Jennifer R. Brum
Curriculum Vitae

Louisiana State University
Department of Oceanography and Coastal Sciences
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Research Focus **I am a microbial oceanographer broadly interested in viral ecology and viral influences on microbial community dynamics and biogeochemistry in marine systems.**

Academic Appointments **Louisiana State University,** Baton Rouge, Louisiana, Assistant Professor, Department of Oceanography and Coastal Sciences (2017 – present)

Postdoctoral Experience **The Ohio State University,** Columbus, Ohio; Research Scientist (2015 – 2016)
Dr. Matthew B. Sullivan, advisor, Department of Microbiology

University of Arizona, Tucson, Arizona; Postdoctoral Researcher (2010 – 2015)
Dr. Matthew B. Sullivan, advisor, Department of Ecology and Evolutionary Biology

Education **Ph.D. in Oceanography, University of Hawaii at Manoa**, Honolulu, Hawaii (2003 – 2009)
Dr. Grieg F. Steward, advisor, Department of Oceanography

M.S. in Oceanography, University of Hawaii at Manoa, Honolulu, Hawaii (2001 – 2003)
Dr. David M. Karl, advisor, Department of Oceanography

B.S. in Marine Science, Hawaii Pacific University, Honolulu, Hawaii (1997 – 2001)
Minor in Chemistry

Grants **National Science Foundation, Biological Oceanography, 2017 – Present**
Ecology and biogeochemical impacts of viruses in oxygen minimum zones ($692,953)

DOE Joint Genome Institute, Community Sequencing Program, 2018
Elucidating viral 'dark matter' and biogeochemical impacts in extreme environments (metagenomic sequencing funding including 20 samples from hydrothermal vent systems)

NSF Postdoctoral Fellowship in Polar Regions Research, 2010 ($138,300)

Publications Summary: I currently have 29 career publications (published or in press; h-index = 22; i10-index = 25). Journal impact factors: *Nature* = 42.7; *Science* = 41.8; *Nat Biotech* = 36.6; *Nat Rev Microbiol* = 34.2; *Nat Microbiol* = 15.5; *PNAS* = 9.4; *ISME J* = 9.2; *Sci Data* = 5.5; *Global Biogeochem Cycles* = 4.8; *Limnol Oceanogr* = 3.8; *Appl Environ Microbiol* = 4.0; *Microb Ecol* = 3.9; *Environ Microbiol Rep* = 3.0; *PLoS ONE* = 2.7; *PeerJ* = 2.4; *Limnol Oceanogr Methods* = 2.1; *Aquat Microb Ecol* = 1.6.

29. 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 (including JR Brum)**, T Woyke, NJ Mouncey, NN Ivanova, NC Kyrpides, EA Eloe-Fadrosh. (2020) A genomic catalog of Earth's Microbiomes. ***Nature Biotechnology*** https://doi.org/10.1038/s41587-020-0718-6

28. Caputi, L, Q Carradec, D Eveillard, A Kirilovsky, E Pelletier, JJ Pierella Karlusich, FRJ Vieira, E Villar, S Chaffron, S Malviya, E Scalco, SG Acinas, A Alberti, J-M Aury, A-S Benoiston, A Bertrand, T Biard, L Bittner, M Boccara, **JR Brum**, C Brunet, G Busseni, A Carratalà, H Claustre, LP Coelho, S Colin, S D'Aniello, C Da Silva, M Del Core, H Doré, S Gasparini, F Kokoszka, J-L Jamet, C Lejeusne, C Lepoivre, M Lescot, G Lima-Mendez, F Lombard, J Lukeš, N Maillet, M-A Madoui, E Martinez, MG Mazzocchi, MB Néou, J Paz-Yepes, J Poulain, S Ramondenc, J-B Romagnan, S Roux, DS Manta, R Sanges, S Speich, M Sprovieri, S Sunagawa, V Taillander, A Tanaka, L Tirichine, C Trottier, J Uitz, A Veluchamy, J Veselá, F Vincent, S Yau, S Kandels-Lewis, S Searson, C Dimier, M Picheral, *Tara* Oceans Coordinators, P Bork, E Boss, C de Vargas, MJ Follows, N Grimsley, L Guidi, P Hingamp, E Karsenti, P Sordino, L Stemmann, MB Sullivan, A Tagliabue, A Zingone, L Garczarek, F d'Ortenzio, P Testor, F Not, MR d'Alcalà, P Wincker, C Bowler, D Iudicone. (2019) Community-level responses to iron availability in open ocean plankton ecosystems. ***Global Biogeochemical Cycles*** 33:391-419

