

## **Dr. Beth N. Orcutt**

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### **Summary**

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Dr. Orcutt is a mid-career marine scientist with over a decade of leadership experience directing diverse and international teams of scientists and students in the exploration of the deep sea, focused on discovering how microscopic life thrives in strange environments and how their living impacts global processes. She has a Ph.D. in Marine Sciences and has traveled far and wide for her research. Building from these international, cross-cultural experiences, Orcutt also has a passion for promoting justice, equity, diversity, and inclusivity in ocean science. Orcutt translates her scientific expertise to address real world policy issues, such as by providing expert information to national and international agencies, policy-makers, and industry. Orcutt is the Director of the Crustal Ocean Biosphere Research Accelerator (COBRA) and an interim Vice President for Research at Bigelow Laboratory.

**Keywords:** *deep sea, deep biosphere, geomicrobiology, microbial biogeochemistry, astrobiology, oceanic crust, marine sediment, cold seeps, microbe-mineral, observatories, deep-sea mining*

### **Current Appointments**

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- 2022-present **Vice President for Research (interim):** Bigelow Laboratory for Ocean Sciences, ME, USA
- 2012-present **Senior Research Scientist:** Bigelow Laboratory for Ocean Sciences, ME, USA
- 2012-present **Research Professor:** Colby College, ME, USA
- 2009-present **Adjunct Associate Professor:** Marine Biology and Biological Oceanography, Dept. of Biological Sciences, University of Southern California, CA, USA

### **Professional Experience**

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- 2020-2022 **Diversity, Equity & Inclusivity Liaison,** Bigelow Laboratory
- 2019-2022 **Research Fellow,** Hanse-Wissenschaftskolleg, Delmenhorst, Germany
- 2009-2012 **Postdoctoral Research Associate:** Center for Geomicrobiology, Aarhus University, Aarhus, Denmark; lab of Prof. Dr. Bo Barker Jørgensen
- 2007-2009 **Postdoctoral Research Associate:** Department of Biological Sciences, University of Southern California, CA, USA; lab of Dr. Katrina J. Edwards
- 2004-2006 **Guest Scientist:** Organic Geochemistry Group, Research Center Ocean Margins, Bremen, Germany; lab of Prof. Dr. Kai-Uwe Hinrichs
- 2002-2006 **Guest Scientist:** Habitat Group, Max Planck Institute for Marine Microbiology, Bremen, Germany; lab of Prof. Dr. Antje Boetius

### **Education and Courses**

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- 2002-2007 **Ph.D. in Marine Sciences, University of Georgia, Athens, GA, USA.**  
*Dissertation advisor:* Dr. Samantha B. Joye; *Dissertation title:* “Anaerobic oxidation of methane in cold seeps and gas hydrates: Responsible microorganisms, rates of activity, and interactions with other processes.”
- 2003 **International Geobiology Course,** University of Southern California
- 1998-2002 **B.S. in Interdisciplinary Studies** (Marine Geochemistry emphasis with Geology minor), University of Georgia, Athens, GA, USA; Summa Cum Laude

## **Honors and Awards**

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- 2020 CHOICE award and Association of American Publishers 2020 PROSE award for [Deep Carbon](#) published by Cambridge University Press (lead editor)
- 2019 Asahiko Taira International Scientific Ocean Drilling Research [Prize](#), conferred jointly by the American Geophysical Union and Japan Geoscience Union
- 2019 Hanse Wissenschaftskolleg (Delmenhorst, Germany) [Fellow](#), Nov 2019-Feb 2020
- 2019 Kavli Frontiers of Science Fellow, *National Academy of Sciences*. Presentation: <https://vimeo.com/321547723>
- 2018 Geobiology and Geomicrobiology Division post-tenure award, *Geological Society of America*
- 2017 Charlie & Marie Fish Distinguished Lecturer, *University of Rhode Island*
- 2014-2015 Distinguished Lecturer for the U.S. Science Support Program for the Ocean Drilling Program

