

Curriculum Vitae

Columbia University
Department of Systems Biology
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GUILLAUME URTECHO, PhD

HHMI Hanna H. Gray Postdoctoral Fellow
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EDUCATION

- University of California, Los Angeles** 2020
PhD, Molecular Biology (Emphasis on Gene Regulation)
Dissertation Topic: Deconstructing promoter sequence-function relationships in *Escherichia coli*
- University of California, Davis** 2014
BS, Genetics, *magna cum laude*

RESEARCH TRAINING

- Postdoctoral Fellow:** Columbia University 2020-present
Advisor: Harris Wang, *Department of Systems Biology*
Topics:
1) Exploring microbial spatiotemporal dynamics following fecal microbiota transplants
2) Design and testing of cellular life with a reduced amino acid alphabet
- Graduate Student Researcher:** University of California, Los Angeles 2015-2020
Advisor: Sriram Kosuri, *Department of Biochemistry*
Topic: Deconstructing promoter sequence-function relationships in *E. coli*
- Undergraduate Student Researcher:** University of California, Davis 2012-2014
Advisor: Simon W. L. Chan, *Department of Plant Biology*
Topic: Leveraging haploid-induction technologies for accelerated breeding in *A. thaliana*
- Summer Research Assistant:** University of Washington 2013
Advisor: Stanley Fields, *Department of Genome Sciences*
Topic: Saturation mutagenesis of yeast transcription factors to enhance butanol tolerance

PUBLICATIONS

- Ilya Andreev, Kamilla M. E. Laidlaw, Simone M. Giovanetti, **Guillaume Urtecho**, Daniel Shriner, Joshua S. Bloom, Chris Macdonald, & Meru J. Sadhu. Discovery of a rapidly evolving yeast defense factor, KTD1, against the secreted killer toxin K28. *Proceedings of the National Academy of Sciences* 120.8 (2023): e2217194120. 2023
- Guillaume Urtecho**, Thomas Moody, Yiming Huang, Ravi U. Sheth, Miles Richardson, Opeyemi Lekan, Florencia Velez-Cortes, Deirdre Ricaurte, & Harris H. Wang. Spatiotemporal dynamics during niche remodeling by super-colonizing microbiota in the mammalian gut. 2022. *bioRxiv*. 2022.10.21.513299. <https://doi.org/10.1101/2022.10.21.513299> 2022
- Timothy C. Yu* & Winnie L. Liu*, Marcia Brinck, Jessica E. Davis, Jeremy Shek, Grace Bower, Tal Einav, Kimberly D. Insigne, Rob Phillips, Sriram Kosuri, & **Guillaume Urtecho**. Multiplexed characterization of rationally designed promoter architectures deconstructs combinatorial logic for IPTG-inducible systems. 2021. *Nature Communications*. **12**, 325 (2021). <https://doi.org/10.1038/s41467-020-20094-3>. **(Senior & Corresponding Author)** 2021
- Guillaume Urtecho**, Danielle E. Campbell, David M. Hershey, Fatima A. Hussain, Rachel J. Whitaker, & George A. O'Toole. Discovering the Molecular Determinants of *Phaeobacter inhibens* susceptibility to *Phaeobacter* phage MD18. 2020. *mSphere*. 5 (6) e00898-20. doi:10.1128/mSphere.00898-20. **(Corresponding Author)** 2020
- Guillaume Urtecho*** & Kimberly D. Insigne*, Arielle D. Tripp, Marcia Brinck, Nathan B. Lubock, & Sriram Kosuri. Genome-wide Functional Characterization of *Escherichia coli* Promoters and Regulatory Elements Responsible for their Function. 2020. *bioRxiv*. 2020.01.04.894907; <https://doi.org/10.1101/2020.01.04.894907>. 2020
- Guillaume Urtecho**, Arielle D. Tripp, Kimberly D. Insigne, Hwangbeom Kim, & Sriram Kosuri. Systematic Dissection of Sequence Elements Controlling σ^{70} Promoters Using a Genomically Encoded Multiplexed Reporter Assay in *Escherichia coli*. 2018. *Biochemistry*. 58 (11), 1539-1551 DOI: 10.1021/acs.biochem.7b01069. **(Special issue: The Chemistry of Synthetic Biology)** 2018
- Ravi Maruthachalam, Mohan Prem Anand Marimuthu, Ek Han Tan, Shamoni Maheshwari, Isabelle M. Henry, Brenda Marin-Rodriguez, **Guillaume Urtecho**, Jie Tan, Kristina Thornhill, Fan Zhu, Aneesh Panoli, Venkatesan Sundaresan, Anne B. Britt, Luca Comai, & Simon W. L. Chan. A Haploid Genetics Toolbox for *Arabidopsis thaliana*. 2014. *Nature Communications*, 5:5334. 2014

AWARDS AND HONORS

- Howard Hughes Medical Institute Hanna H. Gray Fellowship** 2021-present
Howard Hughes Medical Institute
Amount: \$90,000 annually
Provides additional 4 years funding (\$250K / Year) in faculty phase
- Intersections Science Fellow** 2023
Intersections Science Fellows Symposium
Amount: \$500