27. Roux S, **JR Brum**. (2019) A viral reckoning: viruses emerge as essential manipulators of global ecosystems. ***Environmental Microbiology Reports*** 11:3-8

26. Emerson JB, S Roux, **JR Brum**, B Bolduc, BJ Woodcroft, H Jang, CM Singleton, LM Solden, AE Naas, JA Boyd, SB Hodgkins, RM Wilson, G Trubl, C Li, S Frolking, PB Pope, KC Wrighton, PM Crill, JP Chanton, SR Saleska, GW Tyson, VI Rich, MB Sullivan. (2018) Host-linked soil viral ecology along a permafrost thaw gradient. ***Nature Microbiology*** 3:870-880

25. Brum JR, MB Sullivan. (2018) Ecological genomics of marine viruses. p. 345-376, in JM Gasol, DL Kirchman [eds] **Microbial Ecology of the Oceans, 3rd Edition**, Wiley-Blackwell

24. Weitz JS, SJ Beckett, **JR Brum**, BB Cael, J Dushoff. (2017) Lysis, lysogeny and virus-microbe ratios. ***Nature*** 549:E1

23. Alberti A, J Poulain, S Engelen, K Labadie, S Romac, I Ferrera, G Albini, JM Aury, C Belser, A Bertrand, C Cruaud, C Da Silva, C Dossat, F Gavory, S Gas, J Guy, M Haquelle, E Jacoby, O Jaillon, A Lemainque, E Pelletier, G Samson, M Wessner, Genoscope Technical Team, SG Acinas, M Royo-Llonch, FM Cornejo-Castillo, R Logares, B Fernández-Gómez, C Bowler, G Cochrane, C Amid, P Ten Hoopen, C De Vargas, N Grimsley, E Desgranges, S Kandels-Lewis, H Ogata, N Poulton, ME Sieracki, R Stepanauskas, MB Sullivan, **JR Brum**, MB Duhaime, BT Poulos, BL Hurwitz, S Pesant, E Karsenti, P Wincker. (2017) Viral to metazoan marine plankton nucleotide sequences from the *Tara* Oceans expedition. ***Scientific Data*** 4:170093

22. Vik DR, S Roux, **JR Brum**, B Bolduc, JB Emerson, CC Padilla, FJ Stewart, MB Sullivan. (2017) Putative archaeal viruses from the mesopelagic ocean. ***PeerJ*** 5:e3428

21. Roux S, **JR Brum**, BE Dutlih, S Sunagawa, MB Duhaime, A Loy, BT Poulos, N Solonenko, E Lara, J Poulain, S Pesant, S Kandels-Lewis, C Dimier, M Picheral, S Searson, C Cruaud, A Alberti, CM Duarte, JM Gasol, D Vaque, Tara Oceans Coordinators, P Bork, SG Acinas, P Wincker, MB Sullivan. (2016) Ecogenomics and potential biogeochemical impacts of globally abundant ocean viruses. ***Nature*** 537:689-693

20. Brum JR*, JC Ignacio-Espinoza*, E-H Kim*, G Trubl, R Jones, S Roux, NC VerBerkmoes, VI Rich, MB Sullivan. (2016) Illuminating structural proteins in viral 'dark matter' with metaproteomics. ***Proceedings of the National Academy of Sciences, U.S.A.*** 113:2436-2441 (*co-first authors)