## **Grants (~\$6M awarded since 2012)**

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### *Current awards*

- 2021-2026 National Science Foundation ([OISE-2114593](#)); 10/01/2021-09/30/2026; \$1,997,178; PI: **AccelNet-Implementation: Crustal Ocean Biosphere Research Accelerator (COBRA)**; Co-Is: Julie Huber, Andrew Fisher, Geoff Wheat, Randi Rotjan
- 2021-2023 National Oceanographic and Atmospheric Administration (NA21OAR0110199); 07/01/2021 – 06/30/2023; \$310,738; PI: **Microbial Ecosystem Services at Seamounts (MESS)**
- 2018-2023 National Science Foundation ([OIA-1826734](#)); 08/15/2018 – 07/31/2023; \$893,636 of total \$6M; **Co-PI: EPSCOR Track-2 FEC: Single Cell Genome-to-Phenome: Integrating genome and phenome analysis of individual microbial cells in complex microbiomes** (PI: Ramunas Stepanauskas, Co-PIs: Nicole Poulton, Kai Ziervogel, Duane Moser)
- 2018-2022 National Science Foundation ([OCE-1737017](#)); 01/01/2018 – 12/31/2023; \$455,041 + \$61,997 supplement; **PI: Microbial activity in the deep crustal biosphere**
- 2022-2023 National Science Foundation (subaward from [OCE-1450528](#) from Columbia University); 06/01/2022 – 02/28/2023; \$60,579 subaward; **co-PI: Participation of Timothy D'Angelo as Microbiologist on IODP Expedition 393**

### *Past awards*

- 2015-2022 National Science Foundation (subaward from [OCE-0939564](#) to University of Southern California); 10/01/2015 – 09/30/2022; \$928,205 subaward as Senior Scientist; **Center for Dark Energy Biosphere Investigations (C-DEBI) Phase 2 renewal** (PI: Jan Amend, Co-PIs: Steve D'Hondt, Andrew Fisher, Julie Huber, Geoff Wheat)
- 2021-2022 National Science Foundation (subaward from [OCE-1450528](#) from Columbia University); 06/01/2021 – 02/28/2022; \$15,035 subaward; **co-PI: Participation of Melody Lindsay as Inorganic Geochemistry on IODP Expedition 395C**
- 2019-2022 Hanse Wissenschaftskolleg fellowship

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- 2019-2022 NASA ([Exobiology-80NSSC19K0466](#)); 2/13/2019-2/12/2022; \$299,453 total; **PI: Sorting out active vs. inactive microbes in subsurface oceanic crust Icy World analogs** (Co-I: Ramunas Stepanauskas)
- 2019-2020 National Science Foundation (subaward from [OCE-1450528](#) to Columbia University); 04/01/2019 – 02/28/2020; \$65,040 subaward; **PI: Participation of Dr. Beth Orcutt as co-chief scientist on IODP Expedition 385T**
- 2019 Sloan Foundation (subaward from [G-2017-14084](#) to Marine Biological Laboratory); 01/01/2019 – 11/30/2019; \$20,000 subaward; **Co-PI: Deep Life Community - the Deep Carbon Observatory 2018-2019** (PI: Mitch Sogin)
- 2017-2019 Sloan Foundation ([G-2017-9881](#)); 09/01/2017 – 11/30/2019; \$86,128 total; **PI: Creation and editing of Deep Carbon: Past to Present book for the Deep Carbon Observatory**
- 2015-2019 National Science Foundation (subaward from [OCE-1450528](#) from Columbia University); 09/01/2015 – 02/28/2019; \$212,756 subaward; **PI: Participation of Dr. Beth Orcutt as co-chief scientist on IODP Expedition 357**
- 2016-2019 National Science Foundation (subaward from [OCE-1450528](#) from Columbia University); 04/01/2016 – 02/28/2019; \$35,763 subaward; **Co-PI: Participation of Dr. Stephanie Carr on IODP Expedition 365** (PI: Stephanie Carr)
- 2015-2018 Gulf of Mexico Research Initiative (subaward from [GOMRI-SA1517](#) to University of Georgia); 01/01/2015 – 12/31/2018; \$406,628 subaward; **Co-PI: ECOGIG: Ecosystem Impacts of Oil and Gas Inputs to the Gulf of Mexico** (PI: Samantha Joye)
- 2016-2018 National Science Foundation (subaward from [OCE-0939564](#) to University of Southern California); 12/01/2016 – 11/20/2018; \$230,000 subaward; **Co-PI: Postdoctoral Fellowship for Jacqueline Goordial: Investigations into the Diversity and Function of Active Microbial Subpopulations in Atlantis Massif oceanic crust** (PI: Jacqueline Goordial)
- 2015-2018 National Science Foundation ([OCE-1536539](#)); 10/01/2015 – 09/30/2018; \$56,325 total; **Co-PI: Collaborative Research: Completing North Pond Borehole Experiments to Elucidate the Hydrology of Young, Slow-Spread Crust** (PI: Geoff Wheat; Co-PI: Keir Becker)
- 2016-2017 NASA (subaward from [NNA13AA92A](#) from University of Southern California); 06/01/2016 – 12/31/2017; \$155,915 subaward; **Co-PI: Life Underground NASA Astrobiology Institute** (PI: Jan Amend)
- 2016-2017 Sloan Foundation (subaward from [G-2015-14084](#) from Marine Biological Laboratory); 01/01/2016 – 12/31/2017; \$34,720 subaward; **Co-PI: Deep Life Community - the Deep Carbon Observatory 2016-2018** (PI: Mitch Sogin)
- 2014-2017 National Science Foundation ([PLR-1416961](#)); 09/01/2014 – 08/30/2017; \$154,760 total; **PI: Collaborative Research: Year-round autonomous sampling of methane in Arctic Lakes** (Co-PI: Laura Lapham, Geoff Wheat)
- 2013-2017 National Science Foundation ([OCE-1335810](#)); 08/15/13-07/31/17; \$535,211 total to PI; **Co-PI: MRI: Acquisition of genome sequences for Bigelow Laboratory for Ocean Sciences** (PI: Ramunas Stepanauskas)
- 2013-2016 National Science Foundation ([DBI-1318385](#)); 09/15/13 – 08/31/16; \$111,649 total to PI; **Co-PI: FSML-Enhanced Cooperative Radiochemistry Research and Education at the Bigelow Laboratory for Ocean Sciences** (PI: William Balch)
- 2012-2015 National Science Foundation ([OCE-1233226](#)); 08/15/2012 – 07/31/2015; \$182,306 total; **PI: IODP Expedition 336 Objective Research: The deep**

