Bays and Bayous, Mobile, AL, Jan. 24-25, 2023 (oral).
7. Clemo<sup>#</sup>, W.C., **K.M. Dorgan**, and B. Dzwonkowski. 2023. Interactions Between Sediment Stability and Infaunal Community Structure Following a Hurricane Disturbance. Bays and Bayous, Mobile, AL, Jan. 24-25, 2023 (oral).
8. Ballentine<sup>#</sup>, W., **K.M. Dorgan**, and A. Penko. 2023. Biostabilization of marine sands by microalgae and meiofauna. Society for Integrative and Comparative Biology 2023, Austin, TX, Jan. 3-7, 2023 (oral). \*runner-up, DIZ student award
9. Rojas<sup>\*</sup>, M., A. McKee<sup>^</sup>, M. Frey<sup>\*</sup>, and **K.M. Dorgan**. 2023. Use of a novel "Ant Farm" tank to explore the role of hydraulic fracture in burrowing. Society for Integrative and Comparative Biology 2023, Austin, TX, Jan. 3-7, 2023 (poster).
10. Clemo<sup>#</sup>, W.C., **K.M. Dorgan**, and B. Dzwonkowski. 2022. Interactions Between Sediment Stability and Infaunal Community Structure Following a Hurricane Disturbance. American Geophysical Union Meeting, Chicago, IL, Dec. 12-16, 2022 (oral).
11. Cho, A.<sup>\*</sup>, **K.M. Dorgan**, G. Lockridge. 2022. Bubbles & Burrows: Characterizing fracture behavior in marine sediments via bubble injection. American Geophysical Union Meeting, Chicago, IL, Dec. 12-16, 2022 (poster).

12. Clemo<sup>#</sup>, W.C., and **K.M. Dorgan**. 2022. Impacts of infaunal communities and habitat structure following a hurricane disturbance. 6<sup>th</sup> Nereis Park International Conference, Lagonna-Daoulas, France, August 22-26, 2022 (oral).
13. Frey<sup>\*</sup>, M. and **K.M. Dorgan**. 2022. Distinguishing between mixing modalities of a small deposit feeder. 6<sup>th</sup> Nereis Park International Conference, Lagonna-Daoulas, France, August 22-26, 2022 (poster). \*\*student poster award
14. Cho, A.<sup>\*</sup>, **K.M. Dorgan**, G. Lockridge. 2022. Bubbles & Burrows: Characterizing fracture behavior in marine sediments via bubble injection. REU symposium, DISL, Aug. 4, 2022 (poster).
15. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2022. Impacts of hurricane disturbance on shallow coastal sediment ecosystems. Benthic Ecology Meeting, Portsmouth, NH, March 29 – April 2, 2022 (oral).
16. Gadeken<sup>#</sup>, K.J and **K.M. Dorgan**. 2022. Changes in sediment metabolism and macrofaunal activity throughout the diel oxygen cycle. Benthic Ecology Meeting, Portsmouth, NH, March 29 – April 2, 2022 (oral).
17. Cox<sup>#</sup>, C. and **K.M. Dorgan**. 2022. Slicing through mud: Mechanical response of sediments to small scale burrowers. Benthic Ecology Meeting, Portsmouth, NH, March 29 – April 2, 2022 (poster).
18. Gadeken<sup>#</sup>, K.J. 2022. Coastal sediment response to the diel oxygen cycle.” Hatfield Marine Science Center, Oregon State University, Jan. 6, 2022. (Invited seminar)
19. Ballentine<sup>#</sup>, W. and **K.M. Dorgan**. 2022. Meiofaunal response to porewater flow. Society for Integrative and Comparative Biology, Phoenix, AZ, Jan. 2022. (oral) \*runner-up, DIZ student award
20. McKee<sup>^</sup>, A. and **K.M. Dorgan**. 2022. Relating burrowing gaits to mechanical properties of sediments. Society for Integrative and Comparative Biology, Phoenix, AZ, Jan. 2022. (oral)
21. Frey<sup>\*</sup>, M.R. and **K.M. Dorgan**. 2022. Effects of food supply and water flow on bioturbation by coastal invertebrates. Society for Integrative and Comparative Biology, Phoenix, AZ, Jan. 2022. (poster)
22. Moore<sup>^</sup>, J.M., E.L. Stanley, and **K.M. Dorgan**. 2022. Sand-strikers and grunge-moppers: comparative morphology or Eunicidan jaws using uCT imaging of museum specimens. Society for Integrative and Comparative Biology, Phoenix, AZ, Jan. 2022. (oral, virtual)
23. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2021. Impacts of infaunal activity and physical disturbance on acoustic properties of muddy coastal sediments. Meeting of the Acoustical Society of America. December 3, 2021. Seattle, WA. (oral)
24. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2021. Impacts of a hurricane disturbance on shallow coastal sediment ecosystems. Coastal and Estuarine Research Federation Conference. November 10, 2021. Virtual. (oral)
25. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2021. Changes in sediment metabolism and macrofaunal activity throughout the diel oxygen cycle. (Virtual) Coastal and Estuarine Research Federation 2021 Conference. Nov 1-3 and 8-11, 2021 (oral).
26. Gadeken<sup>#</sup>, K.J. 2021. Marine sediments: A worm’s eye view. Gulf Coast Research Laboratory, University of Southern Mississippi, June 27, 2021. (Invited seminar)
27. Gadeken<sup>#</sup>, K.J. 2021. Marine sediments: A worm’s eye view. SAIL/CYAMUS Marine Science Librarian Joint Conference, May 19, 2021. (Invited keynote talk)
28. Ballentine<sup>#</sup>, W. *Shifting Sands: Shaping society and science at Dauphin Island*. Society of Nematology, Gulf Shores, AL. 2021. (Invited keynote talk)
29. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2021. Temporal changes to coastal muddy sediment structure following resuspension. Marine Science Graduate Student Symposium. April 16, 2021. Virtual. (oral)
30. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2021. Temporal changes to coastal muddy sediment structure following resuspension. Dauphin Island Sea Lab Seminar. April 2, 2021. Virtual. (oral)