19. Guidi L*, S Chaffron*, L Bittner*, D Eveillard*, A Larhlimi, S Roux, Y Darzi, S Audic, L Berline, **JR Brum**, LP Coelho, JC Ignacio Espinoza, S Malviya, S Sunagawa, C Dimier, S Kandels-Lewis, M Picheral, J Poulain, S Searson, *Tara* Oceans coordinators, L Stemmann, F Not, P Hingamp, S Speich, M Follows, L Karp-Boss, E Boss, H Ogata, S Pesant, J Weissenbach**,** P Wincker, SG Acinas, P Bork, C de Vargas, D Iudicone, MB Sullivan, J Raes, E Karsenti, C Bowler, G Gorsky. (2016) Plankton networks driving carbon export in the global ocean. ***Nature*** 532:465-470 (*co-first authors)

18. Brum JR, BL Hurwitz, HW Ducklow, MB Sullivan. (2016) Seasonal time bombs: Dominant temperate viruses affect Southern Ocean microbial dynamics. ***The ISME Journal*** 10:437-449

17. Goldsmith DB, **JR Brum**, M Hopkins, CA Carlson, M Breitbart. (2015) Water column stratification structures viral community composition in the Sargasso Sea. ***Applied and Environmental Microbiology*** 76:85-94

16. Brum JR*, JC Ignacio-Espinoza*, S Roux*, G Doulcier, SG Acinas, A Alberti, S Chaffron, C Cruaud, C de Vargas, JM Gasol, G Gorsky, AC Gregory, L Guidi, P Hingamp, D Iudicone, F Not, H Ogata, S Pesant, BT Poulos, SM Schwenck, S Speich, C Dimier, S Kandels-Lewis, M Picheral, S Searson, *Tara* Oceans Coordinators, P Bork, C Bowler, S Sunagawa, P Wincker, E Karsenti, MB Sullivan. (2015) Patterns and ecological drivers of ocean viral communities. ***Science*** 348:1261498 (*co-first authors)

15. Villar E, GK Farrant, M Follows, L Garczarek, S Speich, S Audic, L Bittner, B Blanke, **JR Brum**, C Brunet, R Casotti, A Chase, JR Dolan, F d'Ortenzio, JP Gattuso, N Grima, L Guidi, CN Hill, O Jahn, JL Jamet, H Le Goff, C Lepoivre, S Malviya, E Pelletier, JB Romagnan, S Roux, S Santini, E Scalco, SM Schwenck, A Tanaka, P Testor, T Vannier, F Vincent, A Zingone, C Dimier, M Picheral, S Searson, S Kandels-Lewis, *Tara* Oceans coordinators, SG Acinas, P Bork, E Boss, C de Vargas, G Gorsky, H Ogata, S Pesant, MB Sullivan, S Sunagawa, P Wincker, E Karsenti, C Bowler, F Not, P Hingamp, D Iudicone. (2015) Environmental characteristics of Agulhas rings affect interocean plankton transport. ***Science*** 348:1261447

14. Cunningham BR*, **JR Brum***, SM Schwenck, MB Sullivan, SG John. (2015) An inexpensive, accurate, and precise wet-mount method for enumerating aquatic viruses. ***Applied and Environmental Microbiology*** 81:2995-3000 (*co-first authors)

13. Brum JR, MB Sullivan. (2015) Rising to the challenge: Accelerated pace of discovery transforms marine virology. ***Nature Reviews Microbiology*** 13:147-159

12. Hurwitz BL, **JR Brum**, MB Sullivan. (2015) Depth-stratified functional and taxonomic niche specialization in the 'core' and 'flexible' Pacific Ocean Virome. ***The ISME Journal*** 9:472-484

11. Hurwitz BL, A Westvald, **JR Brum**, MB Sullivan. (2014) Modeling ecological drivers in marine viral communities using comparative metagenomics and network analyses. ***Proceedings of the National Academy of Sciences, U.S.A.*** 111:10714-10719