- biosphere of young and oxic oceanic crust** (Co-PI: Katrina Edwards, Heath Mills)
- 2012-2014 National Science Foundation (subaward from [OCE-0939564](#) to University of Southern California); 12/01/2012 – 12/31/2014; \$49,995 subaward; **PI: The Dorado Outcrop low-temperature ridge flank environment**
- 2012-2013 National Science Foundation (subaward from [OCE-0652315](#) to Consortium for Ocean Leadership); 11/01/2012 – 10/13/2013; \$8,828 subaward; **PI: The Adopt A Microbe Project**
- 2012-2013 National Science Foundation (subaward from [OCE-0939564](#) to University of Southern California); 4/01/2012 – 9/30/2013; \$49,919 subaward; **PI: Primary productivity in young, oxic oceanic crust: Rates of activity and autotrophic groups in subsurface and seafloor-exposed basalts from North Pond, Mid-Atlantic Ridge**

## Professional Service

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- 2020-present Member, [JEDI Committee](#) of The Oceanography Society
- 2020-present Member, IODP [Curatorial Advisory Board](#)
- 2018-present Member, Deep Ocean Stewardship Initiative (DOSI): Minerals Working Group and Decade of Deep-Ocean Science Working Group
- 2018-present Member, Scientific Advisory Committee, International Center for Deep Life Investigation ([IC-DLI](#)), Shanghai, China
- 2021-2022 Short-term Member, Committee on Astrobiology and Planetary Sciences ([CAPS](#)) of the U.S. National Academy of Sciences
- 2019-2022 Steering Committee Member, Network for Life Detection ([NFoLD](#)), a NASA Astrobiology Research Coordination Network
- 2019-2022 Steering Committee Member, Network for Ocean Worlds ([NOW](#)), a NASA Astrobiology Research Coordination Network
- 2019-2019 Science Advisory Board member, Jebsen Centre for Deep-Sea Research, Bergen, Norway
- 2018-2021 Member, IODP Science Evaluation Panel
- 2018-2020 Steering Committee Member, Scientific Ocean Drilling post-2023 (SOD23+)
- 2018-2020 Steering Committee Member, Deep Carbon Observatory Deep Life Community
- 2016-2018 Member, Deep Carbon Observatory "Task Force 2020"
- 2015-2022 Senior Scientist, Center for Dark Energy Biosphere Investigations ([C-DEBI](#)) NSF Science and Technology Center
- 2012-2015 Member, U.S. Advisory Committee for Scientific Ocean Drilling (USAC)
- Session co-organizer for society conferences: AGU Fall meeting (2021, 2016, 2014, 2012, 2011, 2008, 2007), Ocean Sciences Meeting (2022)
  - Workshop co-organizer: 2018 Ocean Worlds 3 meeting, 2014 IODP-MI workshop on deep biosphere research
  - Recent *ad hoc* reviews for journals: *Deep Sea Research*, *Environmental Microbiology*, *Frontiers in Microbiology*, *Geobiology*, *Geophysical Instruments*, *ISME Journal*, *Limnology & Oceanography*, *mBio*, *Nature Geoscience*, *Nature Microbiology*, *Organic Geochemistry*, *Philosophical Transactions of the Royal Society*, *PLOS One*, *PNAS*, *Science*, *Scientific Drilling*

