

Timothy K Lu

List of Publications by Year in descending order

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Version: 2024-02-01

144
papers

15,311
citations

23567

58
h-index

20358

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.	5.4	18
2	Predicting Membrane-Active Peptide Dynamics in Fluidic Lipid Membranes. <i>Methods in Molecular Biology</i> , 2022, 2405, 115-136.	0.9	0
3	Engineered Living Hydrogels. <i>Advanced Materials</i> , 2022, 34, e2201326.	21.0	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.	3.8	9
5	Synthetic molecular evolution of antimicrobial peptides. <i>Current Opinion in Biotechnology</i> , 2022, 75, 102718.	6.6	21
6	Enhancing phage therapy through synthetic biology and genome engineering. <i>Current Opinion in Biotechnology</i> , 2021, 68, 151-159.	6.6	72
7	Materials design by synthetic biology. <i>Nature Reviews Materials</i> , 2021, 6, 332-350.	48.7	190
8	Designing <i>P. aeruginosa</i> synthetic phages with reduced genomes. <i>Scientific Reports</i> , 2021, 11, 2164.	3.3	37
9	Coatable and Resistance-Proof Ionic Liquid for Pathogen Eradication. <i>ACS Nano</i> , 2021, 15, 966-978.	14.6	28
10	Living materials with programmable functionalities grown from engineered microbial co-cultures. <i>Nature Materials</i> , 2021, 20, 691-700.	27.5	151
11	Synthetic Biology and Computer-Based Frameworks for Antimicrobial Peptide Discovery. <i>ACS Nano</i> , 2021, 15, 2143-2164.	14.6	51
12	Natural combinatorial genetics and prolific polyamine production enable siderophore diversification in <i>Serratia plymuthica</i> . <i>BMC Biology</i> , 2021, 19, 46.	3.8	8
13	Magnetic Living Hydrogels for Intestinal Localization, Retention, and Diagnosis. <i>Advanced Functional Materials</i> , 2021, 31, 2010918.	14.9	77
14	Hydrogel-based biocontainment of bacteria for continuous sensing and computation. <i>Nature Chemical Biology</i> , 2021, 17, 724-731.	8.0	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, .	7.1	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, .	4.1	31
18	Scalable recombinase-based gene expression cascades. <i>Nature Communications</i> , 2021, 12, 2711.	12.8	11

