

Dashiell J. Massey

Department of Evolutionary Anthropology
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CURRICULUM VITAE**Education**

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| Cornell University | Ithaca, NY | 2022 |
| Ph.D. | Genetics, Genomics, and Development | |
| Dissertation | <i>Probing underexplored axes of variation in human DNA replication timing.</i> | |
| Committee | Amnon Koren (chair), Robert Weiss, Charles Danko | |
| Swarthmore College | Swarthmore, PA | 2014 |
| B.A. | Biology, with a minor in Philosophy | |

Research Experience

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| Duke University | Durham, NC | 2022 – |
| Postdoctoral Associate | <i>Modeling of non-random mating & complex demographic history.</i> | |
| Amy Goldberg, Ph.D. | | |
| Cornell University | Ithaca, NY | 2017 – 2022 |
| Graduate Research Assistant | <i>Variation in human DNA replication timing at the single-cell level.</i> | |
| 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 | <i>Effects of aging on DmRad51 expression and homologous recombination repair in the D. melanogaster male germline.</i> | |
| 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 | <i>Cardiac intensive care predictors of failed sternal re-approximation and post-operative mortality.</i> | |
| Catherine Allan, M.D. | Proposal, design, and implementation of a retrospective electronic medical record review. | |
| Harvard Medical School | Boston, MA | 2011 |
| Summer Research Student | <i>Effects of aging on peripheral nerve regeneration in the mouse.</i> | |
| 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

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| 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)

Peer-Reviewed Articles

1. Massey **DJ**, Szpiech ZA, Goldberg A. (2025). Differentiating mechanism from outcome for ancestry-assortative mating in admixed human populations. *Genetics*, iyaf022. DOI: 10.1093/genetics/iyaf022.
2. Edwards MM, Wang N, **Massey DJ**, Bhatele S, Egli D, Koren A. (2024). Incomplete reprogramming of DNA replication timing in induced pluripotent stem cells. *Cell Reports* 43, 113664. DOI: 10.1016/j.celrep.2023.113664.
3. Guevara E, Gopalan S, **Massey DJ**, Adegboyega A, Zhou W, Solis A, Anaya AD, Churchill SE, Feldblum J, Lawler RR. (2023). Getting it right: Teaching undergraduate biology to undermine racial essentialism. *Biology Methods and Protocols* 8, bpad032. DOI: 10.1093/biomethods/bpad032.
4. Palmerola KL, Amrane S, De Los Angeles A, Xu S, Wang N, de Pinho J, Zuccaro MV, Tagliatela A, **Massey DJ**, Turocy J, Robles A, Subbiah A, Prosser B, Lobo R, Ciccio A, Koren A, Baslan T, Egli D. (2022). Replication stress impairs chromosome segregation and preimplantation development in human embryos. *Cell* 185, 2988-3007. DOI: 10.1016/j.cell.2022.06.028.
5. **Massey DJ**, Koren A. (2022). Telomere-to-telomere human DNA replication timing profiles. *Scientific Reports* 12, 9560. DOI: 10.1038/s41598-022-13638-8.
6. **Massey DJ**, Koren A. (2022). High-throughput analysis of single human cells reveals the complex nature of DNA replication timing control. *Nature Communications* 13, 2402. DOI: 10.1038/s41467-022-30212-y.
7. 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. *Cancer Research* 81, 6106-16. DOI: 10.1158/0008-5472.CAN-21-2039.
8. Koren A, **Massey DJ**, Bracci AN. (2021). TIGER: inferring DNA replication timing from whole-genome sequence data. *Bioinformatics* btab166. DOI: 10.1093/bioinformatics/btab166
9. **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
10. Delabaere L*, Ertl HA*, **Massey DJ**, Hofley CM, Sohail F, Bienenstock EJ, Sebastian H, Chiolo 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/ace.12556.

Preprints

11. Pereira C, Rebelo AR, **Massey DJ**, Schimenti JC, Weiss RS, Koren A. Sequencing micronuclei reveals the landscape of chromosomal instability. *bioRxiv*. DOI: 10.1101/2021.10.28.466311.

