Stanford

Stanley Qi

Associate Professor of Bioengineering and, by courtesy, of Biomedical Data Science

CONTACT INFORMATION

- **Administrative Contact**

  Brandon Seale - Administrative Assistant

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Bio

BIO

Stanley Qi (publishing as Lei S. Qi) is a pioneer in the field of genome engineering and the architect of the foundational technologies that transitioned CRISPR from a "cutting" tool into a universal platform for Programmable Biology. As the inventor of CRISPR interference (CRISPRi) and CRISPR activation (CRISPRa), Qi established the first methods for the precise, reversible, and targeted regulation of the human genome without altering the DNA sequence.

The Qi Lab integrates scalable genomic perturbation with live-cell and super-resolution imaging and computation-guided design to redefine the boundaries of cellular control. Under Dr. Qi's leadership, the group has fundamentally expanded the genome engineering toolbox, evolving CRISPR from a single editing tool into a multidimensional platform for the precise control of dynamic and spatial cell states. This work includes establishing foundational technologies and architectures for precise epigenetic editing, multiplexed regulation of the transcriptome, programmable 3D genome organization, and spatial control of RNA logistics. By pioneering real-time visualization of chromatin dynamics and RNA in living cells, the lab provides an unprecedented window into the fundamental "control principles of life."

This principle-driven technology lineage has moved into the clinic, with the lab's compact epigenetic editor currently in first-in-human clinical testing for FSHD muscular dystrophy (NCT06907875). This milestone represents a core mission of the lab: translating foundational engineering into next-generation therapeutics that act predictably as dynamic, complex systems.

Beyond single-cell control, the Qi Lab is building a framework for synthetic cell–cell communication, with a particular emphasis on the bidirectional interplay between immune cells and neurons. The lab's goal is to move beyond describing molecular parts to discovering fundamental control principles in living systems: how regulatory landscapes create stable states and memory, how spatial genome–RNA organization shapes dynamic responses, and how engineered cell–cell interactions can generate emergent multicellular behaviors.

By integrating computational design with experimental biology, Dr. Qi aims to identify the generalizable rules linking molecular programs to systems-level physiology. He is a Chan Zuckerberg Biohub Investigator and an Institute Scholar at the Sarafan ChEM-H, and is dedicated to shaping the technical and ethical frameworks that will define the future of human genome engineering.

ACADEMIC APPOINTMENTS

- Associate Professor, Bioengineering
- Associate Professor (By courtesy), Department of Biomedical Data Science
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Institute Scholar, Sarafan ChEM-H
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Systems Biology Fellow, University of California San Francisco, (2012-2014)
- Assistant Professor, Stanford University, (2014-2022)
- Associate Professor, Stanford University, (2022- present)
- Chan Zuckerberg Biohub Investigator, Chan Zuckerberg Biohub, (2022- present)

HONORS AND AWARDS

- NIH Director's Independence Award, National Institutes of Health (2013)
- Pew Biomedical Scholar, The Pew Charitable Trusts (2016)
- Alfred P. Sloan Fellow, Alfred P. Sloan Foundation (2017)
- Innovators Under 35, MIT Technology Review (2018)
- ACS Synthetic Biology Young Innovator Award, American Chemical Society (2021)
- NSF CAREER Award, National Science Foundation (2021)
- Blavatnik National Awards for Young Scientists Finalist, Blavatnik Family Foundation (2021, 2022, 2023)
- Chan Zuckerberg Biohub Investigator, Chan Zuckerberg Biohub (2022)
- Kenneth Fong Young Investigator Award, SCBA (2022)
- Elected Fellow of AIMBE, American Institute for Medical and Biological Engineering (AIMBE) (2023)
- NIH Director’s Pioneer Award, National Institutes of Health (2023)
- NIH TARGETED Prize, National Institutes of Health (2024)
- Stein Innovation Award, Research to Prevent Blindness (RPB) (2025)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Phi Beta Kappa (2011 - present)
- Scientific Advisory Board, Caribou Biosciences (2015 - 2016)
- Scientific founder, Refuge Biotechnologies (2016 - 2021)
- Associate Editor, The CRISPR Journal (2017 - 2022)
- Member, Sigma Xi (2017 - present)
- Scientific Advisory Board, NIH Center for Genome Editing and Recording (CGER) (2018 - present)
- Editorial Board Member, Quantitative Biology (2019 - 2024)
- Founder and Scientific Advisory Board, Epicrispr Biotechnologies (2019 - present)

