Dashiell J. Massey
Dept. of Molecular Biology & Genetics
Cornell University
Ithaca, NY, 14853

dm792@cornell.edu
dashiell.massey@gmail.com
dashiellmassey.github.io

Education

Cornell University	Ithaca, NY	2022 (anticipated)
Ph.D. Candidate	Field of Genetics, Genomics, and Development	
Dissertation Title:	*Variation in human DNA replication timing at single-cell resolution.*	
Committee:	Amnon Koren (Chair), Robert Weiss, Charles Danko	
Swarthmore College	Swarthmore, PA	2014
B.A.	Biology, with a minor in Philosophy	

Research Experience

Cornell University	Ithaca, NY	2017 –
Ph.D. Candidate	*Variation in human DNA replication timing at the single-cell level.*	
PI: Amnon Koren, Ph.D.	Development of methods for bioinformatic processing and analysis of whole-genome DNA sequence data from single cells.	
Georgetown University	Washington DC	2015 – 2016
Research Assistant	*Effects of aging on DmRad51 expression and homologous recombination repair in the D. melanogaster male germline.*	
PI: Jan LaRocque, Ph.D.	Optimization of protocols for RNA isolation, cDNA generation and qPCR from whole-fly preps.	
Boston Children's Hospital	Boston, MA	2013 – 2015
Clinical Research Intern	*Cardiac intensive care predictors of failed sternal re-approximation and post-operative mortality.*	
PI: Catherine Allan, M.D.	Proposal, design, and implementation of a retrospective electronic medical record review.	
Harvard Medical School	Boston, MA	2011
Summer Research Student	*Effects of aging on peripheral nerve regeneration in the mouse.*	
PI: Clifford Woolf, M.B., B.Ch., Ph.D.	Biochemical and behavioral analysis of nerve damage and healing in young vs. aged mice. Funded by HMMI fellowship.	

Distinctions and Awards

Outstanding Graduate Teaching Assistant, College of Ag. & Life Sciences	Cornell University	2021
Leo M. Leva Memorial Prize for Biology	Swarthmore College	2014
William B. Sailer '82 Scholarship	Swarthmore College	2011 – 2014
Howard Hughes Medical Institute (HHMI) grant for off-campus research	Swarthmore College	2011
Luminary Award for Service and Citizenship	City of Cambridge, MA	2009

Publications (* indicates equal contribution)

Preprints / In Preparation

1. **Massey DJ**, Koren A. (2021). High-throughput analysis of DNA replication in single human cells reveals the complex nature of replication timing control. bioRxiv. DOI: 10.1101/2021.05.14.443897.

2. Yaacov A*, Vardi O*, Blumenfeld B, Greenberg A, **Massey DJ**, Koren A, Adar S, Simon I, Rosenberg S. (2021). Cancer mutational processes vary in their association with replication timing and chromatin accessibility. bioRxiv. DOI: 10.1101/2021.05.05.442736.

3. Palmerola KL*, Amrane S*, De Los Angeles A*, Xu S, Zuccaro MV, **Massey DJ**, de Pinho J, Subbiah A, Prosser B, Lobo R, Koren A, Baslan T, Egli D. (2021). DNA breaks due to replication stress limit the developmental potential of human preimplantation embryos. SSRN. DOI: 10.2139/ssrn.3825160.

4. Pereira C, Rebelo AR, **Massey DJ**, Schimenti JC, Weiss RS, Koren A. (2021). Sequencing micronuclei reveals the landscape of chromosomal instability. *In preparation.*

Primary Research Articles

5. Koren A, **Massey DJ**, Bracci AN. (2021). TIGER: inferring DNA replication timing from whole-genome sequence data. Bioinformatics *btab166*. DOI: 10.1093/bioinformatics/btab166.

6. **Massey DJ***, Kim D*, Brooks KE, Smolka MB, Koren A. (2019). Next-generation sequencing enables spatiotemporal resolution of human centromere replication timing. Genes *10*, 269. DOI: 10.3390/genes10040269.

7. Delabaere L*, Ertl HA*, **Massey DJ**, Hofley CM, Sohail F, Bienenstock EJ, Sebastian H, Chiolo3 I & LaRocque JR. (2017). Aging impairs double-strand break repair by homologous recombination in *Drosophila* germ cells. Aging Cell *16*, 320-328. DOI: 10.1111/acel.12556.

Reviews and Commentaries

8. Hulke ML*, **Massey DJ*** & Koren A. (2019). Genomic methods for measuring DNA replication dynamics (Review). Chromosome Research. DOI: 10.1007/s10577-019-09624-y.

9. **Massey DJ** & Koren A (2017). Mismatch repair prefers exons (News and Views). Nature Genetics *49*, 1673-1674. DOI: 10.1038/ng.3993.

Presentations

Intramural Seminar Talks

2020 "Single-cell analysis of DNA replication across human cell types."
Single Cell Work-in-Progress Seminar; Ithaca, NY.

2020 "Toward improved *in vitro* fertilization outcomes with single-cell DNA replication analysis."
Stem Cell Work-in-Progress Seminar; Ithaca, NY.