31. Ballentine<sup>#</sup>, W., N. Roberts, C. Grimes., M. Tassia. *Science Down South: Highlights from the ICYINVERTS Antarctic Research Cruise*. Dauphin Island Sea Lab Seminar Series. Dauphin Island, AL. 2021. (Invited seminar)
32. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2020. Changes in sediment metabolism and macrofaunal activity throughout the diel oxygen cycle. (Virtual) Bays and Bayous Symposium. Dec 1-3, 2020 (oral).
33. Clemo<sup>#</sup>, W.C. and **K.M. Dorgan**. 2020. Temporal changes to coastal muddy sediment structure following resuspension. (Virtual) Bays and Bayous Symposium. Dec 1-3, 2020 (oral).
34. Malone\*, R., and **K.M. Dorgan**. 2020. Polychaete burrowing efficiency utilizing resonance frequency of sediment. REU symposium, Dauphin Island, AL, July 30, 2020 (poster).
35. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2019. Effects of diel oxygen cycling on infaunal behavior and sediment oxygen demand. Coastal and Estuarine Research Federation 2019 Conference, Mobile, AL, Nov. 3-7, 2019 (oral).
36. Kiskaddon<sup>##</sup>, E., **K.M. Dorgan**, and S.K. Berke. 2019. An ode to phylogenetics in disturbance ecology. Coastal and Estuarine Research Federation 2019 Conference, Mobile, AL, Nov. 3-7, 2019 (oral).
37. Ballentine<sup>#</sup>, W. and **K.M. Dorgan**. 2019. Meiofaunal behavioral observations and a new approach to their study. Coastal and Estuarine Research Federation 2019 Conference, Mobile, AL, Nov. 3-7, 2019 (poster).
38. Tripp\*, E., K. Gadeken<sup>#</sup>, and **K.M. Dorgan**. 2019. Infaunal behavior variance observed in normoxia and hypoxia. DISL REU symposium, Dauphin Island, AL, Aug. 1, 2019.
39. Ballentine<sup>#</sup>, W. and **K.M. Dorgan**. 2019. Effects of infauna on sound speed and attenuation in marine sediments. Society for Integrative and Comparative Biology, Tampa, FL, January 3-7, 2019 (poster).
40. Kiskaddon<sup>##</sup>, E., **K.M. Dorgan**, and S.K. Berke. 2019. Impacts of the Deepwater Horizon oil spill on phylogenetic diversity of benthic infauna in the Northern Gulf of Mexico. Society for Integrative and Comparative Biology, Tampa, FL, January 3-7, 2019 (oral).
41. Cole<sup>#</sup>, S., **K.M. Dorgan**, W. Walton. 2018. Infestation of farmed oysters (*Crassostrea virginica*) by mudblister worms. Bays and Bayous, Mobile, AL, November 29-30, 2018 (oral).
42. Titus\*, E.F., **K.M. Dorgan**, S.M. Cole<sup>#</sup>, W. Walton. 2018. Oyster recovery from Mudblister Worm Infestation. Bays and Bayous, Mobile, AL, November 29-30, 2018 (poster).
43. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2018. Effects of the diel oxygen cycle on sediment macrofaunal behavior. Bays and Bayous, Mobile, AL, November 29-30, 2018 (poster). \*student award, 1st place poster
44. Cole<sup>#</sup>, S., **K.M. Dorgan**, W. Walton. 2018. Oyster infestation: Abundance of mudblister worms (*Polydora websteri*) in Alabama coast oyster farms. National Shellfish Association Meeting, Seattle, WA, March 18-22, 2018 (oral).
45. Pugh\*, R.D., **K.M. Dorgan**, S. Cole<sup>#</sup>, and W. Walton. 2018. Mud blisters in oysters: Relating worm infestation to blister strength. National Shellfish Association Meeting, Seattle, WA, March 18-22, 2018 (poster).
46. Clemo<sup>#</sup>, W.C., **K.M. Dorgan**. 2017. Relating functional diversity of infauna and sediment geoaoustic properties. Acoustical Society of America, New Orleans, LA, December 8, 2017 (oral).
47. Ballentine\*, W., **K.M. Dorgan**, K.M. Lee, M.S. Ballard, A.R. McNeese, P.S. Wilson, G.R. Venegas. Effects of Marine Infauna on the Acoustic Properties of Sediment. Acoustical Society of America, New Orleans, LA, December 8, 2017 (oral).
48. Parker<sup>#</sup>, R. and **K.M. Dorgan**, A. Robertson, S.K. Berke, S. Bell, E. Weldin\*, T. Caffray\*, S. Budai\*, K. Gadeken<sup>#</sup>, W. Ballentine\*, E. Kiskaddon. Sublethal impacts of oil exposure on bioturbation. Coastal and Estuarine Research Federation 2017, Providence, RI, November 5-9, 2017 (poster).
49. Clemo<sup>#</sup>, W.C.. 2017. Jaws: Just when you thought it was safe to go back in the mud... Nereis Park Conference Film Festival. Southampton, NY, August 8-11, 2017 (film).

50. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2017. Rates of benthic metabolism in an intertidal marsh throughout a diurnal oxygen cycle. Nereis Park Conference, Southampton, NY, August 8-11, 2017 (poster).
51. Pugh<sup>\*</sup>, R.D., **K.M. Dorgan**, and S. Cole. 2017. *Polydora websteri* blisters in *Crassostrea virginica*: Strength, area, color. DISL REU symposium, Dauphin Island, AL, August 3, 2017 (poster).
52. Clemo<sup>#</sup>, W.C., **K.M. Dorgan**. 2017. Functional morphology of Eunicidan (Polychaeta) jaws. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (oral).
53. Ballentine<sup>\*</sup>, W.M., **K.M. Dorgan**, K. Gadeken<sup>#</sup>, B. Mortazavi, R. Parker<sup>#</sup>, E. Kiskaddon, S. Berke, S. Bell. 2017. Effects of macrofauna on oxygen consumption and nutrient fluxes in sediments. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (poster).
54. Parker<sup>#</sup>, R., **K.M. Dorgan**, A. Robertson, S.K. Berke, S. Bell, E. Weldin<sup>\*</sup>, T. Caffray<sup>\*</sup>, S. Budai,<sup>\*</sup> K. Gadeken<sup>#</sup>, W. Ballentine<sup>\*</sup>, E. Kiskaddon. Sublethal impacts of oil exposure on bioturbation. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (poster).
55. Cole<sup>#</sup>, S., **K.M. Dorgan**, W. Walton. 2017. Oyster infestation: abundance of mudblister worms (*Polydora websteri*) in Mobile Bay, AL, oyster farms. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (poster).
56. Gadeken<sup>#</sup>, K.J. and **K.M. Dorgan**. 2017. Rates of benthic metabolism in an intertidal marsh throughout a diurnal oxygen cycle. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (poster).
57. Cole<sup>#</sup>, S., **K.M. Dorgan**, W. Walton. 2016. Oyster infestation: abundance of mudblister worms (*Polydora websteri*) in Mobile Bay oyster farms. Bays and Bayous. Nov. 30-Dec. 1, 2016, Biloxi, MS (poster).
58. Lescinsky<sup>\*</sup>, H., **K.M. Dorgan**. 2016. Sediment response to diurnal changes. DISL REU Symposium, Dauphin Island, AL, Aug. 2016 (poster).
59. Gadeken<sup>#</sup>, K.J., **K.M. Dorgan**, J. Moore, S.K. Berke. 2016. Application of ecophylogenetics to benthic communities in the Northern Gulf of Mexico. Do functional traits follow phylogeny? Ocean Sciences Meeting. February 21-26, 2016, New Orleans, LA (poster).
60. Clemo<sup>\*</sup>, W.C. and **K.M. Dorgan**. 2016. Functional morphology of Eunicidan (Polychaeta) jaws. Ocean Sciences Meeting. February 21-26, 2016, New Orleans, LA (poster).
61. Gadeken<sup>#</sup>, K., **K.M. Dorgan**, J. Moore, S.K. Berke. 2016. Application of ecophylogenetics to benthic communities in the Northern Gulf of Mexico. Do functional traits follow phylogeny? Society for Integrative and Comparative Biology Meeting. January 3-7, 2016, Portland, OR (poster).
62. Clemo<sup>\*</sup>, W.C. and **K.M. Dorgan**. 2015. Functional morphology of Eunicidan (Polychaeta) jaws. Southeastern Regional Society for Integrative and Comparative Biology Meeting. October 12, 2015, Atlanta, GA (oral).
63. Cole<sup>\*</sup>, S. and **K.M. Dorgan**. 2015. Mud blister worm infestation in oysters, Mobile Bay, AL. DISL REU symposium, Dauphin Island, AL, Aug. 2015 (poster).
64. Grill<sup>\*</sup>, S. and **K. M. Dorgan**. 2014. Burrowing by small polychaetes - mechanics, behavior, and muscle structure of *Capitella* sp. Society for Integrative and Comparative Biology 2014 Annual Meeting, January 3-7, 2014. Austin, TX (poster). \*\* awarded Division of Invertebrate Zoology Student Poster Award
65. Law<sup>\*</sup>, C.J., **K.M. Dorgan**, G.W. Rouse. 2013. Differences in polychaete musculature lead to distinct burrowing behaviors. Society for Integrative and Comparative Biology 2013 Annual Meeting, January 3-7, 2013, San Francisco, CA (poster).
66. Francoeur<sup>\*</sup>, A.A. and **K.M. Dorgan**. 2013. Mud versus sand: Morphological and behavioral comparison of two species of burrowing orbinid polychaetes. Society for Integrative and Comparative Biology 2013 Annual Meeting, January 3-7, 2013, San Francisco, CA (poster).
67. Law<sup>\*</sup>, C., **K.M. Dorgan**, G. Rouse. 2012. The kinematics and anatomical features of undulatory burrowing in *Armandia brevis*. Society for Integrative and Comparative Biology 2012 Meeting, Charleston, SC (poster).

