

Timothy K Lu

List of Publications by Year in descending order

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144
papers

15,311
citations

23544

58
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20343

116
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164
all docs

164
docs citations

164
times ranked

15193
citing authors

#	ARTICLE	IF	CITATIONS
1	A warm-start digital CRISPR/Cas-based method for the quantitative detection of nucleic acids. <i>Analytica Chimica Acta</i> , 2022, 1196, 339494.	2.6	18
2	Predicting Membrane-Active Peptide Dynamics in Fluidic Lipid Membranes. <i>Methods in Molecular Biology</i> , 2022, 2405, 115-136.	0.4	0
3	Engineered Living Hydrogels. <i>Advanced Materials</i> , 2022, 34, e2201326.	11.1	75
4	Sense-and-Respond Payload Delivery Using a Novel Antigen-Inducible Promoter Improves Suboptimal CAR-T Activation. <i>ACS Synthetic Biology</i> , 2022, 11, 1440-1453.	1.9	9
5	Synthetic molecular evolution of antimicrobial peptides. <i>Current Opinion in Biotechnology</i> , 2022, 75, 102718.	3.3	21
6	Enhancing phage therapy through synthetic biology and genome engineering. <i>Current Opinion in Biotechnology</i> , 2021, 68, 151-159.	3.3	72
7	Materials design by synthetic biology. <i>Nature Reviews Materials</i> , 2021, 6, 332-350.	23.3	190
8	Designing <i>P. aeruginosa</i> synthetic phages with reduced genomes. <i>Scientific Reports</i> , 2021, 11, 2164.	1.6	37
9	Coatable and Resistance-Proof Ionic Liquid for Pathogen Eradication. <i>ACS Nano</i> , 2021, 15, 966-978.	7.3	28
10	Living materials with programmable functionalities grown from engineered microbial co-cultures. <i>Nature Materials</i> , 2021, 20, 691-700.	13.3	151
11	Synthetic Biology and Computer-Based Frameworks for Antimicrobial Peptide Discovery. <i>ACS Nano</i> , 2021, 15, 2143-2164.	7.3	51
12	Natural combinatorial genetics and prolific polyamine production enable siderophore diversification in <i>Serratia plymuthica</i> . <i>BMC Biology</i> , 2021, 19, 46.	1.7	8
13	Magnetic Living Hydrogels for Intestinal Localization, Retention, and Diagnosis. <i>Advanced Functional Materials</i> , 2021, 31, 2010918.	7.8	77
14	Hydrogel-based biocontainment of bacteria for continuous sensing and computation. <i>Nature Chemical Biology</i> , 2021, 17, 724-731.	3.9	110
15	High-throughput functional variant screens via in vivo production of single-stranded DNA. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	53
16	Zero-Crossing-Based Bio-Engineered Sensor. , 2021, , .		3
17	Engineering the Modular Receptor-Binding Proteins of <i>Klebsiella</i> Phages Switches Their Capsule Serotype Specificity. <i>MBio</i> , 2021, 12, .	1.8	31
18	Scalable recombinase-based gene expression cascades. <i>Nature Communications</i> , 2021, 12, 2711.	5.8	11

