Iain M Young

List of Publications by Year
in descending order

135 papers	10,814 citations	28242 55 h-index	33869 99 g-index
136 all docs	136 docs citations	136 times ranked	9815 citing authors

#	Article	IF	Citations
1	Rhizosphere: biophysics, biogeochemistry and ecological relevance. Plant and Soil, 2009, 321, 117-152.	1.8	950
2	Interactions and Self-Organization in the Soil-Microbe Complex. Science, 2004, 304, 1634-1637.	6.0	757
3	Root- and microbial-derived mucilages affect soil structure and water transport. European Journal of Soil Science, 2000, 51, 435-443.	1.8	340
4	Spatial distribution of bacterial communities and their relationships with the micro-architecture of soil. FEMS Microbiology Ecology, 2003, 44, 203-215.	1.3	291
5	Tillage, habitat space and function of soil microbes. Soil and Tillage Research, 2000, 53, 201-213.	2.6	258
6	Changes to water repellence of soil aggregates caused by substrateâ€induced microbial activity. European Journal of Soil Science, 1999, 50, 35-40.	1.8	252
7	Plant roots release phospholipid surfactants that modify the physical and chemical properties of soil. New Phytologist, 2003, 157, 315-326.	3.5	250
8	Interactions between soil structure and fungi. The Mycologist, 2004, 18, 52-59.	0.5	229
9	Three-dimensional Microorganization of the Soilâ€“Rootâ€“Microbe System. Microbial Ecology, 2006, 52, 151-158.	1.4	227
10	Soil Security: Solving the Global Soil Crisis. Global Policy, 2013, 4, 434-441.	1.0	219
11	Root hairs improve root penetration, rootâ€“soil contact, and phosphorus acquisition in soils of different strength. Journal of Experimental Botany, 2013, 64, 3711-3721.	2.4	215
12	3D Stochastic Modelling of Heterogeneous Porous Media â€“ Applications to Reservoir Rocks. Transport in Porous Media, 2006, 65, 443-467.	1.2	194
13	In Situ Spatial Patterns of Soil Bacterial Populations, Mapped at Multiple Scales, in an Arable Soil. Microbial Ecology, 2002, 44, 296-305.	1.4	180
14	New methods and models for characterising structural heterogeneity of soil. Soil and Tillage Research, 2001, 61, 33-45.	2.6	179
15	The fractal structure of soil aggregates: its measurement and interpretation. Journal of Soil Science, 1991, 42, 187-192.	1.2	166
16	Chapter 4 Microbial Distribution in Soils. Advances in Agronomy, 2008, 100, 81-121.	2.4	166
17	Applications of <scp>X</scp>â€ray computed tomography for examining biophysical interactions and structural development in soil systems: a review. European Journal of Soil Science, 2013, 64, 279-297.	1.8	164
18	Root phenomics of crops: opportunities and challenges. Functional Plant Biology, 2009, 36, 922.	1.1	163

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19	Disentangling the impact of AM fungi versus roots on soil structure and water transport. Plant and Soil, 2009, 314, 183-196.	1.8	159
20	Additional carbon sequestration benefits of grassland diversity restoration. Journal of Applied Ecology, 2011, 48, 600-608.	1.9	145
21	Variation in moisture contents between bulk soil and the rhizosheath of wheat (Triticum aestivum L.) Tj ETQq1 1 0.784314 rgBT /Ove	3.5	143
22	Visualization, modelling and prediction in soil microbiology. Nature Reviews Microbiology, 2007, 5, 689-699.	13.6	142
23	Towards an evolutionary ecology of life in soil. Trends in Ecology and Evolution, 2005, 20, 81-87.	4.2	141
24	Microbial diversity affects self-organization of the soilâ€“microbe system with consequences for function. Journal of the Royal Society Interface, 2012, 9, 1302-1310.	1.5	131
25	Non-destructive quantification of cereal roots in soil using high-resolution X-ray tomography. Journal of Experimental Botany, 2012, 63, 2503-2511.	2.4	121
26	An Efficient Markov Chain Model for the Simulation of Heterogeneous Soil Structure. Soil Science Society of America Journal, 2004, 68, 346-351.	1.2	118
27	Anomalous diffusion of heterogeneous populations characterized by normal diffusion at the individual level. Journal of the Royal Society Interface, 2009, 6, 111-122.	1.5	116
28	Investigating microbial micro-habitat structure using X-ray computed tomography. Geoderma, 2006, 133, 398-407.	2.3	115
29	Soil organic carbon mineralization rates in aggregates under contrasting land uses. Geoderma, 2014, 216, 10-18.	2.3	114
30	Quantification of fungal morphology, gaseous transport and microbial dynamics in soil: an integrated framework utilising fractal geometry. Geoderma, 1993, 56, 157-172.	2.3	109
31	A lattice BGK model for advection and anisotropic dispersion equation. Advances in Water Resources, 2002, 25, 1-8.	1.7	107
32	Quantification of the in situ distribution of soil bacteria by large-scale imaging of thin sections of undisturbed soil. FEMS Microbiology Ecology, 2001, 37, 67-77.	1.3	104
33	Root hair length and rhizosheath mass depend on soil porosity, strength and water content in barley genotypes. Planta, 2014, 239, 643-651.	1.6	101
34	Effect of bulk density on the spatial organisation of the fungus Rhizoctonia solani in soil. FEMS Microbiology Ecology, 2003, 44, 45-56.	1.3	100
35	Hard-setting soils. Soil Use and Management, 1987, 3, 79-83.	2.6	97
36	X-ray microtomographic imaging of charcoal. Journal of Archaeological Science, 2008, 35, 2698-2706.	1.2	94

