Timothy K Lu

List of Publications by Year
in descending order

144 papers	15,311 citations	27035 58 h-index	23173 116 g-index
164 all docs	164 docs citations	164 times ranked	17098 citing authors

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

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19	High-throughput 5â€² 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 therapeuticsâ€”a Keystone Symposia report. Annals of the New York Academy of Sciences, 2021, , .	1.8	2
25	High-Throughput CRISPR Screens To Dissect Macrophage- Shigella 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 antiinfectives 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. Journal of Allergy and Clinical Immunology, 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). Nature Communications, 2019, 10, 2880.	5.8	42
39	Emerging Frontiers in Microbiome Engineering. Trends in Immunology, 2019, 40, 952-973.	2.9	47
40	Gene networks that compensate for crosstalk with crosstalk. Nature Communications, 2019, 10, 4028.	5.8	26
41	Quantifying the RNA cap epitranscriptome reveals novel caps in cellular and viral RNA. Nucleic Acids Research, 2019, 47, e130-e130.	6.5	124
42	Engineering Phage Host-Range and Suppressing Bacterial Resistance through Phage Tail Fiber Mutagenesis. Cell, 2019, 179, 459-469.e9.	13.5	208
43	Engineered Bacillus subtilis biofilms as living glues. Materials Today, 2019, 28, 40-48.	8.3	72
44	CRISPR/Cas-based devices for mammalian synthetic biology. Current Opinion in Chemical Biology, 2019, 52, 23-30.	2.8	10
45	Lightâ€Controlled, Highâ€Resolution Patterning of Living Engineered Bacteria Onto Textiles, Ceramics, and Plastic. Advanced Functional Materials, 2019, 29, 1901788.	7.8	78
46	Small-molecule control of antibody N-glycosylation in engineered mammalian cells. Nature Chemical Biology, 2019, 15, 730-736.	3.9	52
47	Short Cationic Peptide Derived from Archaea with Dual Antibacterial Properties and Anti-Infective Potential. ACS Infectious Diseases, 2019, 5, 1081-1086.	1.8	37
48	Engineering advanced cancer therapies with synthetic biology. Nature Reviews Cancer, 2019, 19, 187-195.	12.8	46
49	Modular genetic design of multi-domain functional amyloids: insights into self-assembly and functional properties. Chemical Science, 2019, 10, 4004-4014.	3.7	18
50	Directing curli polymerization with DNA origami nucleators. Nature Communications, 2019, 10, 1395.	5.8	22
51	Selective antibacterial activity of the cationic peptide PaDBS1R6 against Gram-negative bacteria. Biochimica Et Biophysica Acta - Biomembranes, 2019, 1861, 1375-1387.	1.4	38
52	Human cathelicidin peptide LL-37 as a therapeutic antiviral targeting Venezuelan equine encephalitis virus infections. Antiviral Research, 2019, 164, 61-69.	1.9	40
53	Advancing CRISPR-Based Programmable Platforms beyond Genome Editing in Mammalian Cells. ACS Synthetic Biology, 2019, 8, 2607-2619.	1.9	5
54	Peptide Design Principles for Antimicrobial Applications. Journal of Molecular Biology, 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 semiconductorâ€“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 Escherichia coli 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 Saccharomyces cerevisiae. 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 Computationalâ€“Experimental Platform. ACS Synthetic Biology, 2018, 7, 2105-2115.	1.9	63
74	Magnetic Surfactant Ionic Liquids and Polymers With Tetrahaloferrate (III) Anions as Antimicrobial Agents With Low Cytotoxicity. Colloids and Interface Science Communications, 2018, 22, 11-13.	2.0	24
75	Single-molecule detection of protein efflux from microorganisms using fluorescent single-walled carbon nanotube sensor arrays. Nature Nanotechnology, 2017, 12, 368-377.	15.6	172