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19	High-throughput 5' UTR engineering for enhanced protein production in non-viral gene therapies. Nature Communications, 2021, 12, 4138.	5.8	55
20	Digital CRISPR-based method for the rapid detection and absolute quantification of nucleic acids. Biomaterials, 2021, 274, 120876.	5.7	65
21	Synthetic Circuit-Driven Expression of Heterologous Enzymes for Disease Detection. ACS Synthetic Biology, 2021, 10, 2231-2242.	1.9	5
22	Efficient retroelement-mediated DNA writing in bacteria. Cell Systems, 2021, 12, 860-872.e5.	2.9	17
23	Engineering living therapeutics with synthetic biology. Nature Reviews Drug Discovery, 2021, 20, 941-960.	21.5	142
24	Synthetic biology: at the crossroads of genetic engineering and human therapeutics—a Keystone Symposia report. Annals of the New York Academy of Sciences, 2021, , .	1.8	2
25	High-Throughput CRISPR Screens To Dissect Macrophage- <i>Shigella</i> Interactions. MBio, 2021, 12, e0215821.	1.8	4
26	Illuminating Host-Mycobacterial Interactions with Genome-wide CRISPR Knockout and CRISPRi Screens. Cell Systems, 2020, 11, 239-251.e7.	2.9	23
27	Sequence-to-function deep learning frameworks for engineered riboregulators. Nature Communications, 2020, 11, 5058.	5.8	63
28	Multiplex CRISPRi System Enables the Study of Stage-Specific Biofilm Genetic Requirements in Enterococcus faecalis. MBio, 2020, 11, .	1.8	18
29	Repurposing a peptide toxin from wasp venom into anti-infectives with dual antimicrobial and immunomodulatory properties. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26936-26945.	3.3	48
30	Programming Living Glue Systems to Perform Autonomous Mechanical Repairs. Matter, 2020, 3, 2080-2092.	5.0	41
31	Microbes as Biosensors. Annual Review of Microbiology, 2020, 74, 337-359.	2.9	35
32	Synthetic Host Defense Peptides Inhibit Venezuelan Equine Encephalitis Virus Replication and the Associated Inflammatory Response. Scientific Reports, 2020, 10, 21491.	1.6	6
33	Development and Challenges of Antimicrobial Peptides for Therapeutic Applications. Antibiotics, 2020, 9, 24.	1.5	318
34	Computer-Aided Design of Mastoparan-like Peptides Enables the Generation of Nontoxic Variants with Extended Antibacterial Properties. Journal of Medicinal Chemistry, 2019, 62, 8140-8151.	2.9	19
35	Synthetic Genetic Circuits for Self-Actuated Cellular Nanomaterial Fabrication Devices. ACS Synthetic Biology, 2019, 8, 2152-2162.	1.9	13
36	Single-Nucleotide-Resolution Computing and Memory in Living Cells. Molecular Cell, 2019, 75, 769-780.e4.	4.5	72

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37	Cell-based biosensors for immunology, inflammation, and allergy. <i>Journal of Allergy and Clinical Immunology</i> , 2019, 144, 645-647.	1.5	23
38	A high-throughput screening and computation platform for identifying synthetic promoters with enhanced cell-state specificity (SPECS). <i>Nature Communications</i> , 2019, 10, 2880.	5.8	42
39	Emerging Frontiers in Microbiome Engineering. <i>Trends in Immunology</i> , 2019, 40, 952-973.	2.9	47
40	Gene networks that compensate for crosstalk with crosstalk. <i>Nature Communications</i> , 2019, 10, 4028.	5.8	26
41	Quantifying the RNA cap epitranscriptome reveals novel caps in cellular and viral RNA. <i>Nucleic Acids Research</i> , 2019, 47, e130-e130.	6.5	124
42	Engineering Phage Host-Range and Suppressing Bacterial Resistance through Phage Tail Fiber Mutagenesis. <i>Cell</i> , 2019, 179, 459-469.e9.	13.5	208
43	Engineered <i>Bacillus subtilis</i> biofilms as living glues. <i>Materials Today</i> , 2019, 28, 40-48.	8.3	72
44	CRISPR/Cas-based devices for mammalian synthetic biology. <i>Current Opinion in Chemical Biology</i> , 2019, 52, 23-30.	2.8	10
45	Lightâ€Controlled, Highâ€Resolution Patterning of Living Engineered Bacteria Onto Textiles, Ceramics, and Plastic. <i>Advanced Functional Materials</i> , 2019, 29, 1901788.	7.8	78
46	Small-molecule control of antibody N-glycosylation in engineered mammalian cells. <i>Nature Chemical Biology</i> , 2019, 15, 730-736.	3.9	52
47	Short Cationic Peptide Derived from Archaea with Dual Antibacterial Properties and Anti-Infective Potential. <i>ACS Infectious Diseases</i> , 2019, 5, 1081-1086.	1.8	37
48	Engineering advanced cancer therapies with synthetic biology. <i>Nature Reviews Cancer</i> , 2019, 19, 187-195.	12.8	46
49	Modular genetic design of multi-domain functional amyloids: insights into self-assembly and functional properties. <i>Chemical Science</i> , 2019, 10, 4004-4014.	3.7	18
50	Directing curli polymerization with DNA origami nucleators. <i>Nature Communications</i> , 2019, 10, 1395.	5.8	22
51	Selective antibacterial activity of the cationic peptide PaDBS1R6 against Gram-negative bacteria. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2019, 1861, 1375-1387.	1.4	38
52	Human cathelicidin peptide LL-37 as a therapeutic antiviral targeting Venezuelan equine encephalitis virus infections. <i>Antiviral Research</i> , 2019, 164, 61-69.	1.9	40
53	Advancing CRISPR-Based Programmable Platforms beyond Genome Editing in Mammalian Cells. <i>ACS Synthetic Biology</i> , 2019, 8, 2607-2619.	1.9	5
54	Peptide Design Principles for Antimicrobial Applications. <i>Journal of Molecular Biology</i> , 2019, 431, 3547-3567.	2.0	273

