

# Mak A Saito

## List of Publications by Year in descending order

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109  
papers

10,859  
citations

41344

49  
h-index

32842

100  
g-index

148  
all docs

148  
docs citations

148  
times ranked

10545  
citing authors

#	ARTICLE	IF	CITATIONS
1	The Genome of the Diatom <i>Thalassiosira Pseudonana</i> : Ecology, Evolution, and Metabolism. <i>Science</i> , 2004, 306, 79-86.	12.6	1,862
2	A cadmium enzyme from a marine diatom. <i>Nature</i> , 2005, 435, 42-42.	27.8	518
3	The integral role of iron in ocean biogeochemistry. <i>Nature</i> , 2017, 543, 51-59.	27.8	482
4	A global ocean inventory of anthropogenic mercury based on water column measurements. <i>Nature</i> , 2014, 512, 65-68.	27.8	404
5	The bioinorganic chemistry of the ancient ocean: the co-evolution of cyanobacterial metal requirements and biogeochemical cycles at the Archean-Proterozoic boundary?. <i>Inorganica Chimica Acta</i> , 2003, 356, 308-318.	2.4	372
6	Some thoughts on the concept of colimitation: Three definitions and the importance of bioavailability. <i>Limnology and Oceanography</i> , 2008, 53, 276-290.	3.1	331
7	The Transcriptome and Proteome of the Diatom <i>Thalassiosira pseudonana</i> Reveal a Diverse Phosphorus Stress Response. <i>PLoS ONE</i> , 2012, 7, e33768.	2.5	296
8	Genomic and proteomic characterization of <i>Candidatus Nitrosopelagicus brevis</i> : An ammonia-oxidizing archaeon from the open ocean. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 1173-1178.	7.1	278
9	The GEOTRACES Intermediate Data Product 2017. <i>Chemical Geology</i> , 2018, 493, 210-223.	3.3	257
10	Culturing the marine cyanobacterium <i>Prochlorococcus</i> . <i>Limnology and Oceanography: Methods</i> , 2007, 5, 353-362.	2.0	241
11	Cobalt limitation and uptake in <i>Prochlorococcus</i> . <i>Limnology and Oceanography</i> , 2002, 47, 1629-1636.	3.1	220
12	Production of cobalt binding ligands in a <i>Synechococcus</i> feature at the Costa Rica upwelling dome. <i>Limnology and Oceanography</i> , 2005, 50, 279-290.	3.1	208
13	Iron conservation by reduction of metalloenzyme inventories in the marine diazotroph <i>Crocospaera watsonii</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 2184-2189.	7.1	208
14	Vitamin B <sub>12</sub> and iron colimitation of phytoplankton growth in the Ross Sea. <i>Limnology and Oceanography</i> , 2007, 52, 1079-1093.	3.1	187
15	Siderophore-based microbial adaptations to iron scarcity across the eastern Pacific Ocean. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 14237-14242.	7.1	179
16	Complexation of cobalt by natural organic ligands in the Sargasso Sea as determined by a new high-sensitivity electrochemical cobalt speciation method suitable for open ocean work. <i>Marine Chemistry</i> , 2001, 75, 49-68.	2.3	175
17	Multiple nutrient stresses at intersecting Pacific Ocean biomes detected by protein biomarkers. <i>Science</i> , 2014, 345, 1173-1177.	12.6	174
18	Co-occurring <i>Synechococcus</i> ecotypes occupy four major oceanic regimes defined by temperature, macronutrients and iron. <i>ISME Journal</i> , 2016, 10, 333-345.	9.8	169

