

MAX THRUSH HUKILL

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[HTTPS://GITHUB.COM/MHUKILL/MAX_HUKILL.CV](https://github.com/mhukill/max_hukill.cv)

EDUCATION

Bowdoin College, Brunswick, ME

Aug 2017 – May 2021

A.B. in Mathematics and Biochemistry

GPA: 3.94/4.00

Awards: Phi Beta Kappa, *magna cum laude*, Sunrise Prize in Cinema Studies, Surdna

Research Fellowship, Sarah and James Bowdoin Scholar, Faculty Scholar

Honors Project: A Bayesian hierarchical mixture model with continuous-time Markov chains to capture bumblebee foraging behavior

School for Field Studies, Puerto Natales, Chile

Jan – Mar 2020

Study abroad program. Coursework: Climate Science, Patagonian Ecology, Socio-Political Dimensions of Conservation.

RESEARCH EXPERIENCE (SEE GITHUB)

Mathematics Dept. and Ecology Dept. collaboration, Bowdoin College, Brunswick, ME

Mar 2020 – present

Student Researcher & Honors Project on Bumblebee Behavior; data from Patty Jones, PhD; Advisor: Jack O'Brien, PhD

- Developed computational Bayesian statistical model for data describing bumblebee behavior
- Engineered a hierarchical regression scheme in R for novel inference of a complex array of biologically pertinent parameters
- Implemented both discrete- and continuous-time Markov chain representations of the state space, using Metropolis-Hastings and Markov chain Monte Carlo techniques for inference
- Conducted thorough simulation studies and proof-of-concept checks throughout
- Compared algorithm's performance to alternate approaches such as generalized-linear mixed models
- In the process of preparing work for publication

Mathematics Dept. and Neuroscience Dept. collaboration, Bowdoin College, Brunswick, ME

Mar 2020 – present

Student Researcher on Cricket Behavior; data from Hadley Horsch, PhD; Advisor: Jack O'Brien, PhD

- Designed a behavioral assay for cricket response to auditory stimulus
- Engineered a bioinformatic pipeline and developed novel metrics for analysis
- Developed visualization schemes for the data transformed by our pipeline
- Navigated data generated by DeepLabCut, an artificial intelligence engine in neuroethology
- Pipelines and analysis routine successfully described cricket responses, demonstrating the utility of the tools developed
- Collaborated with an interdisciplinary team to submit our methodology for publication (in review)

Kaiser Permanente Oakland Hospital, Perioperative Clinic, Oakland, CA

Summer 2019

Quality Improvement Research Intern, Advisors: Renuka Yeldandi, MD, Stephen Sarafian, MD

- Led project seeking to improve patient care experience through early educational intervention on postoperative delirium
- Conducted extensive interviews with patients and health care providers
- Administered Mini-Cog exams and delirium education to patients
- Developed workflow for the clinic
- Over 80% of patients followed throughout the study reported that the program actively added value to their care experience
- Presented findings and workflow framework to hospitalist physicians and the perioperative clinic staff
- Recommendations currently being implemented region-wide

Chemistry Dept., Bowdoin College, Brunswick, ME

Aug – Dec 2019

Student Researcher, Advisor: Benjamin Gorske, PhD

- Using solution-phase organic chemistry, designed, synthesized, and analyzed biomimetic thiopeptoids targeting the WW binding domain relevant to cancer and Alzheimer's pathways
- Applied theory of $n \rightarrow \pi^*$ interactions to design peptoid foldamers mimicking naturally occurring peptides
- Conducted sequential solution-phase steps to create and purify target molecules

Kaiser Permanente Oakland Hospital, Hospital-Based Medicine, Oakland, CA

Summer 2018

Research Intern, Advisors: Yu-Te Lee, MD, Loveleena Virk, MD

- Collaborated with hospitalists and LEAN Methodology project managers to increase hospital discharge efficiency