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19	High-throughput 5' UTR engineering for enhanced protein production in non-viral gene therapies. <i>Nature Communications</i> , 2021, 12, 4138.	12.8	55
20	Digital CRISPR-based method for the rapid detection and absolute quantification of nucleic acids. <i>Biomaterials</i> , 2021, 274, 120876.	11.4	65
21	Synthetic Circuit-Driven Expression of Heterologous Enzymes for Disease Detection. <i>ACS Synthetic Biology</i> , 2021, 10, 2231-2242.	3.8	5
22	Efficient retroelement-mediated DNA writing in bacteria. <i>Cell Systems</i> , 2021, 12, 860-872.e5.	6.2	17
23	Engineering living therapeutics with synthetic biology. <i>Nature Reviews Drug Discovery</i> , 2021, 20, 941-960.	46.4	142
24	Synthetic biology: at the crossroads of genetic engineering and human therapeutics—a Keystone Symposia report. <i>Annals of the New York Academy of Sciences</i> , 2021, , .	3.8	2
25	High-Throughput CRISPR Screens To Dissect Macrophage- <i>Shigella</i> Interactions. <i>MBio</i> , 2021, 12, e0215821.	4.1	4
26	Illuminating Host-Mycobacterial Interactions with Genome-wide CRISPR Knockout and CRISPRi Screens. <i>Cell Systems</i> , 2020, 11, 239-251.e7.	6.2	23
27	Sequence-to-function deep learning frameworks for engineered riboregulators. <i>Nature Communications</i> , 2020, 11, 5058.	12.8	63
28	Multiplex CRISPRi System Enables the Study of Stage-Specific Biofilm Genetic Requirements in <i>Enterococcus faecalis</i> . <i>MBio</i> , 2020, 11, .	4.1	18
29	Repurposing a peptide toxin from wasp venom into antiinfectives with dual antimicrobial and immunomodulatory properties. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 26936-26945.	7.1	48
30	Programming Living Glue Systems to Perform Autonomous Mechanical Repairs. <i>Matter</i> , 2020, 3, 2080-2092.	10.0	41
31	Microbes as Biosensors. <i>Annual Review of Microbiology</i> , 2020, 74, 337-359.	7.3	35
32	Synthetic Host Defense Peptides Inhibit Venezuelan Equine Encephalitis Virus Replication and the Associated Inflammatory Response. <i>Scientific Reports</i> , 2020, 10, 21491.	3.3	6
33	Development and Challenges of Antimicrobial Peptides for Therapeutic Applications. <i>Antibiotics</i> , 2020, 9, 24.	3.7	318
34	Computer-Aided Design of Mastoparan-like Peptides Enables the Generation of Nontoxic Variants with Extended Antibacterial Properties. <i>Journal of Medicinal Chemistry</i> , 2019, 62, 8140-8151.	6.4	19
35	Synthetic Genetic Circuits for Self-Actuated Cellular Nanomaterial Fabrication Devices. <i>ACS Synthetic Biology</i> , 2019, 8, 2152-2162.	3.8	13
36	Single-Nucleotide-Resolution Computing and Memory in Living Cells. <i>Molecular Cell</i> , 2019, 75, 769-780.e4.	9.7	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.	2.9	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.	12.8	42
39	Emerging Frontiers in Microbiome Engineering. <i>Trends in Immunology</i> , 2019, 40, 952-973.	6.8	47
40	Gene networks that compensate for crosstalk with crosstalk. <i>Nature Communications</i> , 2019, 10, 4028.	12.8	26
41	Quantifying the RNA cap epitranscriptome reveals novel caps in cellular and viral RNA. <i>Nucleic Acids Research</i> , 2019, 47, e130-e130.	14.5	124
42	Engineering Phage Host-Range and Suppressing Bacterial Resistance through Phage Tail Fiber Mutagenesis. <i>Cell</i> , 2019, 179, 459-469.e9.	28.9	208
43	Engineered <i>Bacillus subtilis</i> biofilms as living glues. <i>Materials Today</i> , 2019, 28, 40-48.	14.2	72
44	CRISPR/Cas-based devices for mammalian synthetic biology. <i>Current Opinion in Chemical Biology</i> , 2019, 52, 23-30.	6.1	10
45	Light-Controlled, High-Resolution Patterning of Living Engineered Bacteria Onto Textiles, Ceramics, and Plastic. <i>Advanced Functional Materials</i> , 2019, 29, 1901788.	14.9	78
46	Small-molecule control of antibody N-glycosylation in engineered mammalian cells. <i>Nature Chemical Biology</i> , 2019, 15, 730-736.	8.0	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.	3.8	37
48	Engineering advanced cancer therapies with synthetic biology. <i>Nature Reviews Cancer</i> , 2019, 19, 187-195.	28.4	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.	7.4	18
50	Directing curli polymerization with DNA origami nucleators. <i>Nature Communications</i> , 2019, 10, 1395.	12.8	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.	2.6	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.	4.1	40
53	Advancing CRISPR-Based Programmable Platforms beyond Genome Editing in Mammalian Cells. <i>ACS Synthetic Biology</i> , 2019, 8, 2607-2619.	3.8	5
54	Peptide Design Principles for Antimicrobial Applications. <i>Journal of Molecular Biology</i> , 2019, 431, 3547-3567.	4.2	273