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37	Oil mallee biochar improves soil structural propertiesâ€"A study with x-ray micro-CT. Agriculture, Ecosystems and Environment, 2014, 191, 142-149.	2.5	94
38	Biophysical interactions at the rootâ€"soil interface: a review. Journal of Agricultural Science, 1998, 130, 1-7.	0.6	92
39	The interaction of soil biota and soil structure under global change. Global Change Biology, 1998, 4, 703-712.	4.2	91
40	The relation between the moisture-release curve and the structure of soil. European Journal of Soil Science, 1995, 46, 369-375.	1.8	89
41	Soil physics, fungal epidemiology and the spread of Rhizoctonia solani. New Phytologist, 2001, 151, 459-468.	3.5	88
42	On the relation between number-size distributions and the fractal dimension of aggregates. Journal of Soil Science, 1993, 44, 555-565.	1.2	77
43	The impact of soil carbon management on soil macropore structure: a comparison of two apple orchard systems in New Zealand. European Journal of Soil Science, 2009, 60, 945-955.	1.8	76
44	Evaluation of X-ray computed tomography for quantifying macroporosity of loamy pasture soils. Geoderma, 2014, 213, 460-470.	2.3	76
45	A mass balance based numerical method for the fractional advection-dispersion equation: Theory and application. Water Resources Research, 2005, 41, .	1.7	74
46	Determination of soil hydraulic conductivity with the lattice Boltzmann method and soil thin-section technique. Journal of Hydrology, 2005, 306, 59-70.	2.3	73
47	Plant roots redesign the rhizosphere to alter the threeâ€dimensional physical architecture and water dynamics. New Phytologist, 2018, 219, 542-550.	3.5	73
48	Root elongation of seedling peas through layered soil of different penetration resistances. Plant and Soil, 1993, 149, 129-139.	1.8	72
49	Mechanical impedance of root growth directly reduces leaf elongation rates of cereals. New Phytologist, 1997, 135, 613-619.	3.5	69
50	Impacts of fauna on an upland grassland soil as determined by micromorphological analysis. Applied Soil Ecology, 2002, 20, 133-143.	2.1	67
51	Exploring capillary trapping efficiency as a function of interfacial tension, viscosity, and flow rate. Energy Procedia, 2011, 4, 4945-4952.	1.8	67
52	Impact of fungal and bacterial biocides on microbial induced water repellency in arable soil. Geoderma, 2006, 135, 72-80.	2.3	66
53	The first animals: ca. 760-million-year-old sponge-like fossils from Namibia. South African Journal of Science, 2012, 108, .	0.3	63
54	Visualization of xylem embolism by Xâ€ray microtomography: a direct test against hydraulic measurements. New Phytologist, 2017, 214, 890-898.	3.5	61

