

Christine E. Cucinotta

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EDUCATION

University of Pittsburgh, Pittsburgh, PA
Doctor of Philosophy, Molecular, Cellular, and Developmental Biology, August 2017
Minor in Teaching, August 2017
The University of Texas at Austin, Austin, TX
Bachelor of Science, Molecular and Cell Biology, May 2011

RESEARCH EXPERIENCE

Postdoctoral Researcher

Advisor: Dr. Toshio Tsukiyama, Fred Hutchinson Cancer Center
Project Title: Mechanisms of Genome Reactivation During Quiescence Exit

- Uncovered widespread genome activation during early quiescence exit events
- Identified key chromatin regulator for quiescence exit
- Revealed quiescence-specific functions of chromatin remodelers
- Discovered quiescence-specific posttranslational modifications on chromatin remodelers
- Found specialized DNA replication program during quiescence exit

Graduate Student Researcher

Advisor: Dr. Karen Arndt, University of Pittsburgh
Dissertation: Roles of the Nucleosome Acidic Patch in Regulating Histone Modifications and Transcription

- Identified nucleosome surface controlling:
 - histone modifications
 - transcription elongation
 - transcription termination
 - global chromatin architecture
- Used site-specific crosslinking and mass spectrometry analysis to find direct interactions with the nucleosome acidic patch *in vivo*

Undergraduate Student Researcher

Advisor: Dr. Scott Stevens, The University of Texas at Austin
Honor's Thesis: Genetic Analysis of the C-terminal Region of Prp43

- Used gap-repair mutagenesis in yeast and identified separation of function mutants within the gene encoding an essential, conserved ribosome biogenesis and splicing factor

PUBLICATIONS

Cucinotta CE, Dell RH, Braceron KCA, Tsukiyama T. (2021) RSC primes the quiescent genome for hypertranscription upon cell-cycle re-entry. *eLife* doi: 10.7554/eLife.67033

Cucinotta CE*, Martin BJE*, Noe Gonzalez M*, Raman P*, Teif VB*, and Vlamming H*. (2021) Strength is in engagement: The rise of an online scientific community during the COVID-19 pandemic. *EMBO Reports* doi: 10.15252/embr.202152612 *all authors contributed equally

Poramba-Liyanage DW*, Korthout T*, **Cucinotta CE**, van Kruijsbergen I, van Welsem T, El Atmioui D, Ovaa H, Tsukiyama T, van Leeuwen F (2020) Inhibition of transcription leads to rewiring of locus-specific chromatin proteomes. *Genome Research* 30, no. 4 (April 2020): 635–46 doi: 10.1101/gr.256255.119 *equal contribution

Cucinotta CE, Hildreth AE, McShane BM, Shirra MS, Arndt KM (2019) The nucleosome acidic patch directly interacts with subunits of the Paf1 and FACT complexes and controls chromatin architecture. *Nucleic Acids Research* 47 (16): 8410–8423, doi:10.1093/nar/gkz549

Van Oss SB, **Cucinotta CE**, and Arndt KM. (2017) Emerging insights into the roles of the Paf1 complex in gene regulation. *Trends Biochem Sci.* 2017 Oct;42(10):788-798. doi:10.1016/j.tibs.2017.08.003

Cucinotta CE and Arndt KM (2016) SnapShot: Transcription Elongation. *Cell* 166 (4): 1058- 1058.e1. doi:10.1016/j.cell.2016.07.039.

Van Oss SB, Shirra MK, Bataille AR, Wier AD, Yen K, Vinayachandran V, Byeon I, **Cucinotta CE**, Heroux A, Jeon J, Kim J, VanDemark AP, Pugh BF, and Arndt KM (2016) The Histone Modification Domain of Paf1 Complex Subunit Rtf1 Directly Stimulates H2B Ubiquitylation Through an Interaction with Rad6. *Mol Cell.* 2016;64(4):815-25. doi:10.1016/j.molcel.2016.10.008

Cucinotta CE, Young AN, Klucsevsek KM, and Arndt KM (2015) The Nucleosome Acidic Patch Regulates the H2B K123 Monoubiquitylation Cascade and Transcription Elongation in *Saccharomyces cerevisiae*. *PLoS Genet* 11(8): e1005420. doi:10.1371/journal.pgen.1005420

FUNDING	NRSA Ruth L. Kirschstein Postdoctoral Fellowship F32GM131554	2019-2021
	CMCTG Training Grant T32CA009657, Fred Hutchinson Cancer Center	2018-2019
	Andrew Mellon Predoctoral Fellowship, University of Pittsburgh	2015-2016
	HHMI Undergraduate Summer Research Fellowship, University of Texas	2009, 2010
HONORS AND AWARDS	SciEd Mentoring and Outreach Award, Fred Hutchinson Cancer Center	2021
	Mary P. Edmonds Memorial Award for Outstanding Research Publication, University of Pittsburgh	2016
	Travel Grant Graduate Student Organization, University of Pittsburgh	2015
	Best Oral Presentation Honorable Mention ICYGMB meeting, Levico Terme, Italy	2015

