Tullis C Onstott

List of Publications by Year
in descending order

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128 papers	8,024 citations	53794 45 h-index	53230 85 g-index

138 all docs	138 docs citations	138 times ranked	7538 citing authors

#	Article	IF	Citations
1	Biogenic iron mineralization accompanying the dissimilatory reduction of hydrous ferric oxide by a groundwater bacterium. Geochimica Et Cosmochimica Acta, 1998, 62, 3239-3257.	3.9	712
2	Environmental Genomics Reveals a Single-Species Ecosystem Deep Within Earth. Science, 2008, 322, 275-278.	12.6	474
3	A genomic catalog of Earthâ€™s microbiomes. Nature Biotechnology, 2021, 39, 499-509.	17.5	457
4	Archaeal Diversity in Waters from Deep South African Gold Mines. Applied and Environmental Microbiology, 2001, 67, 5750-5760.	3.1	387
5	Unravelling abiogenic and biogenic sources of methane in the Earth's deep subsurface. Chemical Geology, 2006, 226, 328-339.	3.3	241
6	The yield and isotopic composition of radiolytic H2, a potential energy source for the deep subsurface biosphere. Geochimica Et Cosmochimica Acta, 2005, 69, 893-903.	3.9	197
7	Direct measurements of methane emissions from abandoned oil and gas wells in Pennsylvania. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 18173-18177.	7.1	185
8	Mineral transformations associated with the microbial reduction of magnetite. Chemical Geology, 2000, 169, 299-318.	3.3	180
9	An oligotrophic deep-subsurface community dependent on syntrophy is dominated by sulfur-driven autotrophic denitrifiers. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7927-E7936.	7.1	173
10	Isotopic signatures of CH4 and higher hydrocarbon gases from Precambrian Shield sites: A model for abiogenic polymerization of hydrocarbons. Geochimica Et Cosmochimica Acta, 2008, 72, 4778-4795.	3.9	172
11	Microbes in thawing permafrost: the unknown variable in the climate change equation. ISME Journal, 2012, 6, 709-712.	9.8	153
12	Argon retentivity of hornblendes: A field experiment in a slowly cooled metamorphic terrane. Geochimica Et Cosmochimica Acta, 1987, 51, 2891-2903.	3.9	148
13	39Ar recoil artifacts in chloritized biotite. Geochimica Et Cosmochimica Acta, 1989, 53, 2697-2711.	3.9	147
14	Rokubacteria: Genomic Giants among the Uncultured Bacterial Phyla. Frontiers in Microbiology, 2017, 8, 2264.	3.5	142
15	Recoil refinements: Implications for the 40Ar/39Ar dating technique. Geochimica Et Cosmochimica Acta, 1995, 59, 1821-1834.	3.9	139
16	The relative abundances of resolved l2CH2D2 and 13CH3D and mechanisms controlling isotopic bond ordering in abiotic and biotic methane gases. Geochimica Et Cosmochimica Acta, 2017, 203, 235-264.	3.9	125
17	Hydrogeologic Controls on Episodic H₂ Release from Precambrian Fractured Rocksâ€”Energy for Deep Subsurface Life on Earth and Mars. Astrobiology, 2007, 7, 971-986.	3.0	121
18	Isolation of Halobacterium salinarum retrieved directly from halite brine inclusions. Environmental Microbiology, 2003, 5, 1094-1102.	3.8	120