- Editorial Board, Gene and Genome Editing (2020 - 2023)
- Board of Reviewing Editors (BoRE), Science (2020 - present)
- Advisory Board Editor, Cell Reports Methods (2021 - present)
- Scientific Advisory Board, Laboratory of Genomics Research (2022 - 2025)
- Scientific Advisory Board, Kytopen Corp (2023 - 2025)
- Editorial Board Member, The CRISPR Journal (2023 - present)
- Elected Fellow, American Institute for Medical and Biological Engineering (AIMBE) (2023 - present)
- Editorial Board, Molecular Therapy Advance (2025 - present)
- Scientific Advisory Board, Enoda Cellworks (2025 - present)

PROFESSIONAL EDUCATION

- B.S., Tsinghua University , Math and Physics (2005)
- M.A., University of California, Berkeley , Physics (2007)
- Ph.D., University of California, Berkeley/UCSF , Bioengineering (2012)

PATENTS

- Qi, L.S., Lau, M.. "United States Patent U.S. Provisional Patent Application 63/791,209; 63/792,074 Room Temperature-Stable CRISPRKit.", Leland Stanford Junior University, Jun 1, 2025
- Qi, L.S., Zhu, Y.. "United States Patent U.S. Provisional Patent Application 63/762,301 CRISPR-Cas Guide Nucleic Acids and Methods of Use Thereof.", Leland Stanford Junior University, May 1, 2025
- Qi, L.S., Chen, X.. "United States Patent .S. Provisional Patent Application 63/606,711 Method and Composition for Targeted Receptor-Mediated Programmable Macromolecule Delivery", Leland Stanford Junior University/Chan Zuckerberg Biohub, Dec 5, 2024
- Qi, L.S., Chen, C.. "United States Patent U.S. Provisional Patent Application 63/623,679 Composition and Method for Autonomous RNA Switches for Translational Control.", Leland Stanford Junior University, Nov 12, 2024
- Qi, L.S., Han, M.. "United States Patent U.S. Provisional Patent Application 63/594,147 Manipulating Spatial RNA Localization.", Leland Stanford Junior University/Chan Zuckerberg Biohub, Oct 23, 2024
- Qi, L.S., Yang, X., Cutillas, V., Alvarez G., Tcheau, T., Hart, D.O.. "United States Patent 12/054,756 Engineered nucleases, compositions, and methods of use thereof.", Epicrispr Bio, Aug 6, 2024
- Qi, L.S., Mackall, C., Sotillo, E., Tieu, V.. "United States Patent U.S. Provisional Patent Application 63/400,578 A Multiplexed RNA Regulation Platform for Primary Immune Cell Engineering.", Leland Stanford Junior University/Parker Institute, Aug 24, 2023
- Qi, L.S., Xu, X.. "United States Patent U.S. Application 18/174,552 Synthetic miniature CRISPR-Cas (Casmini) system for eukaryotic genome engineering.", Leland Stanford Junior University, Feb 24, 2023
- Qi, L.S., Henn, D., Zhao, D., Gurtner, G.C.. "United States Patent U.S. Application 18/729,844 Gene editing and delivery of myeloid cells to promote wound healing.", Leland Stanford Junior University, Jan 24, 2023
- Qi, L.S., Finn P.B.. "United States Patent U.S. Application 18/704,007 Composition and method of valency controlled receptor systems for cell engineering and therapy.", Leland Stanford Junior University, Nov 15, 2022
- Qi, L.S., Choudhry, M.S., Lin, X., Xu, X.. "United States Patent 11/447,774 Nuclease systems for genetic engineering.", Leland Stanford Junior University, Sep 20, 2022
- Qi, L.S., Finn, P., Chavez, M.. "United States Patent U.S. Provisional Patent Application 63/405,720 Composition and Method of Universal Pseudotyped Retroviruses", Leland Stanford Junior University, Aug 21, 2022
- Qi, L.S., Ferrara, K., Liu, P.. "United States Patent U.S. Provisional Patent Application 62/347,259 Compositions and Methods Using Focused Ultrasound for Multiplexed Gene Expression Control.", Leland Stanford Junior University, May 21, 2022
- Qi, L.S., Gilbert, L., Horlbeck, M., Kampmann, M., Weissman, J.S.. "United States Patent 11/254,933 CRISPR/Cas transcriptional modulation", University of California, Feb 22, 2022
- Qi, L.S., Guo, L., Kempton, H.. "United States Patent U.S. Application 18/546,177 Synthetic Cas12a for enhanced multiplex gene control and editing.", Leland Stanford Junior University, Feb 11, 2022
- Qi, L.S., Magnusson, J.P.. "United States Patent U.S. Patent Application 18/261,953 Composition and method for high-multiplexed genome engineering using synthetic CRISPR arrays.", Leland Stanford Junior University, Jan 18, 2022
- Qi, L.S., Chavez, M.G.. "United States Patent U.S. Application 18/251,941 Knock-in of large DNA for long-term high genomic expression.", Leland Stanford Junior University, Nov 10, 2021

