

# David A Butterfield

## List of Publications by Year in descending order

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103  
papers

11,282  
citations

39113

52  
h-index

38517

99  
g-index

109  
all docs

109  
docs citations

109  
times ranked

8159  
citing authors

#	ARTICLE	IF	CITATIONS
1	Multi-stage evolution of the Lost City hydrothermal vent fluids. <i>Geochimica Et Cosmochimica Acta</i> , 2022, 332, 239-262.	1.6	5
2	Organic Biogeochemistry in West Mata, NE Lau Hydrothermal Vent Fields. <i>Geochemistry, Geophysics, Geosystems</i> , 2021, 22, e2020GC009481.	1.0	0
3	Seafloor Incubation Experiment with Deep-Sea Hydrothermal Vent Fluid Reveals Effect of Pressure and Lag Time on Autotrophic Microbial Communities. <i>Applied and Environmental Microbiology</i> , 2021, 87, .	1.4	12
4	Extensive decentralized hydrogen export from the Atlantis Massif. <i>Geology</i> , 2021, 49, 851-856.	2.0	5
5	A New Insight Into Seawater-Basalt Exchange Reactions Based on Combined $\delta^{18}\text{O}$ and $^{210}\text{Pb}/^{87}\text{Sr}/^{86}\text{Sr}$ Values of Hydrothermal Fluids From the Axial Seamount Volcano, Pacific Ocean. <i>Frontiers in Earth Science</i> , 2021, 9, .	0.8	8
6	Validating the Cyc2 Neutrophilic Iron Oxidation Pathway Using Meta-omics of <i>Zetaproteobacteria</i> Iron Mats at Marine Hydrothermal Vents. <i>MSystems</i> , 2020, 5, .	1.7	65
7	Unique Solid Phase Microextraction Sampler Reveals Distinctive Biogeochemical Profiles among Various Deep-Sea Hydrothermal Vents. <i>Scientific Reports</i> , 2020, 10, 1360.	1.6	8
8	Hydrothermal Chimney Distribution on the Endeavour Segment, Juan de Fuca Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2020, 21, e2020GC008917.	1.0	13
9	Hydroacoustic, Seismic, and Bathymetric Observations of the 2014 Submarine Eruption at Ahi Seamount, Mariana Arc. <i>Geochemistry, Geophysics, Geosystems</i> , 2019, 20, 3608-3627.	1.0	14
10	Active subseafloor microbial communities from Mariana back-arc venting fluids share metabolic strategies across different thermal niches and taxa. <i>ISME Journal</i> , 2019, 13, 2264-2279.	4.4	38
11	Fluid geochemistry, local hydrology, and metabolic activity define methanogen community size and composition in deep-sea hydrothermal vents. <i>ISME Journal</i> , 2019, 13, 1711-1721.	4.4	29
12	Posteruption Enhancement of Hydrothermal Activity: A 33-Year, Multi-eruption Time Series at Axial Seamount (Juan de Fuca Ridge). <i>Geochemistry, Geophysics, Geosystems</i> , 2019, 20, 814-828.	1.0	9
13	Spatially distinct, temporally stable microbial populations mediate biogeochemical cycling at and below the seafloor in hydrothermal vent fluids. <i>Environmental Microbiology</i> , 2018, 20, 769-784.	1.8	71
14	A Recent Volcanic Eruption Discovered on the Central Mariana Back-Arc Spreading Center. <i>Frontiers in Earth Science</i> , 2018, 6, .	0.8	22
15	Deep-Sea Volcanic Eruptions Create Unique Chemical and Biological Linkages Between the Subsurface Lithosphere and the Oceanic Hydrosphere. <i>Oceanography</i> , 2018, 31, 128-135.	0.5	13
16	Rapid variations in fluid chemistry constrain hydrothermal phase separation at the Main Endeavour Field. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 531-543.	1.0	6
17	Geological interpretation of volcanism and segmentation of the Mariana back-arc spreading center between $12.7^{\circ}\text{N}$ and $18.3^{\circ}\text{N}$ . <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 2240-2274.	1.0	25
18	The Effect of Arc Proximity on Hydrothermal Activity Along Spreading Centers: New Evidence From the Mariana Back Arc ( $12.7^{\circ}\text{N}$ - $18.3^{\circ}\text{N}$ ). <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 4211-4228.	1.0	15

