

SAMUEL DADD HAMILTON

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EDUCATION

Northwestern University, Evanston

September 2013 - June 2017

Bachelor of Arts with Departmental Honors, Biology.
Weinberg College of Arts and Sciences

Northwestern University, Chicago

September 2019 - Present

Ph.D Student
Driskill Graduate Program at Feinberg School of Medicine, Biomedical Informatics Track

RESEARCH EXPERIENCES

Rong Lab, UIC College of Medicine, Chicago IL

June 2015 - August 2015

Summer Intern

- Produced Marburg and Ebola pseudovirions for high throughput antiviral drug testing.

Wagenius Lab, Chicago Botanic Garden, Glencoe IL

September 2016 - March 2017

Undergraduate Researcher

- Quantified the impact of fire on the pollination success of a prairie perennial, *Echinacea Angustifolia*.

Andersen Lab, Northwestern University, Evanston IL

September 2016 - April 2017

Undergraduate Researcher

- Performed Crispr-CAS9 genetic editing and analyzed results from high-throughput phenotyping experiments to assist in the discovery that the DBT-1 locus mediates resistance to a chemotherapeutic, arsenic trioxide, in *C. elegans*.

De Cabo Lab, National Institute on Aging, Baltimore MD

July 2017 - April 2019

Postbaccalaureate Fellow

- Lead data analyst, data manager, and data collection team member for a 2,600 mouse longitudinal study of aging.
- Analyzed RNA-seq and whole genome bisulfite sequencing data to evaluate the effect of dietary interventions in mice.
- Developed software for processing data from high throughput assays.
- Collected, managed, analyzed data for a variety of studies investigating dietary interventions in aging mice.

Winter Lab, Northwestern University, Chicago IL

July 2019 - September 2019

Rotation Student

- Analyzed single cell and longitudinal RNA-seq data from arthritic mouse models to elucidate macrophage function in arthritic mouse joints.

Luo Lab, Northwestern University, Chicago IL

September 2019 - December 2019

Rotation Student

- Developed tool to generate co-reference gene networks from PubMed free text.

Braun Lab, Northwestern University, Chicago IL

January 2020 - March 2020

Rotation Student

- Developed a derivation of Approximate Entropy, Sliding Window Approximate Entropy, to enable the comparison of regularity in time series of varying lengths
- Applied Sliding Window Approximate Entropy to quantify the effects of time restricted feeding and melatonin on the metabolic circadian rhythm, as measured by a continuous glucose monitoring system in adult humans.

Alshurafa Lab, Northwestern University, Chicago IL

January 2020 - June 2020

Student/Volunteer

- Assisted in ongoing project to detect eating in a free-living environment using multimodal detection system.

AWARDS

NIH Predoctoral Training Program in Biomedical Data Driven Discovery

June 2020

Northwestern Undergraduate Research Grant

December 2016

National Merit Scholar

March 2013

PUBLICATIONS

Hamilton, S., de Cabo, R., Bernier, M. (2019). Maternally Expressed Gene 3 in metabolic programming. *Biochimica et Biophysica Acta, Gene Regulatory Mechanisms*.

Anna Montgomery, Niamh Fahy, **Samuel Hamilton**, Blair Eckman, Lucia De Almeida, Shingo Ishihara, Maximilian G Mayr, Shang Yang Chen, Gaurav Gadhvi, Carla Cuda, Anne-Marie Malfait, Yvonne Bastiaansen-Jenniskens, Deborah R. Winter (2020). Macrophages drive the inflammatory phase in experimental osteoarthritis. *bioRxiv*.

POSTERS AND CONFERENCES

Oral Presentation, National Institute on Aging Annual Retreat, Baltimore

May 2018

Study of Longitudinal Aging in Mice: Perspectives on Morbidity on Mortality

Poster Presentation, National Institute on Aging Annual Retreat, Baltimore

May 2018

Study of Longitudinal Aging in Mice: Perspectives on Morbidity on Mortality

Poster Presentation, Translation Gerontology Branch Retreat, Baltimore

June 2018

Changes in Maternally Imprinted Dlk-Dio3 Region are Associated with Lifespan Extension by Caloric Restriction