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55	The impact of boundary on the fractional advectionâ€“dispersion equation for solute transport in soil: Defining the fractional dispersive flux with the Caputo derivatives. Advances in Water Resources, 2007, 30, 1205-1217.	1.7	58
56	Can there be a contemporary ecological dimension to soil biology without a habitat?. Soil Biology and Biochemistry, 1998, 30, 1229-1232.	4.2	56
57	Dispersal patterns and behaviour of the nematode Phasmarhabditis hermaphrodita in mineral soils and organic media. Soil Biology and Biochemistry, 2009, 41, 1483-1490.	4.2	56
58	Finger structures in the Rhum Complex. Geological Magazine, 1985, 122, 491-502.	0.9	55
59	Characterising and linking X-ray CT derived macroporosity parameters to infiltration in soils with contrasting structures. Geoderma, 2018, 313, 82-91.	2.3	54
60	Root cap influences root colonisation by Pseudomonas fluorescens SBW25 on maize. FEMS Microbiology Ecology, 2005, 54, 123-130.	1.3	53
61	Ensuring planetary survival: the centrality of organic carbon in balancing the multifunctional nature of soils. Critical Reviews in Environmental Science and Technology, 2022, 52, 4308-4324.	6.6	52
62	An empirical stochastic model for the geometry of two-dimensional crack growth in soil (with) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 462	2.3	49
63	An image processing and analysis tool for identifying and analysing complex plant root systems in 3D soil using non-destructive analysis: Root1. PLoS ONE, 2017, 12, e0176433.	1.1	49
64	A novel three-dimensional lattice Boltzmann model for solute transport in variably saturated porous media. Water Resources Research, 2002, 38, 6-1-6-10.	1.7	46
65	Effects of recent and accumulated livestock manure carbon additions on soil fertility and quality. European Journal of Soil Science, 2011, 62, 174-181.	1.8	46
66	Deformation and Shrinkage Effects on the Soil Water Release Characteristic. Soil Science Society of America Journal, 2010, 74, 1104-1112.	1.2	45
67	Soil organic carbon is significantly associated with the pore geometry, microbial diversity and enzyme activity of the macro-aggregates under different land uses. Science of the Total Environment, 2021, 778, 146286.	3.9	45
68	On boundary conditions in the lattice Boltzmann model for advection and anisotropic dispersion equation. Advances in Water Resources, 2002, 25, 601-609.	1.7	44
69	Aggregate hierarchy and carbon mineralization in two Oxisols of New South Wales, Australia. Soil and Tillage Research, 2015, 146, 193-203.	2.6	43
70	Effects of inorganic nitrogen application on the dynamics of the soil solution composition in the root zone of maize. Plant and Soil, 1996, 180, 1-9.	1.8	42
71	The role played by microorganisms in the biogenesis of soil cracks: importance of substrate quantity and quality. Soil Biology and Biochemistry, 2001, 33, 1851-1858.	4.2	41
72	Microbial processing of organic matter drives stability and pore geometry of soil aggregates. Geoderma, 2020, 360, 114033.	2.3	41

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73	Preferential spread of the pathogenic fungus Rhizoctonia solani through structured soil. Soil Biology and Biochemistry, 2004, 36, 203-210.	4.2	39
74	Nematode (Caenorhabditis elegans) movement in sand as affected by particle size, moisture and the presence of bacteria (Escherichia coli). European Journal of Soil Science, 1998, 49, 237-241.	1.8	37
75	Survival of bacterial and fungal populations following chloroform-fumigation: Effects of soil matric potential and bulk density. Soil Biology and Biochemistry, 1996, 28, 1545-1547.	4.2	35
76	Microbiological factors affecting the colonisation of soil aggregates by Fusarium oxysporum f. sp. raphani. Soil Biology and Biochemistry, 1996, 28, 1513-1521.	4.2	35
77	Quantifying the response of wheat (Triticum aestivum L) root system architecture to phosphorus in an Oxisol. Plant and Soil, 2014, 385, 303-310.	1.8	35
78	The analysis of fracture profiles of soil using fractal geometry. Soil Research, 1992, 30, 291.	0.6	34
79	Spinning-induced rhabdomyolysis: a case report. European Journal of Emergency Medicine, 2004, 11, 358-359.	0.5	31
80	Quantification of the slug parasitic nematode Phasmarhabditis hermaphrodita from soil samples using real time qPCR. International Journal for Parasitology, 2006, 36, 1453-1461.	1.3	31
81	Does pore water velocity affect the reaction rates of adsorptive solute transport in soils? Demonstration with pore-scale modelling. Advances in Water Resources, 2008, 31, 425-437.	1.7	31
82	Exploration of soil micromorphology to identify coarse-sized OM assemblages in X-ray CT images of undisturbed cultivated soil cores. Geoderma, 2012, 179-180, 38-45.	2.3	30
83	Does the presence of glomalin relate to reduced water infiltration through hydrophobicity?. Canadian Journal of Soil Science, 2004, 84, 365-372.	0.5	29
84	A Lattice Boltzmann model for simulating water flow at pore scale in unsaturated soils. Journal of Hydrology, 2016, 538, 152-160.	2.3	29
85	A multi-scale Lattice Boltzmann model for simulating solute transport in 3D X-ray micro-tomography images of aggregated porous materials. Journal of Hydrology, 2016, 541, 1020-1029.	2.3	29
86	A general random walk model for the leptokurtic distribution of organism movement: Theory and application. Ecological Modelling, 2007, 200, 79-88.	1.2	26
87	Fungi in century old managed soils could hold key to the development of soil water repellency. Soil Biology and Biochemistry, 2012, 45, 125-127.	4.2	26
88	Movement of the parasitic nematode Phasmarhabditis hermaphrodita in the presence of mucus from the host slug Deroceras reticulatum. Biological Control, 2007, 41, 223-229.	1.4	25
89	Modelling nematode movement using time-fractional dynamics. Journal of Theoretical Biology, 2007, 248, 212-224.	0.8	25
90	An Efficient Markov Chain Model for the Simulation of Heterogeneous Soil Structure. Soil Science Society of America Journal, 2004, 68, 346.	1.2	24

