

Current Positions

Investigator, Howard Hughes Medical Institute
Professor, Genome Sciences, University of Washington
Scientific Director, Allen Discovery Center for Cell Lineage
Scientific Director, Brotman Baty Institute for Precision Medicine
Lead Scientific Director, Seattle Hub for Synthetic Biology (Allen-CZI-UW)

Contact Information

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Education and Training

- 1992 – 1996 Undergraduate studies Princeton University
- 1996 A.B., *summa cum laude* (advisor: Lee Silver) Princeton University
- 1996 – 1997 Fulbright Scholar to India (advisor: Mrudula Phadke) Sassoon General Hospital
- 1997 – 1998 Research Scientist, Vaccine Division Merck Research Labs
- 1998 – 2007 Medical Scientist Training Program (MSTP) Candidate Harvard Medical School
- 2005 Ph.D. (advisor: George Church; Dept. of Genetics) Harvard University
- 2007 M.D. Harvard Medical School

Post-Training Positions

- 2023 – present Lead Scientific Director Seattle Hub for Synthetic Biology (Allen-CZI-UW)
- 2017 – present Scientific Director Allen Discovery Center for Cell Lineage Tracing
- 2017 – present Scientific Director Brotman Baty Institute for Precision Medicine
- 2015 – present Investigator Howard Hughes Medical Institute
- 2015 – present Full Professor w/ tenure Dept. of Genome Sciences, University of Washington
- 2010 – present Affiliate Professor Div. of Human Biology, Fred Hutch Cancer Res. Center
- 2011 – 2015 Associate Professor Dept. of Genome Sciences, University of Washington
- 2007 – 2011 Assistant Professor Dept. of Genome Sciences, University of Washington

Honors & Named Lectures

- 2022 Mendel Lecture European Society of Human Genetics
- 2022 Election to Membership National Academy of Sciences
- 2022 Election to Membership National Academy of Inventors
- 2022 Election to Membership Washington Academy of Sciences
- 2019 Richard Lounsbery Award National Academy of Sciences
- 2019 AAAS Fellow American Assc. Advancement of Science
- 2019 Jeffrey M. Trent Lectureship in Cancer Research National Human Genome Research Institute
- 2019 Paul D. Gottlieb Distinguished Lectureship University of Texas, Austin

Jay Shendure, MD, PhD

- 2018 Allan C. Wilson Memorial Lectureship University of California, Berkeley
- 2018 Richard and Carol Hertzberg Prize University of California, San Diego
- 2018 Nancy Andrews Physician-Scientist Lectureship Duke University
- 2017 British Society of Genetic Medicine Lectureship British Society of Genetic Medicine
- 2014 Cell “40 under 40”, Cell 40th Anniversary Cell Press
- 2014 7th Annual Scripps Genomic Medicine Award Scripps Health
- 2014 HudsonAlpha Prize for Life Sciences HudsonAlpha Institute for Biotechnology
- 2013 FEDERAprijs Fed. of Dutch Medical Scientific Societies
- 2013 NIH Director’s Pioneer Award National Institutes of Health
- 2012 Curt Stern Award American Society of Human Genetics
- 2010 Lowell Milken Young Investigator Prostate Cancer Foundation
- 2008 Science in Medicine New Investigator Lecture University of Washington
- 2008 3rd Annual Tomorrow’s Pls Genome Technology Magazine
- 2007 James Tolbert Shipley Prize Harvard Medical School
- 2006 TR35 Young Innovator Award M.I.T. Technology Review
- 1998 Medical Science Training Program Fellowship National Institutes of Health
- 1996 Fulbright Scholarship U.S. State Department
- 1996 *summa cum laude* Princeton University
- 1996 Honorary Major in Anthropology Princeton University
- 1996 Sigma Chi Thesis Award for Molecular Biology Princeton University
- 1996 Senior Prize for Best Thesis in Anthropology Princeton University

Service

Pandemic Response

- 2020 – 2022 Co-Lead Investigator Seattle Coronavirus Assessment Network (SCAN)
- 2018 – 2022 Co-Lead Investigator Seattle Flu Study (SFS)

