Dana E Hunt

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Education

BA Biochemistry, Rice University	May 2001
BA Environmental Engineering, Rice University	May 2001
PhD Civil and Environmental Engineering, MIT	Feb 2008
Postdoctoral Associate, University of Hawaii	2007-2009
Postdoctoral Associate, Duke University	2009-2010

Appointments

Associate Professor, Duke University *Marine Science and Conservation* Nicholas School of the Environment	2019-present
Assistant Professor, Duke University	2010-2019
Faculty, *University Program in Ecology*	2010-present
Faculty, *University Program in Environmental Health*	2010-present
Department of Biology, Duke University Secondary Appointment	2011-present
Civil and Environmental Engineering, Duke University Secondary Appointment	2011-present

Key Awards and Workshops

- US-Australia Fulbright Scholar- University of Technology, Sydney (2024)
- HERS Ecosystem response network working group Key Largo Florida (2023)
- C-Coast Stakeholder Research Priorities Development Meeting (2022)
- Hurricane Ecosystem Response Synthesis (HERS) working group (2022-23)
- Duke Teaching and Leading for Equity (2021)
- Fellow, Association for the Science of Limnology and Oceanography (2020)
- Earth Cube Time Series Workshop Honolulu, HI (2019)
- United Nations World Oceans Assessment, Doha, Qatar (2018)
- NSF Coastlines and People Workshop, Atlanta GA (2018)
- Ecological Dissertations in the Aquatic Sciences (formerly DIALOG, 2008)
- Microbial Diversity Course, MBL (2004)
- Whitaker Foundation Graduate Fellowship (2004-2005)
- National Science Foundation Graduate Fellowship (2001-2004)

Publications

Hunt, DE, A Focardi, I Herrera, N Montoya, G Wang, "Chapter 4 Plankton" United Nations World Oceans Assessment III (in revision)

ZI Johnson, **DE Hunt,** PICO Consortium (2025) "The Piver's Island Coastal Observatory – a decade of weekly+ observations reveal the press and pulse of a changing temperate coastal marine system" *Frontiers in Marine Science* **12** doi: 10.3389/fmars.2025.1505754

Li J, N Xie, X Liu, M Bai, **DE Hunt**, G Wang (2024) "Oxygen levels differentially attenuate the structure and diversity of microbial communities in the oceanic oxygen minimal zones" *Science of the Total Environment* **948:** 174934 doi:10.1016/j.scitotenv.2024.174934

Gray PC, I Savelyev, N Cassar, M Levy, E Boss, Y Lehahn, G Bourdin, KA Smith, A Windle, J Gronniger, S Floge, G Silsbe, ZI Johnson, **DE Hunt**, DW Johnston (2024) "Evidence for kilometer scale biophysical features at the Gulf Stream front" *JGR: Oceans* **129** doi: 10.1029/2023JC020526

Wang Z, CM Bergemann, M Simonin, A Avellan, P Kiburi, **DE Hunt** (2024) "Interactions shape aquatic microbiome responses to Cu and Au nanoparticle treatments in wetland manipulation experiments" *Environmental Research* **252**:3 doi: 10.1016/j.envres.2024.118603

Gronniger JL, PC Gray, AK Niebergall, ZI Johnson, **DE Hunt** (2023) "A Gulf Stream frontal eddy harbors a distinct microbiome compared to adjacent waters" *PLOS ONE* 18(11):e0293334. doi: 10.1371/journal.pone.0293334

Pavlopoulos GA, FA Baltoumas, S Liu, O Selvitopi, AP Camargo, S Nayfach, A Azad, S Roux, L Call, NN Ivanova, IM Chen, D Paez-Espino, E Karatzas, **Novel Metagenome Protein Families Consortium**, I Iliopoulos, K Konstantinidis, JM Tiedje, J Pett-Ridge, D Baker, A Visel, CA Ouzounis, S Ovchinnikov, A Buluç, NC. Kyrpides (2023) "Unraveling functional dark matter through global metagenomics" *Nature* **622**, 594–602 https://doi.org/10.1038/s41586-023-06583-7