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55	Comparison of Integrases Identifies Bxb1-GA Mutant as the Most Efficient Site-Specific Integrase System in Mammalian Cells. <i>ACS Synthetic Biology</i> , 2019, 8, 16-24.	3.8	37
56	Programmable and printable <i>Bacillus subtilis</i> biofilms as engineered living materials. <i>Nature Chemical Biology</i> , 2019, 15, 34-41.	8.0	202
57	In silico optimization of a guava antimicrobial peptide enables combinatorial exploration for peptide design. <i>Nature Communications</i> , 2018, 9, 1490.	12.8	179
58	A multi-landing pad DNA integration platform for mammalian cell engineering. <i>Nucleic Acids Research</i> , 2018, 46, 4072-4086.	14.5	110
59	Yeast-Based Synthetic Biology Platform for Antimicrobial Peptide Production. <i>ACS Synthetic Biology</i> , 2018, 7, 896-902.	3.8	76
60	Versatile and on-demand biologics co-production in yeast. <i>Nature Communications</i> , 2018, 9, 77.	12.8	28
61	Emerging Paradigms for Synthetic Design of Functional Amyloids. <i>Journal of Molecular Biology</i> , 2018, 430, 3720-3734.	4.2	23
62	Contact guidance and collective migration in the advancing epithelial monolayer. <i>Connective Tissue Research</i> , 2018, 59, 309-315.	2.3	11
63	3D Printing of Living Responsive Materials and Devices. <i>Advanced Materials</i> , 2018, 30, 1704821.	21.0	277
64	Neuromicrobiology: How Microbes Influence the Brain. <i>ACS Chemical Neuroscience</i> , 2018, 9, 141-150.	3.5	50
65	Roadmap on semiconductor-cell biointerfaces. <i>Physical Biology</i> , 2018, 15, 031002.	1.8	45
66	Encryption and steganography of synthetic gene circuits. <i>Nature Communications</i> , 2018, 9, 4942.	12.8	6
67	Structure-function-guided exploration of the antimicrobial peptide polybia-CP identifies activity determinants and generates synthetic therapeutic candidates. <i>Communications Biology</i> , 2018, 1, 221.	4.4	111
68	A Computationally Designed Peptide Derived from <i>Escherichia coli</i> as a Potential Drug Template for Antibacterial and Antibiofilm Therapies. <i>ACS Infectious Diseases</i> , 2018, 4, 1727-1736.	3.8	30
69	Artificial Repeat-Structured siRNA Precursors as Tunable Regulators for <i>Saccharomyces cerevisiae</i> . <i>ACS Synthetic Biology</i> , 2018, 7, 2403-2412.	3.8	1
70	Emerging applications for DNA writers and molecular recorders. <i>Science</i> , 2018, 361, 870-875.	12.6	80
71	An ingestible bacterial-electronic system to monitor gastrointestinal health. <i>Science</i> , 2018, 360, 915-918.	12.6	380
72	Phage-Based Applications in Synthetic Biology. <i>Annual Review of Virology</i> , 2018, 5, 453-476.	6.7	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.	3.8	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.	4.1	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.	31.5	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.	7.1	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.	3.8	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.	3.3	74
80	Synthetic gene networks that smell. <i>Nature Chemical Biology</i> , 2017, 13, 245-246.	8.0	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.	1.3	47
83	Next-generation precision antimicrobials: towards personalized treatment of infectious diseases. <i>Current Opinion in Microbiology</i> , 2017, 37, 95-102.	5.1	100
84	Diverse Supramolecular Nanofiber Networks Assembled by Functional Low-Complexity Domains. <i>ACS Nano</i> , 2017, 11, 6985-6995.	14.6	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.	9.7	31
87	An Engineered Synthetic Pathway for Discovering Nonnatural Nonribosomal Peptides in <i>Escherichia coli</i> . <i>MBio</i> , 2017, 8, .	4.1	8
88	Synthetic RNA-Based Immunomodulatory Gene Circuits for Cancer Immunotherapy. <i>Cell</i> , 2017, 171, 1138-1150.e15.	28.9	113
89	Advancing therapeutic applications of synthetic gene circuits. <i>Current Opinion in Biotechnology</i> , 2017, 47, 133-141.	6.6	23
90	Production of Functional Anti-Ebola Antibodies in <i>Pichia pastoris</i> . <i>ACS Synthetic Biology</i> , 2017, 6, 2183-2190.	3.8	15