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91	Host plant recognition by the root feeding clover weevil, Sitona lepidus (Coleoptera: Curculionidae). Bulletin of Entomological Research, 2004, 94, 433-439.	0.5	23
92	The effects of soil horizons and faunal excrement on bacterial distribution in an upland grassland soil. FEMS Microbiology Ecology, 2005, 52, 139-144.	1.3	23
93	Can minor compaction increase soil carbon sequestration? A case study in a soil under a wheel-track in an orchard. Geoderma, 2012, 183-184, 74-79.	2.3	23
94	Title is missing!. Plant and Soil, 1998, 202, 263-270.	1.8	22
95	In situ visualisation of fungi in soil thin sections: problems with crystallisation of the fluorochrome FB 28 (Calcofluor M2R) and improved staining by SCRI Renaissance 2200. Mycological Research, 2002, 106, 293-297.	2.5	22
96	Hardsetting and structural regeneration in two unstable British sandy loams and their influence on crop growth. Soil and Tillage Research, 1991, 19, 383-394.	2.6	21
97	Mean Residence Time of Soil Organic Carbon in Aggregates Under Contrasting Land Uses Based on Radiocarbon Measurements. Radiocarbon, 2013, 55, 127-139.	0.8	21
98	Characterization of Soil Organic Matter in Aggregates and Size-Density Fractions by Solid State¹³C CPMAS NMR Spectroscopy. Communications in Soil Science and Plant Analysis, 2014, 45, 1523-1537.	0.6	21
99	Bacterial Interactions At The Microscale â€“ Linking Habitat To Function In Soil. , 2007, , 61-85.		21
100	The Impact of Bacterial Diet on the Migration and Navigation of Caenorhabditis elegans. Microbial Ecology, 2004, 48, 358-365.	1.4	20
101	Spatial variation of effective porosity and its implications for discharge in an upland headwater catchment in Scotland. Journal of Hydrology, 2004, 290, 217-228.	2.3	20
102	Protozoa, nematodes and N-mineralization across a prescribed soil textural gradient. Pedobiologia, 2001, 45, 481-495.	0.5	19
103	A multiple scaled fractal tree. Journal of Theoretical Biology, 1990, 145, 199-206.	0.8	18
104	Efficient methods for solving water flow in variably saturated soils under prescribed flux infiltration. Journal of Hydrology, 2002, 260, 75-87.	2.3	18
105	Links between substrate additions, native microbes, and the structural complexity and stability of soils. Soil Biology and Biochemistry, 1999, 31, 1541-1547.	4.2	17
106	Egg hatching and survival time of soil-dwelling insect larvae: A partial differential equation model and experimental validation. Ecological Modelling, 2007, 202, 493-502.	1.2	17
107	Mean Residence Time of Soil Organic Carbon in Aggregates Under Contrasting Land Uses Based on Radiocarbon Measurements. Radiocarbon, 2013, 55, 127-139.	0.8	17
108	Factors affecting the strength of undisturbed cores from soils with low structural stability. Journal of Soil Science, 1991, 42, 205-217.	1.2	16