Gronniger JL, Z Wang, G Brandt, CS Ward, D Tsementzi, H Mu, J Gu, ZI Johnson, K Konstantinidis, **DE Hunt** (2022) "Rapid changes in coastal ocean microbiomes uncoupled with shifts in environmental variables" *Environmental Microbiology* **24**(9) 4167-4177 doi: 10.1111/1462-2920.16086

Xie N, M Bai, L Liu, J Li, Y He, JL Collier, **DE Hunt**, ZI Johnson, N Jiao, G Wang (2022) "Patchy blooms of Labyrinthulomycetes protists contribute to vertical carbon export in the pelagic waters of the Eastern Indian Ocean" *Microbiology Spectrum* doi: 10.1128/spectrum.00144-22

Fremin BJ, AS Bhatt, NS Kyprides, **Global Phage Small Open Reading Frame Consortium** (2022) "Thousands of small, novel genes predicted in global phage genomes" *Cell Reports*, **39** (12) 110984

Xie N, Z Wang, **DE Hunt**, ZI Johnson, Y He, G Wang (2022) "Niche partitioning of Labyrinthulomycetes protists across sharp coastal gradients and their putative relationships with bacteria and fungi" *Frontiers in Microbiology* doi:10.3389/fmicb.2022.906864

Bai M, N Xie, Y He, J Li, JL Collier, **DE Hunt**, ZI Johnson, N Jiao, G Wang (2022) "Vertical community patterns of Labyrinthulomycetes protists reveal their potential importance in the oceanic biological pump" *Environmental Microbiology* **24**(4) p 1703-1713 doi.org/10.1111/1462-2920.15709

Duan, Y, N Xie, Z Wang, ZI Johnson, **DE Hunt**, G Wang (2021) "Patchy distributions and distinct niche partitioning of mycoplankton populations across a nearshore to open ocean gradient" *Microbiology Spectrum* **9**(3) doi: 0.1128/Spectrum.01470-21

Ahern O, K Whitaker, TC Williams, **DE Hunt,** T Rynearson (2021) "Host genotype structures the microbiome of a globally dispersed marine phytoplankton" *PNAS-USA* **118** (48) e2105207118 doi:10.1073/pnas.2105207118

Woodroffe CD, Q Bing, **DE Hunt**, R Christofoletti, P Muniz, M Yasuhara (2021) "Chapter 7G: Estuaries and Deltas" United Nations 2nd World Oceans Assessment. p339-351.

Wang Z, D Tsementzi, TC Williams, DL Juarez, SK Blinebry, NS Garcia, BK Sienkiewicz, ZI Johnson, K Konstantinidis, **DE Hunt** (2021) "Environmental stability impacts the differential sensitivity of marine microbiomes to increases in temperature and acidity" *ISME Journal* **15**:19-28 doi:10.1038/s41396-020-00748-2.

Xie N, **DE Hunt**, ZI Johnson, Y Xie, G Wang (2021) "Annual partitioning patterns of Labyrinthulomycetes protists reveal their multifaceted roles in marine microbial food webs" *Applied and Environmental Microbiology* **87**(2) e01652-20 doi:10.1128/AEM.01652-20

Nayfach S, S Roux, R Seshadri, D Udwary, N Varghese, F Schulz, D Wu, D Paez-Espino, I-M Chen, M Huntemann, K Palaniappan, J Ladau, S Mukherjee, TBK Reddy, T Nielsen, E Kirton, JP Faria, JN Edirisinghe, CS Henry, SP Jungbluth, D Chivian, P Dehal, EM Wood-Charlson, AP Arkin, S Tringe, A Visel, **IMG/M Data Consortium,** T Woyke, NJ Mouncey, NN Ivanova, NC Kyrpides, EA Eloe-Fadrosh (2021) "A genomic catalog of earth's microbiomes" *Nature Biotechnology* **39**(4), doi: 10.1038/s41587-020-00769-4