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19	Microbes Deep Inside the Earth. Scientific American, 1996, 275, 68-73.	1.0	118
20	Dating ultra-deep mine waters with noble gases and 36Cl, Witwatersrand Basin, South Africa. Geochimica Et Cosmochimica Acta, 2003, 67, 4597-4619.	3.9	115
21	Development of a Vital Fluorescent Staining Method for Monitoring Bacterial Transport in Subsurface Environments. Applied and Environmental Microbiology, 2000, 66, 4486-4496.	3.1	113
22	A metagenomic window into carbon metabolism at 3 km depth in Precambrian continental crust. ISME Journal, 2016, 10, 730-741.	9.8	112
23	Microbial hydrocarbon gases in the Witwatersrand Basin, South Africa: Implications for the deep biosphere. Geochimica Et Cosmochimica Acta, 2004, 68, 3239-3250.	3.9	103
24	40Ar/39Ar dating of 1.0â€“1.1 Ga magnetizations from the SaËœo Francisco and Kalahari cratons: tectonic implications for Pan-African and Brasiliano mobile belts. Earth and Planetary Science Letters, 1990, 101, 349-366.	4.4	100
25	Variations in microbial carbon sources and cycling in the deep continental subsurface. Geochimica Et Cosmochimica Acta, 2016, 173, 264-283.	3.9	100
26	Related assemblages of sulphate-reducing bacteria associated with ultradeep gold mines of South Africa and deep basalt aquifers of Washington State. Environmental Microbiology, 2003, 5, 267-277.	3.8	96
27	Microorganisms from deep, high temperature sandstones: constraints on microbial colonization. FEMS Microbiology Reviews, 1997, 20, 425-435.	8.6	93
28	The Martian subsurface as a potential window into the origin of life. Nature Geoscience, 2018, 11, 21-26.	12.9	91
29	Martian CH4: Sources, Flux, and Detection. Astrobiology, 2006, 6, 377-395.	3.0	89
30	Commercial DNA extraction kits impact observed microbial community composition in permafrost samples. FEMS Microbiology Ecology, 2014, 87, 217-230.	2.7	89
31	Phylogeny and phylogeography of functional genes shared among seven terrestrial subsurface metagenomes reveal N-cycling and microbial evolutionary relationships. Frontiers in Microbiology, 2014, 5, 531.	3.5	87
32	Theoretical prediction of collision efficiency between adhesion-deficient bacteria and sediment grain surface. Colloids and Surfaces B: Biointerfaces, 2002, 24, 229-245.	5.0	76
33	Rejuvenation of KAr systems for minerals in the Taiwan Mountain Belt. Earth and Planetary Science Letters, 1995, 131, 71-98.	4.4	72
34	Comparisons of the composition and biogeographic distribution of the bacterial communities occupying South African thermal springs with those inhabiting deep subsurface fracture water. Frontiers in Microbiology, 2014, 5, 679.	3.5	72
35	Reduced net methane emissions due to microbial methane oxidation in a warmer Arctic. Nature Climate Change, 2020, 10, 317-321.	18.8	70
36	Neon identifies two billion year old fluid component in Kaapvaal Craton. Chemical Geology, 2011, 283, 287-296.	3.3	68

