# James J Collins

## List of Publications by Citations



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|---|---|---|---|
| 180 papers | 47,068 citations | 97 h-index | 192 g-index |
| 192 ext. papers | 58,062 ext. citations | 25.5 avg, IF | 7.9 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 180 | Construction of a genetic toggle switch in Escherichia coli. *Nature*, **2000**, 403, 339-42 | 50.4 | 3103 |
| 179 | Highly efficient reprogramming to pluripotency and directed differentiation of human cells with synthetic modified mRNA. *Cell Stem Cell*, **2010**, 7, 618-30 | 18 | 2025 |
| 178 | A common mechanism of cellular death induced by bactericidal antibiotics. *Cell*, **2007**, 130, 797-810 | 56.2 | 1833 |
| 177 | Stochasticity in gene expression: from theories to phenotypes. *Nature Reviews Genetics*, **2005**, 6, 451-64 | 30.1 | 1738 |
| 176 | Noise in eukaryotic gene expression. *Nature*, **2003**, 422, 633-7 | 50.4 | 1273 |
| 175 | How antibiotics kill bacteria: from targets to networks. *Nature Reviews Microbiology*, **2010**, 8, 423-35 | 22.2 | 1242 |
| 174 | Nucleic acid detection with CRISPR-Cas13a/C2c2. *Science*, **2017**, 356, 438-442 | 33.3 | 1240 |
| 173 | The Immunological Genome Project: networks of gene expression in immune cells. *Nature Immunology*, **2008**, 9, 1091-4 | 19.1 | 1098 |
| 172 | Wisdom of crowds for robust gene network inference. *Nature Methods*, **2012**, 9, 796-804 | 21.6 | 1097 |
| 171 | Large-scale mapping and validation of Escherichia coli transcriptional regulation from a compendium of expression profiles. *PLoS Biology*, **2007**, 5, e8 | 9.7 | 1051 |
| 170 | Multiplexed and portable nucleic acid detection platform with Cas13, Cas12a, and Csm6. *Science*, **2018**, 360, 439-444 | 33.3 | 916 |
| 169 | Synthetic biology: applications come of age. *Nature Reviews Genetics*, **2010**, 11, 367-79 | 30.1 | 900 |
| 168 | Highly efficient Cas9-mediated transcriptional programming. *Nature Methods*, **2015**, 12, 326-8 | 21.6 | 856 |
| 167 | Cellular decision making and biological noise: from microbes to mammals. *Cell*, **2011**, 144, 910-25 | 56.2 | 713 |
| 166 | Rapid, Low-Cost Detection of Zika Virus Using Programmable Biomolecular Components. *Cell*, **2016**, 165, 1255-1266 | 56.2 | 697 |
| 165 | Sublethal antibiotic treatment leads to multidrug resistance via radical-induced mutagenesis. *Molecular Cell*, **2010**, 37, 311-20 | 17.6 | 609 |
| 164 | Metabolite-enabled eradication of bacterial persisters by aminoglycosides. *Nature*, **2011**, 473, 216-20 | 50.4 | 599 |

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| 163 | Dispersing biofilms with engineered enzymatic bacteriophage. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 11197-202 | 11.5 | 596 |
| 162 | Engineered gene circuits. *Nature*, **2002**, 420, 224-30 | 50.4 | 569 |
| 161 | Contributions of microbiome and mechanical deformation to intestinal bacterial overgrowth and inflammation in a human gut-on-a-chip. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, E7-15 | 11.5 | 523 |
| 160 | Noise-based switches and amplifiers for gene expression. *Proceedings of the National Academy of Sciences of the United States of America*, **2000**, 97, 2075-80 | 11.5 | 507 |
| 159 | Antibiotics induce redox-related physiological alterations as part of their lethality. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, E2100-9 | 11.5 | 481 |
| 158 | Programmable cells: interfacing natural and engineered gene networks. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 8414-9 | 11.5 | 480 |
| 157 | Phenotypic consequences of promoter-mediated transcriptional noise. *Molecular Cell*, **2006**, 24, 853-65 | 17.6 | 479 |