10. Brum JR, JJ Morris, M Decima, MR Stukel. (2014) Mortality in the oceans: causes and consequences. p. 16-48, in PF Kemp [ed] **Eco-DĀS IX Symposium Proceedings**, ASLO

9. Brum JR, RO Schenck, MB Sullivan. (2013) Global morphological analysis of marine viruses shows minimal regional variation and dominance of non-tailed viruses. ***The ISME Journal*** 7:1738-1751

8. **Brum JR**, AI Culley, GF Steward. (2013) Assembly of a marine viral metagenome after physical fractionation. ***PLoS ONE*** 8(4):e60604

7. **Brum JR**, GF Steward. (2011) Physical fractionation of aquatic viral assemblages. ***Limnology and Oceanography: Methods*** 9:150-163

6. John SG, CB Mendez, L Deng, B Poulos, AKM Kauffman, S Kern, **J Brum**, MF Polz, EA Boyle, MB Sullivan. (2011) A simple and efficient method for concentration of ocean viruses by chemical flocculation. ***Environmental Microbiology Reports*** 3:195-202

5. **Brum JR**, GF Steward. (2010) Morphological characterization of viruses in the stratified water column of alkaline, hypersaline Mono Lake. ***Microbial Ecology*** 60:636-643

4. **Brum JR**, GF Steward, SC Jiang, R Jellison. (2005) Spatial and temporal variability of prokaryotes, viruses, and viral infections of prokaryotes in an alkaline, hypersaline lake. ***Aquatic Microbial Ecology*** 41:247-260

3. **Brum JR**. (2005) Concentration, production, and turnover of viruses and dissolved DNA pools at Station ALOHA, North Pacific Subtropical Gyre. ***Aquatic Microbial Ecology*** 41:103-113

2. **Brum JR**, GF Steward, DM Karl. (2004) A novel method for the measurement of dissolved deoxyribonucleic acid in seawater. ***Limnology and Oceanography: Methods*** 2:248-255

1. Dore JE, **JR Brum**, LM Tupas, DM Karl. (2002) Seasonal and interannual variability in sources of nitrogen supporting export in the oligotrophic subtropical North Pacific Ocean. ***Limnology and Oceanography*** 47:1595-1607

Awards

LSU Alumni Association Rising Faculty Research Award, Louisiana State University (2020)

Outstanding Mentor Award, Undergraduate Biology Research Program, University of Arizona (2014)

Outstanding Early Career Scientist Poster, Marine Microbes Gordon Research Conference (2012)

Achievement Rewards for College Scientists (ARCS) Scholarship in Oceanography (2008)

Outstanding Student Paper Award, Ocean Sciences Meeting, Honolulu, Hawaii (2006)

Field Research

Summary: I have significant experience designing, planning, and implementing field ecological studies including 18 oceanographic research cruises and 8 land-based field sampling campaigns.

2016 BigMAR cruise to Mid-Atlantic Ridge hydrothermal vents, FS *Meteor*; Atlantic Ocean
2014 field sampling; OMZ Microbes SCOR Working Group; Saanich Inlet, British Columbia
2013 ETNP oxygen minimum zone cruise; RV *New Horizon*; Eastern Tropical North Pacific Ocean
2010 field sampling; Palmer Station, Antarctica
2010 field sampling; The Biosphere 2 "Ocean" Biome, Tucson, Arizona
2009 field sampling: The Biosphere 2 "Ocean" Biome, Tucson, Arizona
2009 Line P cruise 2009-10, CGCS *John P. Tully*; North Pacific Ocean
2008 C-MORE OPEREX cruise, RV *Kilo Moana*; North Pacific Ocean
2007 field sampling; Kaneohe Bay, Hawaii
2006 field sampling; Kaneohe Bay, Hawaii
2005 HALE ALOHA cruise, RV *Wecoma*; North Pacific Ocean
2004 field sampling; Mono Lake, California

