Wayne L Nicholson

List of Publications by Year
in descending order

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95 papers	6,113 citations	81900 39 h-index	71685 76 g-index
97 all docs	97 docs citations	97 times ranked	5244 citing authors

#	Article	IF	Citations
1	Resistance of Bacillus Endospores to Extreme Terrestrial and Extraterrestrial Environments. Microbiology and Molecular Biology Reviews, 2000, 64, 548-572.	6.6	1,656
2	A New Analysis of Mars â€œSpecial Regionsâ€: Findings of the Second MEPAG Special Regions Science Analysis Group (SR-SAG2). Astrobiology, 2014, 14, 887-968.	3.0	317
3	Role of the Spore Coat Layers in Bacillus subtilis Spore Resistance to Hydrogen Peroxide, Artificial UV-C, UV-B, and Solar UV Radiation. Applied and Environmental Microbiology, 2000, 66, 620-626.	3.1	251
4	The solar UV environment and bacterial spore UV resistance: considerations for Earth-to-Mars transport by natural processes and human spaceflight. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2005, 571, 249-264.	1.0	155
5	Artificial and Solar UV Radiation Induces Strand Breaks and Cyclobutane Pyrimidine Dimers in <i>Bacillus subtilis</i> Spore DNA. Applied and Environmental Microbiology, 2000, 66, 199-205.	3.1	143
6	The <i>Bacillus subtilis ydjL</i> (<i>bdhA</i>) Gene Encodes Acetoin Reductase/2,3-Butanediol Dehydrogenase. Applied and Environmental Microbiology, 2008, 74, 6832-6838.	3.1	143
7	Role of Dipicolinic Acid in Survival of Bacillus subtilis Spores Exposed to Artificial and Solar UV Radiation. Applied and Environmental Microbiology, 2001, 67, 1274-1279.	3.1	142
8	Role of DNA Repair by Nonhomologous-End Joining in <i>Bacillus subtilis</i> Spore Resistance to Extreme Dryness, Mono- and Polychromatic UV, and Ionizing Radiation. Journal of Bacteriology, 2007, 189, 3306-3311.	2.2	139
9	UV Resistance of Bacillus anthracis Spores Revisited: Validation of Bacillus subtilis Spores as UV Surrogates for Spores of B. anthracis Sterne. Applied and Environmental Microbiology, 2003, 69, 1327-1330.	3.1	136
10	Resistance of Bacterial Endospores to Outer Space for Planetary Protection Purposesâ€”Experiment PROTECT of the EXPOSE-E Mission. Astrobiology, 2012, 12, 445-456.	3.0	124
11	Ancient micronauts: interplanetary transport of microbes by cosmic impacts. Trends in Microbiology, 2009, 17, 243-250.	7.7	123
12	Paradoxical DNA Repair and Peroxide Resistance Gene Conservation in Bacillus pumilus SAFR-032. PLoS ONE, 2007, 2, e928.	2.5	118
13	Inactivation of Vegetative Cells, but Not Spores, of Bacillus anthracis , B. cereus , and B. subtilis on Stainless Steel Surfaces Coated with an Antimicrobial Silver- and Zinc-Containing Zeolite Formulation. Applied and Environmental Microbiology, 2003, 69, 4329-4331.	3.1	111
14	Spore Photoproduct Lyase from <i>Bacillus subtilis</i> Spores Is a Novel Iron-Sulfur DNA Repair Enzyme Which Shares Features with Proteins such as Class III Anaerobic Ribonucleotide Reductases and Pyruvate-Formate Lyases. Journal of Bacteriology, 1998, 180, 4879-4885.	2.2	99
15	Roles of Small, Acid-Soluble Spore Proteins and Core Water Content in Survival of <i>Bacillus subtilis</i> Spores Exposed to Environmental Solar UV Radiation. Applied and Environmental Microbiology, 2009, 75, 5202-5208.	3.1	98
16	Spore UV and Acceleration Resistance of Endolithic Bacillus pumilus and Bacillus subtilis Isolates Obtained from Sonoran Desert Basalt: Implications for Lithopanspermia. Astrobiology, 2003, 3, 709-717.	3.0	94
17	Bacterial endospores and their significance in stress resistance. Antonie Van Leeuwenhoek, 2002, 81, 27-32.	1.7	89