## **Society Memberships**

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- American Geophysical Union (AGU)
- American Society for Microbiology (ASM)
- Association for the Science of Limnology & Oceanography (ASLO)
- Deep Sea Biology Society (DSBS)
- Deep Ocean Stewardship Initiative (DOSI)
- The Oceanographic Society (TOS)
- Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS)
- Women's Aquatic Network

## **Mentoring**

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### **Postdoctoral Scientists**

- 2020-2022 [Julia McGonigle](#)
- 2019-2022 [Melody Lindsay](#) *Now a Research Scientist at Bigelow*
- 2019-2022 [Anne Booker](#) *Now a Postdoctoral Scientist at Bigelow with Dr. Joaquín Martínez Martínez*
- 2016-2019 [Jacqueline Goordial](#). *C-DEBI Postdoctoral Fellow 2016-2018, Now an Assistant Professor at University of Guelph*
- 2016-2019 [Rose Jones](#). *Now a researcher with Fugro*
- 2015-2016 [Jessica Labonté](#). *Now an Assistant Professor at Texas A&M, Galveston*
- 2013-2017 [Stephanie Carr](#), *C-DEBI Postdoctoral Fellow 2013-2015, NSF Postdoctoral Fellow 2015-2017, Now an Assistant Professor at Hartwick College*

### **Ph.D. students:**

- 2014-2016 Gustavo Ramirez, University of Southern California, Co-advisor and committee member, *Soon to be an Assistant Professor at CSU Los Angeles*

### **Master's students:**

- 2020 Kerry Dykens, University of New Hampshire, committee member (thesis advisor Kai Ziervogel)
- 2015-2018 Mitchell Bergstresser, Simon Fraser University, Co-advisor and committee member
- 2017 Siham De Goeyse, IPGP France, Hosted internship
- 2015 Aurelien Lecouevre, Universite Occidental Britania, France, Hosted internship

### **Undergraduate students:**

- 2022 Melissa Herring, Northeastern University, 2022 spring semester intern
- 2021 Dani Buchheister, University of Colorado Boulder, 2021 Summer NSF-REU intern
- 2021 Grace Beery, Boston University, 2021 Summer NSF-REU intern
- 2021 Asher Platts, Southern Maine Community College, 2021 Summer NSF-REU intern
- 2021 Eliza Goodell, Oberlin College, Spring 2021 intern (NASA funded)
- 2021 Annie Sternberg, Colby College, 2021 JanPlan intern
- 2021 Anna Chen, Colby College, 2021 JanPlan intern
- 2020 Jennifer Gladstone, UCSB, 2020 Colby-at-Bigelow fall semester intern

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- 2020-2022 Annabelle Adams-Beyea, The New School, 2020 Summer intern (Rodney White fellowship funded) + 2020 Fall independent research study + 2021 Colby-At-Bigelow fall semester intern + 2022 COBRA intern on Expedition NA138
- 2019 Katelyn Smith, Maine Maritime Academy, 2019 Summer intern (NASA funded)
- 2018 Patricia Montalvo, University of Puerto Rico, 2018 Summer NSF-REU intern
- 2017 Matthew Weiser, Occidental College, 2017 Summer NSF-REU intern
- 2016 Jin Mei McMahan, Colorado College, 2016 Summer NSF-REU intern
- 2016 Elenia Lin, Colby College, 2016 Colby-At-Bigelow fall semester intern
- 2015 Francisco Spaulding, University of Chicago, 2015 Summer NSF-REU intern
- 2014 Briana Adams, Texas A&M, Corpus Christi, 2014 Summer NSF-REU intern
- 2014 Allison Sharrar, University of Michigan, 2014 Summer NSF-REU intern

## Teaching & Instruction

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### Formal Education & Instruction

- 2005 **Teaching Assistant** for Biology of the Marine Environment, University of Georgia, Athens, GA, USA. Designed and presented lectures for the undergraduate laboratory courses for non-science majors; oversaw laboratory exercises; designed, proctored, and graded laboratory reports, quizzes, and exams.