68. Che\*, J., **K.M. Dorgan**. 2010. Do the ends justify the means? Mechanics and kinematics of forward and backward burrowing. Ocean Sciences Meeting, February 22-26, 2010, Portland, OR (poster).
69. Murphy\*, E.A.K. and **K.M. Dorgan**. 2010. Long thin slimy ones, short fat juicy ones: Exploring how worms with varying body morphologies burrow. Ocean Sciences Meeting, February 22-26, 2010, Portland, OR (poster).
70. Zeman\*, S.M. and **K.M. Dorgan**. 2010. A two-way street: Burrow bioirrigation behavior and boundary layer flow. Ocean Sciences Meeting, February 22-26, 2010, Portland, OR (poster).
71. Che\*, J. and **K.M. Dorgan**. 2009. It's tough to be small: Dependence of burrowing kinematics on body size. Society for Integrative and Comparative Biology 2009 Annual Meeting, January 3-7, 2009, Boston, MA (poster).

\* undergraduate student or post-B.S. intern or technician

# graduate student

## M.S. technician

^ postdoc

### Co-authored Presentations

1. Wang, X., S. Arwade, **K. Dorgan**, A. Louhghalam. 2023. How Fracture Properties of Sediments Influences Bioturbation: A Discrete Numerical Approach. Engineering Mechanics Institute Conference, Atlanta, GA, June 6-9, 2023 (oral).
2. Moore, J., N. Stark, G. Massey, C. Friedrichs, **K. Dorgan**, A. Rodriguez-Marek, C. Cox, M.R. Rahman, E. Hunstein. 2023. Investigating the relationship between geotechnical seabed properties and erodibility. Coastal Sediments '23 Conference, New Orleans, LA, April 11-15, 2023 (poster). \*\*student award winner
3. Rahman, M.R., E. Hunstein, A. Rodriguez-Marek, N. Stark, G. Massey, **K. Dorgan**, C. Cox. 2023. Probabilistic soil characterization based on portable free fall penetrometer measurements. Coastal Sediments '23 Conference, New Orleans, LA, April 11-15, 2023 (poster).
4. Lee, K.M., M.S. Ballard, A.R. McNeese, D.D. Garcia, P.S. Wilson, G.R. Venegas, **K.M. Dorgan**, J.D. Chaytor. 2022. Direct measurements of acoustic and physical properties in mud and comparison to sediment acoustics models. Acoustical Society of America Meeting, Dec. 6, 2022.
5. Lee, K.M., M.S. Ballard, G.R. Venegas, W.C. Clemo, **K.M. Dorgan**, N. Brill, N. Stark, J. Calantoni. 2021. Normal-incidence bottom loss measurements over a sand-mud gradient and comparison to direct seabed measurements. Acoustical Society of America Meeting, Dec. 3, 2021.
6. Lee, K.M., M.S. Ballard, A.R. McNeese, **K.M. Dorgan**, G.R. Venegas, P.S. Wilson. 2019. Impacts of infauna on geoacoustic properties of marine sediments. Coastal and Estuarine Research Federation 2019 Meeting, Mobile, AL, Nov. 3-7, 2019 (oral).
7. Lee, K.M., M.S. Ballard, A.R. McNeese, **K.M. Dorgan**, G.R. Venegas, P.S. Wilson. 2018. Effects of benthic biology on geoacoustic properties of marine sediments. Acoustical Society of America Meeting, Nov. 5-9, 2018, Victoria, BC, Canada (oral, invited symposium)
8. Ballard, M.S., K.M. Lee, A.R. McNeese, J.D. Chaytor, A.H. Reed, **K.M. Dorgan**, G.R. Venegas, P.S. Wilson. 2018. Observations of the effects of benthic biology in measurements from the Acoustic Coring System collected in the New England Mud Patch. Acoustical Society of America Meeting, Nov. 5-9, 2018, Victoria, BC, Canada (oral, invited symposium)
9. Berke, S. K., **K.M. Dorgan**, A. Robertson, S. Bell, T. Caffray\*, E. Weldin\*, S. Budai\*, R. Parker#, K. Gadeken#, W.C. Clemo#, and E.L. Keller\*. 2018. Long-term changes to benthic community structure following the Deepwater Horizon Event. Society for Integrative and Comparative Biology Meeting. January 3-7, 2018, San Francisco, CA (oral).