18	Roles of the Major, Small, Acid-Soluble Spore Proteins and Spore-Specific and Universal DNA Repair Mechanisms in Resistance of <i>Bacillus subtilis</i> Spores to Ionizing Radiation from X Rays and High-Energy Charged-Particle Bombardment. Journal of Bacteriology, 2008, 190, 1134-1140.	2.2	81

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19	Growth of<i>Serratia liquefaciens</i>under 7 mbar, 0Â°C, and CO₂-Enriched Anoxic Atmospheres. Astrobiology, 2013, 13, 115-131.	3.0	79
20	Growth of <i>Carnobacterium</i> spp. from permafrost under low pressure, temperature, and anoxic atmosphere has implications for Earth microbes on Mars. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 666-671.	7.1	78
21	Resistance of Bacillus subtilis Spore DNA to Lethal Ionizing Radiation Damage Relies Primarily on Spore Core Components and DNA Repair, with Minor Effects of Oxygen Radical Detoxification. Applied and Environmental Microbiology, 2014, 80, 104-109.	3.1	67
22	Bacillus subtilisSpores on Artificial Meteorites Survive Hypervelocity Atmospheric Entry: Implications for Lithopanspermia. Astrobiology, 2005, 5, 726-736.	3.0	66
23	Migrating microbes and planetary protection. Trends in Microbiology, 2009, 17, 389-392.	7.7	65
24	The O/OREOS Mission: First Science Data from the Space Environment Survivability of Living Organisms (SESLO) Payload. Astrobiology, 2011, 11, 951-958.	3.0	64
25	Novel rpoB Mutations Conferring Rifampin Resistance on Bacillus subtilis : Global Effects on Growth, Competence, Sporulation, and Germination. Journal of Bacteriology, 2004, 186, 2481-2486.	2.2	63
26	Survival and Germinability ofBacillus subtilisSpores Exposed to Simulated Mars Solar Radiation: Implications for Life Detection and Planetary Protection. Astrobiology, 2006, 6, 592-605.	3.0	57
27	Transcriptomic Responses of Germinating<i>Bacillus subtilis</i>Spores Exposed to 1.5 Years of Space and Simulated Martian Conditions on the EXPOSE-E Experiment PROTECT. Astrobiology, 2012, 12, 469-486.	3.0	54
28	Interactive effects of hypobaria, low temperature, and CO2 atmospheres inhibit the growth of mesophilic Bacillus spp. under simulated martian conditions. Icarus, 2006, 185, 143-152.	2.5	52
29	Method for purification of bacterial endospores from soils: UV resistance of natural Sonoran desert soil populations of Bacillus spp. with reference to B. subtilis strain 168. Journal of Microbiological Methods, 1999, 35, 13-21.	1.6	51
30	Comparison of Bacillus subtilis transcriptome profiles from two separate missions to the International Space Station. Npj Microgravity, 2019, 5, 1.	3.7	51
31	The Spectrum of Spontaneous Rifampin Resistance Mutations in the rpoB Gene of Bacillus subtilis 168 Spores Differs from That of Vegetative Cells and Resembles That of Mycobacterium tuberculosis. Journal of Bacteriology, 2002, 184, 4936-4940.	2.2	49
32	Cultivation of Staphylococcus epidermidis in the Human Spaceflight Environment Leads to Alterations in the Frequency and Spectrum of Spontaneous Rifampicin-Resistance Mutations in the rpoB Gene. Frontiers in Microbiology, 2016, 7, 999.	3.5	49
33	Twenty Species of Hypobarophilic Bacteria Recovered from Diverse Soils Exhibit Growth under Simulated Martian Conditions at 0.7â€‰kPa. Astrobiology, 2016, 16, 964-976.	3.0	48
34	Bacillus subtilisSpore Survival and Expression of Germination-Induced Bioluminescence After Prolonged Incubation Under Simulated Mars Atmospheric Pressure and Composition: Implications for Planetary Protection and Lithopanspermia. Astrobiology, 2005, 5, 536-544.	3.0	45
35	Spore Photoproduct (SP) Lyase from Bacillus subtilisSpecifically Binds to and Cleaves SP (5-Thyminyl-5,6-Dihydrothymine) but Not Cyclobutane Pyrimidine Dimers in UV-Irradiated DNA. Journal of Bacteriology, 2000, 182, 6412-6417.	2.2	44