### Informal Education & Instruction

- 2021 **Guest lecturer**, Portland High School, Nov 29, 2021
- 2020 **Guest lecturer**, Portland High School; Dec 1, 2020
- 2019 **Guest lecturer**, Boothbay Regional High School, March 28, 2019
- 2019 **Guest lecturer**, University of Southern Maine, March 26, 2019
- 2017 **Lead of 6-week Adopt-A-Microbe ship-to-shore outreach project** in conjunction with the Girl Scouts of Maine. Featured daily blog posts and weekly interactive activities, followed by an in-person visits of Scouts to Bigelow Laboratory for hands-on science experiments. Based on “Adopt-A-Microbe” project developed in 2010/2011/2012 described in *Current: The Journal of Marine Education* (see publications). <https://sites.google.com/site/adoptamicrobe2017/>
- 2017 **Guest lecturer**, Professional development webinar on preparing proposals and budgets, jointly sponsored by C-DEBI and the Consortium for Ocean Leadership, June 15, 2017; <https://youtu.be/eb3fWiGp5EA>

## Recent Notable Public Outreach

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- 2022 Interviewed for article on deep-sea mining, [Hakai Magazine](#)
- 2022 Public lecture (hybrid) at Cove St Arts on art+science [collaboration](#) with artist Michel Droge; May 26, 2022
- 2022 Public [webinar](#) for National Marine Sanctuaries Foundation “Third Thursday by the Bay” series, March 17, 2022. 474 registrants.
- 2021 Guest on [Next on Nautilus](#) broadcast, Nov 22, 2021
- 2021 [Public lecture](#) (hybrid) at the Maine Jewish Museum on art+science collaboration with artist Michel Droge; Nov 7, 2021
- 2020 Public lecture (virtual) for Islesboro Forum; August 9, 2020; <https://www.youtube.com/watch?v=ZFSp8F9Pit0>

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- 2020 Public lecture (virtual) for the *Café Sci* program of the Bigelow Laboratory for Ocean Sciences; July 21, 2021; “[Deep-Sea Frontiers: What Happens when Humanity Seizes the Seafloor](#)”
- 2019 Interviewed on *Scientifically Speaking* on WMPG 90.9fm (Portland, ME), July 12, 2019; <https://www.wmpg.org/show/fri1300/#>
- 2018 Public lecture in Dallas, TX, for the *EarthX* Ocean Expo
- 2018 Public lecture in East Boothbay, ME, for the *Café Scientifique* program of the Bigelow Laboratory for Ocean Sciences, 180+ attendees, “Deep-Sea Mining: How Your Cell Phone is Driving the Quest for Seafloor Minerals”
- 2018 Featured in *Smithsonian Magazine* article about deep sea exploration and deep-sea mining, <https://www.smithsonianmag.com/science-nature/diving-deep-reveal-microbial-mysteries-lost-city-180970234/>
- 2018 Speaker, American Museum of Natural History *Milstein Science Series* on Ocean Technology, 500+ attendees. <https://www.amnh.org/calendar/milstein-science-series-ocean-technology>
- 2018 Speaker, Maine Science Festival *5 Minute Genius* program, 100+ people. <https://youtu.be/FAMR9dAhNqk>
- 2017 Featured in *Smithsonian Magazine* article about warming permafrost. <https://www.smithsonianmag.com/science-nature/climate-scientists-turn-to-unusual-partnerships-arctic-180965015/>
- 2017 Featured in *Life Below the Seafloor: A Deep Sea Search for Intraterrestrial Life* short video by Bigelow Laboratory for Ocean Sciences. <https://youtu.be/MQPXCgzORPw>
- 2017 Public lecture in East Boothbay, ME, for the *Café Scientifique* program of the Bigelow Laboratory for Ocean Sciences, 100+ attendees, “The Oil-You-Can-Eat Buffet: How Microscopic Life Eats Oil in the Ocean”
- 2016 Public lecture in East Boothbay, ME, for the *Café Scientifique* program of the Bigelow Laboratory for Ocean Sciences, 100+ attendees, “If a frozen lake burps methane into the atmosphere, and no one is around to see if, did it happen?”
- 2015 Featured in *Deep Sea Gold Rush* short video on Al Jazeera’s “TechKnow” program. <https://www.aljazeera.com/programmes/techknow/2015/12/deep-sea-gold-rush-151226120600259.html>
- 2014 Featured in *Meet a Scientist* short video by Ocean Leadership. <https://youtu.be/p7eYZ56sndM>
- 2013 Featured in *North Pond: Search for Intraterrestrials* documentary (96 minutes); Awards: Best Documentary Feature, 2014 Yosemite Film Festival; Honorable Mention – Documentary Feature, 2014 Blue Ocean Film Festival; <https://vimeo.com/117447690>