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19	Regional distributions of nitrogen-fixing bacteria in the Pacific Ocean. <i>Limnology and Oceanography</i> , 2008, 53, 63-77.	3.1	154
20	Slow-spreading submarine ridges in the South Atlantic as a significant oceanic iron source. <i>Nature Geoscience</i> , 2013, 6, 775-779.	12.9	140
21	Trace elements at the intersection of marine biological and geochemical evolution. <i>Earth-Science Reviews</i> , 2016, 163, 323-348.	9.1	135
22	Basin-scale inputs of cobalt, iron, and manganese from the Benguela-Angola front to the South Atlantic Ocean. <i>Limnology and Oceanography</i> , 2012, 57, 989-1010.	3.1	134
23	Irreversibly increased nitrogen fixation in <i>Trichodesmium</i> experimentally adapted to elevated carbon dioxide. <i>Nature Communications</i> , 2015, 6, 8155.	12.8	131
24	Temporal and spatial variability of cobalt in the Atlantic Ocean. <i>Geochimica Et Cosmochimica Acta</i> , 2002, 66, 1943-1953.	3.9	120
25	Cobalt and nickel in the Peru upwelling region: A major flux of labile cobalt utilized as a micronutrient. <i>Global Biogeochemical Cycles</i> , 2004, 18, n/a-n/a.	4.9	119
26	Influence of cobalamin scarcity on diatom molecular physiology and identification of a cobalamin acquisition protein. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, E1762-71.	7.1	104
27	Cobalt and marine redox evolution. <i>Earth and Planetary Science Letters</i> , 2014, 390, 253-263.	4.4	95
28	IDENTIFICATION AND COMPARATIVE GENOMIC ANALYSIS OF SIGNALING AND REGULATORY COMPONENTS IN THE DIATOM <i>THALASSIOSIRA PSEUDONANA</i> . <i>Journal of Phycology</i> , 2007, 43, 585-604.	2.3	87
29	Zinc-cobalt colimitation of <i>Phaeocystis antarctica</i> . <i>Limnology and Oceanography</i> , 2008, 53, 266-275.	3.1	85
30	Thaumarchaeal ecotype distributions across the equatorial Pacific Ocean and their potential roles in nitrification and sinking flux attenuation. <i>Limnology and Oceanography</i> , 2017, 62, 1984-2003.	3.1	83
31	Mercury species concentrations and fluxes in the Central Tropical Pacific Ocean. <i>Global Biogeochemical Cycles</i> , 2015, 29, 656-676.	4.9	81
32	The Transpolar Drift as a Source of Riverine and Shelf-Derived Trace Elements to the Central Arctic Ocean. <i>Journal of Geophysical Research: Oceans</i> , 2020, 125, e2019JC015920.	2.6	80
33	Mechanisms of increased <i>Trichodesmium</i> fitness under iron and phosphorus co-limitation in the present and future ocean. <i>Nature Communications</i> , 2016, 7, 12081.	12.8	74
34	Progress and Challenges in Ocean Metaproteomics and Proposed Best Practices for Data Sharing. <i>Journal of Proteome Research</i> , 2019, 18, 1461-1476.	3.7	73
35	Nitrogen fixation in the South Atlantic Gyre and the Benguela Upwelling System. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	71
36	Microbial metabolites in the marine carbon cycle. <i>Nature Microbiology</i> , 2022, 7, 508-523.	13.3	71

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37	Examination of precipitation chemistry and improvements in precision using the Mg(OH) <sub>2</sub> preconcentration inductively coupled plasma mass spectrometry (ICP-MS) method for high-throughput analysis of open-ocean Fe and Mn in seawater. <i>Analytica Chimica Acta</i> , 2006, 565, 222-233.	5.4	67
38	Cobalt, manganese, and iron near the Hawaiian Islands: A potential concentrating mechanism for cobalt within a cyclonic eddy and implications for the hybrid-type trace metals. <i>Deep-Sea Research Part II: Topical Studies in Oceanography</i> , 2008, 55, 1473-1490.	1.4	67
39	Distinct Siderophores Contribute to Iron Cycling in the Mesopelagic at Station ALOHA. <i>Frontiers in Marine Science</i> , 2018, 5, .	2.5	67
40	Proteome Changes Driven by Phosphorus Deficiency and Recovery in the Brown Tide-Forming Alga <i>Aureococcus anophagefferens</i> . <i>PLoS ONE</i> , 2011, 6, e28949.	2.5	65
41	A Manganese-rich Environment Supports Superoxide Dismutase Activity in a Lyme Disease Pathogen, <i>Borrelia burgdorferi</i> . <i>Journal of Biological Chemistry</i> , 2013, 288, 8468-8478.	3.4	65
42	Methionine synthase interreplacement in diatom cultures and communities: Implications for the persistence of B <sub>12</sub> use by eukaryotic phytoplankton. <i>Limnology and Oceanography</i> , 2013, 58, 1431-1450.	3.1	63
43	Metabolic versatility of the nitrite-oxidizing bacterium <i>Nitrospira marina</i> and its proteomic response to oxygen-limited conditions. <i>ISME Journal</i> , 2021, 15, 1025-1039.	9.8	62
44	Divergent responses of Atlantic coastal and oceanic <i>Synechococcus</i> to iron limitation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9944-9949.	7.1	61
45	Sulfide Ameliorates Metal Toxicity for Deep-Sea Hydrothermal Vent Archaea. <i>Applied and Environmental Microbiology</i> , 2004, 70, 2551-2555.	3.1	56
46	Coastal sources, sinks and strong organic complexation of dissolved cobalt within the US North Atlantic GEOTRACES transect GA03. <i>Biogeosciences</i> , 2017, 14, 2715-2739.	3.3	53
47	A dissolved cobalt plume in the oxygen minimum zone of the eastern tropical South Pacific. <i>Biogeosciences</i> , 2016, 13, 5697-5717.	3.3	52
48	Trace Metal Substitution in Marine Phytoplankton. <i>Annual Review of Earth and Planetary Sciences</i> , 2020, 48, 491-517.	11.0	52
49	The unique trace metal and mixed layer conditions of the Costa Rica upwelling dome support a distinct and dense community of <i>Synechococcus</i> . <i>Limnology and Oceanography</i> , 2014, 59, 2166-2184.	3.1	51
50	Copper stress in <i>Staphylococcus aureus</i> leads to adaptive changes in central carbon metabolism. <i>Metallomics</i> , 2019, 11, 183-200.	2.4	51
51	Needles in the blue sea: Subspecies specificity in targeted protein biomarker analyses within the vast oceanic microbial metaproteome. <i>Proteomics</i> , 2015, 15, 3521-3531.	2.2	49
52	Persistence of deeply sourced iron in the Pacific Ocean. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 1292-1297.	7.1	49
53	Dynamic mercury methylation and demethylation in oligotrophic marine water. <i>Biogeosciences</i> , 2018, 15, 6451-6460.	3.3	49
54	Iron Limitation of a Springtime Bacterial and Phytoplankton Community in the Ross Sea: Implications for Vitamin B12 Nutrition. <i>Frontiers in Microbiology</i> , 2011, 2, 160.	3.5	48