36	Transcriptome Divergence and the Loss of Plasticity in <i>Bacillus subtilis</i> after 6,000 Generations of Evolution under Relaxed Selection for Sporulation. Journal of Bacteriology, 2009, 191, 428-433.	2.2	44

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37	Bacillus subtilis Spore Resistance to Simulated Mars Surface Conditions. Frontiers in Microbiology, 2019, 10, 333.	3.5	44
38	Using thermal inactivation kinetics to calculate the probability of extreme spore longevity: implications for paleomicrobiology and lithopanspermia. Origins of Life and Evolution of Biospheres, 2003, 33, 621-631.	1.9	42
39	Testing interplanetary transfer of bacteria between Earth and Mars as a result of natural impact phenomena and human spaceflight activities. Acta Astronautica, 2007, 60, 534-540.	3.2	42
40	THE POPULATION GENETICS OF PHENOTYPIC DETERIORATION IN EXPERIMENTAL POPULATIONS OF BACILLUS SUBTILIS. Evolution; International Journal of Organic Evolution, 2006, 60, 686-695.	2.3	41
41	Bacterial Spores in Granite Survive Hypervelocity Launch by Spallation: Implications for Lithopanspermia. Astrobiology, 2009, 9, 647-657.	3.0	40
42	Alterations in the Spectrum of Spontaneous Rifampicin-Resistance Mutations in the Bacillus subtilis rpoB Gene after Cultivation in the Human Spaceflight Environment. Frontiers in Microbiology, 2018, 9, 192.	3.5	36
43	Astrobiological Aspects of the Mutagenesis of Cosmic Radiation on Bacterial Spores. Astrobiology, 2010, 10, 509-521.	3.0	35
44	Exploring the Low-Pressure Growth Limit: Evolution of Bacillus subtilis in the Laboratory to Enhanced Growth at 5 Kilopascals. Applied and Environmental Microbiology, 2010, 76, 7559-7565.	3.1	34
45	Increased Fitness and Alteration of Metabolic Pathways during Bacillus subtilis Evolution in the Laboratory. Applied and Environmental Microbiology, 2011, 77, 4105-4118.	3.1	34
46	Multifactorial Resistance of<i>Bacillus subtilis</i>Spores to High-Energy Proton Radiation: Role of Spore Structural Components and the Homologous Recombination and Non-Homologous End Joining DNA Repair Pathways. Astrobiology, 2012, 12, 1069-1077.	3.0	33
47	Protective Role of Spore Structural Components in Determining Bacillus subtilis Spore Resistance to Simulated Mars Surface Conditions. Applied and Environmental Microbiology, 2012, 78, 8849-8853.	3.1	32
48	Role of altered rpoB alleles in Bacillus subtilis sporulation and spore resistance to heat, hydrogen peroxide, formaldehyde, and glutaraldehyde. Archives of Microbiology, 2012, 194, 759-767.	2.2	30
49	Essential Cysteine Residues in Bacillus subtilis Spore Photoproduct Lyase Identified by Alanine Scanning Mutagenesis. Current Microbiology, 2005, 51, 331-335.	2.2	29
50	Exposure of DNA and <i>Bacillus subtilis</i> Spores to Simulated Martian Environments: Use of Quantitative PCR (qPCR) to Measure Inactivation Rates of DNA to Function as a Template Molecule. Astrobiology, 2010, 10, 403-411.	3.0	29
51	Persistence of Biomarker ATP and ATP-Generating Capability in Bacterial Cells and Spores Contaminating Spacecraft Materials under Earth Conditions and in a Simulated Martian Environment. Applied and Environmental Microbiology, 2008, 74, 5159-5167.	3.1	28
52	Evolution of<i>Bacillus subtilis</i>to Enhanced Growth at Low Pressure: Up-Regulated Transcription of<i>des-desKR</i>, Encoding the Fatty Acid Desaturase System. Astrobiology, 2012, 12, 258-270.	3.0	28
53	Aqueous extracts of a Mars analogue regolith that mimics the Phoenix landing site do not inhibit spore germination or growth of model spacecraft contaminants Bacillus subtilis 168 and Bacillus pumilus SAFR-032. Icarus, 2012, 220, 904-910.	2.5	28