**Oceanographic Field Experience** – 32 cruises & 657 days at sea, and counting

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- 2022 [Cruise NA138](#), E/V *Nautilus* with ROV *Hercules*, Papahānaumokuākea Marine National Monument, **lead scientist**
- 2021 [Cruise NA134](#), E/V *Nautilus* with ROV *Hercules*, Papahānaumokuākea Marine National Monument, **co-lead scientist**
- 2019 [IODP Expedition 385T](#), D/V *JOIDES Resolution*, Costa Rica Rift flank, **co-chief scientist**  
[Cruise AT42-11](#), R/V *Atlantis* with ROV *Jason II*, Juan de Fuca Ridge flank, **chief scientist**
- 2017 [Cruise AT39-01](#), R/V *Atlantis* with ROV *Jason II*, Mid-Atlantic Ridge, **co-chief scientist**

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- 2016 Cruise PS17-05, R/V *Point Sur*, Northern Gulf of Mexico  
Cruise PE16-18, R/V *Pelican*, Northern Gulf of Mexico
- 2015 [IODP Expedition 357](#), RRS *James Cook* with seabed drills *MeBo* and *RD2*, Atlantis Massif, **co-chief scientist**  
[Cruise PE15-20](#), R/V *Pelican*, Northern Gulf of Mexico, **chief scientist**
- 2014 Cruise AT26-24, R/V *Atlantis* with HOV *Alvin*, Dorado Outcrop; Alvin dive [4777](#) with Pilot Phil Forte  
Cruise AT26-18, R/V *Atlantis* with HOV *Alvin*, Juan de Fuca Ridge flank; Alvin dive [4750](#) with Pilot Bob Waters  
[Cruise PE14-14](#), R/V *Pelican*, Northern Gulf of Mexico, **chief scientist**
- 2013 Cruise AT26-09, R/V *Atlantis* with ROV *Jason II* and AUV *Sentry*, Dorado Outcrop  
[Cruise PE 14-09](#), R/V *Pelican*, Northern Gulf of Mexico, **chief scientist**  
Cruise AT26-03, R/V *Atlantis* with ROV *Jason II*, Juan de Fuca Ridge flank  
Cruise NA027, E/V *Nautilus* with ROV *Hercules*, Northern Gulf of Mexico  
Cruise PE 13-21, R/V *Pelican*, Northern Gulf of Mexico
- 2012 [Cruise Fk006b](#), R/V *Falkor* with ROV *Global Explorer*, Northern Gulf of Mexico, **co-chief scientist**  
Cruise MSM20-5, R/V *Maria S. Merian* (Germany) with ROV *Jason II*, Mid-Atlantic Ridge
- 2011 [IODP Expedition 336](#), D/V *JOIDES Resolution*, Mid-Atlantic Ridge  
Cruise AT18-07, R/V *Atlantis* with ROV *Jason-II*, Juan de Fuca Ridge flank
- 2010 [IODP Expedition 327](#), D/V *JOIDES Resolution*, Juan de Fuca Ridge flank
- 2009 Cruise KM09-23, R/V *Kilo Moana* with ROV *Jason*, Loihi Seamount  
Cruise AT15-51, R/V *Atlantis* with HOV *Alvin*, Juan de Fuca Ridge and Ridge flank; Alvin dive [4538](#) with Pilot Mark Spear
- 2008 Cruise TN-225, R/V *Thompson* with ROV *Jason*, Loihi Seamount
- 2008 Cruises AT15-34/35, R/V *Atlantis* with HOV *Alvin*, Juan de Fuca Ridge and Ridge flank; Alvin dive [4420](#) with Pilot Mark Spear
- 2007 Cruise AT15-23, R/V *Atlantis* with HOV *Alvin*, Juan de Fuca Ridge flank; Alvin dive [4532](#) with Pilot Pat Hickey
- 2004 Cruise JOH/04/0035, R/V *Seward Johnson I*, Western Gulf of Mexico
- 2003 Cruise SO-174, R/F *SONNE*, Northern and Southern Gulf of Mexico cold seeps
- 2002 Cruise HE-180, R/V *Heincke*, North Sea cold seeps
- 2002 Cruise LExEn2002, R/V *Seward Johnson II* with *Johnson SeaLink* submersible, Northern Gulf of Mexico cold seeps
- 2001 Cruise LExEn2001, R/V *Seward Johnson I* with *Johnson SeaLink* submersible, Northern Gulf of Mexico cold seeps