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109	Growth of a ciliate protozoan in model ballotini systems of different particle sizes. Soil Biology and Biochemistry, 1994, 26, 1173-1178.	4.2	16
110	The habitat of soil microbes. , 2005, , 31-43.		16
111	Characterisation of flow paths and saturated conductivity in a soil block in relation to chloride breakthrough. Journal of Hydrology, 2008, 348, 431-441.	2.3	16
112	Ecological Succession, Hydrology and Carbon Acquisition of Biological Soil Crusts Measured at the Micro-Scale. PLoS ONE, 2012, 7, e48565.	1.1	15
113	Application of X-ray computed tomography to quantify fresh root decomposition in situ. Plant and Soil, 2013, 372, 619-627.	1.8	15
114	The search for the meaning of life in soil: an opinion. European Journal of Soil Science, 2018, 69, 31-38.	1.8	15
115	High water availability in drought tolerant crops is driven by root engineering of the soil micro-habitat. Geoderma, 2021, 383, 114738.	2.3	15
116	Effects of soil matric potential and bulk density on the growth of Fusarium oxysporum f. sp. raphani. Soil Biology and Biochemistry, 1996, 28, 1139-1145.	4.2	14
117	A new, three-dimensional geometric morphometric approach to assess egg shape. PeerJ, 2018, 6, e5052.	0.9	14
118	Modelling the movement and survival of the root-feeding clover weevil, Sitona lepidus, in the root-zone of white clover. Ecological Modelling, 2006, 190, 133-146.	1.2	13
119	The impact of carbon addition on the organisation of rhizosheath of chickpea. Scientific Reports, 2018, 8, 18028.	1.6	13
120	Water-suspensible solids and structural stability. Soil and Tillage Research, 1991, 19, 89-94.	2.6	12
121	Movement of the nematode, Phasmarhabditis hermaphrodita, in a structurally heterogeneous environment. Nematology, 2007, 9, 731-738.	0.2	12
122	Root architectural responses of wheat cultivars to localised phosphorus application are phenotypically similar. Journal of Plant Nutrition and Soil Science, 2017, 180, 169-177.	1.1	12
123	Soil-root interaction in the rhizosheath regulates the water uptake of wheat. Rhizosphere, 2022, 21, 100462.	1.4	12
124	Greater, but not necessarily better: The influence of biochar on soil hydraulic properties. European Journal of Soil Science, 2021, 72, 2033-2048.	1.8	11
125	Protozoan Life in a Fractal World. Protist, 2001, 152, 123-126.	0.6	9
126	A MATHEMATICAL ANALYSIS OF A MINIMAL MODEL OF NEMATODE MIGRATION IN SOIL. Journal of Biological Systems, 2002, 10, 15-32.	0.5	9

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127	Simultaneous Preservation of Soil Structural Properties and Phospholipid Proflles: A Comparison ofThree Drying Techniques. Pedosphere, 2008, 18, 284-287.	2.1	9
128	Differences in potato development (Solanum tuberosum cv. Maris Piper) in zero and conventional traffic treatments are related to soil physical conditions and radiation interception. Soil and Tillage Research, 1993, 26, 341-359.	2.6	8
129	Comment on Zhao et al. (2005) â€œDoes ergosterol concentration provide a reliable estimate of soil fungal biomass?â€• Soil Biology and Biochemistry, 2006, 38, 1500-1501.	4.2	8
130	Hardsetting soils in the UK. Soil and Tillage Research, 1992, 25, 187-193.	2.6	7
131	Enhancing carbon sequestration in soil with coal combustion products: a technology for minimising carbon footprints in coal-power generation and agriculture. Climatic Change, 2015, 131, 559-573.	1.7	6
132	A mini-corer for relative soil strength studies. Biosystems Engineering, 1990, 46, 77-79.	0.4	5
133	A sterile environment for growing, and monitoring, micro-organisms under a range of soil matric potentials. Soil Biology and Biochemistry, 2001, 33, 689-691.	4.2	5
134	The Brremangurey pearl: A 2000 year old archaeological find from the coastal Kimberley, Western Australia. Australian Archaeology, 2015, 80, 112-115.	0.3	4
135	Root Plasticity Not Evident in N-Enriched Soil Volumes for Wheat (Triticum aestivumL.) and Barley (Hordeum vulgareL.) Varieties. Communications in Soil Science and Plant Analysis, 2017, 48, 2002-2012.	0.6	3