Academic Scientific Advisory or Consortium Leadership Roles

- 2017 – present Board of Reviewing Editors Science / AAAS
- 2018 – present Scientific Advisory Board Chan Zuckerberg Initiative (Single Cell Biology)
- 2020 – present Scientific Advisory Board New York Genome Center
- 2021 – present Co-Lead, Cancer Basic Biology Fred Hutch-UW-SCH Cancer Consortium (NCI)
- 2017 – 2022 Advisory Council Allen Institute for Cell Science
- 2018 – 2022 Scientific Advisory Board Allen Institute for Immunology
- 2021 – 2022 Scientific Advisory Board Open Targets
- 2017 – 2020 Advisory Committee to NIH Director National Institutes of Health
- 2014 – 2018 National Advisory Council National Human Genome Research Institute
- 2015 NIH ACD Working Group AllOfUs / US Precision Medicine Initiative
- 2012 – 2014 Scientific Advisory Board Joint Genome Institute, Department of Energy
- 2012 – 2015 Steering Committee NIH/NHGRI Centers for Mendelian Genomics

- 2009 – 2012 Steering Committee NIH/NHLBI Exome Sequencing Project

Scientific Meetings & Symposia

- 2022 Co-organizer 20th Anniversary Symposium (UW Genome Sciences)
- 2019 – 2022 Co-organizer Biology of Genomes (Cold Spring Harbor Labs)
- 2020 – 2021 Co-organizer Hindsight 2020 Series (Allen Institute)
- 2015 – 2019 Co-organizer Genomics of Rare Diseases (Wellcome / Sanger)
- 2018 Co-organizer Symposium: The Personal Genome (UW Genome Sciences / BBI)
- 2014 Co-organizer Symposium: Genetic Networks (UW Genome Sciences)
- 2010 Co-organizer Symposium: Healthcare Implications of Medical Discoveries (UW)

Peer or Program Review

Note: my roles as an advisor on the NIH ACD and/or NACHGR precluded NIH CSR service from 2015-2020. The sole exception below was due to an oversight.

- 2023 Chair, NHGRI Multi-Omics for Health and Disease Special Emphasis Panel, NIH
- 2023 Reviewer, Investigator Competition, Howard Hughes Medical Institute
- 2022 Chair, NHGRI Single Molecule Protein Sequencing Special Emphasis Panel, NIH
- 2021 Reviewer, Investigator Competition, Howard Hughes Medical Institute
- 2021 Reviewer, Investigator Competition, Chan Zuckerberg Biohub
- 2020 Reviewer, Wellcome Sanger Quinquennial Review
- 2018 Reviewer, Investigator Competition, Howard Hughes Medical Institute
- 2017 Reviewer, International Scholars Competition, Howard Hughes Medical Institute
- 2017 Reviewer, Advanced Genomic Technology Development Special Emphasis Panel, NIH
- 2016 Reviewer, Faculty Scholars Competition, Howard Hughes Medical Institute
- 2014 Reviewer, Paul G. Allen Family Foundation ADI 2014 Life Science Focus
- 2014 Reviewer, TEDDY Whole Genome Sequencing Lab RFP, NIH
- 2014 Reviewer, NIDDK Special Emphasis Panel, NIH
- 2013 Reviewer, NICHD Special Emphasis Panel, NIH
- 2013 Reviewer, 63th Annual Meeting of American Society of Human Genetics
- 2013 Reviewer, The Wellcome Trust
- 2011 Reviewer, W. M. Keck Foundation
- 2011 Reviewer, Lasker Clinical Research Scholars Program
- 2010 Reviewer, UK Medical Research Council, Molecular and Cellular Medicine Board
- 2009 Reviewer, National Science Foundation
- 2009 Reviewer, NIH ARRA Challenge Grants (Genes, Genomes and Genetics IRG), NIH
- 2009 Reviewer, Ontario Research Fund (GL2 Competition)
- 2008 Reviewer, Genome BritishColumbia

Teaching

- 2008 – present Co-Lead “Methods and Logic in Genetics” (UW, graduate seminar)
- 2017, 2019, 2021 Co-Lead “Genomics & Proteomics” (UW, undergraduate lecture course)

Jay Shendure, MD, PhD

- 2012 – 2016 Co-Lead “Genetics” (UW, pre-clinical med school requirement)
- 2012 – 2015 Co-Lead “Genetic Anatomy” (UW, pre-clinical med school elective)
- 2010 – 2012 Co-Lead “Genome Informatics” (UW, undergraduate lecture course)
- 2001 – 2003 TA “Principles of Pharmacology” (HMS, pre-clinical med school requirement)