- Qi, L.S., Liu, Y.. "United States Patent U.S. Application 17/496,275 Compositions and methods identifying and using stem cell differentiation markers.", Leland Stanford Junior University, Oct 7, 2021
- Qi, L.S., Choudhry, M., Lin, X., Collingwood, T.N., Henley, T., Klapholz, B., Buerckstuemmer, T., Salic, S.. "United States Patent U.S. Application 17/464,635 Mesophilic argonaute systems and uses thereof.", Leland Stanford Junior University, Sep 1, 2021
- Qi, L.S., Chavez, M., Finn, P.B.. "United States Patent U.S. Application 18/007,283 Synthetic oligomerization systems for cell engineering and therapy.", Leland Stanford Junior University, Jul 28, 2021
- Qi, L.S., La Russa, M.F., Abbott, T.R., Lewis, D.B.. "United States Patent U.S. Application 17/911,079 Systems and methods for viral genome targeting.", Leland Stanford Junior University, Mar 21, 2021
- Qi, L.S., Chen, B., Huang, B., Gilbert, L.. "United States Patent 10/822,606 Optimized small guide RNAs and methods of use", University of California, Nov 11, 2020
- Qi, L.S., Dingal, P.C.D.P.. "United States Patent 10/457,961 Chimeric proteins and methods of regulating gene expression.", Leland Stanford Junior University, Oct 29, 2019
- Qi LS, Wang H. "United States Patent US provisional patent application No. 62/722,684 Systems and methods for polynucleotide spatial organization", Leland Stanford Junior University, Sep 1, 2018
- Qi, L.S., Dingal, P.C.D.P.. "United States Patent 9,856,497 Recombinant chimeric receptors for antigen sensing and genome manipulation", Leland Stanford Junior University, Jan 2, 2018
- Lei S. Qi, Rachel E Haurwitz, Jennifer A Doudna, Adam P Arkin. "United States Patent 9/745,610 Methods and compositions for controlling gene expression by RNA processing.", University of California, Aug 29, 2017
- Lei S Qi, Jennifer A Doudna, Martin Jinek, Emmanuelle Charpentier,Krzysztof Chylinski, James HD Cate, Wendell A Lim. "United States Patent US Patent App. 13/842,859 Methods and compositions for RNA-directed target DNA modification and for RNA-directed modulation of transcription", University of California, Mar 15, 2013
- Qi, L.S., Liu, C.C., Arkin, A.P.. "United States Patent 9/593,338 Synthetic transcriptional control elements and methods of generating and using such elements.", University of California, Sep 27, 2012

LINKS

- Stanley Qi Lab: http://qilab.stanford.edu
- Stanley Qi Google Scholar: https://scholar.google.com/citations?user=7iV1PPYAAAAJ&hl=en

Teaching

COURSES

2025-26

- Senior Capstone Design I: BIOE 141A (Aut)
- Senior Capstone Design II: BIOE 141B (Win)

2024-25

- Senior Capstone Design I: BIOE 141A (Aut)
- Senior Capstone Design II: BIOE 141B (Win)

2023-24

- Senior Capstone Design I: BIOE 141A (Aut)
- Senior Capstone Design II: BIOE 141B (Win)

2022-23

- Biology and Applications of CRISPR/Cas9: Genome Editing and Epigenome Modifications: BIOS 268, GENE 268 (Spr)
- Senior Capstone Design I: BIOE 141A (Aut)
- Senior Capstone Design II: BIOE 141B (Win)

