

## Education

**Fordham University, College of Arts and Sciences, New York, NY**

**Aug 2016 - Dec 2019**

*Degree:* Bachelor of Science in Biological Sciences  
*Cumulative GPA:* 3.945/4.000 (*summa cum laude*)

**Weill Cornell Graduate School, New York, NY**

**Aug 2020 - Present**

*Degree:* Ph.D. (in progress)  
*Program:* Biochemistry, Cell and Molecular Biology (BCMB)

## Honors and Awards

Honors in Freshman Chemistry (Undergraduate)  
Dean's List (Dean's List)

## Employment and Research Experience

**Research Technician I**

**Feb 2020 - Aug 2020**

**Weill Cornell Medicine, New York, NY**

*P.I.:* Dr. Eftychia Apostolou

**Advancing Cornell Career Experiences for Summer Students (ACCESS)**

**Jun 3 - Aug 9, 2019**

**Weill Cornell Graduate School, New York, NY**

*Position:* Undergraduate researcher

*Mentor:* Dr. Eftychia Apostolou

*Project:* "Subnuclear Clustering of Transcriptional Coactivators in Embryonic Stem Cells"

Super-enhancers are defined as active genomic regions in various cell types which assemble high densities of coactivators, such as Mediator 1 (MED1) and Bromodomain Protein 4 (BRD4). Dr. Apostolou's lab is attempting to visualize and quantify these large subnuclear clusters in naïve embryonic stem cells. To this end, I performed immunofluorescence assays of BRD4 followed by high resolution fluorescence microscopy and quantitation of BRD4 foci with ImageJ 3D Objects Counter.

**Advancing Cornell Career Experiences for Summer Students (ACCESS)**

**Jun 4 - Aug 10, 2018**

**Weill Cornell Graduate School, New York, NY**

*Position:* Undergraduate researcher

*Mentor:* Dr. Eftychia Apostolou

*Project:* "Maintenance of Imprinting at the *Dlk1-Dio3* Locus in Induced Pluripotent Stem Cells"

*Dlk1-Dio3* is an imprinted locus located on chromosome 12 in mice in which the non-protein coding genes, like *Gtl2*, are maternally expressed and the protein-coding genes, like *Dlk1*, are paternally expressed. Dr. Apostolou's lab is attempting to discern the mechanism of maintenance of imprinting at this locus in induced pluripotent stem cells (iPSCs). My work focused on identifying various proteins which may be involved in this maintenance, including TET proteins, DNA-Methyltransferase (DNMT) proteins, and zinc-finger proteins, through CRISPR-Cas9-mediated protein knockouts of reporter iPSCs.

**Building Diversity in Biomedical Sciences (BDBS) Research Program      May 29 - Aug 4, 2017**  
**Sackler School of Graduate Biomedical Sciences, Tufts University, Boston, MA**

*Position:* Undergraduate researcher

*Mentor:* Dr. Pamela Yelick

*Project:* "Validation of Heterotopic Ossification in *acvr1l<sup>Q204D</sup>* Mutant Zebrafish."

Fibrodysplasia ossificans progressiva (FOP) is a rare autosomal dominant disorder characterized by continuous heterotopic ossification, the process by which bone grows within fibrous tissue such as skeletal muscle. The molecular basis of FOP lies in the constitutive activation of ACVR1, a transforming growth factor (TGF)  $\beta$ /bone morphogenic protein (BMP) receptor which controls bone formation. Dr. Yelick's lab had created the world's first zebrafish model of adult human FOP by injecting constitutively activating *acvr1l<sup>Q204D</sup>* into zebrafish embryos (*acvr1l* being the zebrafish ortholog of human ACVR1). My work focused on verifying the presence of heterotopic bone growth within the *acvr1l<sup>Q204D</sup>* fish through both immunohistochemical and histological analysis.

## **Presentations**

**Weill Cornell Graduate School, New York, NY      Aug 9, 2019**

*Type of Presentation:* Poster

*Title:* "Subnuclear Clustering of Transcriptional Coactivators in Embryonic Stem Cells."

**Leadership Alliance National Convention, Hartford, CT      July 27-29, 2019**

*Type of Presentation:* Oral

*Title:* "Subnuclear Clustering of Transcriptional Coactivators in Embryonic Stem Cells."

**Weill Cornell Graduate School, New York, NY      Aug 10, 2018**

*Type of Presentation:* Poster

*Title:* "Maintenance of Imprinting at the *Dlk1-Dio3* Locus in Induced Pluripotent Stem Cells."

**Leadership Alliance National Convention, Hartford, CT      July 27-29, 2018**

*Type of Presentation:* Oral

*Title:* "Maintenance of Imprinting at the *Dlk1-Dio3* Locus in Induced Pluripotent Stem Cells."

**Tufts University, Sackler School of Graduate Biomedical Sciences, Boston, MA      Aug 3, 2017**

*Type of Presentation:* Poster

*Title:* "Verification of Heterotopic Ossification in *acvr1l<sup>Q204D</sup>* Mutant Zebrafish."

**Leadership Alliance National Convention, Hartford, CT      July 28-30, 2017**

*Type of Presentation:* Oral

*Title:* "Verification of Heterotopic Ossification in *acvr1l<sup>Q204D</sup>* Mutant Zebrafish."

## **Publications**

Aronson B.E., Scourzic, L., Shah V., Swanzey E., Kloetgen A., Polyzos A., Sinha A., **Azziz A.**, Caspi I., Li J. Pelham-Webb B., Wchiterle H., Tsirigos A., Stadtfeld M., Apostolou E. "A bipartite element with allele-specific functions safeguards DNA methylation imprints at the *Dlk1-Dio3* locus." 2020. *bioRxiv*, <https://doi.org/10.1101/2020.05.22.103796>. **Currently under review.**

## Relevant Skills

### *Animal Handling:*

- Breeding and maintaining zebrafish
- Collecting and cleaning zebrafish embryos

### *Histology:*

- HBQ and H+E staining
- Immunohistochemistry
- Immunofluorescence

### *Imaging:*

- Brightfield microscopy
- Polarized microscopy
- Fluorescence microscopy (live and fixed)

### *Tissue Culture:*

- Cell lines maintained and manipulated:
  - mouse induced pluripotent stem cells (iPSCs)
  - human embryonic kidney (293T) cells
  - mouse extraembryonic endoderm (XEN) cells
  - mouse breast cancer (4T1) cells
  - mouse colorectal cancer (CTC26) cells
  - HeLa cells
- Transfection and infection
- Virus generation and isolation
- Fluorescence-activated cell sorting (FACS)

### *Bacterial and DNA Work:*

- Mini-, midi-, and maxi-preps
- Gel electrophoresis
- Polymerase chain reaction (PCR) and reverse transcription-quantitative polymerase chain reaction (RT-qPCR)
- Plasmid cloning
- Surveyor assays
- Western blot

### *Computer Skills:*

- R
- Unix
- LaTeX
- Python
- PyMOL

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