Faculty Administrative Responsibilities

- 2023 Member, Search Committee for the Director, Office of Strategic Coordination, NIH
- 2022 – 2023 Chair, Faculty Search Committee (UW Genome Sciences)
- 2013 – 2014 Chair, Seminar Series Committee (UW Genome Sciences)
- 2012 – 2013 Co-chair, UW Scientific Discovery Subcommittee for Curriculum Renewal
- 2009 Member, UW “Two Years to Two Decades” (2y2d) initiative, Discovery focus group
- 2007 – 2021 UW Faculty Search Committees: Genome Sciences (2020-21, 2017-18, 2010-12, 2008-9), Biology (2016-17), Biochemistry (2013-17), Medical Genetics (2008-13)
- 2008 – 2022 UW Genome Sciences Seminar Series Committee (2021-22, 2014-15, 2008-9)

Journal Editorial or Advisory Boards

Current: *Science*, *Cell Genomics*, *Genetics*, *Genome Biology*, *Genome Medicine*, *Genome Research*, *Human Genetics*, *Molecular Case Studies*

Previous: *Biotechniques* (2011-2018), *American Journal of Human Genetics* (2009-2012), *Human Molecular Genetics* (2013-2023)

Commercial SAB & Consulting Roles

- 2022 – present Sixth Street Partners (Scientific Advisory Board)
- 2022 – present Prime Medicine (Scientific Advisory Board)
- 2022 – present Pacific Biosciences (Scientific Advisory Board)
- 2021 – present Scale Biosciences (Founder; Scientific Advisory Board)
- 2020 – present Cajal Neuroscience (Scientific Advisory Board)
- 2016 – present Guardant Health (Scientific Consultant)
- 2018 – present Maze Therapeutics (Scientific Advisory Board)
- 2018 – present Camp4 Therapeutics (Scientific Advisory Board)
- 2015 – present Phase Genomics (Founder; Scientific Advisory Board)
- 2010 – present Adaptive Biotechnologies (Scientific Advisory Board)
- 2009 – 2020 Stratos Genomics (Scientific Advisory Board)
- 2016 – 2019 Nanostring (Scientific Advisory Board)
- 2016 – 2019 Bellwether Bio (Founder; Scientific Consultant)
- 2016 – 2019 Cambridge Epigenetix (Scientific Advisory Board)
- 2013 – 2018 GenePeeks (Scientific Advisory Board)
- 2009 – 2017 Good Start Genetics (Scientific Advisory Board)
- 2013 – 2017 Gen9 (Scientific Advisory Board)
- 2010 – 2015 Ariosa Diagnostics (Scientific Consultant)
- 2013 – 2015 Ingenuity Systems (Scientific Advisory Board)

- 2013 – 2015 Rubicon Genomics (Scientific Advisory Board)
- 2012 Merck Research Laboratories (Scientific Consultant)
- 2010 – 2011 Halo Genomics (Scientific Advisory Board)
- 2008 – 2009 Complete Genomics (Scientific Consultant)
- 2006 Highland Capital Partners (Scientific Consultant)
- 2004 – 2005 Agencourt Biosciences (Scientific Consultant)