10. Lee, K.M., M.S. Ballard, A.R. McNeese, W.M. Ballentine, **K.M. Dorgan**, G.R. Venegas, and P.S. Wilson. 2017. Comparison between infauna abundance and seabed geoacoustic properties. Acoustical Society of America Meeting. New Orleans, LA, December 4-8, 2017.
11. Venegas, G.R., P.S. Wilson, **K.M. Dorgan**, K.M. Lee, M.S. Ballard, and A.R. McNeese. Resonant core-logger measurements of fine-grained sediments containing infauna. Acoustical Society of America Meeting. New Orleans, LA, December 4-8, 2017.
12. Berke, S. K., **K.M. Dorgan**, A. Robertson, S. Bell, T. Caffray\*, E. Weldin\*, S. Budai\*, R. Parker#, K. Gadeken#, W.C. Clemo#, and E.L. Keller\*. 2017. Long-term changes to benthic community structure following the Deepwater Horizon Event. Benthic Ecology Meeting, Myrtle Beach, SC, April 12-15, 2017 (oral).
13. Rawson, P., W.C. Walton, D. Morse, **K.M. Dorgan**. 2017. Gauging the current impact of blister worm on the Atlantic and Gulf Coast oyster culture industries. National Shellfisheries Association, March 26-30, 2017, Knoxville, TN.
14. Zeh, M.#, Wilson, P.S., Lee, K.M., Ballard, M., **Dorgan, K.M.** 2016. Acoustic scattering by tube-building worms (Polychaeta: Maldanidae) of the New England Mud Patch. 5th Joint Meeting of the Acoustical Society of America and Acoustical Society of Japan, December 1, 2016, Honolulu, HI.
15. Lee, K.M., Ballard, M.S., Wilson, P.S., **Dorgan, K.M.**, Reed, A.H., Roosen, E. Preliminary characterization of surficial sediment acoustic properties and infauna in the New England Mud Patch. Acoustical Society of America Spring 2016 Meeting, May 23-27, 2016, Salt Lake City, UT.
16. Keller, E.L.\*, T.E. Caffray\*, S.K. Berke, **K.M. Dorgan**, S. Bell, A. Robertson, K. Baltzer, W.C. Clemo\*, K. Gadeken#. Oxygen fluxes in Gulf of Mexico sediments. 2016 Oil Spill and Ecosystem Science Conference. February 1-4, 2016, Tampa, FL.
17. Keller, E.L.\*, T.E. Caffray\*, S.K. Berke, **K.M. Dorgan**, S. Bell, A. Robertson, K. Baltzer, W.C. Clemo\*, K. Gadeken#. Oxygen fluxes in Gulf of Mexico sediments. Society for Integrative and Comparative Biology Meeting. January 3-7, 2016, Portland, OR.