2019 "High-throughput profiling of DNA replication timing in single human cells."
Replication, Recombination, and Repair Seminar; Ithaca, NY.

Posters

2021 "High-throughput analysis of DNA replication in single human cells reveals confined variability in the location and timing of replication initiation."
Eukaryotic DNA Replication and Genome Maintenance; Cold Spring Harbor, NY (virtual).

2019 "Timing of human centromere replication varies across cell lines."
Eukaryotic DNA Replication and Genome Maintenance; Cold Spring Harbor, NY.

2019 "High-throughput profiling of DNA replication timing in single human cells."
Intercampus Genome Instability, Repair, and Editing Symposium; Ithaca, NY.

2014 "Failed delayed sternal closure following neonatal cardiac surgery predicted by high mean airway pressure and associated with increased post-operative mortality."
American Heart Association Scientific Sessions; Chicago, IL.

Teaching Related

2020 "A historical view of curricular changes to the Cornell University Biological Sciences major."
Symposium on Connecting Research and Teaching; Ithaca, NY.

Teaching Experience

Cornell University	Ithaca, NY	
Teaching Assistant	Undergraduate Lab in Genetics and Genomics (BIOMG 2801)	
Michael Goldberg, Ph.D.	CRISPR-Cas9 mutagenesis in *D. melanogaster*	Fall 2020
Kristina Blake-Hodek, Ph.D.		Summer 2020
		Spring 2019
Kristina Blake-Hodek, Ph.D.	Gene mapping in *D. melanogaster;* basic molecular techniques in *E. coli* and *S. cerevisiae*	Spring 2018
Georgetown University	Washington DC	
Laboratory Coordinator	All undergraduate laboratory courses for the Human Science major	
Theodore Nelson, Ph.D.	Human Biology I (HSCI 101)	Fall 2015
	Human anatomy and physiology	Fall 2014
Theodore Nelson, Ph.D.	Human Biology II (HSCI 102)	Spring 2016
	Comparative vertebrate anatomy	Spring 2015
Pablo Irusta, Ph.D.	Microbiology (HSCI 201)	Fall 2015
	Basic microbiology technique; identification of unknown organisms	Fall 2014
Ronit Yarden, Ph.D.	Genetics of Health and Disease (HSCI 355)	Fall 2015
Theodore Nelson, Ph.D.	Site-directed mutagenesis; metaphase spreads; RNAi in *C. elegans*	Fall 2014
Alexander Theos, Ph.D.	Molecular and Cellular Biology in Health and Disease (HSCI 280)	Spring 2016
	Fundamentals of molecular biology and biochemistry	Spring 2015
Swarthmore College	Swarthmore, PA	
Teaching Assistant	Introductory undergraduate biology laboratory series	
Rachel Merz, Ph.D.	Organismal and Population Biology Lab (BIOL 002)	Spring 2014
Stacey Dougherty, M.S.	Introduction to ecology and physiology	
Elizabeth Vallen, Ph.D.	Cellular and Molecular Biology Lab (BIOL 001)	Fall 2013
Stacey Dougherty, M.S.	Introduction to cellular and molecular biology	
Swarthmore College	Swarthmore, PA	
Writing Associate (WA)	Recruited as a peer writing tutor, with training in writing pedagogy	
Jill Gladstein, Ph.D.	WA for the Swarthmore College Writing Center	Spring 2012, 2013, 2014
	WA for the Organismal and Population Biology Lab (BIOL 002)	Spring 2012,
	Head WA for the course (Spring 2013, 2014)	2013, 2014
	WA for the Cellular and Molecular Biology Lab (BIOL 001)	Fall 2011,
	Head WA for the course (Fall 2012, 2013)	2012, 2013

Mentoring Experience

Research mentor for Sneha Sharma, undergraduate research assistant	Cornell University	2018 – 2021
Graduate Students Mentoring Undergraduates program	Cornell University	2018 – 2019
Peer mentor for five Writing Associate trainees	Swarthmore College	2012 – 2014

Outreach, Engagement, and Service

Life Sciences Diversity Recruitment Weekend (Board member)	Cornell University	2021 –
Diversity Council, Dept. of Molecular Biology and Genetics	Cornell University	2018 –
Scholarship of Teaching and Learning	Cornell University	2019 – 2020
Future Professors Institute	Cornell University	2019
Center for Vertebrate Genomics Journal Club (Co-organizer)	Cornell University	2018 – 2019
Genetics, Genomics, and Development Admissions Committee	Cornell University	2018 – 2019
Graduate Student School Outreach Program (GRASSHOPR)	Enfield Elementary Sch.	2018, 2019
BMCB-GGD Biennial Symposium (Co-organizer)	Cornell University	2018
Student Representative to the Graduate Field Faculty	Cornell University	2017 – 2018
Housing Committee (Co-chair, 2013 – 2014)	Swarthmore College	2010 – 2014
Resident Assistant Hiring Committee (Co-chair, 2013 – 2014)	Swarthmore College	2010 – 2014
Writing Center Outreach to the College Access Center of Delaware Co.	Chester, PA	2013