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91	Scaling computation and memory in living cells. <i>Current Opinion in Biomedical Engineering</i> , 2017, 4, 143-151.	3.4	16
92	Ciprofloxacin-nitroxide hybrids with potential for biofilm control. <i>European Journal of Medicinal Chemistry</i> , 2017, 138, 590-601.	5.5	38
93	Synthetic Biogenesis of Bacterial Amyloid Nanomaterials with Tunable Inorganic-Organic Interfaces and Electrical Conductivity. <i>ACS Synthetic Biology</i> , 2017, 6, 266-275.	3.8	71
94	Analog and digital memory in living cells. , 2017, , .		0
95	Multiplexed Sequence Encoding: A Framework for DNA Communication. <i>PLoS ONE</i> , 2016, 11, e0152774.	2.5	9
96	Analog synthetic gene networks. , 2016, , .		0
97	Microbiome therapeutics – Advances and challenges. <i>Advanced Drug Delivery Reviews</i> , 2016, 105, 44-54.	13.7	198
98	Deciphering Combinatorial Genetics. <i>Annual Review of Genetics</i> , 2016, 50, 515-538.	7.6	16
99	Continuous genetic recording with self-targeting CRISPR-Cas in human cells. <i>Science</i> , 2016, 353, .	12.6	186
100	Synthetic recombinase-based state machines in living cells. <i>Science</i> , 2016, 353, aad8559.	12.6	196
101	Synthetic mixed-signal computation in living cells. <i>Nature Communications</i> , 2016, 7, 11658.	12.8	87
102	Synthetic biology and microreactor platforms for programmable production of biologics at the point-of-care. <i>Nature Communications</i> , 2016, 7, 12211.	12.8	69
103	Genetically Engineered Phages: a Review of Advances over the Last Decade. <i>Microbiology and Molecular Biology Reviews</i> , 2016, 80, 523-543.	6.6	310
104	Engineering Synthetic Gene Circuits in Living Cells with CRISPR Technology. <i>Trends in Biotechnology</i> , 2016, 34, 535-547.	9.3	111
105	Multiplexed barcoded CRISPR-Cas9 screening enabled by CombiGEM. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 2544-2549.	7.1	210
106	The Era of Synthetic Biology and Genome Engineering: Where No Man Has Gone Before. <i>Journal of Molecular Biology</i> , 2016, 428, 835-836.	4.2	2
107	<i>Corynebacterium glutamicum</i> Metabolic Engineering with CRISPR Interference (CRISPRi). <i>ACS Synthetic Biology</i> , 2016, 5, 375-385.	3.8	222
108	Foundations and Emerging Paradigms for Computing in Living Cells. <i>Journal of Molecular Biology</i> , 2016, 428, 893-915.	4.2	19