Postdoctoral Fellows Trained

- 2023 – present Yi Fu, Ph.D.
- 2023 – present Chengxiang (CX) Qiu Ph.D.
- 2022 – present Haedong Kim, Ph.D.
- 2021 – present Xiaoyi Li, Ph.D.
- 2021 – present Riddhiman Garge, Ph.D. (joint with Lea Starita)
- 2021 – present Kamen Simeonov, Ph.D. (joint with Chris Lengner)
- 2020 – present Troy McDiarmid, Ph.D.
- 2020 – present Eva Nichols, Ph.D. (joint with Brian Beliveau)
- 2020 – present Jean-Benoît Lalanne, Ph.D.
- 2019 – present Diego Calderon, Ph.D. (joint with Cole Trapnell)
- 2019 – 2024 Junhong Choi, Ph.D. (Assistant Professor, Memorial Sloan Kettering Cancer Center)
- 2023 – 2024 Sudarshan (Sud) Pinglay Ph.D. (SeaHub Faculty Investigator; Research Assistant Professor, Genome Sciences, University of Washington)
- 2022 – 2023 Elizabeth Vincent, Ph.D. (joint with David Beier)
- 2021 – 2023 Sanjay Srivatsan, Ph.D. (Assistant Professor, Basic Science, Fred Hutch Cancer Research Center)
- 2020 – 2022 Nobu Hamazaki, Ph.D. (Assistant Professor, Genome Sciences & Ob/Gyn, University of Washington)
- 2020 – 2022 Alexander Boulgakov, Ph.D. (Bioinformatics Scientist, Ansa Biotechnologies)
- 2020 – 2021 Jase Gehring, Ph.D. (Investigator, Arcadia Science)
- 2018 – 2022 Silvia Domcke Ph.D. (Head of Human Genomics, Gordian Biotechnology)
- 2018 – 2021 Jacob Tome, Ph.D. (Research Scientist, Shape Therapeutics)
- 2018 – 2020 Ronnie Blecher, Ph.D. (Associate Researcher, Weizmann Institute of Science)
- 2016 – 2020 Yi Yin, Ph.D. (Assistant Professor, Human Genetics, UCLA)
- 2015 – 2019 Vikram Agarwal, Ph.D. (Head of mRNA Platform Design & Data Science, Sanofi)
- 2015 – 2017 Lea Starita, Ph.D. (Assistant Professor, Genome Sciences, University of Washington)
- 2014 – 2019 Bridget Kulasekara, Ph.D. (Senior Research Scientist, University of Washington)
- 2014 – 2018 Jes Alexander, Ph.D.
- 2016 – 2018 Malte Spielmann, M.D. (Professor & Head, Institute for Human Genetics, University of Lübeck)
- 2014 – 2018 Darren Cusanovich, Ph.D. (Assistant Professor, Cellular & Molecular Medicine, University of Arizona)
- 2012 – 2017 Martin Kircher, Ph.D. (Professor of Regulatory Genomics, University of Lübeck)
- 2014 – 2016 Ron Hause, Ph.D. (VP, Head of Analytics and Informatics, Shape Therapeutics)

- 2011 – 2015 Stephen Salipante, M.D., Ph.D. (Associate Professor, Laboratory Medicine & Pathology, University of Washington)
- 2009 – 2013 Jerrod Schwartz, Ph.D. (Vice President, Advanced Technology, ChromaCode)
- 2009 – 2013 Brian O’Roak, Ph.D. (joint with Evan Eichler; Associate Professor, Molecular & Medical Genetics, Oregon Health & Science University)
- 2007 – 2009 Emily Turner, Ph.D. (Program Officer, Bill & Melinda Gates Foundation)

Graduate Students Trained

- 2023 – Present Qi Yu (Genome Sciences)
- 2022 – Present Jenny Nathans (MSTP; Genome Sciences)
- 2022 – Present David Lee (Genome Sciences; joint with David Baker)
- 2022 – Present Shruti Jain (Genome Sciences; joint with David Baker)
- 2022 – Present Connor Kubo (Genome Sciences)
- 2021 – Present Hanna Liao (Molecular & Cellular Biology)
- 2021 – Present Tony Li (Genome Sciences)
- 2021 – Present Aidan Keith (Genome Sciences)
- 2020 – Present Wei Yang (Genome Sciences)
- 2020 – Present Chase Suiter (Molecular & Cellular Biology)
- 2018 – 2024 Sam Regalado (MSTP; Genome Sciences; joint with Cole Trapnell; dissertation entitled “Scalable methods for genomic analysis of *in vitro* models of mammalian embryogenesis”)
- 2019 – 2023 Chengxiang (CX) Qiu (Genome Sciences; dissertation entitled “Single-cell Analysis Reveals the Molecular Roadmap of Mouse Embryogenesis”; postdoctoral fellow, Shendure Lab)
- 2018 – 2023 Florence Chardon (Genome Sciences; joint with Lea Starita; dissertation entitled “CRISPR-based functional genomics to study gene regulatory architecture and functional consequences of genetic variation”; Research Scientist, Seattle Hub for Synthetic Biology)
- 2018 – 2023 Xingfang (Fanny) Huang (Computer Science & Engineering; dissertation entitled “Computational methods of high-dimensional datasets derived from molecular profiling of biological systems”; Computational Biologist, Calico Life Sciences)
- 2017 – 2022 Anna Minkina (Genome Sciences; dissertation entitled “Tethering distinct molecular profiles of single cells by their lineage histories to investigate sources of cell state heterogeneity”; Research Scientist, Cajal Neuroscience)
- 2016 – 2022 Will (Wei) Chen (Molecular Engineering; dissertation entitled “Multiplex Molecular Recording of Biological Signals and Events”; Postdoctoral Fellow, Baker Lab)
- 2015 – 2019 Molly Gasperini (Genome Sciences; dissertation entitled “Efficiently searching for enhancers and their target genes in the human genome”; Assistant Investigator, Allen Institute for Brain Science)
- 2015 – 2019 Andrew Hill (Genome Sciences; joint with Cole Trapnell; dissertation entitled “Expanding the scope and utility of single-cell genomic technologies”; Senior Computational Biologist, Tune Therapeutics)
- 2014 – 2019 Seungsoo Kim (Genome Sciences; dissertation entitled “Maps and mechanisms of three-dimensional genome organization”; Postdoctoral Fellow, Wysocka Lab)