2003 field sampling; Mono Lake, California
2002 Hawaii Ocean Time-series cruise 141, RV *Wecoma*; North Pacific Ocean
2002 Hawaii Ocean Time-series cruise 140, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2002 Hawaii Ocean Time-series cruise 139, RV *Wecoma*; North Pacific Ocean
2002 Hawaii Ocean Time-series cruise 138, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2002 Photoheterotrophy cruise, RV *Kilo Moana*; North Pacific Ocean
2001 Palmer LTER cruise 01-01, RV *Laurence M. Gould*; Southern Ocean
2001 Hawaii Ocean Time-series cruise 129, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2001 Hawaii Ocean Time-series cruise 128, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2001 Hawaii Ocean Time-series cruise 127, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2000 Hawaii Ocean Time-series cruise 118, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2000 Hawaii Ocean Time-series cruise 117, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2000 Hawaii Ocean Time-series cruise 116, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean
2000 Hawaii Ocean Time-series cruise 115, RV *Ka'imikai-o-Kanaloa*; North Pacific Ocean

Service

Journal and Proposal Reviewer

Peer reviewer for *Proceedings of the National Academy of Sciences of the United States of America* (2020 – present)
Peer reviewer for *Nature Reviews Microbiology* (2019 – present)
Grant proposal reviewer for Programa FONDECYT – Fondo Nacional de Desarrollo Científico y Tecnológico, Chile (2019)
Peer reviewer for *Applied and Environmental Microbiology* (2019 – present)
Peer reviewer for *mSystems* (2019 – present)
Thesis reviewer for Macquarie University (2019)
Reviewer for the DOE Science Graduate Student Research program (2019)
Grant proposal reviewer for the Israel Science Foundation (2019)
Peer reviewer for *Estuarine, Coastal and Shelf Science* (2018 – present)
Peer reviewer for *Nature Microbiology* (2018 – present)
Peer reviewer for *Viruses* (2018 – present)
Peer reviewer for *Biogeosciences* (2017 – present)
Peer reviewer for *PLoS Genetics* (2017 – present)
Peer reviewer for *PLoS Computational Genetics* (2017 – present)
Peer reviewer for *Environmental Microbiology Reports* (2017 – present)
Peer reviewer for *Science Advances* (2016 – present)
Peer reviewer for *PeerJ* (2016 – present)
Grant proposal reviewer for the Austrian Science Fund (2015)
Grant proposal reviewer for the French Polar Institute (2014)
Peer reviewer for *FEMS Microbiology Letters* (2014 – present)
Peer reviewer for *Frontiers in Microbiology* (2014 – present)
Peer reviewer for *Journal of Virological Methods* (2014 – present)
Peer reviewer for *Aquatic Microbial Ecology* (2014 – present)
Peer reviewer for *Journal of Experimental Marine Biology and Ecology* (2014 – present)
Peer reviewer for *Nature Communications* (2014 – present)
Peer reviewer for *The ISME Journal* (2013 – present)
Reviewer for Graduate Women in Science fellowship (2013)
Peer reviewer for *PLoS ONE* (2012 – present)
Grant proposal reviewer for NSF Biological Oceanography (2011 – present)
Peer reviewer for *Environmental Microbiology* (2009 – present)

Authorship of Publicly Available Laboratory Protocols

*all protocols available at http://u.osu.edu/viruslab/protocols/
Wet-Mount Virus Enumeration
Concentrating Viruses with Ultrafiltration Devices

Adsorbing Viruses onto TEM Grids
Quantitatively Depositing Viruses onto TEM Grids
Positive and Negative Staining of Viruses on TEM Grids
FVIC (Frequency of Visibly Infected Cells)
Analysis of Viral Morphological Characteristics
Using ImageJ to Measure Viral Dimensions in Micrographs

Workshop Participation
Microbial Genomics of the Global Ocean System (2019). Gulf of Mexico Research Initiative. Washington, DC, USA.