## **Continental Field Experience**

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- Mackenzie River delta Arctic lakes, Northwest Territories, Canada, 08/10/16-08/16/16
- Mackenzie River delta Arctic lakes, Northwest Territories, Canada, 03/17/16-03/23/16
- Mackenzie River delta Arctic lakes, Northwest Territories, Canada, 07/29/15–8/10/15
- Mono Lake, California, summers 1999, 2000

## **Scientific Journal Publications** (peer-reviewed)

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ORCID ID: [0000-0002-6233-3578](https://orcid.org/0000-0002-6233-3578) – \* student advisee, \$ postdoctoral advisee. h-index = 32



**2023**

67. Bhattacharjee A, Schulz F, Woyke T, **Orcutt B**, Martinez Martinez J. 2023. [Genomics discovery of giant fungal viruses from subsurface oceanic crustal fluids](#). *ISME Communications*.

**2022**

66. Munson-McGee JH, Lindsay MR<sup>s</sup>, Brown JM, Sintes E, D'Angelo T, Brown J, Lubelczyk LC, Tomko P, Emerson D, **Orcutt BN**, Poulton NJ, Herndl GJ, Stepanauskas R. Accepted. Decoupling of respiration rates and abundance in marine prokaryoplankton. *Nature*
65. Amon D, Gollner S, Morato T, Smith CR, Chen C, Christiansen S, Currie B, Drazen JC, Fukushima T, Gianni M, Gjerde K, Gooday AJ, Grillo GG, Haeckel M, Joyini T, Ju S-J, Levin L, Metaxas A, Mianowicz K, Molodtsova T, Narberhaus I, **Orcutt BN**, Swaddling A, Tuhumwire J, Urueña Palicio P, Walker M, Weaver P, Xu X-W, Yow Mulalap C, Edwards PET, Pickens C. Assessment of scientific gaps related to effective environmental management of deep-seabed mining. *Marine Policy*. DOI: [10.1016/j.marpol.2022.105006](#)
64. D'Angelo T, Goordial J<sup>s</sup>, Poulton N, Seyler L, Huber JA, Stepanauskas R, **Orcutt BN**. 2022. Oceanic crustal fluid single cell genomics complements metagenomic and metatranscriptomic surveys with orders of magnitude less sample volume. *Frontiers in Microbiology* 12: 738231. DOI: [10.3389/fmicb.2021.738231](#)

**2021**

63. Goordial J<sup>s</sup>, Labonté J<sup>s</sup>, Poulton N, D'Angelo T, Brown J, Stepanauskas R, Früh-Green G, **Orcutt BN**. 2021. Microbial diversity and function in shallow subsurface sediment and oceanic lithosphere of the Atlantis Massif. *mBio* 12: e00490-21. DOI: [10.1128/mBio.00490-21](#)
62. Wear EK, Church MJ, **Orcutt BN**, Chulse CN, Lindh MV, Smith CR. 2021. Bacterial and archaeal communities in the abyssal Clarion-Clipperton Zone: Emerging patterns and considerations for future monitoring studies. *Frontiers in Marine Science* 8: 634803. DOI: [10.3389/fmars.2021.634803](#)
61. McIntosh Marcek HA, Lesack LFW, **Orcutt BN**, Wheat CG, Dallimore SR, Geeves K, Lapham LL. 2021. Continuous dynamics of dissolved methane over two years and its carbon isotopes ( $\delta^{13}\text{C}$ ,  $\Delta^{14}\text{C}$ ) in a small Arctic lake in the Mackenzie Delta. *Journal of Geophysical Research: Biogeosciences*. DOI: [10.1029/2020JG006038](#)
60. **Orcutt BN**, D'Angelo T, Wheat CG, Trembath-Reichert E. 2021. Microbe-mineral biogeography from multi-year incubations in oceanic crust at North Pond, Mid-Atlantic Ridge. *Environmental Microbiology* 23(7):3923-3936. DOI: [10.1111/1462-2920.15366](#)

