James M Carothers

List of Publications by Year
in descending order

30 papers	2,436 citations	471371 17 h-index	454834 30 g-index
37 all docs	37 docs citations	37 times ranked	2668 citing authors

#	Article	IF	Citations
1	Design of a dynamic sensor-regulator system for production of chemicals and fuels derived from fatty acids. Nature Biotechnology, 2012, 30, 354-359.	9.4	721
2	Informational Complexity and Functional Activity of RNA Structures. Journal of the American Chemical Society, 2004, 126, 5130-5137.	6.6	196
3	Model-Driven Engineering of RNA Devices to Quantitatively Program Gene Expression. Science, 2011, 334, 1716-1719.	6.0	180
4	Digital logic circuits in yeast with CRISPR-dCas9 NOR gates. Nature Communications, 2017, 8, 15459.	5.8	175
5	Measurement and modeling of intrinsic transcription terminators. Nucleic Acids Research, 2013, 41, 5139-5148.	6.5	155
6	Synthetic CRISPR-Cas gene activators for transcriptional reprogramming in bacteria. Nature Communications, 2018, 9, 2489.	5.8	140
7	Aptamers Selected for Higher-Affinity Binding Are Not More Specific for the Target Ligand. Journal of the American Chemical Society, 2006, 128, 7929-7937.	6.6	107
8	Functional information and the emergence of biocomplexity. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 8574-8581.	3.3	100
9	Chemical synthesis using synthetic biology. Current Opinion in Biotechnology, 2009, 20, 498-503.	3.3	91
10	Selecting RNA aptamers for synthetic biology: investigating magnesium dependence and predicting binding affinity. Nucleic Acids Research, 2010, 38, 2736-2747.	6.5	80
11	Effective CRISPRa-mediated control of gene expression in bacteria must overcome strict target site requirements. Nature Communications, 2020, 11, 1618.	5.8	65
12	Solution structure of an informationally complex high-affinity RNA aptamer to GTP. Rna, 2006, 12, 567-579.	1.6	64
13	Data science: Accelerating innovation and discovery in chemical engineering. AICHE Journal, 2016, 62, 1402-1416.	1.8	63
14	Designing RNA-Based Genetic Control Systems for Efficient Production from Engineered Metabolic Pathways. ACS Synthetic Biology, 2015, 4, 107-115.	1.9	57
15	Regulated Expression of sgRNAs Tunes CRISPRi in <i>E. coli</i>. Biotechnology Journal, 2018, 13, e1800069.	1.8	47
16	Portable bacterial CRISPR transcriptional activation enables metabolic engineering in Pseudomonas putida. Metabolic Engineering, 2021, 66, 283-295.	3.6	30
17	Challenges and opportunities with CRISPR activation in bacteria for data-driven metabolic engineering. Current Opinion in Biotechnology, 2020, 64, 190-198.	3.3	29
18	Membrane Augmented Cell-Free Systems: A New Frontier in Biotechnology. ACS Synthetic Biology, 2021, 10, 670-681.	1.9	22

#	Article	IF	Citations
19	Design-driven, multi-use research agendas to enable applied synthetic biology for global health. Systems and Synthetic Biology, 2013, 7, 79-86.	1.0	16
20	Multi-layer CRISPRa/i circuits for dynamic genetic programs in cell-free and bacterial systems. Cell Systems, 2022, 13, 215-229.e8.	2.9	15
21	Prospects for engineering dynamic CRISPRâ€"Cas transcriptional circuits to improve bioproduction. Journal of Industrial Microbiology and Biotechnology, 2018, 45, 481-490.	1.4	14
22	In vitro selection of RNA aptamers against a composite small molecule-protein surface. Nucleic Acids Research, 2005, 33, 5602-5610.	6.5	13
23	Dual-Selection for Evolution of In Vivo Functional Aptazymes as Riboswitch Parts. Methods in Molecular Biology, 2014, 1111, 221-235.	0.4	10
24	Complex dependence of CRISPR-Cas9 binding strength on guide RNA spacer lengths. Physical Biology, 2021, 18, 056003.	0.8	6
25	Computational Design of RNA Parts, Devices, and Transcripts with Kinetic Folding Algorithms Implemented on Multiprocessor Clusters. Methods in Molecular Biology, 2015, 1244, 45-61.	0.4	6
26	Isolation and Characterization of Bacterial Cellulase Producers for Biomass Deconstruction: A Microbiology Laboratory Course. Journal of Microbiology and Biology Education, 2019, 20, .	0.5	5
27	In Vitro Selection of Functional Oligonucleotides and the Origins of Biochemical Activity. , 2006, , 1-28.		4
28	Label-free selection of RNA aptamers for metabolic engineering. Methods, 2016, 106, 37-41.	1.9	4
29	Kinetic Folding Design of Aptazyme-Regulated Expression Devices as Riboswitches for Metabolic Engineering. Methods in Enzymology, 2015, 550, 321-340.	0.4	2
30	RNA-Based Molecular Sensors for Biosynthetic Pathway Design, Evolution, and Optimization. , 2016, , 117-138.		2