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19	Community Structure of Lithotrophically-Driven Hydrothermal Microbial Mats from the Mariana Arc and Back-Arc. <i>Frontiers in Microbiology</i> , 2017, 8, 1578.	1.5	32
20	Hydrogen Limitation and Syntrophic Growth among Natural Assemblages of Thermophilic Methanogens at Deep-sea Hydrothermal Vents. <i>Frontiers in Microbiology</i> , 2016, 7, 1240.	1.5	35
21	Precipitation and growth of barite within hydrothermal vent deposits from the Endeavour Segment, Juan de Fuca Ridge. <i>Geochimica Et Cosmochimica Acta</i> , 2016, 173, 64-85.	1.6	55
22	Linkages between mineralogy, fluid chemistry, and microbial communities within hydrothermal chimneys from the Endeavour Segment, Juan de Fuca Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 300-323.	1.0	25
23	Hydrogen and thiosulfate limits for growth of a thermophilic, autotrophic <i>Desulfurobacterium</i> species from a deep-sea hydrothermal vent. <i>Environmental Microbiology Reports</i> , 2016, 8, 196-200.	1.0	7
24	Helium isotope, $^{3}\text{H}$ , and $^{13}\text{C}$ signatures in the northern Lau Basin: Distinguishing arc, back-arc, and hotspot affinities. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 1133-1155.	1.0	50
25	Efficient removal of recalcitrant deep-ocean dissolved organic matter during hydrothermal circulation. <i>Nature Geoscience</i> , 2015, 8, 856-860.	5.4	104
26	Diversity and abundance of Bacteria and nirS-encoding denitrifiers associated with the Juan de Fuca Ridge hydrothermal system. <i>Annals of Microbiology</i> , 2014, 64, 1691-1705.	1.1	20
27	Metallogenesis and Mineralization of Intraoceanic Arcs II: The Aeolian, Izu-Bonin, Mariana, and Kermadec Arcs, and the Manus Backarc Basin—Introduction. <i>Economic Geology</i> , 2014, 109, 2073-2077.	1.8	15
28	Understanding a submarine eruption through time series hydrothermal plume sampling of dissolved and particulate constituents: West Mata, 2008–2012. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 4631-4650.	1.0	31
29	Sources of organic nitrogen at the serpentine-hosted Lost City hydrothermal field. <i>Geobiology</i> , 2013, 11, 154-169.	1.1	48
30	Phylogenetic diversity and functional gene patterns of sulfur-oxidizing subsurface Epsilonproteobacteria in diffuse hydrothermal vent fluids. <i>Frontiers in Microbiology</i> , 2013, 4, 185.	1.5	110
31	Growth kinetics and energetics of a deep-sea hyperthermophilic methanogen under varying environmental conditions. <i>Environmental Microbiology Reports</i> , 2013, 5, 665-671.	1.0	32
32	Geologic history of the summit of Axial Seamount, Juan de Fuca Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 4403-4443.	1.0	47
33	The 1998 eruption of Axial Seamount: New insights on submarine lava flow emplacement from high-resolution mapping. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 3939-3968.	1.0	62
34	Seafloor deformation and forecasts of the April 2011 eruption at Axial Seamount. <i>Nature Geoscience</i> , 2012, 5, 474-477.	5.4	104
35	Submarine Magmatic-Hydrothermal Systems at the Monowai Volcanic Center, Kermadec Arc. <i>Economic Geology</i> , 2012, 107, 1669-1694.	1.8	33
36	Hydrogen-limited growth of hyperthermophilic methanogens at deep-sea hydrothermal vents. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 13674-13679.	3.3	81