Continuum of Persistence Workshop (2017). Sponsored by the Canadian Institute for Advanced Research and the Gordon and Betty Moore Foundation. Cascais, Portugal.

University Committees
Faculty Senate, Committee on Committees, Louisiana State University (2019 – present)

Departmental Committees
Academic Affairs Committee (2020 – present)
Website Committee (2017 – 2018; 2020 – present)
Awards Committee (2019 – 2020)

Teaching

Curriculum development for Course-based Undergraduate Research Experience (CURE) sections of "Introduction to Biology Laboratory" (BIOL 1503) (2019 – present)
Louisiana State University, Baton Rouge, Louisiana

Instructor, "Biological Oceanography" (OCS 4550) (2019 – Present)
Louisiana State University, Baton Rouge, Louisiana

Instructor, "Introduction to Oceanography" (OCS 1005) (2018)
Louisiana State University, Baton Rouge, Louisiana

Instructor, "Marine and Environmental Microbiology" (OCS/BIOL 4090) (2017 – Present)
Louisiana State University, Baton Rouge, Louisiana

Outreach Instructor, "Ocean viruses: From isolates to genomes" (2010)
Tucson High Magnet School, Tucson, Arizona

Adjunct Instructor, Ecology Laboratory (2007)
Hawaii Pacific University, Honolulu, Hawaii

Teaching Assistant, Science of the Sea (2001 – 2002)
University of Hawaii, Honolulu, Hawaii

Teaching Assistant, Science of the Sea Laboratory (2001 – 2002)
University of Hawaii, Honolulu, Hawaii

Teaching Assistant, Organic Chemistry Laboratory (2001 – 2002)
Hawaii Pacific University, Honolulu, Hawaii

Presentations

Brum, JR. Emerging ecological roles of viruses in the global oceans. Scripps Institution of Oceanography, Ecology Seminar. 2021. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. University of Pretoria, seminar. 2020. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Hawaii Pacific University, Marine Science seminar. 2020. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. University of New Mexico, Virology Journal Club seminar. 2020. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. University of Alabama at Birmingham, Department of Biology seminar. 2020. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Louisiana State University, Department of Plant Pathology & Crop Physiology seminar. 2020. (***invited*** oral presentation)

Brum, JR, S Jurgensen, S Roux, S Schwenck, FJ Stewart, MB Sullivan. Viruses don't breathe: Understanding ecosystem effects of viruses in marine oxygen minimum zones. American Geophysical Union Fall Meeting. 2019. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Louisiana State University Science Club. 2019. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Louisiana State University, Department of Biological Sciences seminar. 2019. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. University of New Orleans, Department of Biological Sciences seminar. 2018. (***invited*** oral presentation)

Brum, JR, S Roux, S Schwenck, FJ Stewart, MB Sullivan. Viruses don't breathe: Understanding ecosystem effects of viruses in marine oxygen minimum zones. Ocean Sciences Meeting. Portland, Oregon. 2018. (***invited*** poster presentation)

Brum, JR. Challenges and advances in environmental viral ecology. Evergreen Bacteriophage Conference. Olympia, Washington. 2017. (***invited*** oral presentation)

Brum, JR. Challenges and advances in environmental viral ecology. Applied and Environmental Microbiology Gordon Research Conference. South Hadley, Massachusetts. 2017. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Georgia Institute of Technology, School of Biological Sciences seminar. 2017. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. Ohio State University, School of Earth Sciences seminar. 2016. (***invited*** oral presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. ASM Microbe. Boston, Massachusetts. 2016. (***invited*** oral presentation)

Brum, JR, S Roux, VI Rich, MB Sullivan, and collaborators. Global ecology and ecosystem effects of marine viruses. DOE JGI User Meeting. Walnut Creek, California. 2016. (poster presentation)

