Curriculum Vitae

Benjamin J. Patty

Department of Biological Sciences
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Current Position:

2020-Present — **NSF Predoctoral Fellow**
Advisor: Dr. Sarah Hainer, Department of Biological Sciences, University of Pittsburgh. *Elucidating a nucleosome-based network of ncRNA regulation in murine embryonic stem cells*.

Education:

In progress — **Ph.D in Molecular, Cellular, and Developmental Biology**
Department of Biological Sciences, University of Pittsburgh

2013-2016 — **B.S., Biology with Minor in Chemistry**
Truman State University

Previous Positions:

2019-2020 — **Graduate Student**
Advisor: Dr. Sarah Hainer, Department of Biological Sciences, University of Pittsburgh. *Elucidating a nucleosome-based network of ncRNA regulation in murine embryonic stem cells*.

2019 — **Rotation Student**
Advisor: Dr. Karen Arndt, Department of Biological Sciences, University of Pittsburgh. *Evaluating the impact of Spt5 CTR modification on Pol II Localization.*

2018 — **Rotation Student**
Advisor: Dr. Sarah Hainer, Department of Biological Sciences, University of Pittsburgh. *Investigating the role of esBAF in R-loop regulation.*

2018 — **Rotation Student**
Advisor: Dr. Jacob Durrant, Departmental of Biological Sciences, University of Pittsburgh. *Characterization of PARP1 binding pocket confirmations through POVME analysis.*

February 2017-August 2018 — **Entry-Level Biologist**
Applied Genome Editing Modifications, Monsanto-Bayer Co, Saint Louis, Missouri.
Utilized cutting-edge gene-editing techniques to stably integrate genetic traits into the genomes of commercial crops.

August 2016- — **GIASR-funded Undergraduate Researcher**

December 2016 Advisor: Jenna Canfield, Biology Department, Truman State University
The Effect of temperature and nutrient on reproductive fitness of Daphnia Magna.

May, 2016 **Undergraduate Researcher**
Advisor: Peter Goldman, Ph.D, Biology Department, Truman State University. *Investigating the effects of wildfires on avian diversity in the Chiricahua Mountains.*

Publications:

BJ Patty and SJ Hainer**.** Transcription factor chromatin profiling genome-wide using uliCUT&RUN in single cells and individual blastocysts. *Nat Protoc* (2021). https://doi.org/10.1038/s41596-021-00516-2

BJ Patty and SJ Hainer**.** Non-Coding RNAs and Nucleosome Remodeling Complexes: An Intricate Regulatory Relationship. *Biology*. 2020 August 6; 9(8): 213.

Grants and Fellowships: Year(s)

Graduate Research Fellowship, National Science Foundation 2020-2023
$138,000

Dietrich Arts and Sciences Fellowship, University of Pittsburgh 2018-2019
$26,246

Grant in Aid of Student Research, Truman State University 2016
$500

Presentations:

Poster, *Elucidating a nucleosome-based network of ncRNA regulation in murine embryonic stem cells*. Graduate Student Research Exposition, University of Pittsburgh, March 2021

Seminar, *Elucidating a nucleosome-based network of ncRNA regulation in murine embryonic stem cells*. Department of Biological Sciences, University of Pittsburgh. October 2020

Seminar, *Establishing the roles of chromatin remodelers in eRNA and PROMPT expression*. Pittsburgh Nucleic Acids Club, Carnegie Mellon University. October 2019

Seminar, *Investigating the roles of chromatin remodeling factors in ncRNA regulation in murine embryonic stem cells*. Department of Biological Sciences, University of Pittsburgh. September 2019

Rotation Talk, *Evaluating the impact of Spt5 CTR modification on Pol II Localization.* Department of Biological Sciences, University of Pittsburgh. April 2019

Rotation Talk, *Investigating the role of esBAF in R-loop regulation.* Department of Biological Sciences, University of Pittsburgh. February 2019

Rotation Talk, *Characterization of PARP1 binding pocket confirmations through POVME analysis.* Department of Biological Sciences, University of Pittsburgh. November 2018

Conferences

NHLBI Long Non-Coding RNAs Symposium, Attendee (Virtual), Bethesda, Maryland, March 2021

RNA Rustbelt Conference, Attendee (Virtual), Pittsburgh PA, October 2020

Epigenetics & Chromatin Conference, Cold Spring Harbor Laboratory. Attendee (Virtual), Long Island, NY. September 2020

Teaching/Relevant Experience

Teaching Assistant, BIOSCI_0150: Foundations of Biology. Fall 2019, Department of Biological Sciences, University of Pittsburgh
Professor: Dr. Laurel Roberts. Headed a team of 25 undergraduate teaching assistants to conduct grading/teaching and led four two-hour recitation sections a week for ~150 students.

Biology Stockroom Staffer, August 2015- May 2016, Biology Department, Truman State University.
Regulated and organized a fully stocked laboratory stockroom and biology prep-room 60 hours a semester for undergraduate biology labs

Animal Care Facility Staffer, August 2014-May 2015, Biology Department, Truman State University.
Maintained rodent husbandry facilities for use in research, student education, and feed for campus herpetarium.

Professional Service and Mentorship:

Undergraduate/Graduate Student Mentor, Hainer Lab, Department of Biological Sciences, University of Pittsburgh.
Cailin Jordan, Undergraduate, Hainer Lab. Mentored Cailin through how to conduct nascent transcriptomic assays and the relevant bioinformatic analyses.
Jasmine Dioguardi, graduate student, Hainer Lab. Instructed Jasmine as she learned how to design constructs and performed gene editing in mammalian systems.

"Friday's with Ben" Seminar Series, BIOSCI_0150: Foundations of Biology. Fall 2019, Department of Biological Sciences, University of Pittsburgh
Conducted a novel series of short seminars before class every Friday about various STEM career to promote undergraduate career development.

Volunteer Sample Collector, Missouri Department of Conservation, November 2014.
Volunteered to collect information and samples from deer harvested in Macon County, Missouri to track the spread of Chronic Waste Disease in Missouri.

Manuscripts Co-reviewed: Cell Reports, 2020 (1); Epigenetics & Chromatin, 2020 (1), Trends in Biochemical Sciences, 2020 (1)

Professional Affiliations:

Beta Beta Beta Biology Honors Fraternity, 2015-present

Technical/Computational Skills:

- Expertise in assays related to nascent transcriptomics, genomics, and genomic editing in mammalian and yeast systems
- Proficiency in bioinformatic analyses of transcriptomics, genomics, and other whole genome next generation sequencing data sets in R programming, python programming, and Unix command line
- Excellent scientific communication skills through my experience in research presentation and teaching/mentorship
- Expectational project management abilities due to my dual background in an high through industry laboratory and fundamental academia setting