Maya Lemmon-Kishi

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Education

University of California, Berkeley
Ph.D. in Computational Biology
Berkeley, California
Aug. 2019 - Exp. Dec. 2024
- Advised by Rasmus Nielsen, Departments of Statistics & Integrative Biology

University of Pittsburgh
B.S. in Computer Science, *magna cum laude*
Pittsburgh, Pennsylvania
Aug. 2014 - Dec. 2018
- Program Honors in Computer Science
- Minors in Bioengineering and Chemistry

Research Experience

Graduate Researcher
Nielsen Lab
Berkeley, California
May 2020 - Present
- Currently developing methods for population genetic analyses of environmental DNA

Graduate Rotation Student
Various Labs
Berkeley, California
Sept. 2019 - May 2020
- 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

Undergraduate Researcher - PittSmartLiving
Advanced Data Management Technologies Lab
Pittsburgh, Pennsylvania
Sept. 2018 - May 2019
- 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

Undergraduate Researcher
Kostka Lab, University of Pittsburgh
Pittsburgh, Pennsylvania
Jan. 2018 - Dec. 2018
- 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

Undergraduate Researcher and Student Leader (Pittsburgh iGEM)
Department of Bioengineering, University of Pittsburgh
Pittsburgh, Pennsylvania
Apr. 2016 - May 2017
- 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

Undergraduate Researcher
Banerjee Lab, University of Pittsburgh
Pittsburgh, Pennsylvania
Jan. 2016 - May 2016
- 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

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

Industry Experience

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

Programming	R, Python, 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!. Carneige 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

SheInnovates 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 STHEM, 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**, SheInnovates Hackathon   *Pittsburgh, Pennsylvania*
2018   **Most Creative Hack**, SheInnovates Hackathon   *Pittsburgh, Pennsylvania*
2016   **Nomination for Best Environmental Project**, iGEM 2016   *Boston, Massachusetts*
2016   **Gold Medal**, iGEM 2016   *Boston, Massachusetts*