

Kate E. Galloway

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EDUCATION AND EXPERIENCE

Assistant Professor of Chemical Engineering Massachusetts Institute of Technology, Cambridge, MA	July 2019 – Present
NIH Postdoctoral Research Fellow University of Southern California, Los Angeles, CA PI: Justin Ichida	Sep 2013 – July 2019
Adjunct Assistant Professor Harvey Mudd College, Claremont, CA Department of Chemistry	Jan 2013 – May 2013
Remote Research Scientist Stanford University, Stanford, CA PI: Christina Smolke	Jun 2012 – Jan 2013
PhD, Chemical Engineering, Minor in Biology California Institute of Technology, Pasadena, CA Advisor: Christina Smolke	Jun 2007 – Jun 2012
MS, Chemical Engineering California Institute of Technology, Pasadena, CA	Sep 2005 – Jun 2007
BS, Chemical Engineering, Graduated with Honors University of California, Berkeley, Berkeley, CA	Aug 2001 – May 2005
Research Assistant University of California, Riverside, Riverside, CA PI: Wilfred Chen	Jun 2000 – Aug 2001

PUBLICATIONS

1. Ichida, JK, Staats, KA, Davis-Dusenbery, BN, Clement, K, Galloway, KE, Babos, KN, Son, EY, Kiskinis, E, Atwater, N, Gu, H, Gnirke, A, Meissner, A, and Eggan, K. Comparative genomic analysis of embryonic, lineage-converted, and stem cell-derived motor neurons. *Development*. 2018: dev.168617.
 2. Galloway, KE and Ichida, JK. Modeling neurodegenerative diseases and neurodevelopmental disorders with reprogrammed cells. *Stem Cells, Tissue Engineering and Regenerative Medicine*. D.A. Warburton, Ed. (World Scientific, New Jersey, 2015).
 3. Franco, E and Galloway, KE. Feedback loops in biological networks. *Computational Methods in Synthetic Biology*. M. A. Marchisio, Ed. (Springer New York, 2015), vol. 1244, pp. 193-214.
 4. Galloway, KE, Franco, E, and Smolke, CD. Dynamically reshaping signaling networks to program cell fate via genetic controllers. *Science*. 2013. 341:1235005.

Highlighted in "Concentrating (on) native proteins to control cell fate." Sarkar, Casim A. *Science* 341.6152 (2013)
 5. Chen, YY*, Galloway, KE*, and Smolke, CD. Synthetic biology: advancing biological frontiers by building synthetic systems. *Genome Biology*. 2012. 13:240. *These authors contributed equally to this work.
 6. Kostal, J, Mulchandani, A, Gropp, KE, and Chen, WA. Temperature Responsive Biopolymer for Mercury Remediation. *Environmental Science & Technology*. 2003. 37, 4457-4462.
- In review**
- Babos, KN*, Galloway, KE*, Kislner, K, Zitting, M, Li, Y, Quintino, B, Chow, RH, Zlokovic, BV, and Ichida, JK. Balancing dynamic tradeoffs to drive reprogramming. (Cell Stem Cell. *In revision*). *These authors contributed equally to this work. Available at bioRxiv: <https://doi.org/10.1101/393934> .

FUNDING

Postdoctoral Fellowships

NIH Ruth L. Kirschstein NRSA Postdoctoral Fellowship
National Institute of Neurological Disorders and Stroke (NINDS), Grant #: 5F32NS092417-03
Identifying the mechanisms of neuronal fate commitment during direct conversion

Fall 2015 – Fall 2018
\$171,018/3 years

California Institute of Regenerative Medicine Postdoctoral Fellowship
CIRM Training Grant, Grant #: TG2-01161

Fall 2013 – Fall 2015
\$86,000/2 years

Grants

USC Provost Top-off Award
Internal award for NIH-funded postdocs

2017
\$5,000

Doerr USC Stem Cell Challenge Award with Hoaze Yu
Internal collaborative grant competition, Role: Co-PI

2017
\$10,000

Fluidigm USC Single Cell Project Grant
Corporate-sponsored grant competition, Role: PI

2016
\$9,000

HONORS & AWARDS

2nd Place Winner of Annual UCI Postdoctoral Symposium
TED talk-style competition for open to all Southern California postdocs

Sep 2018

Audrey E. Streedain Postdoctoral Travel Award
Internal USC travel award

Jan 2018

ARCS Maggie McKnight Russell Memorial Postdoctoral Fellow Award
Awarded by ARCS philanthropic society to one outstanding USC postdoctoral scholar, renewable

Oct 2017-Present

1st Place Winner of Annual USC Postdoctoral Symposium
TED talk-style competition for all USC postdocs

May 2017

Caltech Everhart Lecturer
Lecture awarded yearly to three graduate students for excellence in research and communication

May 2011

TEACHING EXPERIENCE

University of Southern California
Laboratory mentor

Los Angeles, CA
Sep 2013 – Present

Mentored 15 junior scientists (5 graduate, 8 undergraduate, 2 high school) through project design, fellowship proposals, laboratory training, data analysis, presentations, and manuscript preparation. Matriculated students have gone on to professional laboratories, dental school, and neuroscience programs.