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55	Vitamin B <sub>12</sub> biosynthesis gene diversity in the Ross Sea: the identification of a new group of putative polar B <sub>12</sub> biosynthesizers. <i>Environmental Microbiology</i> , 2011, 13, 1285-1298.	3.8	47
56	Empirical bayes analysis of sequencing-based transcriptional profiling without replicates. <i>BMC Bioinformatics</i> , 2010, 11, 564.	2.6	46
57	Examination of Microbial Proteome Preservation Techniques Applicable to Autonomous Environmental Sample Collection. <i>Frontiers in Microbiology</i> , 2011, 2, 215.	3.5	46
58	Dinoflagellates alter their carbon and nutrient metabolic strategies across environmental gradients in the central Pacific Ocean. <i>Nature Microbiology</i> , 2021, 6, 173-186.	13.3	45
59	Dissolved zinc in the subarctic North Pacific and Bering Sea: Its distribution, speciation, and importance to primary producers. <i>Global Biogeochemical Cycles</i> , 2012, 26, .	4.9	44
60	Colony formation in <i>Phaeocystis antarctica</i> : connecting molecular mechanisms with iron biogeochemistry. <i>Biogeosciences</i> , 2018, 15, 4923-4942.	3.3	44
61	NADPH-dependent extracellular superoxide production is vital to photophysiology in the marine diatom <i>Thalassiosira oceanica</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 16448-16453.	7.1	43
62	Proteomic responses of oceanic <i>Synechococcus</i> WH8102 to phosphate and zinc scarcity and cadmium additions. <i>Frontiers in Microbiology</i> , 2013, 4, 387.	3.5	42
63	Abundant nitrite-oxidizing metalloenzymes in the mesopelagic zone of the tropical Pacific Ocean. <i>Nature Geoscience</i> , 2020, 13, 355-362.	12.9	41
64	Identifying reference genes with stable expression from high throughput sequence data. <i>Frontiers in Microbiology</i> , 2012, 3, 385.	3.5	40
65	Cobalt scavenging in the mesopelagic ocean and its influence on global mass balance: Synthesizing water column and sedimentary fluxes. <i>Marine Chemistry</i> , 2018, 201, 151-166.	2.3	40
66	The Role of External Inputs and Internal Cycling in Shaping the Global Ocean Cobalt Distribution: Insights From the First Cobalt Biogeochemical Model. <i>Global Biogeochemical Cycles</i> , 2018, 32, 594-616.	4.9	40
67	Transcriptomic and proteomic responses of the oceanic diatom <i>Pseudo-nitzschia granii</i> to iron limitation. <i>Environmental Microbiology</i> , 2018, 20, 3109-3126.	3.8	39
68	Rapid and gradual modes of aerosol trace metal dissolution in seawater. <i>Frontiers in Microbiology</i> , 2014, 5, 794.	3.5	37
69	Dissolved and particulate trace metal micronutrients under the McMurdo Sound seasonal sea ice: basal sea ice communities as a capacitor for iron. <i>Frontiers in Chemistry</i> , 2013, 1, 25.	3.6	33
70	The acceleration of dissolved cobalt's ecological stoichiometry due to biological uptake, remineralization, and scavenging in the Atlantic Ocean. <i>Biogeosciences</i> , 2017, 14, 4637-4662.	3.3	30
71	Use of a modified, high-sensitivity, anodic stripping voltammetry method for determination of zinc speciation in the North Atlantic Ocean. <i>Analytica Chimica Acta</i> , 2008, 614, 143-152.	5.4	29
72	The Rise of Oxygen and Aerobic Biochemistry. <i>Structure</i> , 2012, 20, 1-2.	3.3	29