Loftus SE, **DE Hunt**, ZI Johnson (2020) "Reused cultivation water from a self-inhibiting alga does not inhibit other algae but alters their microbiomes" *Algae Research* **56**(6) doi: 10.1016/j.algal.2020.102067

Wang Z*, DL Juarez*, JF Pan, J Gronniger, SK Blinebry, JS Clark, ZI Johnson, **DE Hunt** (2019) "Microbial communities across nearshore to offshore coastal transects are primarily shaped by distance and temperature" *Environmental Microbiology* **21**(10), 3862–3872 doi: 10.1111/1462-2920.14734

Ward CS*, JF Pan*, BP Colman, Z Wang, CA Gwin, TC Williams, A Ardis, CK Gunsch, **DE Hunt** (2019) "Conserved microbial responses for acute and chronic silver nanoparticle treatments in wetland mesocosms" *Environmental Science and Technology* **53**, 3268−3276 doi: 10.1021/acs.est.8b06654

Duan, Y, N Xie, Z Song, CS Ward, CM Yung, **DE Hunt**, ZI Johnson, G Wang (2018) "A high resolution time series reveals distinct seasonal patterns of planktonic fungi at a temperate coastal site (Beaufort, North Carolina, USA)" *Applied and Environmental Microbiology* 84 (21) e00967-18
doi: 10.1128/AEM.00967-18

Zhang T, JF Pan, **DE Hunt,** M Chen, B Wang (2018) "Organic matter modifies biochemical but not most behavioral responses of the clam *Ruditapes philippinarum* to nanosilver exposure" *Marine Environmental Research* **133**: 105-113. doi:10.1016/j.marenvres.2017.10.016

Ward CS*, CM Yung*, KM Davis, SK Blinebry, TC Williams, ZI Johnson, **DE Hunt** (2017) "Annual community patterns are driven by seasonal switching between closely related marine bacteria" *ISME Journal* **11** 1412-1422
doi:10.1038/ismej.2017.4

Garcia NS*, CM Yung*, KM Davis, T Rynearson, **DE Hunt** (2017) "Draft genome sequences of three bacterial isolates from cultures of the marine diatom *Thalassiosira rotula*" *Genome Announcements* **5** (18) e00316-17 doi: 10.1128/genomeA.00316-17

McMurray SE, ZI Johnson, **DE Hunt,** JR Pawlik, CM Finelli (2016) "Selective feeding by the giant barrel sponge enhances foraging efficiency" *Limnology and Oceanography* **61** 1271-1286.

Yung CM, CS Ward, KM Davis, ZI Johnson, **DE Hunt** (2016) "Insensitivity of diverse and temporally-variable particle-associated microbial communities to bulk seawater environmental parameters" *Applied and Environmental Microbiology* **82** (11):3431-3437.

Hunt DE and CS Ward (2015) “A network-based approach to disturbance transmission through microbial interactions” *Frontiers in Microbiology* **6** doi:10.3389/fmicb.2015.01182

Yung CM, MK Vereen, A Herbert, KM Davis, J Yang, A Kantorowska, CS Ward, JJ Wernegreen, ZI Johnson, **DE Hunt** (2015) “Thermally adaptive tradeoffs in closely related marine bacteria” *Environmental Microbiology* **17**(7) 2421-2429.

Kirchberger PC, M Turnsek, **DE Hunt**, BJ Haley, RR Colwell, MF Polz, CL Tarr, Y Boucher (2014) “*Vibrio metoecus* sp.nov.*,* a close relative of *Vibrio cholerae* isolated from coastal brackish ponds and clinical specimens” *International Journal of Systematic and Evolutionary Microbiology* **64** (9) 3208-3214.

Chae SR[*], **DE Hunt**[*], K Ikuma, S Yang, J Cho, CK Gunsch, J Liu, and MR Wiesner (2014) “Aging of fullerene C_{60} nanoparticles in the presence of microbes” *Water Research* **65** 282-289.