54	Role of the Y-Family DNA Polymerases YqjH and YqjW in Protecting Sporulating BacillusÂsubtilis Cells from DNA Damage. Current Microbiology, 2010, 60, 263-267.	2.2	26

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55	The Paradox of the â€œAncientâ€•Bacterium Which Contains â€œModernâ€•Protein-Coding Genes. Molecular Biology and Evolution, 2002, 19, 1637-1639.	8.9	24
56	Photoreactivation in the genus Bacillus. Current Microbiology, 1995, 31, 361-364.	2.2	23
57	UV Photochemistry of DNAIn Vitroand inBacillus subtilisSpores at Earth-Ambient and Low Atmospheric Pressure: Implications for Spore Survival on Other Planets or Moons in the Solar System. Astrobiology, 2002, 2, 417-425.	3.0	23
58	Genomic bipyrimidine nucleotide frequency and microbial reactions to germicidal UV radiation. Archives of Microbiology, 2010, 192, 521-529.	2.2	23
59	Experimental evolution of <i>Bacillus subtilis</i>. Environmental Microbiology, 2017, 19, 3415-3422.	3.8	21
60	Nanosatellites for Biology in Space: In Situ Measurement of Bacillus subtilis Spore Germination and Growth after 6 Months in Low Earth Orbit on the O/OREOS Mission. Life, 2020, 10, 1.	2.4	20
61	Spore Photoproduct Lyase Operon (splAB) Regulation During Bacillus subtilis Sporulation: Modulation of splB-lacZ Fusion Expression by P1 Promoter Mutations and by an In-Frame Deletion of splA. Current Microbiology, 1997, 34, 133-137.	2.2	19
62	Proposal to rename Carnobacterium inhibens as Carnobacterium inhibens subsp. inhibens subsp. nov. and description of Carnobacterium inhibens subsp. gilichinskyi subsp. nov., a psychrotolerant bacterium isolated from Siberian permafrost. International Journal of Systematic and Evolutionary Microbiology, 2015, 65, 556-561.	1.7	19
63	Exposure of Bacillus subtilis to Low Pressure (5 Kilopascals) Induces Several Global Regulons, Including Those Involved in the SigB-Mediated General Stress Response. Applied and Environmental Microbiology, 2014, 80, 4788-4794.	3.1	18
64	Experimental Evolution of Enhanced Growth by Bacillus subtilis at Low Atmospheric Pressure: Genomic Changes Revealed by Whole-Genome Sequencing. Applied and Environmental Microbiology, 2015, 81, 7525-7532.	3.1	18
65	Complete Genome Sequence of Serratia liquefaciens Strain ATCC 27592. Genome Announcements, 2013, 1, .	0.8	17
66	Cultivation in Space Flight Produces Minimal Alterations in the Susceptibility of Bacillus subtilis Cells to 72 Different Antibiotics and Growth-Inhibiting Compounds. Applied and Environmental Microbiology, 2017, 83, .	3.1	17
67	Meta-analysis of data from spaceflight transcriptome experiments does not support the idea of a common bacterial â€œspaceflight responseâ€• Scientific Reports, 2018, 8, 14403.	3.3	17
68	Role of the Nfo and ExoA Apurinic/Apyrimidinic Endonucleases in Radiation Resistance and Radiation-Induced Mutagenesis of Bacillus subtilis Spores. Journal of Bacteriology, 2011, 193, 2875-2879.	2.2	15
69	Synthetic operon for (R,R)-2,3-butanediol production in Bacillus subtilis and Escherichia coli. Applied Microbiology and Biotechnology, 2016, 100, 719-728.	3.6	14
70	Mechanotransduction in Prokaryotes: A Possible Mechanism of Spaceflight Adaptation. Life, 2021, 11, 33.	2.4	14
71	Isolation of<i>rpoB</i>Mutations Causing Rifampicin Resistance in<i>Bacillus subtilis</i>Spores Exposed to Simulated Martian Surface Conditions. Astrobiology, 2008, 8, 1159-1167.	3.0	13
72	The TRAP-Like SplA Protein Is a trans -Acting Negative Regulator of Spore Photoproduct Lyase Synthesis during Bacillus subtilis Sporulation. Journal of Bacteriology, 2000, 182, 555-560.	2.2	12

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73	Transcriptomic responses of Serratia liquefaciens cells grown under simulated Martian conditions of low temperature, low pressure, and CO2-enriched anoxic atmosphere. Scientific Reports, 2018, 8, 14938.	3.3	12