| 156 | A brief history of synthetic biology. *Nature Reviews Microbiology*, **2014**, 12, 381-90 | 22.2 | 460 |
| 155 | Toehold switches: de-novo-designed regulators of gene expression. *Cell*, **2014**, 159, 925-39 | 56.2 | 459 |
| 154 | Silver enhances antibiotic activity against gram-negative bacteria. *Science Translational Medicine*, **2013**, 5, 190ra81 | 17.5 | 453 |
| 153 | Paper-based synthetic gene networks. *Cell*, **2014**, 159, 940-54 | 56.2 | 451 |
| 152 | Synthetic gene networks that count. *Science*, **2009**, 324, 1199-202 | 33.3 | 449 |
| 151 | A community effort to assess and improve drug sensitivity prediction algorithms. *Nature Biotechnology*, **2014**, 32, 1202-12 | 44.5 | 447 |
| 150 | Engineered riboregulators enable post-transcriptional control of gene expression. *Nature Biotechnology*, **2004**, 22, 841-7 | 44.5 | 443 |
| 149 | A Deep Learning Approach to Antibiotic Discovery. *Cell*, **2020**, 180, 688-702.e13 | 56.2 | 430 |
| 148 | Computational studies of gene regulatory networks: in numero molecular biology. *Nature Reviews Genetics*, **2001**, 2, 268-79 | 30.1 | 426 |
| 147 | Bacterial charity work leads to population-wide resistance. *Nature*, **2010**, 467, 82-5 | 50.4 | 423 |
| 146 | Mistranslation of membrane proteins and two-component system activation trigger antibiotic-mediated cell death. *Cell*, **2008**, 135, 679-90 | 56.2 | 388 |

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|---|---|---|---|
| 145 | Next-Generation Machine Learning for Biological Networks. *Cell*, **2018**, 173, 1581-1592 | 56.2 | 385 |
| 144 | Engineered bacteriophage targeting gene networks as adjuvants for antibiotic therapy. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 4629-34 | 11.5 | 378 |
| 143 | Antibiotics and the gut microbiota. *Journal of Clinical Investigation*, **2014**, 124, 4212-8 | 15.9 | 375 |
| 142 | Prediction and measurement of an autoregulatory genetic module. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 7714-9 | 11.5 | 367 |
| 141 | CellNet: network biology applied to stem cell engineering. *Cell*, **2014**, 158, 903-915 | 56.2 | 358 |
| 140 | Diversity-based, model-guided construction of synthetic gene networks with predicted functions. *Nature Biotechnology*, **2009**, 27, 465-71 | 44.5 | 357 |
| 139 | Antibiotic efficacy is linked to bacterial cellular respiration. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 8173-80 | 11.5 | 353 |
| 138 | Antibiotic treatment expands the resistance reservoir and ecological network of the phage metagenome. *Nature*, **2013**, 499, 219-22 | 50.4 | 352 |
| 137 | Definitions and guidelines for research on antibiotic persistence. *Nature Reviews Microbiology*, **2019** , 17, 441-448 | 22.2 | 351 |
| 136 | Noise-enhanced tactile sensation. *Nature*, **1996**, 383, 770 | 50.4 | 338 |
| 135 | Gyrase inhibitors induce an oxidative damage cellular death pathway in Escherichia coli. *Molecular Systems Biology*, **2007**, 3, 91 | 12.2 | 327 |
| 134 | Syntrophic exchange in synthetic microbial communities. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, E2149-56 | 11.5 | 322 |
| 133 | Oxidation of the guanine nucleotide pool underlies cell death by bactericidal antibiotics. *Science*, **2012**, 336, 315-9 | 33.3 | 316 |
| 132 | Comparison of Cas9 activators in multiple species. *Nature Methods*, **2016**, 13, 563-567 | 21.6 | 308 |
| 131 | Microbial persistence and the road to drug resistance. *Cell Host and Microbe*, **2013**, 13, 632-42 | 23.4 | 306 |
| 130 | Signaling-mediated bacterial persister formation. *Nature Chemical Biology*, **2012**, 8, 431-3 | 11.7 | 302 |
| 129 | Synthetic biology moving into the clinic. *Science*, **2011**, 333, 1248-52 | 33.3 | 300 |