Harvey Mudd College
Adjunct Assistant Professor

Claremont, CA
Jan 2013 – May 2013

Freshman Chemistry Lab: Prepared material for pre-lab lecture, supervised laboratory procedures, addressed issues in write-up and analysis of data, and graded lab books for Chemistry 24. Received 6 out of 7 (max score) for all categories in teaching evaluations.

California Institute of Technology
Teaching Assistant

Pasadena, CA
Jan 2008 – Dec 2008

Biomolecular Engineering Lab: Instructed students on laboratory techniques, guided design of course projects, and taught students how to troubleshoot their systems.

Biomolecular Design Course: Designed, graded homework and maintained the course web site.

TALKS

3rd Annual UCI Postdoctoral Symposium-Invited talk. Slick software, slow hardware: Cellular reprogramming hits a wall. University of California. Irvine, CA.	Sep 2018
5th International Mammalian Synthetic Biology Workshop (mSBW 5.0) Slick software, slow hardware: Balancing biophysical tradeoffs to drive cellular reprogramming. Harvard Medical School. Boston, MA.	May 2018
Society for Pure and Applied Systems and Synthetic Biology (SPASS-LA) Accelerating cellular reprogramming through p53 inhibition enhances neuronal maturation, improves disease modeling University of California at Los Angeles. Los Angeles, CA.	Oct 2016
CIRM Tri-institutional Stem Cell Retreat Destabilizing established transcriptional programs to enhance direct conversion. California Institute of Regenerative Medicine. Santa Barbara, CA.	May 2015
Department of Chemical Engineering Seminar-Invited talk Dynamically reshaping signaling networks to program cell fate via genetic controllers University of Southern California. Los Angeles, CA.	Mar 2014
Department of Chemical Engineering Seminar-Invited talk Dynamically reshaping signaling networks to program cell fate via genetic controllers. Case Western Reserve University. Cleveland, OH.	Jan 2014
Special Chemistry Department Seminar So this engineer walks into a biology lab: Regulating cell fate with genetic control systems. Harvey Mudd College. Claremont, CA.	Dec 2013
Everhart Lecture-Invited talk Flirty, Chaste, Promiscuous: What yeast can teach us about controlling cell fate. California Institute of Technology. Pasadena, CA.	May 2011
Engineering Principles in Biological Systems Seminar Ligand-dependent regulation of transcriptional feedback and phenotype in a MAPK pathway via RNA control elements. Cold Spring Harbor Laboratory. Cold Spring Harbor, NY.	Dec 2008
Institute for Collaborative Biotechnologies Seminar-Invited talk Development of RNA-based trans-control systems and their application to the regulation of signaling through the <i>Saccharomyces cerevisiae</i> pheromone-responsive MAPK pathway. California Institute of Technology. Pasadena, CA.	May 2007

COMMUNITY OUTREACH

I have moderated public debates, such as the Veritas Forum, on the Caltech campus and participated in college panels and outreach to local schools to foster awareness and interest in science and engineering. Additionally, I serve on the Keck School of Medicine Postdoctoral Advisory Committee and Co-chair the Academic Track Working Group (Details below).

Organizer of ISSCR Parents Concierge and Network <i>Co-chair of Academic Track Working Group</i> Connect parents traveling to the ISSCR meeting to local resources for traveling with or away from children.	USC, Los Angeles, CA Mar 2019-Present
Keck School of Medicine Postdoctoral Advisory Committee <i>Co-chair of Academic Track Working Group</i> Recommend, organize, and plan events for postdoctoral scholars planning for careers in academia.	USC, Los Angeles, CA Jan 2018-Present
A Byte of Science: Lunch and learn <i>Speaker</i> Genetic engineering and cellular programming: Why you should go into biochemical engineering	Maranatha High School, Pasadena, CA Jan 2018
The Veritas Forum <i>Moderator</i> Meaning-Making Methodologies: A Christian mathematician and an atheist geoscientist share their views on what makes life worthwhile	California Institute of Technology, Pasadena, CA Jan 2017
College Prep Seminar <i>Panelist</i> How to prepare for college and embrace the challenges and opportunities available at the university	Chinese Bible Missions Church, Alhambra, CA Jul 2016

The Veritas Forum

Moderator

Meta(physics): An atheist and a Christian discuss physics and philosophy

California Institute of Technology, Pasadena, CA

Jan 2014

Solar System Presentation

Speaker, craft facilitator

Our Awesome Milky Way Galaxy and Solar System

Lake Avenue Church Preschool, Pasadena, CA

Jan 2013, 2014, 2015

Chapel and Lunch Seminar

Speaker

Why you should be a scientist!

Crean Lutheran South High School, Irvine, CA

Nov 2008