74	Increased Competitive Fitness of Bacillus subtilis under Nonsporulating Conditions via Inactivation of Pleiotropic Regulators AlsR, SigD, and SigW. Applied and Environmental Microbiology, 2012, 78, 3500-3503.	3.1	11
75	Anaerobic growth of<i>Bacillus subtilis</i>alters the spectrum of spontaneous mutations in the<i>rpoB</i>gene leading to rifampicin resistance. FEMS Microbiology Letters, 2015, 362, fnv213.	1.8	10
76	The Photochemistry of Unprotected DNA and DNA inside <i>Bacillus subtilis</i> Spores Exposed to Simulated Martian Surface Conditions of Atmospheric Composition, Temperature, Pressure, and Solar Radiation. Astrobiology, 2018, 18, 393-402.	3.0	10
77	Establishing Standard Protocols for Bacterial Culture in Biological Research in Canisters (BRIC) Hardware. Gravitational and Space Research: Publication of the American Society for Gravitational and Space Research, 2016, 4, 58-69.	0.8	10
78	Impact of two DNA repair pathways, homologous recombination and non-homologous end joining, on bacterial spore inactivation under simulated martian environmental conditions. Icarus, 2011, 215, 204-210.	2.5	9
79	The LysR-type transcriptional regulator (LTTR) AlsR indirectly regulates expression of the Bacillus subtilis bdhA gene encoding 2,3-butanediol dehydrogenase. Applied Microbiology and Biotechnology, 2013, 97, 7307-7316.	3.6	9
80	THE POPULATION GENETICS OF PHENOTYPIC DETERIORATION IN EXPERIMENTAL POPULATIONS OF BACILLUS SUBTILIS. Evolution; International Journal of Organic Evolution, 2006, 60, 686.	2.3	8
81	Single-spore elemental analyses indicate that dipicolinic acid-deficient Bacillus subtilis spores fail to accumulate calcium. Archives of Microbiology, 2010, 192, 493-497.	2.2	7
82	Shelf Life and Simulated Gastrointestinal Tract Survival of Selected Commercial Probiotics During a Simulated Round-Trip Journey to Mars. Frontiers in Microbiology, 2021, 12, 748950.	3.5	6
83	Comparisons of Transcriptome Profiles from Bacillus subtilis Cells Grown in Space versus High Aspect Ratio Vessel (HARV) Clinostats Reveal a Low Degree of Concordance. Astrobiology, 2020, 20, 1498-1509.	3.0	5
84	Differing Responses in Growth and Spontaneous Mutation to Antibiotic Resistance in <i>Bacillus subtilis</i> and <i>Staphylococcus epidermidis</i> Cells Exposed to Simulated Microgravity. Gravitational and Space Research: Publication of the American Society for Gravitational and Space Research, 2014, 2, 34-45.	0.8	5
85	Carbon-13 (13C) Labeling of Bacillus subtilis Vegetative Cells and Spores: Suitability for DNA Stable Isotope Probing (DNA-SIP) of Spores in Soils. Current Microbiology, 2009, 59, 9-14.	2.2	4
86	Evolution in the <i>Bacillaceae</i>. Microbiology Spectrum, 2014, 2, .	3.0	4
87	Evolution in the<i>Bacillaceae</i>. , 0, , 21-58.		3
88	An improved high-quality draft genome sequence of Carnobacterium inhibens subsp. inhibens strain K1T. Standards in Genomic Sciences, 2016, 11, 65.	1.5	2
89	Experimental Evolution to Explore Adaptation of Terrestrial Bacteria to the Martian Environment. Grand Challenges in Biology and Biotechnology, 2018, , 241-265.	2.4	1
90	A Bumpy Pathway to Stationary-Phase Survival in Bacillus subtilis. MBio, 2019, 10, .	4.1	0

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91	Growth at 5â€‰kPa Causes Differential Expression of a Number of Signals in a Bacillus subtilis Strain Adapted to Enhanced Growth at Low Pressure. Astrobiology, 2021, 21, 1076-1088.	3.0	0
92	Spore. , 2014, , 1-4.		0
93	DNA Repair. , 2014, , 1-3.		0
94	DNA Repair. , 2015, , 673-675.		0
95	Spore. , 2015, , 2331-2333.		0