

# Haley J. Fortin

PhD Candidate at Tufts University &  
The Jackson Laboratory

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## Education

### **Ph.D. Mammalian Genetic**

2024

The Jackson Laboratory for Mammalian Genetics, Bar Harbor, ME &  
Tufts University, Boston, MA

(expected)

Advisor: Dr. Christopher Baker

Thesis: Discovering the role genetic variation has on development through *trans*-regulation of 3D genome contacts

### **B.S. Biology & Biotechnology**

2014

Endicott College, Beverly, MA

Summa Cum Laude Cum Laude

Advisor: Dr. Jessica Kaufman/Dr. Deborah Moore-Lai (Cell Signaling Technology)

Thesis: Antibody production and cellular proliferation in mycoplasma treated and untreated rabbit hybridoma cell lines

## Research Work Experience

### **PhD Candidate, Baker Lab**

Jun 2020 - Present

The Jackson Laboratory - Bar Harbor, ME

- Dissecting the role of *trans*-regulation on 3D genome structure in genetically diverse mouse ESCs
- Determining the molecular mechanism causing dactylaplasia in the *Dac* mutant mouse

### **Rotation Student, Reinholdt Lab**

Mar 2020 - May 2020

The Jackson Laboratory - Bar Harbor, ME

- Analyzed sequencing data from spontaneous mutant mice to identify casual structural variants

### **Rotation Student, Murray Lab**

Jul 2019 - Aug 2019

The Jackson Laboratory - Bar Harbor, ME

- Identified mutant phenotypes in F0 embryos with CRISPR edited *Gli3* binding site

### **Molecular Medical Technologist III**

May 2018 - Jun 2019

### **Research Associate, Department of Conservation Science**

Sep 2014 - May 2018

Veritas Genetics – Danvers, MA

- Performed routine high-complexity NGS library construction, genotyping using microarrays, quality control, sequencing, and proficiency testing for targeted, whole genome, and whole exome sequencing assays
- Complied with all CLIA, CAP, and HIPAA regulations
- Troubleshoot instrument errors and assay failures
- Planned and executed validations to improve processes and assays in the laboratory
- Collaborated with R&D to validate new assays and write validation reports
- Performed MLPA and fragment analysis using Coffalyser software
- Documented quality control measures and took corrective action when necessary
- Managed the status of customer and research samples
- Monitored, scheduled, and performed preventative maintenance and calibration of laboratory instruments

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- Routinely reviewed and revised all laboratory SOPs
- Oversaw inventory and ordering of laboratory supplies
- Trained new employees on techniques and assays
- Contributed to the improvement and development of LIMS
- Communicated and worked effectively with lab members and supervisors
- Managed time effectively and adapted to changing circumstances

**R&D Intern**

May 2014 - Sep 2014

Veritas Genetics – Danvers, MA

- Developed and optimized hereditary cancer and carrier panel assays
- Performed DNA extractions, DNA quantification, PCR, and gel electrophoresis

**Intern, Antibody Production Group**

Fall 2013

Cell Signaling Technology – Beverly, MA

- Lead an independent research thesis on the effect of mycoplasma contamination and antibiotic treatment on antibody production and cellular proliferation in hybridoma cell lines
- Performed weekly antibody cell culture harvests
- Performed routine mycoplasma testing

Teaching & Mentoring Experience

**Learning Consultant**

Sep 2018 - May 2019

Endicott College – Beverly, MA

- Advised and supported undergraduate students in a range of critical college level learning skills, including course content, time management, reading, writing, research, academic self-awareness, campus engagement, and self-advocacy

**Professional Tutor**

Sep 2018 - May 2019

**Certified Peer Tutor**

Jan 2012 - May 2014

Endicott College – Beverly, MA

- Facilitated student learning through individual and group tutoring in core science and mathematics courses

Publications in Preparation

1. Byers C, Spruce C, **Fortin H**, Czechanski A, Munger SC, Reinholdt RG, Skelly DA, Baker CL. Genetic control of pluripotency epigenome determines differentiation bias in mouse embryonic stem cells. BioRxiv. Posted Jan 16, 2021. <https://doi.org/10.1101/2021.01.15.426861>. (In prep for The EMBO Journal)

Awards & Honors

**Science and Technology Award**, Endicott College

2014

**Dean's List**, Endicott College

Fall 2010 - Spring 2014

Oral and Poster Presentations

**Understanding the impact of regulatory variation on development**

Aug 2021

The Jackson Laboratory Board of Scientific Counselors Meeting

The Jackson Laboratory – Bar Harbor, ME

Professional Development & Continuing Education

Jun. 2021

**Summer DEI Workshop: Social Identity Development &**

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Jun. 2021 **Allyship**, The Jackson Laboratory  
Jun. 2021 **The Whole Scientist**, The Jackson Laboratory  
May 2021 **The Cube Education Series**, The Jackson Laboratory  
Apr. 2021 **Statistical Inference for Biology Workshop**, The Jackson Laboratory  
Feb. 2021 **Fellowship-writing workshop I-IV**, The Jackson Laboratory  
Nov. 2020 **Data Carpentry Genomics**, The Carpentries  
Oct. 2020 **Data Carpentry Ecology with R**, The Carpentries  
Oct. 2020 **Containerization with Singularity**, The Jackson Laboratory  
Sep. 2020 **Introduction to HPC**, The Jackson Laboratory  
Jul. 2019 **Human and Mammalian Genetics and Genomics:  
The 60<sup>th</sup> McKusick Short Course**, The Jackson Laboratory  
Sep. 2021 **Introductory Statistics with R**, The Carpentries

### Professional Membership

Phi Sigma Biological Honor Society  
Sigma Xi, The Scientific Research Honor Society  
American Society of Clinical Pathology  
American Society of Human Genetics

### Professional Certifications

Technologist in Molecular Biology, MB (ASCP)<sup>CM</sup>  
American Society for Clinical Pathology  
January 2018 – January 2024

### Scientific Community Service

Jul 2021 - Current **Volunteer biocurator for ClinGen**