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55	Comparison of Integrases Identifies Bxb1-GA Mutant as the Most Efficient Site-Specific Integrase System in Mammalian Cells. ACS Synthetic Biology, 2019, 8, 16-24.	1.9	37
56	Programmable and printable Bacillus subtilis biofilms as engineered living materials. Nature Chemical Biology, 2019, 15, 34-41.	3.9	202
57	In silico optimization of a guava antimicrobial peptide enables combinatorial exploration for peptide design. Nature Communications, 2018, 9, 1490.	5.8	179
58	A multi-landing pad DNA integration platform for mammalian cell engineering. Nucleic Acids Research, 2018, 46, 4072-4086.	6.5	110
59	Yeast-Based Synthetic Biology Platform for Antimicrobial Peptide Production. ACS Synthetic Biology, 2018, 7, 896-902.	1.9	76
60	Versatile and on-demand biologics co-production in yeast. Nature Communications, 2018, 9, 77.	5.8	28
61	Emerging Paradigms for Synthetic Design of Functional Amyloids. Journal of Molecular Biology, 2018, 430, 3720-3734.	2.0	23
62	Contact guidance and collective migration in the advancing epithelial monolayer. Connective Tissue Research, 2018, 59, 309-315.	1.1	11
63	3D Printing of Living Responsive Materials and Devices. Advanced Materials, 2018, 30, 1704821.	11.1	277
64	Neuromicrobiology: How Microbes Influence the Brain. ACS Chemical Neuroscience, 2018, 9, 141-150.	1.7	50
65	Roadmap on semiconductor-cell biointerfaces. Physical Biology, 2018, 15, 031002.	0.8	45
66	Encryption and steganography of synthetic gene circuits. Nature Communications, 2018, 9, 4942.	5.8	6
67	Structure-function-guided exploration of the antimicrobial peptide polybia-CP identifies activity determinants and generates synthetic therapeutic candidates. Communications Biology, 2018, 1, 221.	2.0	111
68	A Computationally Designed Peptide Derived from <i>Escherichia coli</i> as a Potential Drug Template for Antibacterial and Antibiofilm Therapies. ACS Infectious Diseases, 2018, 4, 1727-1736.	1.8	30
69	Artificial Repeat-Structured siRNA Precursors as Tunable Regulators for <i>Saccharomyces cerevisiae</i> . ACS Synthetic Biology, 2018, 7, 2403-2412.	1.9	1
70	Emerging applications for DNA writers and molecular recorders. Science, 2018, 361, 870-875.	6.0	80
71	An ingestible bacterial-electronic system to monitor gastrointestinal health. Science, 2018, 360, 915-918.	6.0	380
72	Phage-Based Applications in Synthetic Biology. Annual Review of Virology, 2018, 5, 453-476.	3.0	88

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73	Identification of Novel Cryptic Multifunctional Antimicrobial Peptides from the Human Stomach Enabled by a Computational–Experimental Platform. <i>ACS Synthetic Biology</i> , 2018, 7, 2105-2115.	1.9	63
74	Magnetic Surfactant Ionic Liquids and Polymers With Tetrahaloferrate (III) Anions as Antimicrobial Agents With Low Cytotoxicity. <i>Colloids and Interface Science Communications</i> , 2018, 22, 11-13.	2.0	24
75	Single-molecule detection of protein efflux from microorganisms using fluorescent single-walled carbon nanotube sensor arrays. <i>Nature Nanotechnology</i> , 2017, 12, 368-377.	15.6	172
76	Stretchable living materials and devices with hydrogel–elastomer hybrids hosting programmed cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 2200-2205.	3.3	212
77	21.1 Nanowatt circuit interface to whole-cell bacterial sensors. , 2017, , .		18
78	A Modular Toolkit for Generating <i>Pichia pastoris</i> Secretion Libraries. <i>ACS Synthetic Biology</i> , 2017, 6, 1016-1025.	1.9	84
79	A novel Bxb1 integrase RMCE system for high fidelity site-specific integration of mAb expression cassette in CHO Cells. <i>Biotechnology and Bioengineering</i> , 2017, 114, 1837-1846.	1.7	74
80	Synthetic gene networks that smell. <i>Nature Chemical Biology</i> , 2017, 13, 245-246.	3.9	1
81	Antimicrobial peptides: Role in human disease and potential as immunotherapies. , 2017, 178, 132-140.		92
82	CRISPR-Cas9 technology: applications in genome engineering, development of sequence-specific antimicrobials, and future prospects. <i>Integrative Biology (United Kingdom)</i> , 2017, 9, 109-122.	0.6	47
83	Next-generation precision antimicrobials: towards personalized treatment of infectious diseases. <i>Current Opinion in Microbiology</i> , 2017, 37, 95-102.	2.3	100
84	Diverse Supramolecular Nanofiber Networks Assembled by Functional Low-Complexity Domains. <i>ACS Nano</i> , 2017, 11, 6985-6995.	7.3	41
85	Ratiometric logic in living cells via competitive binding of synthetic transcription factors. , 2017, , .		2
86	Randomized CRISPR-Cas Transcriptional Perturbation Screening Reveals Protective Genes against Alpha-Synuclein Toxicity. <i>Molecular Cell</i> , 2017, 68, 247-257.e5.	4.5	31
87	An Engineered Synthetic Pathway for Discovering Nonnatural Nonribosomal Peptides in <i>Escherichia coli</i> . <i>MBio</i> , 2017, 8, .	1.8	8
88	Synthetic RNA-Based Immunomodulatory Gene Circuits for Cancer Immunotherapy. <i>Cell</i> , 2017, 171, 1138-1150.e15.	13.5	113
89	Advancing therapeutic applications of synthetic gene circuits. <i>Current Opinion in Biotechnology</i> , 2017, 47, 133-141.	3.3	23
90	Production of Functional Anti-Ebola Antibodies in <i>Pichia pastoris</i> . <i>ACS Synthetic Biology</i> , 2017, 6, 2183-2190.	1.9	15