- Interviewed patients and hospital staff to develop “The Discharge Card,” a patient-education and hospital efficiency tool in various cycles
- Balanced concerns of patients with those of the hospital staff to ensure the product added value to both the patient care experience and hospital administration
- Over 75% of patients in pilot program felt the card actively improved various aspects of their hospital stay
- Presented findings and recommendations to the Dept. of Hospital Based Medicine at KP Oakland

TEACHING EXPERIENCE

La Clínica de la Raza, Casa CHE, Oakland, CA Nov 2021

Community Health Educator II

- Canvased communities in Oakland’s Fruitvale district to improve COVID-19 vaccination confidence and uptake
- Strategized and executed bilingual community outreach projects virtually, over the phone, and in person
- Helped build lasting relationships between La Clínica and the community it serves, emphasizing restorative health justice

Community United Elementary School, Oakland, CA Sep 2020 – Sep 2021

Zoom 1-on-1 Tutor

- Mentored and tutored Spanish-speaking fourth grader in her online coursework
- Tailored lesson plans and sessions to her needs, focusing on communication skills
- Encouraged a positive learning environment that reconciled student’s needs with teachers’ objectives

Bowdoin College, Brunswick, ME Sep 2019 – Dec 2019

Calculus Teacher Assistant, Instructor: Naomi Tanabe, PhD

- Orchestrated weekly review sessions for students of integral calculus
- Prepared and presented material to and for students
- Cultivated an atmosphere of collaboration in the classroom
- Interfaced with students and professor to create optimal learning plans

REAL School, Brunswick, ME Sep 2018 – Dec 2019

Community Mentor and Tutor

- Assisted middle/high school for nontraditional students with special needs, mental health barriers, histories of trauma
- Fostered passion-driven educational curricula, emphasizing student-based inquiry into natural sciences
- Mentored outside of academics, focusing on restorative learning, emotional vulnerability, and mutual respect

Cook! Culinary Programs, Emeryville, CA Summers of 2013 – 2017

Cooking Instructor, Head Intern

- Cooked and cleaned in a commercial catering kitchen, working alongside award-winning chefs and bakers
- Instructed students on culinary techniques and kitchen management, working in both individual and group settings
- Trained and supervised other interns, responsible for overall order and flow of the kitchen

LEADERSHIP AND CO-CURRICULARS

Bowdoin Bridge Club, Brunswick, ME Sep 2018 – May 2021

Club co-leader and co-founder

- Organized weekly bridge card games, coordinating between schedules of student and local coach
- Taught foundational bridge principles to newcomers, and designed lessons with coach and co-leader
- Advertised club to students and managed bureaucratic obligations

Weekly Movie Nights, Brunswick, ME Mar 2018 – May 2021

Organizer

- Balanced interests of 10 regular attendees, selecting films of interest and import
- Held post-viewing discussions

PRESENTATIONS AND POSTERS

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- M.Hukill, R. Yelandi MD, J. Thrush MD, S. Sarafian MD. *The Delirium Screening and Education Program improves patient care experience in the perioperative medicine clinic*. Poster presented at: KP East Bay Academy of Medical Educators Research & Scholarship Symposium (2019), Oakland, CA.

- M.Hukill, M.Hutheensing, Y. Lee MD, C. Vijay MD, L. Virk MD. *Impact of a communication tool on patient care experience of hospital discharge: a thematic analysis of patient care education and agency in the discharge process*. Poster presented at: KP East Bay Academy of Medical Educators Research & Scholarship Symposium (2018), Oakland, CA.

SKILLS AND HOBBIES

Language skills: Spanish (professional working capacity), English writing coach (rhetoric & grammar)

Computer skills: R statistical software, LaTeX, GitHub, Final Cut Pro, Adobe Premiere Pro (advanced); Microsoft Office, Avid Pro Tools, Stan, Mathematica (proficient); MATLAB, Python, Javascript, C++ (exposure)

Hobbies: Classical piano, cinema, videogames, board/card games, woodworking, reading, swimming, tennis, hiking