STANFORD ADVISEES

Abigail Alemayeho

Doctoral Dissertation Reader (AC)

Shawn Cai, Lucas Sant'Anna

Postdoctoral Faculty Sponsor

Alex Choi, Shengyuan Dang, Dongsheng Han, Emmy Li, Yitong Ma, Tassilo Wachsmann, Yanyu Zhu

Doctoral Dissertation Advisor (AC)

Sa Cai, Crystal Chen, Xinyi Chen, Maylin Fu, Izzi Gengaro, Sofia Guerrero, Lorenzo Magni, Christian Otero, Sopida Pimcharoen, Goldie Roth, Yinglin Situ, Yuexuan Yang

Master's Program Advisor

Raghad Asiri, Sujay Banerjee, Santiago Barragán Hernández, Seeva Cherukuri, John Felix, Pauline Goué, Karolina Hasiec, Min Htet, Doyeon Kim, Gabriela Lemos Vargas

Doctoral Dissertation Co-Advisor (AC)

Jon Bezney

Doctoral (Program)

Shawn Cai, Xinyi Chen, John Heath, Bianca Linden, Allen Yesin, Cynthia Zhao

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)

Publications

PUBLICATIONS

- **CRISPR-Cas-based live cell imaging of genome dynamics.** *Nature reviews. Genetics*
  Zhu, Y., Moerner, W. E., Qi, L. S.
  2026
- **Programmable macromolecule delivery via engineered trogocytosis.** *Nature cell biology*
  Chen, X., Situ, Y., Yang, Y., Lyu, L., Han, M., Magni, L., Fu, M. L., Deng, B., Wang, S., Qi, L. S.
  2026
- **Programmable control of spatial transcriptome in live cells and neurons.** *Nature*
  Han, M., Fu, M. L., Zhu, Y., Choi, A. A., Li, E., Bezney, J., Cai, S., Miles, L., Ma, Y., Qi, L. S.
  2025
- **High-resolution dynamic imaging of chromatin DNA communication using Oligo-LiveFISH.** *Cell*
  Zhu, Y., Balaji, A., Han, M., Andronov, L., Roy, A. R., Wei, Z., Chen, C., Miles, L., Cai, S., Gu, Z., Tse, A., Yu, B. C., Uenaka, et al
  2025
- **Precision epigenetic editing: Technological advances, enduring challenges, and therapeutic applications.** *Cell chemical biology*
  Roth, G. V., Gengaro, I. R., Qi, L. S.
  2024
- **A frugal CRISPR kit for equitable and accessible education in gene editing and synthetic biology.** *Nature communications*
  Collins, M., Lau, M. B., Ma, W., Shen, A., Wang, B., Cai, S., La Russa, M., Jewett, M. C., Qi, L. S.
  2024; 15 (1): 6563
- **The realization of CRISPR gene therapy.** *Nature chemical biology*
  Ma, Y., Qi, L. S.
  2024