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109	Engineering Modular Viral Scaffolds for Targeted Bacterial Population Editing. <i>Cell Systems</i> , 2015, 1, 187-196.	6.2	294
110	Engineering Living Functional Materials. <i>ACS Synthetic Biology</i> , 2015, 4, 8-11.	3.8	119
111	DNA nanotechnology: new adventures for an old warhorse. <i>Current Opinion in Chemical Biology</i> , 2015, 28, 9-14.	6.1	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.	6.2	267
113	Putting Non-coding RNA on Display with CRISPR. <i>Molecular Cell</i> , 2015, 59, 146-148.	9.7	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.	17.5	50
116	Synthesis and patterning of tunable multiscale materials with engineered cells. <i>Nature Materials</i> , 2014, 13, 515-523.	27.5	329
117	Digital and analog gene circuits for biotechnology. <i>Biotechnology Journal</i> , 2014, 9, 597-608.	3.5	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.	9.7	417
119	Genomically encoded analog memory with precise in vivo DNA writing in living cell populations. <i>Science</i> , 2014, 346, 1256272.	12.6	253
120	Permanent genetic memory with >1-byte capacity. <i>Nature Methods</i> , 2014, 11, 1261-1266.	19.0	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.	7.1	35
122	Rule-Based Design of Synthetic Transcription Factors in Eukaryotes. <i>ACS Synthetic Biology</i> , 2014, 3, 737-744.	3.8	26
123	Bacteriophage-based synthetic biology for the study of infectious diseases. <i>Current Opinion in Microbiology</i> , 2014, 19, 59-69.	5.1	56
124	Strong underwater adhesives made by self-assembling multi-protein nanofibres. <i>Nature Nanotechnology</i> , 2014, 9, 858-866.	31.5	370
125	Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases. <i>Nature Biotechnology</i> , 2014, 32, 1141-1145.	17.5	577
126	Engineering genetic circuits that compute and remember. <i>Nature Protocols</i> , 2014, 9, 1292-1300.	12.0	36

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127	Synthetic analog and digital circuits for cellular computation and memory. <i>Current Opinion in Biotechnology</i> , 2014, 29, 146-155.	6.6	82
128	Tunable and Multifunctional Eukaryotic Transcription Factors Based on CRISPR/Cas. <i>ACS Synthetic Biology</i> , 2013, 2, 604-613.	3.8	315
129	Synthetic Biology of Antimicrobial Discovery. <i>ACS Synthetic Biology</i> , 2013, 2, 358-372.	3.8	35
130	Synthetic circuits integrating logic and memory in living cells. <i>Nature Biotechnology</i> , 2013, 31, 448-452.	17.5	569
131	Advancing bacteriophage-based microbial diagnostics with synthetic biology. <i>Trends in Biotechnology</i> , 2013, 31, 325-327.	9.3	55
132	Synthetic analog computation in living cells. <i>Nature</i> , 2013, 497, 619-623.	27.8	467
133	Towards a whole-cell modeling approach for synthetic biology. <i>Chaos</i> , 2013, 23, 025112.	2.5	62
134	A Synthetic Biology Framework for Programming Eukaryotic Transcription Functions. <i>Cell</i> , 2012, 150, 647-658.	28.9	293
135	Synthetic Biology: An Emerging Engineering Discipline. <i>Annual Review of Biomedical Engineering</i> , 2012, 14, 155-178.	12.3	205
136	The next generation of bacteriophage therapy. <i>Current Opinion in Microbiology</i> , 2011, 14, 524-531.	5.1	278
137	Designing extensible protein-DNA interactions for synthetic biology. , 2011, , .		0
138	Engineering scalable biological systems. <i>Bioengineered Bugs</i> , 2010, 1, 378-384.	1.7	11
139	Next-generation synthetic gene networks. <i>Nature Biotechnology</i> , 2009, 27, 1139-1150.	17.5	321
140	Synthetic Gene Networks That Count. <i>Science</i> , 2009, 324, 1199-1202.	12.6	528
141	Engineered bacteriophage targeting gene networks as adjuvants for antibiotic therapy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 4629-4634.	7.1	446
142	Dispersing biofilms with engineered enzymatic bacteriophage. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 11197-11202.	7.1	728
143	Fast cochlear amplification with slow outer hair cells. <i>Hearing Research</i> , 2006, 214, 45-67.	2.0	59
144	A MICROMECHANICAL MODEL FOR FAST COCHLEAR AMPLIFICATION WITH SLOW OUTER HAIR CELLS. , 2006, , .		0