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37	Metallogenesis and Mineralization of Intraoceanic Arcs I: Kermadec Arc-Introduction. <i>Economic Geology</i> , 2012, 107, 1521-1525.	1.8	19
38	Microbial utilization of abiogenic carbon and hydrogen in a serpentinite-hosted system. <i>Geochimica Et Cosmochimica Acta</i> , 2012, 92, 82-99.	1.6	105
39	Seismic precursors and magma ascent before the April 2011 eruption at Axial Seamount. <i>Nature Geoscience</i> , 2012, 5, 478-482.	5.4	59
40	Subseafloor nitrogen transformations in diffuse hydrothermal vent fluids of the Juan de Fuca Ridge evidenced by the isotopic composition of nitrate and ammonium. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	1.0	60
41	Activity and abundance of denitrifying bacteria in the subsurface biosphere of diffuse hydrothermal vents of the Juan de Fuca Ridge. <i>Biogeosciences</i> , 2012, 9, 4661-4678.	1.3	37
42	Calcification and organic production on a Hawaiian coral reef. <i>Marine Chemistry</i> , 2011, 127, 64-75.	0.9	163
43	Submarine hydrothermal activity and gold-rich mineralization at Brothers Volcano, Kermadec Arc, New Zealand. <i>Mineralium Deposita</i> , 2011, 46, 541-584.	1.7	219
44	Active submarine eruption of boninite in the northeastern Lau Basin. <i>Nature Geoscience</i> , 2011, 4, 799-806.	5.4	163
45	High SO <sub>2</sub> flux, sulfur accumulation, and gas fractionation at an erupting submarine volcano. <i>Geology</i> , 2011, 39, 803-806.	2.0	87
46	Isolated communities of Epsilonproteobacteria in hydrothermal vent fluids of the Mariana Arc seamounts. <i>FEMS Microbiology Ecology</i> , 2010, 73, no-no.	1.3	99
47	Spotlight: Northwest Rota-1 Seamount. <i>Oceanography</i> , 2010, 23, 182-183.	0.5	3
48	Spotlight: Axial Seamount. <i>Oceanography</i> , 2010, 23, 38-39.	0.5	10
49	A seismic swarm and regional hydrothermal and hydrologic perturbations: The northern Endeavour segment, February 2005. <i>Geochemistry, Geophysics, Geosystems</i> , 2010, 11, .	1.0	20
50	Elevated concentrations of formate, acetate and dissolved organic carbon found at the Lost City hydrothermal field. <i>Geochimica Et Cosmochimica Acta</i> , 2010, 74, 941-952.	1.6	300
51	Survival of mussels in extremely acidic waters on a submarine volcano. <i>Nature Geoscience</i> , 2009, 2, 344-348.	5.4	139
52	Individual hydrothermal vents at Axial Seamount harbor distinct subseafloor microbial communities. <i>FEMS Microbiology Ecology</i> , 2009, 70, 413-424.	1.3	64
53	Variability in Microbial Communities in Black Smoker Chimneys at the NW Caldera Vent Field, Brothers Volcano, Kermadec Arc. <i>Geomicrobiology Journal</i> , 2009, 26, 552-569.	1.0	46
54	Post-eruption succession of macrofaunal communities at diffuse flow hydrothermal vents on Axial Volcano, Juan de Fuca Ridge, Northeast Pacific. <i>Deep-Sea Research Part II: Topical Studies in Oceanography</i> , 2009, 56, 1586-1598.	0.6	62