- **A versatile CRISPR-Cas13d platform for multiplexed transcriptomic regulation and metabolic engineering in primary human T cells.** *Cell*
  Tieu, V., Sotillo, E., Bjelajac, J. R., Chen, C., Malipatlolla, M., Guerrero, J. A., Xu, P., Quinn, P. J., Fisher, C., Klysz, D., Mackall, C. L., Qi, L. S.
  2024
- **Sonogenetic control of multiplexed genome regulation and base editing.** *Nature communications*
  Liu, P., Foiret, J., Situ, Y., Zhang, N., Kare, A. J., Wu, B., Raie, M. N., Ferrara, K. W., Qi, L. S.
  2023; 14 (1): 6575
- **Stable expression of large transgenes via the knock-in of an integrase-deficient lentivirus.** *Nature biomedical engineering*
  Chavez, M., Rane, D. A., Chen, X., Qi, L. S.
  2023
- **Advances in CRISPR therapeutics.** *Nature reviews. Nephrology*
  Chavez, M., Chen, X., Finn, P. B., Qi, L. S.
  2022
- **Nested epistasis enhancer networks for robust genome regulation.** *Science (New York, N.Y.)*
  Lin, X., Liu, Y., Liu, S., Zhu, X., Wu, L., Zhu, Y., Zhao, D., Xu, X., Chemparathy, A., Wang, H., Cao, Y., Nakamura, M., Noordermeer, et al
  2022: eabk3512
- **Scalable biological signal recording in mammalian cells using Cas12a base editors.** *Nature chemical biology*
  Kempton, H. R., Love, K. S., Guo, L. Y., Qi, L. S.
  2022
- **Broad-spectrum CRISPR-mediated inhibition of SARS-CoV-2 variants and endemic coronaviruses in vitro.** *Nature communications*
  Zeng, L., Liu, Y., Nguyenla, X. H., Abbott, T. R., Han, M., Zhu, Y., Chemparathy, A., Lin, X., Chen, X., Wang, H., Rane, D. A., Spatz, J. M., Jain, et al
  2022; 13 (1): 2766
- **Multiplexed genome regulation in vivo with hyper-efficient Cas12a.** *Nature cell biology*
  Guo, L. Y., Bian, J., Davis, A. E., Liu, P., Kempton, H. R., Zhang, X., Chemparathy, A., Gu, B., Lin, X., Rane, D. A., Xu, X., Jamiolkowski, R. M., Hu, et al
  2022
- **Engineering 3D genome organization.** *Nature reviews. Genetics*
  Wang, H., Han, M., Qi, L. S.
  2021
- **CRISPR technologies for precise epigenome editing.** *Nature cell biology*
  Nakamura, M., Gao, Y., Dominguez, A. A., Qi, L. S.
  2021; 23 (1): 11–22
- **Interrogation of the dynamic properties of higher-order heterochromatin using CRISPR-dCas9.** *Molecular cell*
  Gao, Y., Han, M., Shang, S., Wang, H., Qi, L. S.
  2021
- **Engineered miniature CRISPR-Cas system for mammalian genome regulation and editing.** *Molecular cell*
  Xu, X., Chemparathy, A., Zeng, L., Kempton, H. R., Shang, S., Nakamura, M., Qi, L. S.
  2021
- **Multiple Input Sensing and Signal Integration Using a Split Cas12a System.** *Molecular cell*
  Kempton, H. R., Goudy, L. E., Love, K. S., Qi, L. S.
  2020
- **Development of CRISPR as an Antiviral Strategy to Combat SARS-CoV-2 and Influenza.** *Cell*
  Abbott, T. R., Dhamdhere, G. n., Liu, Y. n., Lin, X. n., Goudy, L. n., Zeng, L. n., Chemparathy, A. n., Chmura, S. n., Heaton, N. S., Debs, R. n., Pande, T. n., Endy, D. n., La Russa, et al
  2020
- **Anti-CRISPR-mediated control of gene editing and synthetic circuits in eukaryotic cells.** *Nature communications*

Nakamura, M., Srinivasan, P., Chavez, M., Carter, M. A., Dominguez, A. A., La Russa, M., Lau, M. B., Abbott, T. R., Xu, X., Zhao, D., Gao, Y., Kipniss, N. H., Smolke, et al
2019; 10 (1): 194