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37	Dating blueschist metamorphism: A combined 40Ar/39Ar and electron microprobe approach. Geochimica Et Cosmochimica Acta, 1986, 50, 2111-2117.	3.9	67
38	Paleo-Rock-Hosted Life on Earth and the Search on Mars: A Review and Strategy for Exploration. Astrobiology, 2019, 19, 1230-1262.	3.0	62
39	Ancestral Absence of Electron Transport Chains in Patescibacteria and DPANN. Frontiers in Microbiology, 2020, 11, 1848.	3.5	62
40	Laser microprobe measurement of chlorine and argon zonation in biotite. Chemical Geology, 1991, 90, 145-168.	3.3	61
41	Single cell genomics indicates horizontal gene transfer and viral infections in a deep subsurface Firmicutes population. Frontiers in Microbiology, 2015, 6, 349.	3.5	61
42	The Effect of the Instability of Muscovite During In Vacuo Heating on 40Ar/39Ar Step-Heating Spectra. Geochimica Et Cosmochimica Acta, 1998, 62, 123-141.	3.9	57
43	Argon release mechanisms of biotite in vacuo and the role of short-circuit diffusion and recoil. Chemical Geology, 2000, 165, 135-166.	3.3	57
44	Deep Subsurface Microbial Biomass and Community Structure in Witwatersrand Basin Mines. Geomicrobiology Journal, 2006, 23, 431-442.	2.0	56
45	Hydrogeochemistry of groundwaters in and below the base of thick permafrost at Lupin, Nunavut, Canada. Journal of Hydrology, 2009, 373, 80-95.	5.4	56
46	Paleomagnetism of Middle Proterozoic (1.01 to 1.08 Ga) mafic dykes in southeastern Bahia Stateâ€”SÃ£o Francisco Craton, Brazil. Earth and Planetary Science Letters, 1990, 101, 332-348.	4.4	55
47	Paleomagnetism and 40Ar/39Ar ages of mafic dikes from Salvador (Brazil): new constraints on the SÃ£o Francisco craton APW path between 1080 and 1010 Ma. Precambrian Research, 2004, 132, 55-77.	2.7	45
48	An assessment of 40Ar39Ar dating for the whole-rock volcanic samples from the Luzon Arc near Taiwan. Chemical Geology, 1994, 114, 157-178.	3.3	44
49	Isolation and characterization of a Geobacillus thermoleovorans strain from an ultra-deep South African gold mine. Systematic and Applied Microbiology, 2007, 30, 152-164.	2.8	43
50	Time of emplacement and metamorphism of Late Precambrian mafic dykes associated with the Pan-African Gariep orogeny, Southern Africa: implications for the age of the Nama Group. Journal of African Earth Sciences (and the Middle East), 1991, 13, 531-541.	0.2	42
51	Fitting straight lines and planes with an application to radiometric dating. Earth and Planetary Science Letters, 1990, 97, 1-17.	4.4	40
52	Simultaneous Transport of Two Bacterial Strains in Intact Cores from Oyster, Virginia: Biological Effects and Numerical Modeling. Applied and Environmental Microbiology, 2002, 68, 2120-2132.	3.1	38
53	Cretaceous dinosaur bone contains recent organic material and provides an environment conducive to microbial communities. ELife, 2019, 8, .	6.0	38
54	Sulfur Isotope Enrichment during Maintenance Metabolism in the Thermophilic Sulfate-Reducing Bacterium Desulfotomaculum putei. Applied and Environmental Microbiology, 2009, 75, 5621-5630.	3.1	37

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55	Application of 40Ar39Ar laser-probe and step-heating techniques to the dating of diagenetic K-feldspar overgrowths. Geochimica Et Cosmochimica Acta, 1991, 55, 3777-3793.	3.9	36
56	The role of physical, chemical, and microbial heterogeneity on the field-scale transport and attachment of bacteria. Water Resources Research, 2003, 39, .	4.2	35
57	Survivability of Psychrobacter cryohalolentis K5 Under Simulated Martian Surface Conditions. Astrobiology, 2009, 9, 221-228.	3.0	35
58	Trends and future challenges in sampling the deep terrestrial biosphere. Frontiers in Microbiology, 2014, 5, 481.	3.5	35
59	Microbiome assembly in thawing permafrost and its feedbacks to climate. Global Change Biology, 2022, 28, 5007-5026.	9.5	34
60	The origin of NO3â˜' and N2 in deep subsurface fracture water of South Africa. Chemical Geology, 2012, 294-295, 51-62.	3.3	33
61	Dissolved organic matter compositions in 0.6â€“3.4â€¯km deep fracture waters, Kaapvaal Craton, South Africa. Organic Geochemistry, 2018, 118, 116-131.	1.8	33
62	Precipitation of arsenic under sulfate reducing conditions and subsequent leaching under aerobic conditions. Applied Geochemistry, 2011, 26, 269-285.	3.0	30
63	In situ imaging of microorganisms in geologic material. Journal of Microbiological Methods, 1999, 37, 201-213.	1.6	29
64	Comparison of methods for monitoring bacterial transport in the subsurface. Journal of Microbiological Methods, 2001, 47, 219-231.	1.6	29
65	The role of low-temperature 18O exchange in the isotopic evolution of deep subsurface fluids. Chemical Geology, 2021, 561, 120027.	3.3	29
66	Effects of simulated spring thaw of permafrost from mineral cryosol on CO₂ emissions and atmospheric CH₄ uptake. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 1764-1784.	3.0	28
67	Near infrared cavity ring-down spectroscopy for isotopic analyses of CH4 on future Martian surface missions. Planetary and Space Science, 2015, 105, 117-122.	1.7	28
68	Earth-like Habitable Environments in the Subsurface of Mars. Astrobiology, 2021, 21, 741-756.	3.0	27
69	Laser microprobe analyses of fine-grained illite. Geochimica Et Cosmochimica Acta, 1997, 61, 3851-3861.	3.9	25
70	Predominance of Anaerobic, Spore-Forming Bacteria in Metabolically Active Microbial Communities from Ancient Siberian Permafrost. Applied and Environmental Microbiology, 2019, 85, .	3.1	25
71	Field-scale evaluation of CFDA/SE staining coupled with multiple detection methods for assessing the transport of bacteria in situ. FEMS Microbiology Ecology, 2001, 37, 55-66.	2.7	24
72	Paleomagnetic evidence for the evolution of Meso- to Neo-proterozoic glaciogenic rocks in central-eastern Brazil. Palaeogeography, Palaeoclimatology, Palaeoecology, 1990, 80, 255-265.	2.3	23