76	Stretchable living materials and devices with hydrogelâ€“elastomer hybrids hosting programmed cells. Proceedings of the National Academy of Sciences of the United States of America, 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 Pichia pastoris Secretion Libraries. ACS Synthetic Biology, 2017, 6, 1016-1025.	1.9	84
79	A novel Bxb1 integrase RMCE system for high fidelity siteâ€specific integration of mAb expression cassette in CHO Cells. Biotechnology and Bioengineering, 2017, 114, 1837-1846.	1.7	74
80	Synthetic gene networks that smell. Nature Chemical Biology, 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. Integrative Biology (United Kingdom), 2017, 9, 109-122.	0.6	47
83	Next-generation precision antimicrobials: towards personalized treatment of infectious diseases. Current Opinion in Microbiology, 2017, 37, 95-102.	2.3	100
84	Diverse Supramolecular Nanofiber Networks Assembled by Functional Low-Complexity Domains. ACS Nano, 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. Molecular Cell, 2017, 68, 247-257.e5.	4.5	31
87	An Engineered Synthetic Pathway for Discovering Nonnatural Nonribosomal Peptides in EscherichiaÂcoli. MBio, 2017, 8, .	1.8	8
88	Synthetic RNA-Based Immunomodulatory Gene Circuits for Cancer Immunotherapy. Cell, 2017, 171, 1138-1150.e15.	13.5	113
89	Advancing therapeutic applications of synthetic gene circuits. Current Opinion in Biotechnology, 2017, 47, 133-141.	3.3	23
90	Production of Functional Anti-Ebola Antibodies in Pichia pastoris. ACS Synthetic Biology, 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 Inorganicâ€“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 â€" 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	Corynebacterium glutamicum 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. Cell Systems, 2015, 1, 187-196.	2.9	294
110	Engineering Living Functional Materials. ACS Synthetic Biology, 2015, 4, 8-11.	1.9	119
111	DNA nanotechnology: new adventures for an old warhorse. Current Opinion in Chemical Biology, 2015, 28, 9-14.	2.8	13
112	Programming a Human Commensal Bacterium, Bacteroides thetaiotaomicron, to Sense and Respond to Stimuli in the Murine Gut Microbiota. Cell Systems, 2015, 1, 62-71.	2.9	267
113	Putting Non-coding RNA on Display with CRISPR. Molecular Cell, 2015, 59, 146-148.	4.5	9
114	Complete Genome Sequence of Pseudomonas aeruginosa Phage vB_PaeM_CEB_DP1. Genome Announcements, 2015, 3, .	0.8	6
115	Massively parallel high-order combinatorial genetics in human cells. Nature Biotechnology, 2015, 33, 952-961.	9.4	50
116	Synthesis and patterning of tunable multiscale materials with engineered cells. Nature Materials, 2014, 13, 515-523.	13.3	329
117	Digital and analog gene circuits for biotechnology. Biotechnology Journal, 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. Molecular Cell, 2014, 54, 698-710.	4.5	417
119	Genomically encoded analog memory with precise in vivo DNA writing in living cell populations. Science, 2014, 346, 1256272.	6.0	253
120	Permanent genetic memory with >1-byte capacity. Nature Methods, 2014, 11, 1261-1266.	9.0	202
121	Enhanced killing of antibiotic-resistant bacteria enabled by massively parallel combinatorial genetics. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 12462-12467.	3.3	35
122	Rule-Based Design of Synthetic Transcription Factors in Eukaryotes. ACS Synthetic Biology, 2014, 3, 737-744.	1.9	26
123	Bacteriophage-based synthetic biology for the study of infectious diseases. Current Opinion in Microbiology, 2014, 19, 59-69.	2.3	56
124	Strong underwater adhesives made by self-assembling multi-protein nanofibres. Nature Nanotechnology, 2014, 9, 858-866.	15.6	370
125	Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases. Nature Biotechnology, 2014, 32, 1141-1145.	9.4	577
126	Engineering genetic circuits that compute and remember. Nature Protocols, 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