- 2016 – 2019 Junyue Cao (Molecular & Cellular Biology; dissertation entitled “Cell state and fate characterization by high-throughput single cell genomics”; Assistant Professor, Rockefeller University)
- 2015 – 2019 Hannah Pliner (Genome Sciences; joint with Cole Trapnell; dissertation entitled “Algorithms for modeling gene regulation and determining cell type using single-cell molecular profiles”; Senior Scientist, Computational Biology, Bristol Myers Squibb)
- 2015 – 2018 Jason Klein (Medical Scientist Training Program, Genome Sciences; dissertation entitled “Massively Parallel Characterization of Enhancers in Evolution and Disease”; Resident Physician (dermatology), UT Southwestern)
- 2015 – 2018 Greg Findlay (Medical Scientist Training Program, Genome Sciences; dissertation entitled “High-throughput interrogation of genome function and cellular lineage”; Group Leader, Crick Institute)
- 2014 – 2017 Vijay Ramani (Genome Sciences; dissertation entitled “Massively parallel analysis of nucleic acid structure”; Assistant Professor, Biochemistry & Biophysics, Gladstone Institutes & UCSF)
- 2013 – 2017 Aaron McKenna (Genome Sciences; dissertation entitled “Whole-organism lineage tracing by combinatorial and cumulative genome editing”; Assistant Professor, Molecular & Systems Biology, Dartmouth University)
- 2012 – 2016 Matthew Snyder (Genome Sciences; dissertation entitled “Expanding the accuracy, resolution, and breadth of cell-free DNA investigation”; Manager, Bioinformatics, Brotman Baty Institute for Precision Medicine)
- 2011 – 2014 Joshua Burton (Genome Sciences; dissertation entitled “New methods for de novo assembly of genomes and metagenomes”; Lead Computational Biologist, Base5 Genomics)
- 2010 – 2014 Akash Kumar (Medical Scientist Training Program, Genome Sciences; dissertation entitled “Mutational Heterogeneity in Cancer: Lessons from the Brain and Prostate”; Chief Medical Officer, MyOme).
- 2010 – 2014 Andrew Adey (Molecular & Cellular Biology; dissertation entitled “Comprehensive, precision genomics”; Associate Professor, Molecular & Medical Genetics, OHSU)
- 2009 – 2013 Jacob Kitzman (Genome Sciences; dissertation entitled “New technologies for sequencing and interpreting genomes”; Associate Professor, Genetics, University of Michigan)
- 2009 – 2012 Joseph Hiatt (Medical Scientist Training Program, Genome Sciences; dissertation entitled “Molecular tagging to overcome limitations of massively parallel sequencing”; Medical Director, GRAIL)
- 2007 – 2012 Sarah Ng (Genome Sciences; dissertation entitled “Next Generation Mendelian Genetics”; Head, Genome Innovation Lab, Genome Institute of Singapore)
- 2007 – 2012 Rupali Patwardhan (Genome Sciences; dissertation entitled “Massively parallel functional dissection of regulatory elements”; Software Engineer, Facebook)

