Shelley D Copley

List of Publications by Year in Descending Order

41 papers	2,539 citations	26 h-index	50 g-index
65 ext. papers	2,869 ext. citations	6.4 avg, IF	5.96 L-index

#	Paper	IF	Citations
41	Setting the stage for evolution of a new enzyme. *Current Opinion in Structural Biology*, **2021**, 69, 41-49	8.1	5
40	The physical basis and practical consequences of biological promiscuity. *Physical Biology*, **2020**,	3	5
39	Evolution of new enzymes by gene duplication and divergence. *FEBS Journal*, **2020**, 287, 1262-1283	5.7	18
38	Determinants for Efficient Editing with Cas9-Mediated Recombineering in. *ACS Synthetic Biology*, **2020**, 9, 1083-1099	5.7	8
37	Mutations that improve efficiency of a weak-link enzyme are rare compared to adaptive mutations elsewhere in the genome. *ELife*, **2019**, 8,	8.9	7
36	Hidden resources in the genome restore PLP synthesis and robust growth after deletion of the essential gene. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 24164-24173	11.5	12
35	Successful aerobic bioremediation of groundwater contaminated with higher chlorinated phenols by indigenous degrader bacteria. *Water Research*, **2018**, 138, 118-128	12.5	24
34	Genome-Wide Analysis of Transcriptional Changes and Genes That Contribute to Fitness during Degradation of the Anthropogenic Pollutant Pentachlorophenol by Sphingobium chlorophenolicum. *MSystems*, **2018**, 3,	7.6	2
33	Synonymous mutations make dramatic contributions to fitness when growth is limited by a weak-link enzyme. *PLoS Genetics*, **2018**, 14, e1007615	6	35
32	Shining a light on enzyme promiscuity. *Current Opinion in Structural Biology*, **2017**, 47, 167-175	8.1	93
31	A Synonymous Mutation Upstream of the Gene Encoding a Weak-Link Enzyme Causes an Ultrasensitive Response in Growth Rate. *Journal of Bacteriology*, **2016**, 198, 2853-63	3.5	14
30	Members of a Novel Kinase Family (DUF1537) Can Recycle Toxic Intermediates into an Essential Metabolite. *ACS Chemical Biology*, **2016**, 11, 2304-11	4.9	10
29	Differential effects of a mutation on the normal and promiscuous activities of orthologs: implications for natural and directed evolution. *Molecular Biology and Evolution*, **2015**, 32, 100-8	8.3	43
28	An evolutionary biochemist‧s perspective on promiscuity. *Trends in Biochemical Sciences*, **2015**, 40, 72-8	10.3	95
27	CodaChrome: a tool for the visualization of proteome conservation across all fully sequenced bacterial genomes. *BMC Genomics*, **2014**, 15, 65	4.5	3
26	A radical intermediate in the conversion of pentachlorophenol to tetrachlorohydroquinone by Sphingobium chlorophenolicum. *Biochemistry*, **2014**, 53, 6539-49	3.2	11
25	An evolutionary perspective on protein moonlighting. *Biochemical Society Transactions*, **2014**, 42, 1684-9	3.1	46

24	A versatile and highly efficient method for scarless genome editing in Escherichia coli and Salmonella enterica. *BMC Biotechnology*, **2014**, 14, 84	3.5	28
23	Sequestration of a highly reactive intermediate in an evolving pathway for degradation of pentachlorophenol. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E2182-90	11.5	35
22	Pentachlorophenol hydroxylase, a poorly functioning enzyme required for degradation of pentachlorophenol by Sphingobium chlorophenolicum. *Biochemistry*, **2012**, 51, 3848-60	3.2	36
21	Moonlighting is mainstream: paradigm adjustment required. *BioEssays*, **2012**, 34, 578-88	4.1	150
20	Toward a systems biology perspective on enzyme evolution. *Journal of Biological Chemistry*, **2012**, 287, 3-10	5.4	47
19	The whole genome sequence of Sphingobium chlorophenolicum L-1: insights into the evolution of the pentachlorophenol degradation pathway. *Genome Biology and Evolution*, **2012**, 4, 184-98	3.9	68
18	Three serendipitous pathways in E. coli can bypass a block in pyridoxal-5ɛphosphate synthesis. *Molecular Systems Biology*, **2010**, 6, 436	12.2	91
17	Evolution of efficient pathways for degradation of anthropogenic chemicals. *Nature Chemical Biology*, **2009**, 5, 559-66	11.7	140
16	Prediction of function in protein superfamilies. *F1000 Biology Reports*, **2009**, 1, 91		4
15	A compromise required by gene sharing enables survival: Implications for evolution of new enzyme activities. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 13497-502	11.5	53
14	Mechanism of the severe inhibition of tetrachlorohydroquinone dehalogenase by its aromatic substrates. *Biochemistry*, **2007**, 46, 4438-47	3.2	14
13	Pre-steady-state kinetic studies of the reductive dehalogenation catalyzed by tetrachlorohydroquinone dehalogenase. *Biochemistry*, **2007**, 46, 13211-22	3.2	29
12	A mechanistic investigation of the thiol-disulfide exchange step in the reductive dehalogenation catalyzed by tetrachlorohydroquinone dehalogenase. *Biochemistry*, **2005**, 44, 10360-8	3.2	24
11	The possibility of alternative microbial life on Earth. *International Journal of Astrobiology*, **2005**, 4, 165-173	1.4	69
10	A mechanism for the association of amino acids with their codons and the origin of the genetic code. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 4442-7	11.5	84
9	Genome shuffling improves degradation of the anthropogenic pesticide pentachlorophenol by Sphingobium chlorophenolicum ATCC 39723. *Applied and Environmental Microbiology*, **2004**, 70, 2391-7	4.8	142
8	Divergence of function in the thioredoxin fold suprafamily: evidence for evolution of peroxiredoxins from a thioredoxin-like ancestor. *Biochemistry*, **2004**, 43, 13981-95	3.2	129
7	Enzymes with extra talents: moonlighting functions and catalytic promiscuity. *Current Opinion in Chemical Biology*, **2003**, 7, 265-72	9.7	434

6	A previously unrecognized step in pentachlorophenol degradation in Sphingobium chlorophenolicum is catalyzed by tetrachlorobenzoquinone reductase (PcpD). *Journal of Bacteriology*, **2003**, 185, 302-10	3.5	63
5	Characterization of the initial steps in the reductive dehalogenation catalyzed by tetrachlorohydroquinone dehalogenase. *Biochemistry*, **2002**, 41, 1315-22	3.2	30
4	Lateral gene transfer and parallel evolution in the history of glutathione biosynthesis genes. *Genome Biology*, **2002**, 3, research0025	18.3	109
3	Evolution of a metabolic pathway for degradation of a toxic xenobiotic: the patchwork approach. *Trends in Biochemical Sciences*, **2000**, 25, 261-5	10.3	158
2	Recruitment of a double bond isomerase to serve as a reductive dehalogenase during biodegradation of pentachlorophenol. *Biochemistry*, **2000**, 39, 5303-11	3.2	94
1	Evidence that pcpA encodes 2,6-dichlorohydroquinone dioxygenase, the ring cleavage enzyme required for pentachlorophenol degradation in Sphingomonas chlorophenolica strain ATCC 39723. *Biochemistry*, **1999**, 38, 7659-69	3.2	77