Colman BP, B Espinasse, C Richardson, C Matson, GV Lowry, **DE Hunt**, MR Wiesner, ES Bernhardt (2014) “Emerging contaminant or an old toxin in disguise? Silver nanoparticle impacts on ecosystems” *Environmental Science and Technology* **48**(9), 5229-5236.

Johnson ZI, BJ Wheeler, SK Blinebry, CM Carlson, CS Ward, **DE Hunt** (2013) “Dramatic variability of the carbonate system at a temperate coastal ocean site (Beaufort, North Carolina, USA) is regulated by physical and biogeochemical processes on multiple timescales” *PLoS ONE* **8**(12), e85117.

Hunt DE[*],Y Lin[*], MJ Church, DM Karl, S Tringe, LK Izzo, ZI Johnson (2013) “Relationship between abundance and specific activity of bacterioplankton in open ocean surface waters” *Applied and Environmental Microbiology* **79**(1), 177-184. doi: 10.1128/AEM.02155-12

Boucher Y, OX Codero, A Takemura, **DE Hunt**, K Schliep, E Bapteste, P Lopez, CL Tarr and MF Polz. (2011) “Local mobile gene pools rapidly cross species boundaries to create endemicity within global *Vibrio cholerae* populations” *mBio* **2** (2) e00335-10.

Hunt DE[*], E Ortega-Retuerta[*], C Nelson[*] (2010) “Connections between bacteria and organic material in aquatic ecosystems: Linking microscale ecology with global carbon cycling” p. 110-128. In P.F. Kemp [ed.], Eco-DAS VIII Symposium Proceedings. ASLO.

Hunt DE[*], LA David[*], D Gevers, SP Preheim, EJ Alm, MF Polz. (2008) “Resource partitioning and sympatric differentiation among closely related bacterioplankton” *Science* **320** (5879), 1081-1085 doi: 10.1126/science.1157890

Stocker R, JR Seymour, A Samadani, **DE Hunt**, MF Polz (2008) "Rapid chemotaxis enables marine bacteria to exploit ephemeral microscale nutrient patches" *PNAS-USA* **105**, 4209-4214.

Hunt DE, D Gevers, NM Vahora, MF Polz (2008) "Conservation of the chitin utilization pathway in the *Vibrionaceae*" *Applied and Environmental Microbiology* **74**, 44-51.

Polz MF, **DE Hunt**, SP Preheim, DM Weinreich. (2006) "Patterns and mechanisms of genetic and phenotypic differentiation in marine microbes" *Phil. Trans. R. Soc. B* **361,** 2009-2021.

Hunt DE, V Klepac-Ceraj, SG Acinas, C Gauthier, S Bertilson, MF Polz (2006) "Evaluation of 23S rRNA PCR primers for use in phylogenetic studies of bacterial diversity" *Applied and Environmental Microbiology* **72**, 2221-2225.

Thompson JR, S Pacocha, C Pharino, V Klepac-Ceraj, **DE Hunt**, J Benoit, R Sarma-Rupavtarm, DL Distel, MF Polz (2005) "Genotypic diversity within a natural coastal bacterioplankton population" *Science* **307** (5713) 1311-1313.

Acinas SG[*], V Klepac-Ceraj[*], **DE Hunt**, C Pharino, I Ceraj, DL Distel, MF Polz (2004) "Fine-scale phylogenetic architecture of a complex bacterial community" *Nature* **430**, 551 - 554

Polz MF, S Bertilson, SG Acinas, **D Hunt** (2003) "A(r)ray of hope in diversity analysis of microbial function and communities" *Biological Bulletin* **204**(2), 196-199.