Rotation Students Supervised

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|---------------------|-----------------|-------------|
| ● Abby McGee | Genome Sciences | Winter 2024 |
| ● Yufei Gao | Genome Sciences | Winter 2024 |
| ● Sanjay Kottapalli | Genome Sciences | Fall 2023 |
| ● Lucas Kerr | Genome Sciences | Summer 2023 |
| ● Qi Yu | Genome Sciences | Winter 2023 |
| ● Shruti Jain | Genome Sciences | Spring 2022 |

• Elliott Swanson	Genome Sciences	Spring 2022
• Sydney Sattler	Genome Sciences	Winter 2022
• Connor Kubo	Genome Sciences	Winter 2022
• David Lee	Genome Sciences	Fall 2021
• Jenny Nathans	Genome Sciences	Summer 2021
• Aidan Keith	Genome Sciences	Spring 2021
• Hanna Liao	Molecular & Cellular Biology	Spring 2021
• Tony Li	Genome Sciences	Fall 2020
• Yuzhen Li	Molecular & Cellular Biology	Spring 2020
• Conor Camplisson	Genome Sciences	Winter 2020
• Wei Yang	Genome Sciences	Winter 2020
• Andrew Mullen	MSTP program	Summer 2019
• Chase Suiter	Molecular & Cellular Biology	Summer 2019
• Shawn Fayer	Genome Sciences	Spring 2019
• Chengxiang Qiu	Genome Sciences	Winter 2019
• James Anderson	Molecular & Cellular Biology	Winter 2019
• Eliza Barkan	Molecular & Cellular Biology	Fall 2018
• Michael Goldberg	Genome Sciences	Spring 2018
• Florence Chardon	Genome Sciences	Spring 2018
• Phillip Dishuck	Genome Sciences	Winter 2018
• William DeWitt	Genome Sciences	Fall 2017
• Xingfang Huang	Computer Science & Engineering	Fall 2017
• Bingie Wang	MSTP program	Summer 2017
• Joseph Janizek	MSTP program	Summer 2017
• Sam Regalado	MSTP program	Summer 2017
• Ian Smith	Genome Sciences	Spring 2017
• April Lo	Genome Sciences	Spring 2017
• Anna Minkina	Genome Sciences	Fall 2016
• Wei Chen	Molecular Engineering	Spring 2016
• Eliah Overbey	Genome Sciences	Spring 2016
• Aakash Sur	Biomedical & Informatics	Fall 2015
• Junyue Cao	Molecular & Cellular Biology	Summer 2015
• Molly Gasperini	Genome Sciences	Spring 2015
• Serena Liu	Genome Sciences	Spring 2015
• Hannah Pliner	Genome Sciences	Winter 2015
• Damon May	Genome Sciences	Winter 2015
• Andrew Hill	Genome Sciences	Fall 2014
• Vijay Ramani	Genome Sciences	Winter 2014
• Seungsoo Kim	Genome Sciences	Winter 2014
• Jason Klein	MSTP program	Summer 2013
• Hugh Haddox	Molecular & Cellular Biology	Spring 2013
• Aaron McKenna	Genome Sciences	Winter 2013
• Greg Findlay	MSTP program	Summer 2012
• Matthew Snyder	Genome Sciences	Spring 2012
• Jorgen Nelson	Genome Sciences	Winter 2012
• Elyse Hope	Genome Sciences	Winter 2012
• Meara Davies	Molecular & Cellular Biology	Fall 2011
• Josh Burton	Genome Sciences	Winter 2011
• Jenny Wagner	Genome Sciences	Winter 2011
• Andrew Adey	Molecular & Cellular Biology	Fall 2009
• David Young	MSTP program	Summer 2009

• 2009 – 2013	Cailyn Spurrell	U.W. Genome Sciences	Advisor: Mary-Claire King
• 2008 – 2013	Alan Rubin	U.W. Genome Sciences	Advisor: Phil Green
• 2011 – 2012	Lucas Gray	U.W. Biochemistry	Advisor: Alan Weiner
• 2009 – 2012	Joshua Bishop	U.W. Electrical Engineering	Advisor: Eric Klavins
• 2009 – 2012	Kyle Minch	U.W. Molecular & Cellular Biology	Advisor: David Sherman
• 2011	Sung Hang	U.W. Neurobiology and Behavior	Advisor: William Catterall
• 2010	Carlos Araya	U.W. Genome Sciences	Advisor: Stanley Fields
• 2008 – 2010	Steven Josefowicz	U.W. Immunology	Advisor: Sasha Rudensky
• 2008 – 2010	Kevin Schutz	U.W. Genome Sciences	Advisor: Stan Fields
• 2008 – 2010	Marcia Paddock	U.W. Immunology	Advisor: Andy Scharenberg