Brum, JR. Global ecology and ecosystem effects of marine viruses. International Symposium on Genome Microbiology. Tokyo, Japan. 2016. (***invited*** oral presentation)

Brum JR. Marine viral ecology goes 'meta': How recent advances have transformed our ability to investigate the roles of viruses in nature. Marine Molecular Ecology Gordon Research Conference. Hong Kong. 2015. (***invited*** oral presentation)

Brum JR*, JC Ignacio-Espinoza*, S Roux*, G Doulcier, S Acinas, A Alberti, S Chaffron, L Coppola, C Cruaud, C de Vargas, P Gasol, G Gorsky, AC Gregory, L Guidi, P Hingamp, D Iudicone, F Not, H Ogata, S Pesant, BT Poulos, SM Schwenck, S Speich, C Dimier, M Picheral, S Searson, S Kandels-Lewis, *Tara* Oceans Coordinators, P Bork, C Bowler, E Karsenti, S Sunagawa, P Wincker, MB Sullivan. Global patterns and ecological drivers of ocean viral communities. ASLO Aquatic Sciences Meeting. Granada, Spain. 2015. (*co-first authors) (oral presentation)

Brum JR, MB Sullivan, and collaborators. Marine viral ecology goes 'meta'. Marine Microbes Gordon Research Conference. Waltham, Massachusetts. 2014. (poster presentation)

Brum JR, BL Hurwitz, O Schofield, HW Ducklow, MB Sullivan. Seasonal time bombs: Temperate viruses dominate the Southern Ocean and substantially affect microbial dynamics. Ocean Sciences Meeting. Honolulu, Hawaii. 2014. (oral presentation)

Brum JR, RO Schenck, MB Sullivan. Using morphology of marine viruses to assess community structure and biogeography. Environmental Virology Workshop. Tucson, Arizona. 2013. (***invited*** oral presentation)

Brum JR, SM Schwenck, RO Schenck, MB Sullivan. Targeted viral metagenomics: A cultivation-independent method for investigating specific viruses. Environmental Virology Workshop. Tucson, Arizona. 2013. (***invited*** oral presentation)

Brum JR, BL Hurwitz, HW Ducklow, MB Sullivan. Marine viral survival skills: How oceanic microbial viruses succeed in the Southern Ocean. Marine Microbes Gordon Research Conference. Italy. 2012. (poster presentation)

Brum JR, BL Hurwitz, HW Ducklow, MB Sullivan. Marine viral survival skills: How oceanic microbial viruses succeed in the Southern Ocean. American Society for Microbiology, 112th General Meeting. San Francisco, California. 2012. (oral presentation)

Brum JR, HW Ducklow, MB Sullivan. Marine viral survival skills: How oceanic microbial viruses succeed in the Southern Ocean. Ocean Sciences Meeting. Salt Lake City, Utah. 2012. (oral presentation)

Brum JR, HW Ducklow, MB Sullivan. Ecology and metagenomic analysis of free and induced temperate viruses in the coastal ocean of the Western Antarctic Peninsula. Evergreen International Phage Biology Meeting. Olympia, Washington. 2011. (poster presentation)

Brum JR, GF Steward, AI Culley. Genomic and morphological characterization of uncultivated aquatic viruses. Aquatic Virus Workshop. Vancouver, British Columbia. 2008. (oral presentation)

Brum JR, GF Steward. Multidimensional physical separation of aquatic viruses to assess diversity. Virus Ecology in Marine Systems: A Workshop on Methods. Vancouver, British Columbia. 2006. (poster presentation)

Brum JR, GF Steward. Multidimensional physical separation of aquatic viruses to assess diversity. ASLO Ocean Sciences Meeting. Honolulu, Hawaii. 2006. (oral presentation)

Brum JR, GF Steward, SC Jiang, R Jellison. Use of epifluorescence microscopy and transmission electron microscopy to investigate spatial and temporal dynamics of prokaryotes, viruses, and viral infections of prokaryotes in Mono Lake, CA. Microscopy and Microanalysis Conference. Honolulu, Hawaii. 2005. (poster presentation)