| 128 | RNA synthetic biology. *Nature Biotechnology*, **2006**, 24, 545-54 | 44.5 | 299 |

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| 127 | Universal Chimeric Antigen Receptors for Multiplexed and Logical Control of T Cell Responses. *Cell*, **2018**, 173, 1426-1438.e11 | 56.2 | 297 |
| 126 | Bone marrow-on-a-chip replicates hematopoietic niche physiology in vitro. *Nature Methods*, **2014**, 11, 663-9 | 21.6 | 293 |
| 125 | Bactericidal antibiotics induce mitochondrial dysfunction and oxidative damage in Mammalian cells. *Science Translational Medicine*, **2013**, 5, 192ra85 | 17.5 | 285 |
| 124 | Chemogenomic profiling on a genome-wide scale using reverse-engineered gene networks. *Nature Biotechnology*, **2005**, 23, 377-83 | 44.5 | 283 |
| 123 | Next-generation synthetic gene networks. *Nature Biotechnology*, **2009**, 27, 1139-50 | 44.5 | 274 |
| 122 | Deconstructing transcriptional heterogeneity in pluripotent stem cells. *Nature*, **2014**, 516, 56-61 | 50.4 | 262 |
| 121 | Potentiating antibacterial activity by predictably enhancing endogenous microbial ROS production. *Nature Biotechnology*, **2013**, 31, 160-5 | 44.5 | 259 |
| 120 | Antibiotic-induced bacterial cell death exhibits physiological and biochemical hallmarks of apoptosis. *Molecular Cell*, **2012**, 46, 561-72 | 17.6 | 257 |
| 119 | Bactericidal Antibiotics Induce Toxic Metabolic Perturbations that Lead to Cellular Damage. *Cell Reports*, **2015**, 13, 968-80 | 10.6 | 251 |
| 118 | A synthetic biology framework for programming eukaryotic transcription functions. *Cell*, **2012**, 150, 647-58 | 56.2 | 239 |
| 117 | Noise in human muscle spindles. *Nature*, **1996**, 383, 769-70 | 50.4 | 236 |
| 116 | Programmable bacteria detect and record an environmental signal in the mammalian gut. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 4838-43 | 11.5 | 233 |
| 115 | Effects of Colored Noise on Stochastic Resonance in Sensory Neurons. *Physical Review Letters*, **1999**, 82, 2402-2405 | 7.4 | 233 |
| 114 | Portable, On-Demand Biomolecular Manufacturing. *Cell*, **2016**, 167, 248-259.e12 | 56.2 | 211 |
| 113 | Complex cellular logic computation using ribocomputing devices. *Nature*, **2017**, 548, 117-121 | 50.4 | 211 |
| 112 | Cas9 gRNA engineering for genome editing, activation and repression. *Nature Methods*, **2015**, 12, 1051-4 | 21.6 | 210 |
| 111 | Synthetic biology devices for in vitro and in vivo diagnostics. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 14429-35 | 11.5 | 201 |
| 110 | LIN28 Regulates Stem Cell Metabolism and Conversion to Primed Pluripotency. *Cell Stem Cell*, **2016**, 19, 66-80 | 18 | 192 |

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| 109 | An enhanced CRISPR repressor for targeted mammalian gene regulation. *Nature Methods*, **2018**, 15, 611-616 | 26.6 | 192 |
| 108 | Induction of multipotential hematopoietic progenitors from human pluripotent stem cells via respecification of lineage-restricted precursors. *Cell Stem Cell*, **2013**, 13, 459-70 | 18 | 190 |
| 107 | Dissecting engineered cell types and enhancing cell fate conversion via CellNet. *Cell*, **2014**, 158, 889-902 | 56.2 | 181 |
| 106 | Carbon Sources Tune Antibiotic Susceptibility in Pseudomonas aeruginosa via Tricarboxylic Acid Cycle Control. *Cell Chemical Biology*, **2017**, 24, 195-206 | 8.2 | 166 |
| 105 | "Deadman" and "Passcode" microbial kill switches for bacterial containment. *Nature Chemical Biology*, **2016**, 12, 82-6 | 11.7 | 163 |
| 104 | Unraveling the physiological complexities of antibiotic lethality. *Annual Review of Pharmacology and Toxicology*, **2015**, 55, 313-32 | 17.9 | 161 |