### **Teaching experience**

|              |  |
|--------------|--|
| 2022, 2023   | Applications of Marine Technology (3-credit, upper-division undergraduate/graduate), University of South Alabama, Spring 2022, Spring 2023.                |
| 2021         | Marine Technical Methods (2-credit, upper-division undergraduate), Dauphin Island Sea Lab Summer Programs, 2021.   |
| 2021         | Applications of Marine Technology (3 credit, graduate), University of South Alabama, Spring 2021.  |
| 2014-current | Marine Ecology (4 credit, upper-division undergraduate), Dauphin Island Sea Lab Summer Programs, 2014-current.   |
| 2018         | Field Marine Science - Maine (2 credit, graduate), University of South Alabama, Fall 2018.   |
| 2016, 2019   | Marine Sediment Ecology (3 credit, graduate), University of South Alabama, Spring 2016, 2019.  |
| 2015, 2017   | Biological-physical Interactions (3 credit, graduate), University of South Alabama, Spring 2015, 2017.   |
| 2015, 2023   | Marine Sciences Seminar (1 credit, graduate), University of South Alabama, Fall 2015, Spring 2023.   |
| 2009         | The future of marine ecosystems (1 credit, UC Berkeley freshman seminar), Fall 2009.   |
| 2006         | Invertebrate zoology (3 weeks), taught classes on invertebrate locomotion, feeding, and digestion, Fall 2006 (UMaine, course taught by Kevin Eckelbarger). |
| 2006         | Design of Marine Organisms (2 weeks), taught classes on burrowing mechanics and suspension feeding, Fall 2006 (UMaine, course taught by Pete Jumars).      |

- 2004 Marine Sediment Ecology, taught one lecture on burrowing, Spring 2004 (UMaine, course taught by Pete Jumars, Les Watling, and Larry Mayer).
- 2004 Teaching assistant (volunteer) for Physical Oceanography, Fall 2004 (UMaine, course taught by Neal Pettigrew).

### **Graduate students mentored (at DISL)**

- Fall 2023 Will Ballentine, PhD. “Biophysical interactions between meiofauna and sand habitats,” 2018 – Fall 2023, Next: Postdoctoral researcher, Swarthmore College
- Spring 2022 Kara Gadeken, PhD. “Coastal sediment community response to short-term low oxygen,” Next: NSF Postdoctoral Fellowship – SUNY Stony Brook
- Spring 2019 Ryan Parker, M.S. “Sublethal effects of the Water Accommodated Fraction (WAF) of oil on infaunal bioturbation rates in the northern Gulf of Mexico.” Next: educator at Gulf Coast Research Laboratory, USM
- Fall 2018 Sarah Cole, M.S. “Mudblister worm (*Polydora websteri*) infestation on farmed oysters along the Alabama coast.” (co-advised with Bill Walton) Next: Naturalist for Jean-Michel Cousteau's Ambassadors of the Environment at Dorado Beach at Ritz-Carlton Reserve
- Spring 2016 Maite Jacquot, visiting M.S. student conducting thesis research, European Institute for Marine Studies (IUEM), Plouzane, France. Thesis: “Macrobenthic community structure and influence on denitrification in soft sediments (Mobile Bay, Alabama).” Next: PhD student, Abo Akademi, Finland

### **Current graduate students (at DISL)**

- W. Cyrus Clemo, PhD student, “Interactions between sediment mechanical structure and infaunal community structure following physical disturbance,” 2016 – Fall 2023, Next: NRC Research Associate Postdoc at Naval Research Lab, Stennis, MS
- Chesna Cox, MS student, “Influence of infaunal community structure on sediment physical properties,” 2021 – Fall 2023, Next: Sea Grant Knauss Fellow, Washington DC
- Jenny Duncan, PhD student, 2023 –
- Frankie Hedge, PhD student, 2023 –

### **Graduate student committees**

- Md Rejwanur “Rahi” Rahman, PhD student, Civil Engineering, Virginia Tech, 2022 – current (Committee chair: Nina Stark)
- Kyle Rumaker, M.S. student, Civil Engineering, U. South Alabama, 2022 – 2023 (Committee chair: Bret Webb)
- Israel “Alex” Marquez, PhD, Marine Sciences, U South Alabama, 2017 – 2021 (Committee chair: Jeff Krause)
- Steve Dykstra, PhD, Marine Sciences, U South Alabama, 2015 – 2021 (co-advised with B. Dzwonkowski)
- Viktoria Bogantes, PhD, Biology, Auburn University, 2016 – 2020 (Committee chair: Ken Halanych)
- Haley Nicholson, PhD, Marine Sciences, U South Alabama, 2015 – 2019 (Committee chair: Ruth Carmichael)
- Alyssa Bennett, MS, Coastal Sciences, U Southern Mississippi, 2014 – Sept. 2017 (Committee Chair: Chet Rakocinski)

### **Postdoctoral researchers**

Amberle McKee, Postdoctoral researcher, May 2020 – April 2023  
Jenna Moore, NSF postdoc fellow, July 2020 – Jan. 2022. Next: Curator Annelida, Museum of Nature  
Hamburg, Leibniz Institute for the Analysis of Biodiversity Change