- **CRISPR-mediated live imaging of genome editing and transcription.** *Science (New York, N.Y.)*
  Wang, H. n., Nakamura, M. n., Abbott, T. R., Zhao, D. n., Luo, K. n., Yu, C. n., Nguyen, C. M., Lo, A. n., Daley, T. P., La Russa, M. n., Liu, Y. n., Qi, L. S.
  2019
- **CRISPR-Mediated Programmable 3D Genome Positioning and Nuclear Organization** *CELL*
  Wang, H., Xu, X., Nguyen, C. M., Liu, Y., Gao, Y., Lin, X., Daley, T., Kipniss, N. H., La Russa, M., Qi, L. S.
  2018; 175 (5): 1405-+
- **CRISPR-Mediated Programmable 3D Genome Positioning and Nuclear Organization.** *Cell*
  Wang, H., Xu, X., Nguyen, C. M., Liu, Y., Gao, Y., Lin, X., Daley, T., Kipniss, N. H., La Russa, M., Qi, L. S.
  2018
- **CRISPR Activation Screens Systematically Identify Factors that Drive Neuronal Fate and Reprogramming.** *Cell stem cell*
  Liu, Y., Yu, C., Daley, T. P., Wang, F., Cao, W. S., Bhate, S., Lin, X., Still, C. 2., Liu, H., Zhao, D., Wang, H., Xie, X. S., Ding, et al
  2018
- **Engineering cell sensing and responses using a GPCR-coupled CRISPR-Cas system.** *Nature communications*
  Kipniss, N. H., Dingal, P. C., Abbott, T. R., Gao, Y. n., Wang, H. n., Dominguez, A. A., Labanieh, L. n., Qi, L. S.
  2017; 8 (1): 2212
- **Complex transcriptional modulation with orthogonal and inducible dCas9 regulators.** *Nature methods*
  Gao, Y., Xiong, X., Wong, S., Charles, E. J., Lim, W. A., Qi, L. S.
  2016
- **Engineering Complex Synthetic Transcriptional Programs with CRISPR RNA Scaffolds** *CELL*
  Zalatan, J. G., Lee, M. E., Almeida, R., Gilbert, L. A., Whitehead, E. H., La Russa, M., Tsai, J. C., Weissman, J. S., Dueber, J. E., Qi, L. S., Lim, W. A.
  2015; 160 (1-2): 339-350
- **Dynamic Imaging of Genomic Loci in Living Human Cells by an Optimized CRISPR/Cas System** *CELL*
  Chen, B., Gilbert, L. A., Cimini, B. A., Schnitzbauer, J., Zhang, W., Li, G., Park, J., Blackburn, E. H., Weissman, J. S., Qi, L. S., Huang, B.
  2013; 155 (7): 1479-1491
- **CRISPR-Mediated Modular RNA-Guided Regulation of Transcription in Eukaryotes** *CELL*
  Gilbert, L. A., Larson, M. H., Morsut, L., Liu, Z., Brar, G. A., Torres, S. E., Stern-Ginossar, N., Brandman, O., Whitehead, E. H., Doudna, J. A., Lim, W. A., Weissman, J. S., Qi, et al
  2013; 154 (2): 442-451
- **Repurposing CRISPR as an RNA-Guided Platform for Sequence-Specific Control of Gene Expression** *CELL*
  Qi, L. S., Larson, M. H., Gilbert, L. A., Doudna, J. A., Weissman, J. S., Arkin, A. P., Lim, W. A.
  2013; 152 (5): 1173-1183
- **Rewriting the epigenome: CRISPR tools for biological discovery and therapeutics.** *Current opinion in biomedical engineering*
  Otero, C. P., Qi, L. S.
  2026; 38
- **A CRISPR-Cas13d cancer therapeutic enables selective elimination of uveal melanoma.** *Molecular therapy. Oncology*
  Stauber, D., Sosnick, L., Ma, Y., Pimcharoen, S., Lawanprasert, A., Murthy, N., Myung, D., Qi, L. S.
  2026; 34 (1): 201151
- **A CRISPR-Cas13d cancer therapeutic enables selective elimination of uveal melanoma** *MOLECULAR THERAPY ONCOLOGY*
  Stauber, D., Sosnick, L., Ma, Y., Pimcharoen, S., Lawanprasert, A., Murthy, N., Myung, D., Qi, L. S.
  2026; 34 (1)
- **TRANSFER: Programmable protein delivery via engineered trogocytosis**
  Chen, X., Situ, Y., Yang, Y., Fu, M., Lyu, L., Qi, L.
  WILEY.2025

