

Maya Lemmon-Kishi

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Education

University of California, Berkeley

PH.D. IN COMPUTATIONAL BIOLOGY

- Advised by Rasmus Nielsen, Departments of Statistics & Integrative Biology

Berkeley, California

Aug. 2019 - Exp. May 2025

University of Pittsburgh

B.S. IN COMPUTER SCIENCE, *magna cum laude*

- Program Honors in Computer Science
- Minors in Bioengineering and Chemistry

Pittsburgh, Pennsylvania

Aug. 2014 - Dec. 2018

Research Experience

Graduate Researcher

NIELSEN LAB

- Currently developing methods for population genetic analyses of environmental DNA
- Analyzing environmental DNA for signals of population structure using population genetic summary statistics
- Implementing an algorithm to estimate phylogenetically compatible haplotypes from environmental DNA

Berkeley, California

May 2020 - Present

Graduate Rotation Student

VARIOUS LABS

- Implemented a RNA-seq pipeline for custom reference genome generation of sunflowers
- Developed a method to calculate population genetic summary statistics of environmental DNA
- Explored methods to detect non-Brownian phylogenetic signal of leaf chemical composition data

Berkeley, California

Sept. 2019 - May 2020

Undergraduate Researcher - PittSmartLiving

ADVANCED DATA MANAGEMENT TECHNOLOGIES LAB

- Developed a Flask interactive web application to visualize public transportation connectivity of various U.S. cities
- Produced a Flask web application to visually navigate passenger density data
- Demoed at the Rail-Volution 2018 Mobility Showcase

Pittsburgh, Pennsylvania

Sept. 2018 - May 2019

Undergraduate Researcher

KOSTKA LAB, UNIVERSITY OF PITTSBURGH

- Analyzed single cell kidney data in R to determine validity of pipeline through comparison with published results
- Implemented a Nextflow pipeline to process single-cell Drop-Seq data

Pittsburgh, Pennsylvania

Jan. 2018 - Dec. 2018

Undergraduate Researcher and Student Leader (Pittsburgh iGEM)

DEPARTMENT OF BIOENGINEERING, UNIVERSITY OF PITTSBURGH

- Developed a Simulink model to predict lead blood level concentration depending on lead water levels
- Designed a lead and thallium biosensor using biological components
- Managed and planned all cloning related activities
- Coordinated outreach events and interviews

Pittsburgh, Pennsylvania

Apr. 2016 - May 2017

Undergraduate Researcher

BANERJEE LAB, UNIVERSITY OF PITTSBURGH

- Developed a spheroid analysis macro to analyze pancreatic organoids with ImageJ processing
- Cell culture of fibroblasts and human umbilical vein endothelial cells
- Analyzed islet organoids using qPCR

Pittsburgh, Pennsylvania

Jan. 2016 - May 2016

Industry Experience

Data Engineering Intern

COMPUTATIONAL LIFE SCIENCE, BAYER CROP SCIENCE

- Developed an R Shiny tool to visualize the data landscape of Biologics discovery pipeline
- Streamlined data upload and developed long term storage for laboratory analysis pipeline

West Sacramento, California

May 2019 - Aug. 2019

Genotyping Development Scientist Intern

BAYER CROP SCIENCE (FORMERLY MONSANTO)

- Worked with a diverse team to develop an algorithm in R to generate and process data about differences in genetic maps across germplasm
- Identified several data quality control concerns from genetic inference and developed tools to analyze these issues
- Developed an algorithm in R to impute missing genetic information

Chesterfield, Missouri

Apr. 2018 - Aug. 2018

Teaching Experience

Department of Bioengineering, University of Pittsburgh

UNDERGRADUATE TEACHING ASSISTANT

Pittsburgh, Pennsylvania

Aug. 2017 - Apr. 2018

- Taught weekly recitation of Cellular Biology to bioengineering students
- Wrote and graded weekly quizzes and presentations

Department of Chemistry, University of Pittsburgh

UNDERGRADUATE TEACHING ASSISTANT

Pittsburgh, Pennsylvania

Aug. 2015-May 2016

- Held additional offices hours for general chemistry students

Skills

Programming	R, Python, C, Bash, SQL
Operating Systems	Linux/Unix, Windows
Tools	Git, Conda, Snakemake, \LaTeX , R Shiny

Mentorship

iGEM Summer Research Fellowship Supervisor (Pittsburgh iGEM)

DEPARTMENT OF BIOENGINEERING, UNIVERSITY OF PITTSBURGH

Pittsburgh, Pennsylvania

May. 2017 - Oct. 2017

- Developed laboratory management skills supervising the team on day to day planning and experiments

Publications

Candiello, J., Grandhi, T.S.P., Goh, S.K., Vaidya, V., **Lemmon-Kishi, M.**, Eliato K.R., Ros, R., Kumta, P., Rege, K., Banerjee, I. (2018) "3D Heterogeneous Islet Organoid Generation from Human Embryonic Stem Cells Using a Novel Engineered Hydrogel Platform." *Biomaterials*. 177: 27-39.

Presentations

Lemmon-Kishi, M., Chu, C., Peddada, V., et. al. Hot Metal Switch: Synthetic in vitro gene circuit for the detection of metal ions. iGEM Jamboree 2017. Boston, Massachusetts. October 27-31, 2016.

Lemmon-Kishi, M., Chu, C., Peddada, V., et. al. Thallium and Lead Detection Using Cell-Free Circuitry. Biomedical Engineering Society Conference 2016. Minneapolis, MN. October 8, 2016.

Lemmon-Kishi, M., Ni Chochlian, A. Hot Metal Switch at H2OH!. Carnegie Science Center. Pittsburgh, PA. 2016

Lemmon-Kishi, M., Lachell, S. Tissue Engineered Skin Grafts Using Adipose-Derived Stem Cells. Freshmen Engineering Conference. University of Pittsburgh. Pittsburgh, PA. April 11, 2015

Community Involvement

Center for Computational Biology DEI Committee

GRADUATE STUDENT REPRESENTATIVE

Berkeley, California

Jun. 2020 - Present

- Currently writing a strategic plan to increase diversity, equity, and inclusivity using data gathered from the first Center for Computational Biology climate survey

ShelInnovates Hackathon

WOMEN IN STEM VS. EVIL

Pittsburgh, Pennsylvania

Jan. 2018

- Developed an educational virtual reality game in Unity for Google Daydream to educate young girls about important women in STEM, highlighting their contributions and the barriers they overcame

Society of Women Engineers

MEMBER

Pittsburgh, Pennsylvania

Aug. 2014 - Dec. 2016

- Organized S.T.E.M. activities for events aimed at girl scouts and middle school girls
- Mentored new students interested in bioengineering

Honors & Awards

ACADEMIC

2017 - 2018 **Dean's List**, Dietrich School of Arts and Sciences

Pittsburgh, Pennsylvania

2015 - 2016 **Dean's List**, Swanson School of Engineering

Pittsburgh, Pennsylvania

2014 **Term List**, Swanson School of Engineering

Pittsburgh, Pennsylvania

EXTRACURRICULAR

2018 **2nd Place**, ShelInnovates Hackathon

Pittsburgh, Pennsylvania

2018 **Most Creative Hack**, ShelInnovates Hackathon

Pittsburgh, Pennsylvania

2016 **Nomination for Best Environmental Project**, iGEM 2016

Boston, Massachusetts

2016 **Gold Medal**, iGEM 2016

Boston, Massachusetts