Issued Patents

- Polony fluorescent in situ sequencing beads (7,425,431)
- Sequence tag directed subassembly of short sequencing reads into long sequencing reads (8,383,345; 8,846,347; 10,227,585)
- Error detection in sequence tag directed subassemblies of short sequencing reads (8,865,410; 10,577,601; 11,505,795)
- Nanogrid rolling circle DNA sequencing (9,624,538)
- Methods for retrieval of sequence-verified DNA constructs (9,809,904)
- Massively parallel contiguity mapping (10,457,936; 11,299,730)
- Methods of determining tissues and/or cell types giving rise to cell-free dna, and methods of identifying a disease or disorder using same (11,352,670)
- Method for large scale scaffolding of genome assemblies (11,694,764)

Published Patent Applications

- Precise genome deletion and replacement method based on prime editing (20240011055)
- High-throughput single-cell transcriptome libraries and methods of making and using (20210102194)
- Diagnosis of cancer or other physiological condition using circulating nucleic acid fragment sentinel endpoints (20200255905)
- Determining a physiological condition in an individual by analyzing cell-free DNA fragment endpoints in a biological sample (20190309374)
- High-throughput single-cell sequencing with reduced amplification bias (20190382753)
- Multiplex pairwise assembly of DNA oligonucleotides (application; 20180320166)
- A framework for determining the relative effects of genetic mutations (20160357903)
- Methods and systems for large scale scaffolding of genome assemblies (20160239602)
- Multiplex homology-directed repair (20160076093)
- Systems, Algorithms, and Software for Molecular Inversion Probe (MIP) Design (20160055293)
- Highly multiplex single amino acid mutagenesis for massively parallel functional analysis (20160017410)
- Whole genome sequencing of a human fetus (20150105267)
- Multiplex decoding of sequence tags in barcodes (20080269068)
- Wobble sequencing (20070207482)
- Nucleic acid memory device (20030228611)

Preprints & Publications (* denotes equal contributors; # or ^ denotes corresponding or senior authorship;

gray numbers denote primary publications, defined as those on which I and/or a member of my lab are a corresponding, senior and/or a first author)