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91	Scaling computation and memory in living cells. Current Opinion in Biomedical Engineering, 2017, 4, 143-151.	1.8	16
92	Ciprofloxacin-nitroxide hybrids with potential for biofilm control. European Journal of Medicinal Chemistry, 2017, 138, 590-601.	2.6	38
93	Synthetic Biogenesis of Bacterial Amyloid Nanomaterials with Tunable Inorganic–Organic Interfaces and Electrical Conductivity. ACS Synthetic Biology, 2017, 6, 266-275.	1.9	71
94	Analog and digital memory in living cells. , 2017, , .		0
95	Multiplexed Sequence Encoding: A Framework for DNA Communication. PLoS ONE, 2016, 11, e0152774.	1.1	9
96	Analog synthetic gene networks. , 2016, , .		0
97	Microbiome therapeutics – Advances and challenges. Advanced Drug Delivery Reviews, 2016, 105, 44-54.	6.6	198
98	Deciphering Combinatorial Genetics. Annual Review of Genetics, 2016, 50, 515-538.	3.2	16
99	Continuous genetic recording with self-targeting CRISPR-Cas in human cells. Science, 2016, 353, .	6.0	186
100	Synthetic recombinase-based state machines in living cells. Science, 2016, 353, aad8559.	6.0	196
101	Synthetic mixed-signal computation in living cells. Nature Communications, 2016, 7, 11658.	5.8	87
102	Synthetic biology and microbioreactor platforms for programmable production of biologics at the point-of-care. Nature Communications, 2016, 7, 12211.	5.8	69
103	Genetically Engineered Phages: a Review of Advances over the Last Decade. Microbiology and Molecular Biology Reviews, 2016, 80, 523-543.	2.9	310
104	Engineering Synthetic Gene Circuits in Living Cells with CRISPR Technology. Trends in Biotechnology, 2016, 34, 535-547.	4.9	111
105	Multiplexed barcoded CRISPR-Cas9 screening enabled by CombiGEM. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2544-2549.	3.3	210
106	The Era of Synthetic Biology and Genome Engineering: Where No Man Has Gone Before. Journal of Molecular Biology, 2016, 428, 835-836.	2.0	2
107	<i>Corynebacterium glutamicum</i> Metabolic Engineering with CRISPR Interference (CRISPRi). ACS Synthetic Biology, 2016, 5, 375-385.	1.9	222
108	Foundations and Emerging Paradigms for Computing in Living Cells. Journal of Molecular Biology, 2016, 428, 893-915.	2.0	19