### **Interns mentored (at DISL; 13 additional prior to 2013)**

Clay Bibby (REU intern), summer 2023  
Vivianne Prerost (high school intern), summer 2023  
Jennifer Duncan (post-BS intern), Oct. 2022 – June 2023; Next: PhD student in my lab  
Anika Cho (REU intern), summer 2022, 2 presentations  
Moey Rojas (post-BS technician), May 2022 – current  
Madeline Frey (post-BS technician), March 2021 – Oct. 2022, 2 poster presentations, student award at  
Nereis Park conference; Next: Nature educator  
Samir Sirk Morato (post-BS), Sept. 2021 – March 2022, Next: Americorps crew leader  
Lizi Byrd (U South Alabama undergrad intern), June 2021 – June 2022, Next: MS student, University of  
Alaska, Anchorage  
Shelby Blair (REU intern), summer 2021, 1 presentation  
Rylee Malone (REU intern), summer 2020, 1 presentation.  
Chesna Cox (post-BS technician), Jan. 2020 – July 2021. Next: MS in marine science in my lab  
Katelyn Giles (U South Alabama undergrad), summer 2019 – summer 2020, 1 manuscript co-author;  
Next: MS student at University of Memphis  
Elijah Tripp (REU intern), summer 2019, 1 presentation.  
Eleanor McDonough (HS intern), Feb.-March 2019. Next: undergraduate  
Jane McKee (M.S. intern), spring 2019. Next: lab technician at LSU, PhD student at Tulane  
Linda Wyatt (HS intern), summer 2018. Next: undergraduate at U. South Alabama  
Ellen Titus (post-BS), spring-summer 2018, 1 manuscript as co-author, 1 presentation. Next: MS in  
biology at East Carolina Univ.  
Rachel Pugh (REU intern), summer 2017, 1 manuscript as co-author, 2 presentations. Next: MS in marine  
science at U So. Miss.  
Will Ballentine (post-BS), fall 2016 - summer 2017; 2 manuscripts as co-author, 2 presentations. Next:  
PhD in marine science in my lab  
Haley Lescinsky (REU intern), summer 2016, 1 presentation. Next: MS in public health, U Washington  
Alessandra Jimenez (post-BS), spring 2016.  
Sarah Frankenberg (post-BS), fall 2015 - spring 2016. Next: Intern, Yellowstone National Park  
Sarah Cole (REU intern), summer 2015, 1 presentation. Next: MS in marine science in my lab  
Alison Yee (post-BS), fall 2015. Next: MS in biology, Cal State Long Beach  
Katie D'Amelio (post-BS), fall 2014 - winter 2015, 1 manuscript as co-author. Next: MS in biology,  
Drexel U  
W. Cyrus Clemo (post-BS technician), fall 2014 - summer 2016, 1 manuscript, 2 presentations. Next:  
PhD in marine science in my lab  
Casper Hui (NGI-NOAA intern), summer 2014, 1 presentation  
Susann Grill (post-BS technician), spring-summer 2014, 1 manuscript, 1 presentation, awarded the best  
student poster for the 2014 SICB DIZ division (as an undergraduate competing with graduate  
students). Next: MS in Medical Biometry/Biostatistics at Bremen University, Germany

### **Public Outreach**

DISL Discovery Day, annual public open house, including interactive posters, flume demonstrations, and  
worms under microscopes, 2014 – current

Guest lecture, Odyssey USA's lecture series on aquatic life of Alabama (to ~50 retirees); Feb. 15, 2019  
Featured scientist in the popular science book, "How to Walk on Water and Climb up Walls: Animal Movement and the Robots of the Future" by David Hu (2018).  
Boardwalk Talk, DISL Estuarium, ~30–45 min. talks to general public about research, Fall 2014 (additional talks have been given by my students)  
Lecture, Science Cafe, Moe's BBQ, Mobile, AL, March 14, 2017  
Wrote a letter to a politician explaining that she mis-represented my research as supporting intelligent design. My letter was reproduced and discussed in the blog "The Panda's Thumb" and other science blogs (Fall 2006).  
Public media coverage of my research, including *Popular Science* (October 2006), the *Maine Sunday Telegram* (Oct. 1, 2006), "Maine Things Considered" on Maine Public Radio (Feb. 16, 2005), *The New York Times* (Feb. 15, 2005), and *New Scientist* (Feb. 5-11, 2005).