Preprints

21. “Induction and in silico staging of human gastruloids with neural tube, segmented somites & advanced cell types” [*bioRxiv*](#) 2024.02.10.579769 (posted 12-Feb-2024)
20. “Multiplex generation and single cell analysis of structural variants in a mammalian genome” [*bioRxiv*](#) 2023.01.22.576756 (posted 22-Jan-2024).
19. “Cross-species imputation and comparison of single-cell transcriptomic profiles” [*bioRxiv*](#) 2023.10.19.563173 (posted 19-Oct-2023).
18. “A molecular proximity sensor based on an engineered, dual-component guide RNA” [*bioRxiv*](#) 2023.08.14.553235 (posted 14-Aug-2023).
17. “A multiplex, prime editing framework for identifying drug resistance variants at scale” [*bioRxiv*](#) 2023.07.27.550902 (posted 27-Jul-2023).
16. “CTCF-mediated insulation and chromatin environment modulate *Car5b* escape from X inactivation” [*bioRxiv*](#) 2023.05.04.5394695 (posted 4-May-2023).
15. “Chromatin context-dependent regulation and epigenetic manipulation of prime editing” [*bioRxiv*](#) 2023.04.12.536587 (posted 12-April-2023).
14. “A single-cell transcriptional timelapse of mouse embryonic development, from gastrula to pup” [*bioRxiv*](#) 2023.04.05.535726 (posted 5-April-2023).
13. “Multiplex, single-cell CRISPRa screening for cell type specific regulatory elements” [*bioRxiv*](#) 2023.03.28.534017 (posted 28-Mar-2023).
12. “Modulation of FGF pathway signaling and vascular differentiation using designed oligomeric assemblies” [*bioRxiv*](#) 2023.03.14.532666 (posted 14-Mar-2023).
11. “Massively parallel characterization of transcriptional regulatory elements in three diverse human cell types” [*bioRxiv*](#) 2023.03.05.531189 (posted 5-Mar-2023).
10. “Programmable peroxidase-assisted signal amplification enables flexible detection of nucleic acid targets in cellular and histopathological specimens” [*bioRxiv*](#) 2023.2.01.526264 (posted 1-Feb-2023).
9. “Local-Scale phylodynamics reveal differential community impact of SARS-CoV-2 in metropolitan US county” [*medRxiv*](#) 2022.12.15.22283536 (posted 15-Dec-2022).
8. “High Density Domain-Focused CRISPR Screens Reveal Novel Epigenetic Regulators of HOX/MEIS Activation in Acute Myeloid Leukemia” [*bioRxiv*](#) 2022.12.12.519332 (posted 12-Dec-2022).
7. “Multiplex profiling of developmental enhancers with quantitative, single-cell expression reporters” [*bioRxiv*](#) 2022.12.10.519236 (posted 10-Dec-2022).
6. “Single-cell analysis of chromatin and expression reveals age- and sex-associated alterations in the human heart” [*bioRxiv*](#) 2022.07.12.496461 (posted 12-Jul-2022).
5. “Tethering distinct molecular profiles of single cells by their lineage histories to investigate sources of cell state heterogeneity” [*bioRxiv*](#) 2022.05.12.491602 (posted 12-May-2022).
4. “Multiplex genomic recording of enhancer and signal transduction activity in mammalian cells.” [*bioRxiv*](#) 2021.11.05.467434 (posted 5-Nov-2021).
3. “Viral genome sequencing places White House COVID-19 outbreak into phylogenetic context.” [*medRxiv*](#) 2020.10.31.20223925 (posted 31-Oct-2020).
2. “TransMPRA: A framework for assaying the role of many trans-acting factors at many enhancers.” [*bioRxiv*](#) 2020.09.30.321323 (posted 30-Sep-2020).

1. “Rapid cost-effective viral genome sequencing by V-seq.” *bioRxiv* 2020.08.15.252510 (posted 15-Aug-2020).

Peer-Reviewed Publications

366. Abadie K*, Clark E*, Valanparambil R*, Ukogu O, Yang W, Daza R, Ng K, Jumana F, Wang A, Lee J, Nasti T, Bhandoola A, Nourmohammad A, Ahmed R, **Shendure J**#, Cao J#, Kueh H#. Reversible, tunable epigenetic silencing of TCF1 generates flexibility in the T cell memory decision. *Immunity* 2024 Jan 29:S1074-7613(23)00537-X.
365. McFaline-Figueroa J#, Srivatsan S, Hill A, Gasperini M, Jackson D, Saunders L, Domcke S, Regalado S, Lazarchuck P, Alvarez S, Monnat R, **Shendure J**, Trapnell C#. Multiplex single-cell chemical genomics reveals the kinase dependence of the response to targeted therapy. *Cell Genomics* 2024 Jan 19:100487.
364. Booth G, Daza R, Srivatsan S, McFaline-Figueroa J, Green Gladden R, Mullen A, Furlan S, **Shendure J**, Trapnell C#. High-capacity sample multiplexing for single cell chromatin accessibility profiling. *BMC Genomics* 2023 Dec 4; 24(1):737.
363. Barbosa K, Deshpande A, Edith Perales M, Xiang P, Murad R, Bala Pramod A, Minkina A, Alistair Robertson N, Schischlik F, Lei X, Sun Y, Brown A, Amend D, Jeremias I, Goench J, Humphries R, Ruppin E, **Shendure J**, Mali P, Adams P, Deshpande A#. Transcriptional control of leukemogenesis by the chromatin reader SGF29. *Blood* 2023 Dec 4: blood.2023021234.
362. Saunders L*, Srivatsan S*, Duran M, Dorrity M, Ewing B, Limbo T, **Shendure J**, Raible D, Moens C, Kimelman D#, Trapnell C#. Embryo-scale reverse genetics at single-cell resolution. *Nature* 2023 Nov;623(7988):782-791
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