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55	Chemistry of hydrothermal plumes above submarine volcanoes of the Mariana Arc. <i>Geochemistry, Geophysics, Geosystems</i> , 2009, 10, .	1.0	62
56	A Si-Cl geothermobarometer for the reaction zone of high-temperature, basaltic-hosted mid-ocean ridge hydrothermal systems. <i>Geochemistry, Geophysics, Geosystems</i> , 2009, 10, .	1.0	43
57	Venting of a separate CO <sub>2</sub> -rich gas phase from submarine arc volcanoes: Examples from the Mariana and Tonga-Kermadec arcs. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	68
58	Spatial and temporal patterns of colonization by deep-sea hydrothermal vent invertebrates on the Juan de Fuca Ridge, NE Pacific. <i>Aquatic Biology</i> , 2007, 1, 1-16.	0.5	40
59	Physical controls on the salinity of mid-ocean ridge hydrothermal vent fluids. <i>Earth and Planetary Science Letters</i> , 2007, 257, 132-145.	1.8	44
60	Environmental differences in hemoglobin gene expression in the hydrothermal vent tubeworm, <i>Ridgeia piscesae</i> . <i>Comparative Biochemistry and Physiology - B Biochemistry and Molecular Biology</i> , 2007, 146, 326-337.	0.7	24
61	Search for the proverbial mantle osmium sources to the oceans: Hydrothermal alteration of mid-ocean ridge basalt. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 4655-4667.	1.6	41
62	Application of radium isotopes to determine crustal residence times of hydrothermal fluids from two sites on the Reykjanes Peninsula, Iceland. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 6019-6029.	1.6	35
63	Microbial Population Structures in the Deep Marine Biosphere. <i>Science</i> , 2007, 318, 97-100.	6.0	802
64	Exploring the Submarine Ring of Fire: Mariana Arc - Western Pacific. <i>Oceanography</i> , 2007, 20, 68-79.	0.5	75
65	Submarine venting of liquid carbon dioxide on a Mariana Arc volcano. <i>Geochemistry, Geophysics, Geosystems</i> , 2006, 7, n/a-n/a.	1.0	139
66	Diversity and distribution of subseafloor Thermococcales populations in diffuse hydrothermal vents at an active deep-sea volcano in the northeast Pacific Ocean. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	33
67	Hydrothermal fluid fluxes calculated from the isotopic mass balance of thallium in the ocean crust. <i>Earth and Planetary Science Letters</i> , 2006, 251, 120-133.	1.8	145
68	Formation and evolution of carbonate chimneys at the Lost City Hydrothermal Field. <i>Geochimica Et Cosmochimica Acta</i> , 2006, 70, 3625-3645.	1.6	207
69	Dissolved organic carbon in ridge-axis and ridge-flank hydrothermal systems. <i>Geochimica Et Cosmochimica Acta</i> , 2006, 70, 3830-3842.	1.6	162
70	Microbial life in ridge flank crustal fluids. <i>Environmental Microbiology</i> , 2006, 8, 88-99.	1.8	169
71	Long-term eruptive activity at a submarine arc volcano. <i>Nature</i> , 2006, 441, 494-497.	13.7	141
72	Hydrothermal Vent Geology and Biology at Earth's Fastest Spreading Rates. <i>Marine Geophysical Researches</i> , 2006, 27, 137-153.	0.5	15

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73	A Serpentinite-Hosted Ecosystem: The Lost City Hydrothermal Field. <i>Science</i> , 2005, 307, 1428-1434.	6.0	1,037
74	Mixing, reaction and microbial activity in the sub-seafloor revealed by temporal and spatial variation in diffuse flow vents at axial volcano. <i>Geophysical Monograph Series</i> , 2004, , 269-289.	0.1	98
75	Fluids from Aging Ocean Crust That Support Microbial Life. <i>Science</i> , 2003, 299, 120-123.	6.0	259
76	Bacterial diversity in a subseafloor habitat following a deep-sea volcanic eruption. <i>FEMS Microbiology Ecology</i> , 2003, 43, 393-409.	1.3	190
77	Magmatic events can produce rapid changes in hydrothermal vent chemistry. <i>Nature</i> , 2003, 422, 878-881.	13.7	221
78	30,000 Years of Hydrothermal Activity at the Lost City Vent Field. <i>Science</i> , 2003, 301, 495-498.	6.0	361
79	Phylogenetic Diversity of Nitrogenase (nifH) Genes in Deep-Sea and Hydrothermal Vent Environments of the Juan de Fuca Ridge. <i>Applied and Environmental Microbiology</i> , 2003, 69, 960-970.	1.4	173
80	Temporal Changes in Archaeal Diversity and Chemistry in a Mid-Ocean Ridge Subseafloor Habitat. <i>Applied and Environmental Microbiology</i> , 2002, 68, 1585-1594.	1.4	220
81	Evidence for basaltic Sr in midocean ridge-flank hydrothermal systems and implications for the global oceanic Sr isotope balance. <i>Geochimica Et Cosmochimica Acta</i> , 2001, 65, 4141-4153.	1.6	58
82	An off-axis hydrothermal vent field near the Mid-Atlantic Ridge at 30° N. <i>Nature</i> , 2001, 412, 145-149.	13.7	997
83	Osmium isotopes in hydrothermal fluids from the Juan de Fuca Ridge. <i>Earth and Planetary Science Letters</i> , 2000, 179, 139-152.	1.8	67
84	Seafloor eruptions and evolution of hydrothermal fluid chemistry. , 1999, , 153-170.		4
85	The relationship of hydrothermal fluid composition and crustal residence time to maturity of vent fields on the Juan de Fuca Ridge. <i>Geochimica Et Cosmochimica Acta</i> , 1998, 62, 1521-1533.	1.6	62
86	Geological, chemical, and biological evidence for recent volcanism at 17.5°S: East Pacific Rise. <i>Earth and Planetary Science Letters</i> , 1998, 163, 131-147.	1.8	29
87	The Quantum Event of Oceanic Crustal Accretion: Impacts of Diking at Mid-Ocean Ridges. , 1998, 281, 222-230.		172
88	The quantum event of oceanic crustal accretion: impacts of diking at mid-ocean ridges. <i>Science</i> , 1998, 281, 222-30.	6.0	18
89	Seafloor eruptions and evolution of hydrothermal fluid chemistry. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 1997, 355, 369-386.	1.6	220
90	Biological colonization of new hydrothermal vents following an eruption on Juan de Fuca Ridge. <i>Deep-Sea Research Part I: Oceanographic Research Papers</i> , 1997, 44, 1627-1644.	0.6	143