| 103 | Dynamic Control of Cardiac Alternans. *Physical Review Letters*, **1997**, 78, 4518-4521 | 7.4 | 157 |
| 102 | Synthetic gene network for entraining and amplifying cellular oscillations. *Physical Review Letters*, **2002**, 88, 148101 | 7.4 | 153 |
| 101 | Noise-mediated enhancements and decrements in human tactile sensation. *Physical Review E*, **1997**, 56, 923-926 | 2.4 | 150 |
| 100 | Programmable CRISPR-responsive smart materials. *Science*, **2019**, 365, 780-785 | 33.3 | 148 |
| 99 | Bacterial Metabolism and Antibiotic Efficacy. *Cell Metabolism*, **2019**, 30, 251-259 | 24.6 | 148 |
| 98 | Tracking, tuning, and terminating microbial physiology using synthetic riboregulators. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 15898-903 | 11.5 | 143 |
| 97 | Designing microbial consortia with defined social interactions. *Nature Chemical Biology*, **2018**, 14, 821-829 | 11.7 | 141 |
| 96 | Hydroxyurea induces hydroxyl radical-mediated cell death in Escherichia coli. *Molecular Cell*, **2009**, 36, 845-60 | 17.6 | 140 |
| 95 | A low-cost paper-based synthetic biology platform for analyzing gut microbiota and host biomarkers. *Nature Communications*, **2018**, 9, 3347 | 17.4 | 139 |
| 94 | Genetic switchboard for synthetic biology applications. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 5850-5 | 11.5 | 133 |
| 93 | Tunable protein degradation in bacteria. *Nature Biotechnology*, **2014**, 32, 1276-81 | 44.5 | 130 |
| 92 | A White-Box Machine Learning Approach for Revealing Antibiotic Mechanisms of Action. *Cell*, **2019**, 177, 1649-1661.e9 | 56.2 | 127 |

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| 91 | Multiple mechanisms disrupt the let-7 microRNA family in neuroblastoma. *Nature*, **2016**, 535, 246-51 | 50.4 | 125 |
| 90 | Noise-enhanced human sensorimotor function. *IEEE Engineering in Medicine and Biology Magazine*, **2003**, 22, 76-83 | | 119 |
| 89 | Systematic identification of factors for provirus silencing in embryonic stem cells. *Cell*, **2015**, 163, 230-45 | 56.2 | 117 |
| 88 | Upright, correlated random walks: A statistical-biomechanics approach to the human postural control system. *Chaos*, **1995**, 5, 57-63 | 3.3 | 115 |
| 87 | Probiotic strains detect and suppress cholera in mice. *Science Translational Medicine*, **2018**, 10, | 17.5 | 114 |
| 86 | Salmonella typhimurium intercepts Escherichia coli signaling to enhance antibiotic tolerance. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 14420-5 | 11.5 | 113 |
| 85 | Antibiotic-Induced Changes to the Host Metabolic Environment Inhibit Drug Efficacy and Alter Immune Function. *Cell Host and Microbe*, **2017**, 22, 757-765.e3 | 23.4 | 112 |
| 84 | Next-generation biocontainment systems for engineered organisms. *Nature Chemical Biology*, **2018**, 14, 530-537 | 11.7 | 96 |
| 83 | Targeting Antibiotic Tolerance, Pathogen by Pathogen. *Cell*, **2018**, 172, 1228-1238 | 56.2 | 95 |
| 82 | A CRISPR-Cas9-based gene drive platform for genetic interaction analysis in Candida albicans. *Nature Microbiology*, **2018**, 3, 73-82 | 26.6 | 95 |
| 81 | Using targeted chromatin regulators to engineer combinatorial and spatial transcriptional regulation. *Cell*, **2014**, 158, 110-20 | 56.2 | 93 |
| 80 | An atlas for Schistosoma mansoni organs and life-cycle stages using cell type-specific markers and confocal microscopy. *PLoS Neglected Tropical Diseases*, **2011**, 5, e1009 | 4.8 | 92 |
| 79 | Stochastic Resonance in Ensembles of Nondynamical Elements: The Role of Internal Noise. *Physical Review Letters*, **1997**, 79, 4701-4704 | 7.4 | 89 |