National Science Foundation Graduate Student Fellowship National Science Foundation Amount: \$46,000 annually (Through September 2018)	2015- 2019
Roy and Dorothy John, Fred Eiserling, and Judith Lengyel Teaching Excellence Award University of California, Los Angeles Amount: \$13,500	2018
UCLA Graduate Division Dissertation Year Fellowship University of California, Los Angeles Amount: \$20,000	<i>Declined</i> 2018
Kenneth I. Shine Fellowship University of California, Los Angeles Amount: \$3,000 annually	2015- 2017
UCLA Department of Life Sciences Certificate of Distinction in Teaching Award University of California, Los Angeles	2016
Graduate Dean's Scholar Award University of California, Los Angeles Amount: \$6,000 annually	2015- 2016
Eugene V. Cota-Robles Fellowship University of California, Los Angeles Amount: \$25,000 annually	2014- 2019
Departmental Citation for Outstanding Performance University of California, Davis	2014

TEACHING & OUTREACH EXPERIENCE

Genspace Community Biolab Instructor Brooklyn, NY Lecturer , <i>Making DNA from Scratch</i> Lecturer & Course Developer , <i>Exploring the Microbiome</i>	2021 2022,2023
UCLA Latino Alumni Association (ULAA) OrgullOSO Mentor Los Angeles, CA	2022- present
International Genetically Engineered Machine (iGEM) Advisor University of California, Los Angeles	2017- 2020
Teaching Assistant University of California, Los Angeles Teaching Assistant, Molecular Biology of Cellular Processes* *Awarded for distinction in teaching by graduate program	2017
Teaching Assistant, Genetics* *Awarded for distinction in teaching by department	2015

Community Outreach - Scientific Demonstrations

University of California, Los Angeles

SACNAS Sunset Rec Outreach

SACNAS EAOP Math and Science Academy

2014-

2015

SELECTED CONFERENCE PRESENTATIONS

Guillaume Urtecho, Liyuan Liu, Yiming Huang, Charlotte Rochereau, Avi Swartz, Tomasz Blazejewski, Sergey Ovchinnikov, Calin Plesa, & Harris Wang. Redesigning the *Escherichia coli* genome with a 19-Amino Acid Alphabet. DOE Genome Sciences Meeting. Virtual. February 2022. Poster Presentation.

2022

Poster

Guillaume Urtecho, Yiming Huang, Thomas Moody, Miles Richardson, Ravi U. Sheth, Opeyemi Lekan, Florencia Velez-Cortes, Travis E. Gibson, Georg K. Gerber, & Harris H.Wang. Exploring the temporal and spatial dynamics of microbial colonization during fecal microbiota transplantation. HHMI Virtual Science Meeting: Microbes and the Host Response. Virtual. February 2022. Short Oral presentation.

2022

Short Oral

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Functional Characterization and Dissection of the Global Promoter Landscape in *E. coli*. Microbiome: Chemical Mechanisms and Biological Consequences (Keystone Symposium). Montreal, QC, Canada. March 2019. Poster presentation.

2019

Poster

Guillaume Urtecho, Arielle D. Tripp, Kimberly Insigne, Hwangbeom Kim, & Sriram Kosuri. A genomically-encoded massively parallel reporter assay for functionally dissecting promoters in *E. coli*. International Conference on Microbiome Engineering (ICME). Boston, MA. November 2018. Oral Presentation.

2018

Oral

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Global analysis of promoter architecture in *E. coli*. Lake Arrowhead Microbial Genomics Meeting (LAMG). Lake Arrowhead, CA. September 2018. Poster presentation.

2018

Poster

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Learning the Language of Promoters. UCLA MBIDP Annual Departmental Retreat. Ventura, CA. March 2018. Oral Presentation.

2018

Oral

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Global analysis of promoter architecture in *E. coli*. Synthetic Biology: Engineering, Evolution, & Design (SEED). Vancouver, BC. June 2017. Poster presentation and 'rapid fire' oral summary of poster.

2017

Poster

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Global analysis of promoter architecture in *E. coli*. Engineering Biology Research Consortium (EBRC). Pasadena, CA. November 2016. Oral presentation.

2016

Oral

Guillaume Urtecho, Kimberly Insigne, Arielle D. Tripp, Marcia Brinck, Hwangbeom Kim, & Sriram Kosuri. Global analysis of promoter architecture in *E. coli*. Synthetic Biology Engineering Research Center (Synberc). Berkeley, CA. March 2016. Poster presentation and 'rapid fire' oral summary of poster.

2016

Poster

ATTENDED WORKSHOPS AND RESEARCH COURSES

Marine Biological Laboratory Microbial Diversity Advanced Research Course 2018
Marine Biological Laboratory, Woods Hole, MA

COMMITTEES AND DEPARTMENTAL SERVICE

UCLA MBIDP Annual Departmental Retreat Planning Committee 2016-2018
University of California at Los Angeles, Los Angeles, CA

Gene Regulation, Epigenomics, and Transcriptomics (GREAT) Recruitment Leader 2016, 2017
University of California at Los Angeles, Los Angeles, CA

Gene Regulation, Epigenomics, and Transcriptomics (GREAT) Recruitment Student Speaker 2018
University of California at Los Angeles, Los Angeles, CA

PANELS & PROFESSIONAL DEVELOPMENT LECTURES

Is research for me? The great, the good, the bad and the ugly! 2022
AvenueB, University of California, Davis. Panelist.

Postdoc Panel with MBIDP Alumni 2022
UCLA MBIDP, University of California, Los Angeles. Panelist.

Life Post PhD 2022
UCLA MBIDP, University of California, Los Angeles. Panelist

AvenueB Cohort Connection 2021
AvenueB, University of California, Davis. Lecturer.

REFERENCES**Sriram Kosuri, PhD**

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