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91	Initial results of the rapid response to the 1993 CoAxial event: Relationships between hydrothermal and volcanic processes. <i>Geophysical Research Letters</i> , 1995, 22, 143-146.	1.5	115
92	Observations of manganese and iron at the CoAxial Seafloor Eruption Site, Juan de Fuca Ridge. <i>Geophysical Research Letters</i> , 1995, 22, 151-154.	1.5	35
93	Variations in water-column $\hat{A}^3\text{He}$ /heat ratios associated with the 1993 CoAxial event, Juan de Fuca Ridge. <i>Geophysical Research Letters</i> , 1995, 22, 155-158.	1.5	40
94	Trace metals in hydrothermal solutions from Cleft segment on the southern Juan de Fuca Ridge. <i>Journal of Geophysical Research</i> , 1994, 99, 4925-4935.	3.3	94
95	Geochemistry of north Cleft segment vent fluids: Temporal changes in chlorinity and their possible relation to recent volcanism. <i>Journal of Geophysical Research</i> , 1994, 99, 4951-4968.	3.3	183
96	Temporal and spatial variability of hydrothermal manganese and iron at Cleft segment, Juan de Fuca Ridge. <i>Journal of Geophysical Research</i> , 1994, 99, 4905-4923.	3.3	77
97	Gradients in the composition of hydrothermal fluids from the Endeavour segment vent field: Phase separation and brine loss. <i>Journal of Geophysical Research</i> , 1994, 99, 9561-9583.	3.3	233
98	Boron and halide systematics in submarine hydrothermal systems: Effects of phase separation and sedimentary contributions. <i>Earth and Planetary Science Letters</i> , 1994, 123, 227-238.	1.8	100
99	Anomalous $\text{CH}_4$ and $\text{NH}_4^+$ concentrations at an unsedimented mid-ocean-ridge hydrothermal system. <i>Nature</i> , 1993, 364, 45-47.	13.7	312
100	Silica and germanium in Pacific Ocean hydrothermal vents and plumes. <i>Earth and Planetary Science Letters</i> , 1993, 119, 365-378.	1.8	117
101	Geochemistry of hydrothermal fluids from Axial Seamount hydrothermal emissions study vent field, Juan de Fuca Ridge: Subseafloor boiling and subsequent fluid-rock interaction. <i>Journal of Geophysical Research</i> , 1990, 95, 12895-12921.	3.3	311
102	Submarine venting of phase-separated hydrothermal fluids at Axial Volcano, Juan de Fuca Ridge. <i>Nature</i> , 1989, 340, 702-705.	13.7	145
103	The Chemistry of Diffuse-Flow Vent Fluids on the Galapagos Rift (86°W) Temporal Variability and Subseafloor Phase Equilibria Controls. <i>Geophysical Monograph Series</i> , 0, , 123-144.	0.1	5