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73	Evolutionary stasis of a deep subsurface microbial lineage. ISME Journal, 2021, 15, 2830-2842.	9.8	23
74	South African crustal fracture fluids preserve paleometeoric water signatures for up to tens of millions of years. Chemical Geology, 2018, 493, 379-395.	3.3	22
75	The genome of a subterrestrial nematode reveals adaptations to heat. Nature Communications, 2019, 10, 5268.	12.8	22
76	Physical versus chemical effects on bacterial and bromide transport as determined from on site sediment column pulse experiments. Journal of Contaminant Hydrology, 2005, 76, 295-314.	3.3	21
77	Lessons Learned from Bacterial Transport Research at the South Oyster Site. Ground Water, 2011, 49, 745-763.	1.3	20
78	Metagenomes from Thawing Low-Soil-Organic-Carbon Mineral Cryosols and Permafrost of the Canadian High Arctic. Genome Announcements, 2014, 2, .	0.8	20
79	High Lake gossan deposit: An Arctic analogue for ancient Martian surficial processes?. Planetary and Space Science, 2009, 57, 1302-1311.	1.7	18
80	Hydrogeology, Chemical and Microbial Activity Measurement Through Deep Permafrost. Ground Water, 2011, 49, 348-364.	1.3	18
81	A scalable model for methane consumption in arctic mineral soils. Geophysical Research Letters, 2016, 43, 5143-5150.	4.0	18
82	Draft Genome Sequence of Uncultured Upland Soil Cluster Gammaproteobacteria Gives Molecular Insights into High-Affinity Methanotrophy. Genome Announcements, 2017, 5, .	0.8	18
83	Constraints on the thermal history of Taylorsville Basin, Virginia, U.S.A., from fluid-inclusion and fission-track analyses: implications for subsurface geomicrobiology experiments. Chemical Geology, 1996, 127, 297-311.	3.3	17
84	A tectogenetic origin for the deep subsurface microorganisms of Taylorsville Basin: thermal and fluid flow model constraints. FEMS Microbiology Reviews, 1997, 20, 391-397.	8.6	17
85	Genomic reconstruction of fossil and living microorganisms in ancient Siberian permafrost. Microbiome, 2021, 9, 110.	11.1	17
86	Impact of CO2 Injections on Deep Subsurface Microbial Ecosystems and Potential Ramifications for the Surface Biosphere. , 2005, , 1217-1249.		16
87	Characterization of lattice strain induced by neutron irradiation. Physics and Chemistry of Minerals, 1995, 22, 399.	0.8	15
88	Utility of high performance liquid chromatography/electrospray/mass spectrometry of polar lipids in specifically Per-13C labeled Gram-negative bacteria DA001 as a tracer for acceleration of bioremediation in the subsurface. Journal of Microbiological Methods, 2001, 44, 271-281.	1.6	15
89	Challenges for Coring Deep Permafrost on Earth and Mars. Astrobiology, 2008, 8, 623-638.	3.0	15
90	Taxonomic and Functional Compositions Impacted by the Quality of Metatranscriptomic Assemblies. Frontiers in Microbiology, 2018, 9, 1235.	3.5	15