**2020**

59. Lapham LL, Dallimore SR, Magen C, Henderson L, Powers LC, Gonisor M, Clark B, Côté M, Fraser P, **Orcutt B**. 2020. Microbial greenhouse gas dynamics associated with warming coastal permafrost, western Canadian Arctic. *Frontiers in Earth Science* 8: 582103. DOI: [10.3389/feart.2020.582103](#)
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## **Books, Book Chapters, and Special Issues** (peer-reviewed)

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### *Book editing*

1. *Deep Carbon: Past to Present*. 2019. edited by **B. N. Orcutt**, I. Daniel and R. Dasgupta, Cambridge University Press. 684 pages. ISBN: 9781108477499. DOI: [10.1017/9781108677950](https://doi.org/10.1017/9781108677950)

### *Book Chapters*

3. **Orcutt BN**, D'Angelo T, Jungbluth S, Huber JA, Sylvan JB. In Press. Microbial life in oceanic crust, in *Deep-sea Microbiology*, edited by D. Giovannelli and C. Vetriani, Springer. Pre-print DOI: [10.31219/osf.io/2wxe6](https://doi.org/10.31219/osf.io/2wxe6)
2. **Orcutt BN**, Daniel I, Dasgupta R, Trew Crist D, Edmonds ME. 2019. Introduction to Deep Carbon: Past to Present, in *Deep Carbon: Past to Present*, edited by B. N. Orcutt, I. Daniel and R. Dasgupta, pp. 1-3, Cambridge University Press, Cambridge, DOI: [10.1017/9781108677950.001](https://doi.org/10.1017/9781108677950.001)
1. **Orcutt BN**, Edwards KJ. 2014. Life in the Ocean Crust: Lessons from Subseafloor Laboratories. In "Earth and Life Processes Discovered from Subseafloor Environment - A Decade of Science Achieved by the Integrated Ocean Drilling Program (IODP). (Eds.) Stein, Blackman, Inagaki and Larsen. 7: 175. [Book online](#).

### *Journal Special Issue Editing*

1. "Recent Advances in Geomicrobiology of Ocean Crust" special issue of *Frontiers in Microbiology*. 2015-2017. Edited by B.N. Orcutt, C. Santelli, and J.B. Sylvan

## **Other Scientific Journal Publications** (non-peer reviewed)

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2. Huber JA, **Orcutt BN**. 2021. COBRA: A research accelerator for the crustal ocean biosphere. *Marine Technology Society Journal* 55(3): 130-131. DOI: [10.4031/MTSJ.55.3.14](https://doi.org/10.4031/MTSJ.55.3.14)
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**IODP Proceedings** (non-peer reviewed)

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***Reports and Technical Notes***

21. Sylvan JB, Estes EE, Bogus K, Colwell FS, **Orcutt BN**, Smith DC, 2021. *Technical Note 4: Recommendations for microbiological sampling and contamination tracer use aboard the JOIDES Resolution following 20 years of IODP Deep Biosphere research*. International Ocean Discovery Program. DOI: [10.14379/iodp.tn.4.2021](https://doi.org/10.14379/iodp.tn.4.2021)

***Expedition 385T***

20. Tominaga M, **Orcutt BN**, Blum P, and the Expedition 385T Scientists, 2019. *Expedition 385T Preliminary Report: Panama Basin Crustal Architecture and Deep Biosphere*. International Ocean Discovery Program. DOI: [10.14379/iodp.pr.385T.2019](https://doi.org/10.14379/iodp.pr.385T.2019)
19. Tominaga M, **Orcutt BN**, Blum P. 2019. Expedition 385T Scientific Prospectus: Panama Basin Crustal Architecture and Deep Biosphere. International Ocean Discovery Program. DOI: [10.14379/iodp.sp.385T.2019](https://doi.org/10.14379/iodp.sp.385T.2019)

***Expedition 357***

18. Früh-Green, G.L., Orcutt, B.N., Green, S.L., Cotterill, C., and the Expedition 357 Scientists, 2017. Supplementary material. *Supplement to Früh-Green, G.L., Orcutt, B.N., Green, S.L., Cotterill, C., and the Expedition 357 Scientists, Atlantis Massif Serpentinization and Life*. Proceedings of the International Ocean Discovery Program, 357: College Station, TX (International Ocean Discovery Program). DOI: [10.14379/iodp.proc.357supp.2017](https://doi.org/10.14379/iodp.proc.357supp.2017)
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