

# 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. Dec. 2024

### 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

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

## Teaching Experience

### Department of Bioengineering, University of Pittsburgh

UNDERGRADUATE TEACHING ASSISTANT

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

Pittsburgh, Pennsylvania

Aug. 2017 - Apr. 2018

### Department of Chemistry, University of Pittsburgh

UNDERGRADUATE TEACHING ASSISTANT

- Held additional offices hours for general chemistry students

Pittsburgh, Pennsylvania

Aug. 2015-May 2016

## Industry Experience

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### Data Engineering Intern

COMPUTATIONAL LIFE SCIENCE, BAYER CROP SCIENCE

West Sacramento, California

May 2019 - Aug. 2019

- 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

### Genotyping Development Scientist Intern

BAYER CROP SCIENCE (FORMERLY MONSANTO)

Chesterfield, Missouri

Apr. 2018 - Aug. 2018

- 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

## Skills

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

## Mentorship

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### 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

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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

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**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 H2O!!. 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

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### 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

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## 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*