

Miriam Huntley, PhD

miriamhuntley.com

miriam@dayzerodiagnostics.com

EDUCATION

Harvard University, Applied Math, SEAS PhD, GPA: 4.0/4.0 Secondary Field: Computational Science and Engineering	Sept. 2010-May 2016
Massachusetts Institute of Technology B.S. in Physics, June 2009. GPA: 4.9/5.0	Sept. 2005-June 2009
Technion , Israel Institute of Technology, Haifa, Israel Semester Abroad. GPA: 96.3/100	May-Aug. 2008
Midreshet Lindenbaum , Jerusalem, Israel Post high school year abroad at college for Judaic studies. GPA: 4.0/4.0	Aug. 2004-June 2005
University of California, Davis Attended summer sessions while in high school: Math, CS, Econ. GPA: 4.0/4.0	June-Aug. 2002, 2003, 2004
Northwest Yeshiva High School , Seattle, WA Valedictorian, Dean's List every semester. GPA: 4.0/4.0	Aug. 2001-June 2004

WORK

Day Zero Diagnostics, Inc. Co-founder, algorithm development	Jun. 2016-Present
--	-------------------

RESEARCH EXPERIENCE

Brenner Group, Harvard University Principles of self-assembly in synthetic and natural biology; applications of random matrix theory for data analysis	Jan. 2013-May 2016
Aiden Lab, Baylor College of Medicine Algorithm design for Hi-C and genomic data analysis to uncover principles of chromatin spatial organization; Computational modeling of condensed polymer systems	Aug. 2011-May 2016
Microsoft Research Internship Developed an algorithm for input aware ensemble learning	June-Aug 2015
Biochip Group, Institute of Bioengineering and Nanotechnology , Singapore Developed surface acoustic wave microfluidic techniques and PCR data analysis software	Sept. 2009-Feb. 2010
Ashoori Group, MIT Senior thesis: performed low temperature transport studies on CVD-grown graphene	Sept. 2008-June 2009
Condensed Matter Group, Tel Aviv University Wrote numerical simulations of non-linear optical trapping	Spring 2008
NSF REU Internship, Scalettar Group, U.C. Davis Performed numerical simulations of fermions using quantum Monte-Carlo techniques	Summer 2007
Neutrino and Dark Matter Group, MIT Designed rear electron gun setup for KATRIN experiment	Jan. and Spring Terms 2007

PUBLICATIONS

(* denotes equal contribution, first author contributions in bold)

1. **MH Huntley***, MP Brenner, LJ Colwell. Incorporating Models into Principal Component Analysis. (Under review.)

2. **MH Huntley***, A Murugan*, MP Brenner. The Capacity of Specific Glues. PNAS (2016)
3. EM Darrow*, **MH Huntley***, B Chadwick, E Lieberman Aiden, et al. Deletion of DXZ4 on the human inactive X chromosome eliminates superdomains and impairs gene silencing. PNAS (2016)
4. NC Durand, MS. Shamim, **MH Huntley**, ES Lander, E Lieberman Aiden et al. Juicer: a one-click system for analyzing loop-resolution Hi-C experiments. Cell Systems (2016)
5. AL Sanborn, SSP Rao, **MH Huntley**, E Lieberman Aiden et al. Chromatin extrusion explains key features of loop and domain formation in wild-type and engineered genomes. PNAS (2015)
6. SSP Rao*, **MH Huntley***, ES Lander, E Lieberman Aiden, et al. A three-dimensional map of the human genome at kilobase resolution reveals principles of chromatin looping. Cell (2014)
7. LJ Colwell, Y Qin, **MH Huntley**, A Manta, MP Brenner. Feynman-Hellmann Theorem and Signal Identification from Sample Covariance Matrices. Physical Review X (2014)
8. GG Batrouni, **MH Huntley**, VG Rousseau, RT Scalettar. Exact Numerical Study of Pair Formation with Imbalanced Fermion Populations. Physical Review Letters (2008)

THESES

1. Ph.D. Thesis: Quantitative Methods for Analyzing Structure in Genomes, Self-Assembly, and Random Matrices. Advisors: Erez Lieberman Aiden and Michael P Brenner. May 2016, Harvard University.
2. B.Sc. Thesis: Transport Studies on CVD-Grown Graphene. Advisor: Raymond Ashoori. June 2009, Massachusetts Institute of Technology.

AWARDS

NSF Graduate Research Fellowship	2011
Phi Beta Kappa Award	2009
Sigma Pi Sigma Physics Honor Society	2009
MIT Public Service Grant for Website Development Project	2007
Awarded for trip to Guatemala to develop website for technical high school and teach classes	
High School Valedictorian	2004

OTHER

Teaching:

- Science of Cooking Lab Instructor, Harvard University
2013
- Hebrew Teacher, MIT Hebrew Language Club
2009
- Windsurfing Instructor, MIT Sailing Pavilion
2013-Present
- Mentor: Harvard Women In Science, Technology, Engineering and Mathematics
2012-2015

Languages: fluent Hebrew and Spanish, beginner Mandarin

Art:

- Co-wrote and co-directed a Cell Video abstract that was the recipient of the 2015 BioTechniques Lab Grammy in Education (<https://www.youtube.com/watch?v=dES-ozV65u4&list=UUISV2Tk7x-wBBXP6-VCNbnw>)
- Created a simulated DNA polymer that was 3D printed and exhibited (“Genome Ball”) at the Smithsonian National Museum of Natural History (2014)
- Created images of DNA polymer simulations that were exhibited at the Broad Institute (2011)