Adrian Henry Kwiatkowski

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EDUCATION

The University of Chicago — Chicago, IL

B.A. in Biological Sciences*; minor in Visual Arts — 2024

*Specialization in Development, Regeneration, and Stem Cell Biology

GPA/Major GPA: 3.50/3.70

ACADEMIC AWARDS

U.S. Presidential Scholar — 2019

1 of 20 students selected nationally for exceptional ability and accomplishment in career and technical education.

Gates Scholar — 2019

1 of 300 recipients of a highly selective, last-dollar scholarship for outstanding, minority, high school seniors from low-income households.

Questbridge National College Match Scholarship Recipient — 2019

National Merit Scholar — 2019

National Hispanic Scholar — 2019

RESEARCH EXPERIENCE

The University of Chicago — Chicago, IL

Genetics and Genomics Research Fellow — Summer, 2021

Advisor: *Urs Schmidt-Ott*

- Explored the chromatin remodeling ("pioneer") capabilities of the maternal effect gene *Opa* (*Cal-Opa*) in the common drain fly *Clogmia albipunctata* in order to facilitate a broader understanding of the evolution of axis specification across dipteran insects.
- Identified zygotically expressed *Cal-Opa* targets and their target enhancers in the early *Clogmia albipunctata* embryo using ChIP-qPCR, in-situ hybridization, and other molecular biology techniques.

Marine Biological Laboratory — Woods Hole, MA

Summer Undergraduate Research Fellow — Summer, 2020

Advisor: Duygu Özpolat

- Identified the optimal conditions for the delivery of oligonucleotide morpholinos via electroporation in the marine annelid *Platynereis dumerilli* remotely using data and image analysis software (R and FIJI).

Arizona State University Biodesign Institute Tempe, AZ
Student Researcher 2018-19
Advisor: *Rizal Hariadi*

- Helped develop a DNA origami tool capable of measuring nanoscale protein interactions as part of the ASU SCENES program, an educational outreach program providing high school students with science research experience.
- Designed a low-cost LEGO-based glycerol gradient mixer to purify DNA origami nanostructures from free-floating DNA strands through high-RPM centrifugation (1st place at the Arizona State Science Fair).

SKILLS AND INTERESTS

Interests: developmental biology, stem cell biology, stem cell niche, embryogenesis, A/P-axis polarity, regeneration, social determinants of health

Languages: native Spanish speaker and conversational French

Wet Lab: DNA gel electrophoresis, next-generation DNA sequencing, western blot/SDS-PAGE, PCR, gateway cloning, primer design, bacterial transformation, micro-injecting, ChIP-qPCR, in-situ hybridization, and experience with multiple model organisms (Zebrafish, Nematostella, Planaria, Axolotls, *C. Elegans*, *Drosophila melanogaster* and other basal fly species).

Technical Languages: R/RStudio, Python, Stata

Data Skills: high proficiency in supervised and unsupervised machine learning methods including k-nearest neighbor (KNN), linear regression, classification, resampling, principle component analysis (PCA), and multiple hypothesis testing.

PROFESSIONAL ACTIVITIES

Phoenix Biology Chicago, IL
General Board Member 2021-Present

- Promoting the academic and professional careers of undergraduate students in the life sciences by organizing quarterly lecture series, research symposiums, and 'fireside' chats.
- Helped establish a peer-to-peer mentorship program designed to connect first-year students to experienced upperclassmen.

The Triple Helix @ UChicago Chicago, IL
Events Coordinator 2019-20

- Coordinated quarterly events around campus aimed at supporting three flagship publications (Scientia, Society in Review, and E-pub) exploring the relationship between science & society.

HOSA—Future Health Professionals Phoenix, AZ
Arizona State President 2018-19

- Lead the 9,000 membership of the Arizona HOSA charter, presiding at the Arizona HOSA State Leadership Conference and all student executive council meetings, made committee appointments, and developed an annual program of work with the state officer team.

TEACHING EXPERIENCE

University of Chicago

Teaching Assistant; Prof: Dr. Akira Imamoto 2021
BIOS 21415 "Stem Cells in Development and Diseases"

Laboratory Teaching Assistant; Prof: Dr. John Kennedy 2021
BIOS 20242 "Principles of Physiology"

Virtual Teaching Assistant; Prof: Dr. Katie Bailey 2020
CAAP* Biology

*CAAP is a year-long program that provides early exposure to scholarly and life at the University of Chicago to incoming first-year students, many of whom are the first in their family to go to college or from lower-income backgrounds.

RELEVANT COURSEWORK

Molecular Biology of the Cell
Biological Systems
Biological Dynamics
Principles of Physiology
Stem Cells in Development and Diseases
Stem Cell Biology, Regeneration, and Disease Modeling
Stem Cells and Regeneration: from aquatic research organisms to mammals
Dynamic Camouflage: Behavior, Visual Perception and Neural Skin Patterning in Cephalopods
Honors General Chemistry I, II, III
Honors Organic Chemistry I
Organic Chemistry II
General Physics I, II
Bioethics
Introduction to Biochemistry
Statistical Methods and Applications
Introduction to Machine Learning for Biology
Introduction to Imaging for Biological Research

REFERENCES

Dr. Akira Imamoto
Associate Professor, University of Chicago
Ben May Department of Cancer Research
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Relationship: Academic

Dr. Duygu Özpolat
Professor, Washington University in St. Louis
Department of Biology
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Relationship: Research Mentor

Scott Wolniak
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Relationship: Academic/Professional

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