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109	Engineering Modular Viral Scaffolds for Targeted Bacterial Population Editing. <i>Cell Systems</i> , 2015, 1, 187-196.	2.9	294
110	Engineering Living Functional Materials. <i>ACS Synthetic Biology</i> , 2015, 4, 8-11.	1.9	119
111	DNA nanotechnology: new adventures for an old warhorse. <i>Current Opinion in Chemical Biology</i> , 2015, 28, 9-14.	2.8	13
112	Programming a Human Commensal Bacterium, <i>Bacteroides thetaiotaomicron</i> , to Sense and Respond to Stimuli in the Murine Gut Microbiota. <i>Cell Systems</i> , 2015, 1, 62-71.	2.9	267
113	Putting Non-coding RNA on Display with CRISPR. <i>Molecular Cell</i> , 2015, 59, 146-148.	4.5	9
114	Complete Genome Sequence of <i>Pseudomonas aeruginosa</i> Phage vB_PaeM_CEB_DP1. <i>Genome Announcements</i> , 2015, 3, .	0.8	6
115	Massively parallel high-order combinatorial genetics in human cells. <i>Nature Biotechnology</i> , 2015, 33, 952-961.	9.4	50
116	Synthesis and patterning of tunable multiscale materials with engineered cells. <i>Nature Materials</i> , 2014, 13, 515-523.	13.3	329
117	Digital and analog gene circuits for biotechnology. <i>Biotechnology Journal</i> , 2014, 9, 597-608.	1.8	47
118	Multiplexed and Programmable Regulation of Gene Networks with an Integrated RNA and CRISPR/Cas Toolkit in Human Cells. <i>Molecular Cell</i> , 2014, 54, 698-710.	4.5	417
119	Genomically encoded analog memory with precise in vivo DNA writing in living cell populations. <i>Science</i> , 2014, 346, 1256272.	6.0	253
120	Permanent genetic memory with >1-byte capacity. <i>Nature Methods</i> , 2014, 11, 1261-1266.	9.0	202
121	Enhanced killing of antibiotic-resistant bacteria enabled by massively parallel combinatorial genetics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 12462-12467.	3.3	35
122	Rule-Based Design of Synthetic Transcription Factors in Eukaryotes. <i>ACS Synthetic Biology</i> , 2014, 3, 737-744.	1.9	26
123	Bacteriophage-based synthetic biology for the study of infectious diseases. <i>Current Opinion in Microbiology</i> , 2014, 19, 59-69.	2.3	56
124	Strong underwater adhesives made by self-assembling multi-protein nanofibres. <i>Nature Nanotechnology</i> , 2014, 9, 858-866.	15.6	370
125	Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases. <i>Nature Biotechnology</i> , 2014, 32, 1141-1145.	9.4	577
126	Engineering genetic circuits that compute and remember. <i>Nature Protocols</i> , 2014, 9, 1292-1300.	5.5	36

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127	Synthetic analog and digital circuits for cellular computation and memory. Current Opinion in Biotechnology, 2014, 29, 146-155.	3.3	82
128	Tunable and Multifunctional Eukaryotic Transcription Factors Based on CRISPR/Cas. ACS Synthetic Biology, 2013, 2, 604-613.	1.9	315
129	Synthetic Biology of Antimicrobial Discovery. ACS Synthetic Biology, 2013, 2, 358-372.	1.9	35
130	Synthetic circuits integrating logic and memory in living cells. Nature Biotechnology, 2013, 31, 448-452.	9.4	569
131	Advancing bacteriophage-based microbial diagnostics with synthetic biology. Trends in Biotechnology, 2013, 31, 325-327.	4.9	55
132	Synthetic analog computation in living cells. Nature, 2013, 497, 619-623.	13.7	467
133	Towards a whole-cell modeling approach for synthetic biology. Chaos, 2013, 23, 025112.	1.0	62
134	A Synthetic Biology Framework for Programming Eukaryotic Transcription Functions. Cell, 2012, 150, 647-658.	13.5	293
135	Synthetic Biology: An Emerging Engineering Discipline. Annual Review of Biomedical Engineering, 2012, 14, 155-178.	5.7	205
136	The next generation of bacteriophage therapy. Current Opinion in Microbiology, 2011, 14, 524-531.	2.3	278
137	Designing extensible protein-DNA interactions for synthetic biology. , 2011, , .		0
138	Engineering scalable biological systems. Bioengineered Bugs, 2010, 1, 378-384.	2.0	11
139	Next-generation synthetic gene networks. Nature Biotechnology, 2009, 27, 1139-1150.	9.4	321
140	Synthetic Gene Networks That Count. Science, 2009, 324, 1199-1202.	6.0	528
141	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, 4629-4634.	3.3	446
142	Dispersing biofilms with engineered enzymatic bacteriophage. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 11197-11202.	3.3	728
143	Fast cochlear amplification with slow outer hair cells. Hearing Research, 2006, 214, 45-67.	0.9	59
144	A MICROMECHANICAL MODEL FOR FAST COCHLEAR AMPLIFICATION WITH SLOW OUTER HAIR CELLS. , 2006, , .		0