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73	Unique Patterns and Biogeochemical Relevance of Two-Component Sensing in Marine Bacteria. <i>MSystems</i> , 2019, 4, .	3.8	29
74	Nutrient-Colimited Trichodesmium as a Nitrogen Source or Sink in a Future Ocean. <i>Applied and Environmental Microbiology</i> , 2018, 84, .	3.1	28
75	Marine <i>Synechococcus</i> isolates representing globally abundant genomic lineages demonstrate a unique evolutionary path of genome reduction without a decrease in GC content. <i>Environmental Microbiology</i> , 2019, 21, 1677-1686.	3.8	28
76	Physiology, Fe(II) oxidation, and Fe mineral formation by a marine planktonic cyanobacterium grown under ferruginous conditions. <i>Frontiers in Earth Science</i> , 2015, 3, .	1.8	27
77	Quantifying Oxygen Management and Temperature and Light Dependencies of Nitrogen Fixation by <i>Crocospaera watsonii</i> . <i>MSphere</i> , 2019, 4, .	2.9	26
78	Co-occurrence of Fe and P stress in natural populations of the marine diazotroph <i>Trichodesmium</i> . <i>Biogeosciences</i> , 2020, 17, 2537-2551.	3.3	26
79	Heterozygous huntingtin promotes cadmium neurotoxicity and neurodegeneration in striatal cells via altered metal transport and protein kinase C delta dependent oxidative stress and apoptosis signaling mechanisms. <i>NeuroToxicology</i> , 2019, 70, 48-61.	3.0	25
80	Minimal cobalt metabolism in the marine cyanobacterium <i>Prochlorococcus</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 15740-15747.	7.1	25
81	Competitive inhibition of cobalt uptake by zinc and manganese in a pacific <i>Prochlorococcus</i> strain: Insights into metal homeostasis in a streamlined oligotrophic cyanobacterium. <i>Limnology and Oceanography</i> , 2018, 63, 2229-2249.	3.1	23
82	Efficient zinc/cobalt interreplacement in northeast Pacific diatoms and relationship to high surface dissolved Co : Zn ratios. <i>Limnology and Oceanography</i> , 2020, 65, 2557-2582.	3.1	22
83	Dynamic diel proteome and daytime nitrogenase activity supports buoyancy in the cyanobacterium <i>Trichodesmium</i> . <i>Nature Microbiology</i> , 2022, 7, 300-311.	13.3	21
84	Physiological and proteomic characterization of light adaptations in marine <i>Synechococcus</i> . <i>Environmental Microbiology</i> , 2017, 19, 2348-2365.	3.8	20
85	Microbiomes of bloom-forming <i>Phaeocystis</i> algae are stable and consistently recruited, with both symbiotic and opportunistic modes. <i>ISME Journal</i> , 2022, 16, 2255-2264.	9.8	19
86	Transcriptional Activities of the Microbial Consortium Living with the Marine Nitrogen-Fixing Cyanobacterium <i>Trichodesmium</i> Reveal Potential Roles in Community-Level Nitrogen Cycling. <i>Applied and Environmental Microbiology</i> , 2018, 84, .	3.1	18
87	Introduction to the U.S. GEOTRACES North Atlantic Transect (GA-03): USGT10 and USGT11 cruises. <i>Deep-Sea Research Part II: Topical Studies in Oceanography</i> , 2015, 116, 1-5.	1.4	17
88	Elevated sources of cobalt in the Arctic Ocean. <i>Biogeosciences</i> , 2020, 17, 4745-4767.	3.3	17
89	Characterization of the Fe metalloproteome of a ubiquitous marine heterotroph, <i>Pseudoalteromonas</i> (BB2-AT2): multiple bacterioferritin copies enable significant Fe storage. <i>Metallomics</i> , 2020, 12, 654-667.	2.4	16
90	METATryp v 2.0: Metaproteomic Least Common Ancestor Analysis for Taxonomic Inference Using Specialized Sequence Assemblies—Standalone Software and Web Servers for Marine Microorganisms and Coronaviruses. <i>Journal of Proteome Research</i> , 2020, 19, 4718-4729.	3.7	13