### **K-12 Educational Activities**

Publication in *Frontiers for Young Minds* aimed at middle school students: Gadeken<sup>#</sup>, K.J., E. Kiskaddon, J.M. Moore, K.M. Dorgan. 2022. The weird and wonderful world of worms. *Frontiers for Young Minds* 10: 902248. doi: 10.3389/frym.2022.902248  
My students and I have participated in 2 episodes of *Gulf Detectives*, a virtual field trip reaching >10,000 middle school students produced by Alabama Public Television (2016) (<https://aptv.pbslearningmedia.org/resource/d558678f-1ae6-434e-b2c2-c0da11fab06d/clip-4-the-benthic-zone/>). I was interviewed on *Alabama Stem Explorers*, a show by the Alabama Stem Council aimed at middle school students (Interview in Dec. 2021, <https://www.youtube.com/watch?v=TDPi7zI6Yok>).  
Graduate students in my biological-physical interactions course (Spring 2017) developed K-12 educational modules and taught visiting middle- and high-school students about topics they learned in the course.  
DISL high school summer course guest lecture (2015, 2017, 2019, 2020) and career night panelist (2018). Talks and flume demonstrations to visiting classes to DISL as well as to DISL's Discovery Hall Program educators, also hosted an "open flume" party for the DISL community with student demonstrations of fluid dynamics.  
Presented workshops at the Expanding Your Horizons conference for 7<sup>th</sup> and 8<sup>th</sup> grade girls to encourage them to pursue careers in science and technology at the University of Maine, March 15, 2007 and at University of San Diego, March 5, 2011.

### **Professional Service**

Society for Integrative and Comparative Biology, Division of Invertebrate Zoology Secretary (elected) 2022 -  
Co-organizer of the symposium "The Ocean's Seafloor - One Bio-Geo System" funded by Volkswagen Stiftung and held at Herrenhausen Palace, Hannover, Germany, Oct. 12-14, 2016.  
Co-organizer of the Young Coastal Scientists and Engineers Conference - Americas, held at Dauphin Island Sea Lab, Aug. 21-23, 2017.  
Co-organizer of the Dauphin Island Meiofauna Workshop, May 9-19, 2023.  
Conference session co-chair for: "Ode to the Benthos III" at CERF 2019 and "Ode to the Benthos IV" at CERF 2021 (featured in CERF's Up, 48(2)); "3aUWa, Biological Effects on Seabed Geoaoustic Properties" at the Acoustical Society of America Fall 2018 meeting, "4aAO, Biological Effects on Seabed Geoaoustic Properties" at the Acoustical Society of America Fall 2017 meeting; "Biological-physical interactions at organismal scales from sediments to the water column" at

Ocean Sciences 2016 (an unofficial tribute session for Pete Jumars); BO17: Linking Ecology and Biogeochemistry in Coastal Sediments: New Approaches for the 21st Century at ASLO 2010.

Reviewer for Journals: *Aquaculture Review*; *Aquatic Biology*; *Arctic Science*; *Biogeochemistry*; *Biological Bulletin*; *Biology Letters*; *Deep Sea Research II*; *Ecology*; *Estuaries and Coasts*; *Estuarine, Coastal and Shelf Science*; *Geochemical Transactions*; *Integrative and Comparative Biology*; *Invertebrate Biology*; *Journal of the Acoustical Society of America*; *Journal of Comparative Physiology B*; *Journal of Experimental Biology*; *Journal of Marine Research*; *Journal of the Marine Biological Association of the UK*; *Journal of the Royal Society: Interface*; *Journal of the Royal Society: Open Science*; *Journal of Theoretical Biology*; *Limnology and Oceanography*; *L&O Methods*; *Marine Biology*; *Marine Ecology*; *Marine Ecology Progress Series*; *Palaios*; *PeerJ*; *Physical Biology*; *PLOS One*; *Royal Society Open Science*; *Science*, and Wiley-Blackwell Publishers, as well as ad hoc reviewer for funding agencies: the NSF Biological Oceanography Program, Chemical Oceanography Program, Integrative Organismal Systems Program, and Division of Environmental Sciences; SERDP (Strategic Environmental Research and Development Program).

Proposal Review Panelist for NSF BIO IOS (2017), National Academy of Sciences Gulf Research Program Early Career Fellowship (2019), Louisiana Sea Grant (2019), NSF DBI PRFP (2021), NSF IIP SBIR/STTR (2021), ONR MURI (2021), University of South Alabama College of Arts and Sciences Summer Professional Development Award (2023).

Departmental service: Department of Marine Sciences Representative for University of South Alabama Library Committee (2014-current), Vessel committee chair (DISL, 2018-current), Faculty search committee chair (DISL, 2019), several hiring committees (USA, DISL)

### **Membership in Professional Societies**

Acoustical Society of America  
American Association for the Advancement of Science  
American Geophysical Union  
Association for the Sciences of Limnology and Oceanography  
Coastal and Estuarine Research Federation  
Society for Integrative and Comparative Biology

### **Other skills and training**

AAUS diver (since 1999)  
MOCC Boat operations  
NOAA Planning and Facilitating Collaborative Meetings Workshop (April 26-27, 2018)  
NSF Reintegrating Biology Jumpstart Workshop (Dec. 4-6, 2019)