Brum JR, GF Steward, SC Jiang, R Jellison. Spatial and temporal variability of prokaryotes, viruses, and viral infections of prokaryotes in an alkaline, hypersaline lake. Ocean Sciences Meeting. Santiago de Compostela, Spain. 2005. (oral presentation)

Brum JR. Concentration, production, and turnover of viruses and dissolved DNA at Station ALOHA. Ocean Sciences Meeting. Honolulu, Hawaii. 2004. (oral presentation)

Outreach Activities

***Science Friday* interview on National Public Radio** (2015)
- An interview on the *Science Friday* radio program to discuss my research of marine viruses (http://www.sciencefriday.com/segment/05/22/2015/plankton-goes-viral.html).

Judge for the annual Tanque Verde Elementary School Science Fair (2011 – 2015)

Tucson Middle School Outreach (2010 – 2015; 11 visits)
- An outreach effort with Paula Nasiatka (Tanque Verde Elementary, Tucson, Arizona) and Jennifer Maxwell (Tucson Country Day School, Tucson, Arizona) to present "Microbes in the Great Pacific Garbage Patch" and "Science and Fun in Antarctica" to their 6th grade science classes each year.

Biosphere 2, University of Arizona, Tucson, Arizona (2010 – 2015)
- Development of a 1-page summary of the Biosphere 2 Ocean research and outreach program for dissemination to visiting scientists and funding agencies.
- Interaction with visitors touring Biosphere 2 to educate them about oceanographic research and our Biosphere 2 Ocean research activities.

Center for Microbial Oceanography: Research and Education (C-MORE), University of Hawaii at Manoa, Honolulu, Hawaii (2007 – 2009)
- Assisted in the development of science kits for use in primary and secondary school classrooms.

Judge for the Hawaii State Engineering and Science Fair (2007, 2008)

School of Ocean and Earth Science and Technology Open House, University of Hawaii at Manoa, Honolulu, Hawaii (2003, 2005, 2007)
- Assisted with the development and presentation of hands-on ocean science activities for local K-12 students and the public.

Advising and Mentorship

Graduate Students and Postdoctoral Researchers Advised

Ariel Petchel – PhD candidate, Louisiana State University (2020 – present); recipient of the NSF Graduate Research Fellowship

Andrew Long – Postdoctoral Researcher, Louisiana State University (2019 – present)

Sophie Jurgensen – PhD candidate, Louisiana State University (2018 – present); recipient of the NSF Graduate Research Fellowship

Undergraduate Students Advised

Parker Lawrence – undergraduate, Louisiana State University (2021 – present)

Isabell Powell – undergraduate, Louisiana State University (2020 – present)

Catherine O'Byrne – undergraduate, Louisiana State University (2020 – present)
Victoria Rittell – undergraduate, Louisiana State University (2019 – present)
Elise Peyroux – undergraduate, Louisiana State University (2019 – present)
Sarah Schwenck – undergraduate, University of Arizona (2012 – 2014)
Ryan Schenck – undergraduate, University of Arizona (2011 – 2013)

Student Committees
Melissa Walker – PhD candidate, University of Alabama at Birmingham (2019 – present)
Leah Forsyth – Master's candidate, Louisiana State University (2019 – 2020)
Michelle Anderson – Master's candidate, Louisiana State University (2019 – 2020)
Amaranta Focardi – PhD candidate, University of Technology Sydney (Thesis Examiner; 2019)
Elizabeth Hurst – PhD candidate, Louisiana State University (Dean's Representative; 2019)
Maryam Roostaee – PhD candidate, Louisiana State University (Dean's Representative; 2017 – 2019)
Alec Turner – PhD Candidate , Louisiana State University (Dean's Representative; 2018)
Emily Nall – Undergraduate Honors Thesis, Louisiana State University (2018)