| 78 | Bacterial metabolic state more accurately predicts antibiotic lethality than growth rate. *Nature Microbiology*, **2019**, 4, 2109-2117 | 26.6 | 81 |
| 77 | CRISPR-based diagnostics. *Nature Biomedical Engineering*, **2021**, 5, 643-656 | 19 | 80 |
| 76 | Chromatin regulation at the frontier of synthetic biology. *Nature Reviews Genetics*, **2015**, 16, 159-71 | 30.1 | 76 |
| 75 | Cell-free biosensors for rapid detection of water contaminants. *Nature Biotechnology*, **2020**, 38, 1451-1459 | 44.5 | 75 |
| 74 | CRISPR-based genomic tools for the manipulation of genetically intractable microorganisms. *Nature Reviews Microbiology*, **2018**, 16, 333-339 | 22.2 | 68 |

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| 73 | BioBits Explorer: A modular synthetic biology education kit. *Science Advances*, **2018**, 4, eaat5105 | 14.3 | 68 |
| 72 | Synchronization of noisy systems by stochastic signals. *Physical Review E*, **1999**, 60, 284-92 | 2.4 | 68 |
| 71 | Complex signal processing in synthetic gene circuits using cooperative regulatory assemblies. *Science*, **2019**, 364, 593-597 | 33.3 | 67 |
| 70 | Engineered Phagemids for Nonlytic, Targeted Antibacterial Therapies. *Nano Letters*, **2015**, 15, 4808-13 | 11.5 | 66 |
| 69 | Biophysical Constraints Arising from Compositional Context in Synthetic Gene Networks. *Cell Systems*, **2017**, 5, 11-24.e12 | 10.6 | 63 |
| 68 | Understanding and Sensitizing Density-Dependent Persistence to Quinolone Antibiotics. *Molecular Cell*, **2017**, 68, 1147-1154.e3 | 17.6 | 63 |
| 67 | Iterative plug-and-play methodology for constructing and modifying synthetic gene networks. *Nature Methods*, **2012**, 9, 1077-80 | 21.6 | 62 |
| 66 | Chemogenomics and orthology-based design of antibiotic combination therapies. *Molecular Systems Biology*, **2016**, 12, 872 | 12.2 | 60 |
| 65 | Clinically relevant mutations in core metabolic genes confer antibiotic resistance. *Science*, **2021**, 371, | 33.3 | 56 |
| 64 | Antibiotic efficacy-context matters. *Current Opinion in Microbiology*, **2017**, 39, 73-80 | 7.9 | 55 |
| 63 | Understanding Biological Regulation Through Synthetic Biology. *Annual Review of Biophysics*, **2018**, 47, 399-423 | 21.1 | 55 |
| 62 | A role for the bacterial GATC methylome in antibiotic stress survival. *Nature Genetics*, **2016**, 48, 581-6 | 36.3 | 55 |
| 61 | BioBits Bright: A fluorescent synthetic biology education kit. *Science Advances*, **2018**, 4, eaat5107 | 14.3 | 55 |
| 60 | Wearable materials with embedded synthetic biology sensors for biomolecule detection. *Nature Biotechnology*, **2021**, 39, 1366-1374 | 44.5 | 54 |
| 59 | Evidence that coronavirus superspreading is fat-tailed. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 29416-29418 | 11.5 | 52 |
| 58 | Reconstruction of complex single-cell trajectories using CellRouter. *Nature Communications*, **2018**, 9, 892 | 17.4 | 49 |
| 57 | De novo-designed translation-repressing riboregulators for multi-input cellular logic. *Nature Chemical Biology*, **2019**, 15, 1173-1182 | 11.7 | 48 |
| 56 | Ultrasensitive CRISPR-based diagnostic for field-applicable detection of species in symptomatic and asymptomatic malaria. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 25722-25731 | 11.5 | 48 |

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| 55 | Creating Single-Copy Genetic Circuits. *Molecular Cell*, **2016**, 63, 329-336 | 17.6 | 46 |
| 54 | A Blueprint for a Synthetic Genetic Feedback Controller to Reprogram Cell Fate. *Cell Systems*, **2017**, 4, 109-120.e11 | 10.6 | 43 |
| 53 | Predictive biology: modelling, understanding and harnessing microbial complexity. *Nature Reviews Microbiology*, **2020**, 18, 507-520 | 22.2 | 41 |