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91	Thermoanaerosceptrum fracticalcis gen. nov. sp. nov., a Novel Fumarate-Fermenting Microorganism From a Deep Fractured Carbonate Aquifer of the US Great Basin. Frontiers in Microbiology, 2019, 10, 2224.	3.5	15
92	Underground production of 81Kr detected in subsurface fluids. Geochimica Et Cosmochimica Acta, 2021, 295, 65-79.	3.9	15
93	Denitrifiers, nitrogen-fixing bacteria and N2O soil gas flux in high Arctic ice-wedge polygon cryosols. FEMS Microbiology Ecology, 2019, 95, .	2.7	14
94	<title>Potential for preservation of halobacteria and their macromolecular constituents in brine inclusions from bedded salt deposits</title>. , 1997, , .		13
95	Eight Metagenome-Assembled Genomes Provide Evidence for Microbial Adaptation in 20,000- to 1,000,000-Year-Old Siberian Permafrost. Applied and Environmental Microbiology, 2021, 87, e0097221.	3.1	13
96	Geology, genesis, and metamorphic history of the Namew Lake Ni-Cu deposit, Manitoba. Economic Geology, 1996, 91, 1394-1413.	3.8	12
97	<title>Deep gold mines of South Africa: windows into the subsurface biosphere</title>. , 1997, 3111, 344.		12
98	Development of radiographic and microscopic techniques for the characterization of bacterial transport in intact sediment cores from Oyster, Virginia. Journal of Microbiological Methods, 1999, 37, 139-154.	1.6	12
99	Breakthroughs in field-scale bacterial transport. Eos, 2001, 82, 417-417.	0.1	12
100	The influence of microstructures on the relationship between argon retentivity and chemical composition of hornblende. Geochimica Et Cosmochimica Acta, 1988, 52, 2167-2168.	3.9	11
101	Application of a Vital Fluorescent Staining Method for Simultaneous, Near-Real-Time Concentration Monitoring of Two Bacterial Strains in an Atlantic Coastal Plain Aquifer in Oyster, Virginia. Applied and Environmental Microbiology, 2004, 70, 1680-1687.	3.1	11
102	Draft Genome Sequence of â€œ Candidatus Bathyarchaeotaâ€•Archaeon BE326-BA-RLH, an Uncultured Denitrifier and Putative Anaerobic Methanotroph from South Africaâ€™s Deep Continental Biosphere. Microbiology Resource Announcements, 2018, 7, .	0.6	11
103	Recent calcite spar in an aquifer waste plume: a possible example of contamination driven calcite precipitation. Chemical Geology, 2000, 169, 449-460.	3.3	10
104	Backscattered 39Ar loss in fine-grained minerals: Implications for 40Ar/39Ar geochronology of clay. Geochimica Et Cosmochimica Acta, 2000, 64, 3965-3974.	3.9	10
105	Deep subsurface mine stalactites trap endemic fissure fluid Archaea, Bacteria, and Nematoda possibly originating from ancient seas. Frontiers in Microbiology, 2015, 6, 833.	3.5	10
106	Valuing Life-Detection Missions. Astrobiology, 2018, 18, 834-840.	3.0	10
107	Comparative Metagenomics of the Active Layer and Permafrost from Low-Carbon Soil in the Canadian High Arctic. Environmental Science & Technology, 2021, 55, 12683-12693.	10.0	10
108	Genome-centric resolution of novel microbial lineages in an excavated Centrosaurus dinosaur fossil bone from the Late Cretaceous of North America. Environmental Microbiomes, 2020, 15, 8.	5.0	8