- **CRISPR activation of the ribosome-associated quality control factor ASCC3 ameliorates fragile X syndrome phenotypes in mice.** *Science translational medicine*
  Geng, J., Wang, X., Pan, J., Khan, D., Pimcharoen, S., Zhang, Y., Mosammaparast, N., Hirose, S., Petrucelli, L., Brandman, O., Qi, L. S., Lu, B.
  2025; 17 (819): eadq3551
- **Durable epigenetic silencing with a TALE-based editor.** *Nature biotechnology*
  Wachsmann, T. L., Qi, L. S.
  2025
- **CRISPR tools for T cells: targeting the genome, epigenome, and transcriptome** *TRENDS IN CANCER*
  Wachsmann, T. L. A., Qi, L. S.
  2025; 11 (10): 979-992
- **Engineered RNA-based activation system for coronavirus sensing in live cells.** *Biodesign research*
  Zeng, L., Otero, C., Qi, L. S.
  2025; 7 (3): 100040
- **CRISPR tools for T cells: targeting the genome, epigenome, and transcriptome.** *Trends in cancer*
  Wachsmann, T. L., Qi, L. S.
  2025
- **CRISPR-Cas13d-Mediated Targeting of a Context-Specific Essential Gene Enables Selective Elimination of Uveal Melanoma.** *bioRxiv : the preprint server for biology*
  Stauber, D., Sosnick, L., Ma, Y., Pimcharoen, S., Lawanprasert, A., Murthy, N., Myung, D., Qi, L. S.
  2025
- **A Super-Resolution Spatial Atlas of SARS-CoV-2 Infection in Human Cells.** *bioRxiv : the preprint server for biology*
  Andronov, L., Han, M., Balaji, A., Zhu, Y., Qi, L. S., Moerner, W. E.
  2025
- **Large-scale CRISPR screening in primary human 3D gastric organoids enables comprehensive dissection of gene-drug interactions.** *Nature communications*
  Lo, Y. H., Horn, H. T., Huang, M. F., Yu, W. C., Young, C. M., Liu, Q., Tomaske, M., Towers, M., Dominguez, A., Bassik, M. C., Lee, D. F., Qi, L. S., Weissman, et al
  2025; 16 (1): 7566
- **Identification of replicative aging and inflammatory aging signatures via whole-genome CRISPRi screens.** *Genome biology*
  Wu, L., Zhu, X., Liu, Y., Zhao, D., Yu, B. C., Wei, Z., Lin, X., Qi, L. S.
  2025; 26 (1): 233
- **Engineered RNA-based activation system for coronavirus sensing in live cells** *BIODESIGN RESEARCH*
  Zeng, L., Otero, C., Qi, L. S.
  2025; 7 (3)
- **Multiomic profiling reveals that prostaglandin E2 reverses aged muscle stem cell dysfunction, leading to increased regeneration and strength.** *Cell stem cell*
  Wang, Y. X., Palla, A. R., Ho, A. T., Robinson, D. C., Ravichandran, M., Markov, G. J., Mai, T., Still, C. 2., Balsubramani, A., Nair, S., Holbrook, C. A., Yang, A. V., Kraft, et al
  2025
- **Injury-responsive gene therapy for neuroprotection of retinal ganglion cells**
  Guo, L., Wen, R., Xia, X., Huang, H., Situ, Y., Tsien, C., Chang, H., Mitra, E., Li, L., Wang, S., Kapiloff, M., Qi, L., Hu, et al
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **Injury-responsive gene therapy for neuroprotection of retinal ganglion cells**
  Guo, L., Wen, R., Xia, X., Huang, H., Situ, Y., Tsien, C., Chang, H., Mitra, E., Li, L., Wang, S., Kapiloff, M., Qi, L., Hu, et al
  CELL PRESS.2025
- **Metabolic Reprogramming of HER2 CAR-T Cells Under Hypoxic Conditions: Insights from a multi-omics approach**
  Blanco, J., Bezney, J., Qi, L., Steinman, L., Lopez, R.

CELL PRESS.2025

- **Self-organization of mouse embryonic stem cells into reproducible pre-gastrulation embryo models via CRISPRa programming.** *Cell stem cell*
  Lodewijk, G. A., Kozuki, S., Han, C. J., Topacio, B. R., Lee, S., Nixon, L., Zargari, A., Knight, G., Ashton, R., Qi, L. S., Shariati, S. A.
  2025
- **Programmable macromolecule delivery via engineered trogocytosis.** *bioRxiv : the preprint server for biology*
  Chen, X., Situ, Y., Yang, Y., Fu, M. L., Lyu, L., Qi, L. S.
  2025
- **dCasMINI-mediated therapy rescues photoreceptors degeneration in a mouse model of retinitis pigmentosa.** *Science advances*
  Wang, Q., Xu, X., Chen, S., Lu, R., Li, L., Lo, C. H., Liu, Z., Ning, K., Li, T., Kowal, T. J., Wang, B., Hartnett, M. E., Wang, et al
  2024; 10 (51): eadn7540
- **CRISPRi/a screens in human iPSC-cardiomyocytes identify glycolytic activation as a druggable target for doxorubicin-induced cardiotoxicity.** *Cell stem cell*
  Liu, C., Shen, M., Liu, Y., Manhas, A., Zhao, S. R., Zhang, M., Belbachir, N., Ren, L., Zhang, J. Z., Caudal, A., Nishiga, M., Thomas, D., Zhang, et al
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