| 52 | Comprehensive Mapping of Pluripotent Stem Cell Metabolism Using Dynamic Genome-Scale Network Modeling. *Cell Reports*, **2017**, 21, 2965-2977 | 10.6 | 41 |
| 51 | Mechanism of stochastic resonance enhancement in neuronal models driven by 1/f noise. *Physical Review E*, **1999**, 60, 4637-44 | 2.4 | 40 |
| 50 | Boosting bacterial metabolism to combat antibiotic resistance. *Cell Metabolism*, **2015**, 21, 154-155 | 24.6 | 39 |
| 49 | DNA sense-and-respond protein modules for mammalian cells. *Nature Methods*, **2015**, 12, 1085-90 | 21.6 | 38 |
| 48 | Minimally instrumented SHERLOCK (miSHERLOCK) for CRISPR-based point-of-care diagnosis of SARS-CoV-2 and emerging variants. *Science Advances*, **2021**, 7, | 14.3 | 36 |
| 47 | Synthetic biology platform technologies for antimicrobial applications. *Advanced Drug Delivery Reviews*, **2016**, 105, 35-43 | 18.5 | 35 |
| 46 | A CRISPR-based assay for the detection of opportunistic infections post-transplantation and for the monitoring of transplant rejection. *Nature Biomedical Engineering*, **2020**, 4, 601-609 | 19 | 34 |
| 45 | RNAi Reveals Phase-Specific Global Regulators of Human Somatic Cell Reprogramming. *Cell Reports* , **2016**, 15, 2597-607 | 10.6 | 32 |
| 44 | Assessing muscle stiffness from quiet stance in Parkinson's disease. *Muscle and Nerve*, **1999**, 22, 635-9 | 3.4 | 32 |
| 43 | Predicting cerebral blood flow response to orthostatic stress from resting dynamics: effects of healthy aging. *American Journal of Physiology - Regulatory Integrative and Comparative Physiology*, **2001**, 281, R716-22 | 3.2 | 30 |
| 42 | ZSCAN10 expression corrects the genomic instability of iPSCs from aged donors. *Nature Cell Biology*, **2017**, 19, 1037-1048 | 23.4 | 28 |
| 41 | Using Engineered Bacteria to Characterize Infection Dynamics and Antibiotic Effects In Vivo. *Cell Host and Microbe*, **2017**, 22, 263-268.e4 | 23.4 | 27 |
| 40 | A deep learning approach to programmable RNA switches. *Nature Communications*, **2020**, 11, 5057 | 17.4 | 27 |
| 39 | Synthetic biology: How best to build a cell. *Nature*, **2014**, 509, 155-7 | 50.4 | 24 |
| 38 | Lethality of MalE-LacZ hybrid protein shares mechanistic attributes with oxidative component of antibiotic lethality. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 9164-9169 | 11.5 | 22 |

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|---|---|---|---|
| 37 | Parallel bimodal single-cell sequencing of transcriptome and chromatin accessibility. *Genome Research*, **2020**, 30, 1027-1039 | 9.7 | 22 |
| 36 | Eradicating Bacterial Persisters with Combinations of Strongly and Weakly Metabolism-Dependent Antibiotics. *Cell Chemical Biology*, **2020**, 27, 1544-1552.e3 | 8.2 | 20 |
| 35 | Engineering advanced logic and distributed computing in human CAR immune cells. *Nature Communications*, **2021**, 12, 792 | 17.4 | 20 |
| 34 | A multiplexable assay for screening antibiotic lethality against drug-tolerant bacteria. *Nature Methods*, **2019**, 16, 303-306 | 21.6 | 19 |
| 33 | Synthetic biology in the clinic: engineering vaccines, diagnostics, and therapeutics. *Cell*, **2021**, 184, 881-898 | 38.2 | 19 |
| 32 | Precise Cas9 targeting enables genomic mutation prevention. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 3669-3673 | 11.5 | 18 |
| 31 | Real-time experimental control of a system in its chaotic and nonchaotic regimes. *Physical Review E*, **1997**, 56, R3749-R3752 | 2.4 | 18 |
| 30 | Using deep learning for dermatologist-level detection of suspicious pigmented skin lesions from wide-field images. *Science Translational Medicine*, **2021**, 13, | 17.5 | 18 |