Arts and Sciences Grad Expo Outstanding Presenter, University of Pittsburgh 2013, 2014

Graduated with Departmental Honors in Biological Sciences, University of Texas 2011

TALKS

- Fragile Nucleosome Online Seminar, online (2021)
- Asilomar Chromatin Chromosomes and Epigenetics, online (2020)
- The Allied Genetics Conference, online (2020)
- Big Climb Seattle LLS Fundraiser, Seattle, WA (2018)
- Pittsburgh Area Yeast Meeting, Pittsburgh, PA (2016)
- International Conference on Yeast Genetics and Molecular Biology, Italy (2015)
- Pittsburgh Area Chromatin Club Mini-symposium, Pittsburgh, PA (2014)
- Genetics Society of America Yeast Meeting, Seattle, WA (2014)
- Pittsburgh Area Yeast Meeting, Pittsburgh, PA (2014)

SELECTED POSTERS

- CSH Mechanisms of Eukaryotic Transcription, Online (2021)
- EMBL Transcription and Chromatin, Online (2020)
- Penn State Chromatin Symposium, State College, PA (2019)
- ASBMB Transcription, Snowbird, UT (2018)
- EMBO The Nucleosome: from Atoms to Genes, Heidelberg, Germany (2017)
- ASBMB Transcription, Snowbird, UT (2016)
- EMBL Transcription and Chromatin, Heidelberg, Germany (2016)
- Penn State Chromatin Symposium, State College, PA (2015)

MENTORING

- High school student (Fall 2020 – Present): JM
Fred Hutchinson Cancer Center
- Technician in the lab (Summer 2019 – Present): RD
Fred Hutchinson Cancer Center
- High school student (Fall 2020 – Spring 2021): FZ (now a biology undergrad),
Fred Hutchinson Cancer Center
- Undergraduate researchers (Summer 2020): EU* and KM, NSURP
won an honorable mention for final project*
- High school student (Summer 2020): NN, Athena Women in STEM
- Undergraduate researchers (2015-2017): CG (graduated medical school) and LR
(currently a researcher in biotech), University of Pittsburgh
- Undergraduate researcher (2013): CS (now a genetic counselor), University of
Pittsburgh
- Undergraduate Peer Mentor (January 2009 - December 2009), University of Texas

TEACHING

- Guest lecturer, Research Deconstructed (Jan. 2022), University of Pittsburgh
- Guest lecturer, Epigenetics (Oct. 2020), University of Pennsylvania
- Guest lecturer, Abstract Writing (Jul. 2018), Fred Hutchinson Cancer Center
- Designed and implemented a workshop, Abstract Writing, for undergraduate researchers (Jul. 2014, July 2015, July 2016), University of Pittsburgh
- Guest lecturer, Genetics of Model Organisms (Oct. 2014), University of Pittsburgh
- New TA instructor, Grading and Teaching Labs (Aug. 2014), University of Pittsburgh
- Guest lecturer, graduate seminar course (Mar. 2014), University of Pittsburgh
- Teaching fellow, Microbiology (Summer 2013), University of Pittsburgh
- Teaching fellow, Intro to the Biological World Laboratory (Spring 2013), University of Pittsburgh
- Teaching assistant, Biochemistry (Fall 2012), University of Pittsburgh

ACTIVITIES, OUTREACH, AND SERVICE

- Co-founder and Organizer of Fragile Nucleosome (March 2020-Present)
 - Online seminar series featuring trainee and PI speakers, free and open to all
 - YouTube Channel with currently 90 open-access talks
 - Online community of over 1400 members for scientific discussions, support, and troubleshooting
 - See generegulation.org/fragile-nucleosome for more information
- Co-organizer of postdoc-invited speaker committee (Spring 2019 – Present)
- Presented my research to Highline High School students, Seattle, WA (Jan. 2021)
- Presented on science community organizing at GREECS 2022, online (Jan. 2022)
- Presented my experiences mentoring high school students in genomics using the bioinformatics web platform Galaxy (Apr. 2021)
 - The Galaxy Training Network: galaxyproject.org/events/2021-04-gr4-education/
- ASAPbio Fellow (Jun. 2020 – Nov. 2020)
- Genetics Society of America (GSA) early career reviewer (Jan 2018 – Jan 2020)
- Panelist for F award information session, Fred Hutchinson Cancer Center (June 2019)
- Weintraub Graduate Student Award Selection Committee, Fred Hutchinson Cancer Center (Fall 2017 – Spring 2018)
- Presented my research to middle school girls and facilitated lab activities, Pitt Bio Outreach (Mar. 2017)

IN THE MEDIA

- Interviewed in Active Motif's Epigenetics Podcast: www.activemotif.com/podcastsfragile-nucleosome
- Research highlighted in Fred Hutch's Spotlight: www.fredhutch.org/en/news/spotlight/2021/07/bs-cucinotta-elife.html
- Quoted in The Scientist: www.the-scientist.com/news-opinion/dna-methylation-influences-replication-and-genome-organization-69213