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109	Metagenome-Assembled Genome of USCÎ± AHI, a Potential High-Affinity Methanotroph from Axel Heiberg Island, Canadian High Arctic. Microbiology Resource Announcements, 2019, 8, .	0.6	8
110	In situ oxidation of sulfide minerals supports widespread sulfate reducing bacteria in the deep subsurface of the Witwatersrand Basin (South Africa): Insights from multiple sulfur and oxygen isotopes. Earth and Planetary Science Letters, 2022, 577, 117247.	4.4	8
111	A Modular Injection System, Multilevel Sampler, and Manifold for Tracer Tests. Ground Water, 2003, 41, 816-827.	1.3	7
112	Aspartic acid racemization constrains long-term viability and longevity of endospores. FEMS Microbiology Ecology, 2019, 95, .	2.7	7
113	FISH-TAMB, a Fixation-Free mRNA Fluorescent Labeling Technique to Target Transcriptionally Active Members in Microbial Communities. Microbial Ecology, 2022, 84, 182-197.	2.8	7
114	COSPAR Sample Safety Assessment Framework (SSAF). Astrobiology, 2022, 22, S-186-S-216.	3.0	7
115	Aspartic acid racemization and repair in the survival and recovery of hyperthermophiles after prolonged starvation at high temperature. FEMS Microbiology Ecology, 2021, 97, .	2.7	5
116	A carbon free filter for collection of large volume samples of cellular biomass from oligotrophic waters. Journal of Microbiological Methods, 2012, 90, 145-151.	1.6	4
117	Hydrogen Isotopic Composition of Arctic and Atmospheric CH₄ Determined by a Portable Near-Infrared Cavity Ring-Down Spectrometer with a Cryogenic Pre-Concentrator. Astrobiology, 2016, 16, 787-797.	3.0	4
118	Planetary sample sealing for caching. , 2009, , .		3
119	â€œFollow the Waterâ€• Steve Squyres and the Mars Exploration Rovers. Journal of the Franklin Institute, 2011, 348, 446-452.	3.4	3
120	Transcriptional response to prolonged perchlorate exposure in the methanogen Methanosarcina barkeri and implications for Martian habitability. Scientific Reports, 2021, 11, 12336.	3.3	3
121	<title>Formation of magnetite and iron-rich carbonates by thermophilic iron-reducing bacteria</title>. , 1997, 3111, 61.		2
122	The limited role of aquifer heterogeneity on metal reduction in an Atlantic coastal plain determined by push-pull tests. Applied Geochemistry, 2007, 22, 974-995.	3.0	2
123	LUCI: A facility at DUSEL for large-scale experimental study of geologic carbon sequestration. Energy Procedia, 2011, 4, 5050-5057.	1.8	2
124	Thaumarchaea Genome Sequences from a High Arctic Active Layer. Microbiology Resource Announcements, 2020, 9, .	0.6	2
125	Field-scale evaluation of CFDA/SE staining coupled with multiple detection methods for assessing the transport of bacteria in situ. FEMS Microbiology Ecology, 2001, 37, 55-66.	2.7	1
126	Alumina ceramic as a mounting medium for electron microprobe analysis and 40Ar/39Ar laser microprobe dating of mineral grains. Chemical Geology, 1993, 106, 443-452.	3.3	0

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127	Deep Subsurface Microbiology. , 2014, , 1-4.		0
128	Deep Subsurface Microbiology. , 2015, , 618-621.		0