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91	Comment on “The complex effects of ocean acidification on the prominent N <sub>2</sub> -fixing cyanobacterium <i>Trichodesmium</i> ” Science, 2017, 357, .	12.6	12
92	Revealing ocean-scale biochemical structure with a deep-diving vertical profiling autonomous vehicle. Science Robotics, 2020, 5, .	17.6	12
93	Î±-Synuclein Enhances Cadmium Uptake and Neurotoxicity via Oxidative Stress and Caspase Activated Cell Death Mechanisms in a Dopaminergic Cell Model of Parkinson’s Disease. Neurotoxicity Research, 2017, 32, 231-246.	2.7	11
94	Online Nanoflow Two-Dimension Comprehensive Active Modulation Reversed Phase “Reversed Phase Liquid Chromatography High-Resolution Mass Spectrometry for Metaproteomics of Environmental and Microbiome Samples. Journal of Proteome Research, 2021, 20, 4589-4597.	3.7	11
95	Hydrothermal trace metal release and microbial metabolism in the northeastern Lau Basin of the South Pacific Ocean. Biogeosciences, 2021, 18, 5397-5422.	3.3	11
96	Clio: An Autonomous Vertical Sampling Vehicle for Global Ocean Biogeochemical Mapping. , 2018, , .		10
97	Functional Genomics and Phylogenetic Evidence Suggest Genus-Wide Cobalamin Production by the Globally Distributed Marine Nitrogen Fixer <i>Trichodesmium</i> . Frontiers in Microbiology, 2018, 9, 189.	3.5	10
98	Adaptive responses of marine diatoms to zinc scarcity and ecological implications. Nature Communications, 2022, 13, 1995.	12.8	10
99	Development of an Ocean Protein Portal for Interactive Discovery and Education. Journal of Proteome Research, 2021, 20, 326-336.	3.7	9
100	Mechanisms and heterogeneity of in situ mineral processing by the marine nitrogen fixer <i>Trichodesmium</i> revealed by single-colony metaproteomics. ISME Communications, 2021, 1, .	4.2	9
101	Major processes of the dissolved cobalt cycle in the North and equatorial Pacific Ocean. Biogeosciences, 2022, 19, 2365-2395.	3.3	9
102	The Angola Gyre is a hotspot of dinitrogen fixation in the South Atlantic Ocean. Communications Earth & Environment, 2022, 3, .	6.8	9
103	Cadmium enriched stable isotope uptake and addition experiments with natural phytoplankton assemblages in the Costa Rica Upwelling Dome. Marine Chemistry, 2014, 166, 70-81.	2.3	8
104	Ideas and perspectives: Biogeochemistry “ some key foci for the future. Biogeosciences, 2021, 18, 3005-3013.	3.3	8
105	Inhibited Manganese Oxide Formation Hinders Cobalt Scavenging in the Ross Sea. Global Biogeochemical Cycles, 2021, 35, e2020GB006706.	4.9	8
106	Why Environmental Biomarkers Work: Transcriptome “Proteome Correlations and Modeling of Multistressor Experiments in the Marine Bacterium <i>Trichodesmium</i> . Journal of Proteome Research, 2022, 21, 77-89.	3.7	7
107	Characterization of the metalloproteome of <i>Pseudoalteromonas</i> (BB2-AT2): biogeochemical underpinnings for zinc, manganese, cobalt, and nickel cycling in a ubiquitous marine heterotroph. Metallomics, 2021, 13, .	2.4	6
108	Influence of vitamin B12 availability on oceanic dimethylsulfide and dimethylsulfoniopropionate. Environmental Chemistry, 2016, 13, 293.	1.5	2

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109	Harnessing the Power of Scientific Python to Investigate Biogeochemistry and Metaproteomes of the Central Pacific Ocean. , 2018, , .		2