| 29 | Deep learning identifies synergistic drug combinations for treating COVID-19. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118, | 11.5 | 18 |
| 28 | Engineering living therapeutics with synthetic biology. *Nature Reviews Drug Discovery*, **2021**, 20, 941-960 | 64.1 | 17 |
| 27 | Rapid, Low-Cost Detection of Water Contaminants Using RegulatedIn VitroTranscription | | 17 |
| 26 | Creating CRISPR-responsive smart materials for diagnostics and programmable cargo release. *Nature Protocols*, **2020**, 15, 3030-3063 | 18.8 | 16 |
| 25 | Deep-Learning Resources for Studying Glycan-Mediated Host-Microbe Interactions. *Cell Host and Microbe*, **2021**, 29, 132-144.e3 | 23.4 | 15 |
| 24 | A systems biology pipeline identifies regulatory networks for stem cell engineering. *Nature Biotechnology*, **2019**, 37, 810-818 | 44.5 | 14 |
| 23 | Frequency Control of an Oscillatory Reaction by Reversible Binding of an Autocatalyst. *Physical Review Letters*, **1999**, 82, 1582-1585 | 7.4 | 13 |
| 22 | Diversification of reprogramming trajectories revealed by parallel single-cell transcriptome and chromatin accessibility sequencing. *Science Advances*, **2020**, 6, | 14.3 | 12 |
| 21 | Point-of-Care Devices to Detect Zika and Other Emerging Viruses. *Annual Review of Biomedical Engineering*, **2020**, 22, 371-386 | 12 | 10 |
| 20 | A group-theoretic approach to rings of coupled biological oscillators **1994**, 71, 95 | | 10 |

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|---|---|---|---|
| 19 | Cytoplasmic condensation induced by membrane damage is associated with antibiotic lethality. *Nature Communications*, **2021**, 12, 2321 | 17.4 | 9 |
| 18 | Designing Biological Circuits: Synthetic Biology Within the Operon Model and Beyond. *Annual Review of Biochemistry*, **2021**, 90, 221-244 | 29.1 | 9 |
| 17 | Targeted erythropoietin selectively stimulates red blood cell expansion in vivo. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 5245-50 | 11.5 | 8 |
| 16 | Anomalous COVID-19 tests hinder researchers. *Science*, **2021**, 371, 244-245 | 33.3 | 8 |
| 15 | Tuning stochastic resonance. *Nature*, **1995**, 378, 341-342 | 50.4 | 7 |
| 14 | Continuous bioactivity-dependent evolution of an antibiotic biosynthetic pathway. *Nature Communications*, **2020**, 11, 4202 | 17.4 | 7 |
| 13 | An engineered live biotherapeutic for the prevention of antibiotic-induced dysbiosis.. *Nature Biomedical Engineering*, **2022**, | 19 | 5 |
| 12 | Using Natural Language Processing to Learn the Grammar of Glycans | | 4 |
| 11 | Deep Learning for RNA Synthetic Biology | | 4 |
| 10 | CRISPR Guide RNA Cloning for Mammalian Systems. *Journal of Visualized Experiments*, **2018**, | 1.6 | 3 |
| 9 | Increased energy demand from anabolic-catabolic processes drives β-lactam antibiotic lethality.. *Cell Chemical Biology*, **2021**, | 8.2 | 2 |
| 8 | Hard-wired central pattern generators for quadrupedal locomotion **1994**, 71, 375 | | 2 |
| 7 | SweetOrigins: Extracting Evolutionary Information from Glycans | | 2 |
| 6 | Field validation of the performance of paper-based tests for the detection of the Zika and chikungunya viruses in serum samples.. *Nature Biomedical Engineering*, **2022**, | 19 | 2 |
| 5 | Modulating the evolutionary trajectory of tolerance using antibiotics with different metabolic dependencies.. *Nature Communications*, **2022**, 13, 2525 | 17.4 | 2 |
| 4 | Engineering microbial peer pressure. *Science*, **2019**, 365, 986-987 | 33.3 | 1 |
| 3 | RNA-responsive elements for eukaryotic translational control. *Nature Biotechnology*, **2021**, | 44.5 | 1 |
| 2 | Ribocomputing devices for sophisticated in vivo logic computation **2016**, | | 1 |

1 Engineering Models to Scale. *Cell*, **2016**, 165, 516-7 56.2 1