[*] authors contributed equally

Recent Invited Seminars

Duke Microbiome Seminar Series (May 2025)
Panelist: Duke Research Summit (January 2025)
University of Technology Sydney (February 2024)
C-CoAST RCN Seminar Series (September 2021)
UNC Chapel Hill, Marine Sciences Seminar, Chapel Hill NC (January 2020)

Graduate Students Supervised (PhD/ MS)

Chuxuan "Bertram" Ji		2023-present
Jessica Gronniger, MSC	PhD	2023
Zhao "Joanna" Wang, MSC	PhD	2020
Cheuk Man "Charmaine" Yung, MSC	PhD	2016

Christopher Ward, Toxicology/MSC	PhD	2015
Katherine Davis, MSC	MS	2014

Postdoctoral Associates

Dr. Nathan Garcia	2016-2017
Dr. Tiffany Williams	2015-2017

Technicians

Qing Dai	2021
Doris Juarez	2017-2019

Funding

Duke SPARK Quantifying losses of sequestered carbon and nutrients in the coastal ocean ($143,899, Jan 2025-Dec 2025) **PI DE Hunt**

NSF DEB: 2224819 Collaborative Research: BoCP-Design: A multidomain microbial consortium to interrogate organic matter decomposition in a changing ocean ($438,396, Sept 2022-August 2025) PI **DE Hunt,** co- PI Jean Gibert, Collaborator Rene Boiteau (Univ of Minnesota)

NSF ICER: 2033934 NSF2026: EAGER: Identifying microbes' population-level environmental responses using Bayesian modeling ($299,693, Sept 2020- Aug 2025) **PI DE Hunt** co-PIs James Clark, Mark Borsuk

Duke Microbiome Center: Coastal microbial community responses to post-hurricane conditions ($4,414 Sept 2021-Aug 2022) PIs Gronniger, **DE Hunt**

Duke Bass Connections: Oceans of Microbes ($75,000 Sept 2020- Aug 2023) PIs ZI Johnson **DE Hunt**

NSF 1939447 CoPe: RCN: Building a Collaboratory for Coastal Adaptation over Space and Time (C-CoAST) ($499,864, April 2020- March 2022) **Steering Committee: DE Hunt**

Resilient Coupled Communities and Coasts (RCCoCo) ($35,000, Jan 2020-Dec 2021) **NSOE Faculty**

Duke Bass Connections: Ecological and Social Time Scales in Hurricane Response and Recovery ($24,000, Jan 2019-June 2020) Leads **DE Hunt,** J Gronniger

NSF OCE:1416665 Collaborative Research: Ocean Acidification: microbes as sentinels of adaptive responses to multiple stressors: contrasting estuarine and open ocean environments (Duke portion: $798,452 Jan 2015- Dec 2019) PIs ZI Johnson, K Konstantinidis (GA Tech), co-PI **DE Hunt**

DOE Community Science Program: Seasonal and disturbance-related alterations in the biogeochemical cycling of estuarine carbon (360 Gbp Metagenome Sequencing, Nov 2016- Oct 2019) PI **DE Hunt**

GBMF3768 Gordon and Betty Moore Foundation: Ecology at the microbial scale: the importance of microscale interactions between heterotrophic bacteria and phytoplankton in marine environments (Duke portion: $445,135 Sept 2013- August 2019) PI **DE Hunt,** co-PI T. Rynearson (URI)

NSF OCE 1322950: OCE-RIG: Biological activity on particulate organic material in the coastal ocean. ($99,999 Sept 2013-Aug 2016) PI **DE Hunt**

Nicholas School of the Environment Seed Grant: Community Building and Logistics to Develop a Coastal Carolina LTER site ($10,000 May 2015- April 2016) PIs Johnson, Cassar, diGiulio, Forward, Hench, **Hunt**, Nowacek, Read, Silliman, Smith.

NSF/EPA EF-0830093 Center for Environmental Implications of Nanotechnology (subaward **DE Hunt** $11,744 Oct 2008-Aug 2014) Grant PI MR Wiesner, co-PIs M Hochella, R Di Giulio, K Jones, G Lowry

NSF DBI 0959630: MRI-R2 - Acquisition of High-Speed Sorting Flow Cytometer for Multi-User Environmental Microbiology Research (Total: $473,370 Feb 2010 – Jan 2013) –PI ZI Johnson and co-PIs **DE Hunt**, E Bernhardt, CK Gunsch