Reviews and Commentaries

12. Hulke ML*, **Massey DJ*** & Koren A. (2019). Genomic methods for measuring DNA replication dynamics (Review). *Chromosome Research* 28, 49–67. DOI: 10.1007/s10577-019-09624-y.
13. **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

- 2024 “Differentiating mechanism from outcome for ancestry-assortative mating in admixed populations.”
Society for Molecular Biology and Evolution; Puerto Vallarta, Mexico.
- 2024 “Differentiating mechanism from outcome for ancestry-assortative mating in admixed populations.”
The Allied Genetic Conference; Washington DC.
- 2023 “Simulating assortative mating by global ancestry in admixed populations.”
Society for Molecular Biology and Evolution; Ferrara, Italy.
- 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)

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| <i>Michael Goldberg, Ph.D.</i> | CRISPR-Cas9 mutagenesis in <i>D. melanogaster</i> | Fall 2020 |
| <i>Kristina Blake-Hodek, Ph.D.</i> | | Summer 2020 |
| | | Spring 2019 |
| <i>Kristina Blake-Hodek, Ph.D.</i> | Gene mapping in <i>D. melanogaster</i> ; basic molecular techniques in <i>E. coli</i> and <i>S. cerevisiae</i> | Spring 2018 |

Georgetown University

Washington DC

Laboratory Coordinator All undergraduate laboratory courses for the Human Science major

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| <i>Theodore Nelson, Ph.D.</i> | <u>Human Biology I (HSCI 101)</u> | Fall 2015 |
| | Human anatomy and physiology | Fall 2014 |

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| <i>Theodore Nelson, Ph.D.</i> | <u>Human Biology II (HSCI 102)</u> | Spring 2016 |
| | Comparative vertebrate anatomy | Spring 2015 |

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| <i>Pablo Irusta, Ph.D.</i> | <u>Microbiology (HSCI 201)</u> | Fall 2015 |
| | Basic microbiology technique; identification of unknown organisms | Fall 2014 |

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| <i>Ronit Yarden, Ph.D.</i> | <u>Genetics of Health and Disease (HSCI 355)</u> | Fall 2015 |
| <i>Theodore Nelson, Ph.D.</i> | Site-directed mutagenesis; metaphase spreads; RNAi in <i>C. elegans</i> | Fall 2014 |
| <i>Alexander Theos, Ph.D.</i> | <u>Molecular and Cellular Biology in Health and Disease (HSCI 280)</u> | Spring 2016 |
| | Fundamentals of molecular biology and biochemistry | Spring 2015 |

Swarthmore College

Swarthmore, PA

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| Teaching Assistant | Introductory undergraduate biology laboratory series | |
| <i>Rachel Merz, Ph.D.</i> | <u>Organismal and Population Biology Lab (BIOL 002)</u> | Spring 2014 |
| <i>Stacey Dougherty, M.S.</i> | Introduction to ecology and physiology | |
| <i>Elizabeth Vallen, Ph.D.</i> | <u>Cellular and Molecular Biology Lab (BIOL 001)</u> | Fall 2013 |
| <i>Stacey Dougherty, M.S.</i> | Introduction to cellular and molecular biology | |

Swarthmore College

Swarthmore, PA

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| Writing Associate (WA) | Recruited as a peer writing tutor, with training in writing pedagogy | |
| <i>Jill Gladstein, Ph.D.</i> | <u>WA for the Swarthmore College Writing Center</u> | Spring 2012, 2013, 2014 |
| | <u>WA for the Organismal and Population Biology Lab (BIOL 002)</u> | Spring 2012, 2013, 2014 |
| | Head WA for the course (Spring 2013, 2014) | |
| | <u>WA for the Cellular and Molecular Biology Lab (BIOL 001)</u> | Fall 2011, 2012, 2013 |
| | Head WA for the course (Fall 2012, 2013) | |

Mentoring Experience

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| Research mentor to 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

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| Life Sciences Diversity Recruitment Weekend (Board member) | Cornell University | 2021 – 2022 |
| Diversity Council, Dept. of Molecular Biology and Genetics | Cornell University | 2018 – 2022 |
| 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 |