Max Thrush Hukill

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https://github.com/mhukill/Max_Hukill.CV

Education

Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM), Pasadena, CA — July 2023 – present

M.D. expected in 2027

Awards: ACP SoCal Region I 1st Place in Research (2024)

Nominations: KPSOM Excellence in Student Research and Scholarship (2025)

Bowdoin College, Brunswick, ME — 2017 – 2021

A.B. in Mathematics and Biochemistry

Awards: Phi Beta Kappa, *magna cum laude*, *Sunrise* Prize in Cinema Studies, Surdna Research Fellowship, Book Award, Sarah and James Bowdoin Scholar, Faculty Scholar

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

School for Field Studies, Puerto Natales, Chile — 2020

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

Research Experience (see GitHub)

KPSOM and KP SCAL Quality Improvement collaboration, Pasadena, CA — Aug 2024 – present

Student Researcher; Advisor: Robyn Glezer, DO

- Worked with fellow students at KP Panorama City to develop quality intervetion to improve statin adherence
- Developed analytic pipeline, translated outreach materials into Spanish, and helped administrate project

KPSOM and KP SCAL Nephrology collaboration, Pasadena, CA — Jan 2024 – present

Student Researcher; Advisor: Talha Imam, MD

- Investigating exit-site infection rates for peritoneal dialysis in a vertically integrated healthcare system
- Developed analytical pipeline and statistical framework for the dataset

KPSOM and KP SCAL Hepatology collaboration, Pasadena, CA — Jun 2024 – present

Student Researcher; Advisor: John Sim, MD

- Conducting epidemiological survey of alcoholic liver disease patients within KP system
- Corroborating validity of ICD-10 and ICD-9 in a large vertically integrated healthcare system

KPSOM and KP Interregional Quality Improvement collaboration, Pasadena, CA — Jul 2023 – present

Funded Scholarly Project on Social Needs; Advisors: Quyen Ngo-Metzger, MD, Chileshe Nkonde-Price, MD

- Investigating interplay between social needs and hypertension control in Kaiser Permanente
- Managing interregional collaboration between KP Northern CA, Southern CA, Washington, and Colorado
- Using the HEDIS and SONNET Social Needs survey datasets to model hypertensive control across KP regions

Mathematics Dept. and Ecology Dept. collaboration, Bowdoin College, Brunswick, ME — 2020 – 2023

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 — 2020 – 2023

Student Researcher on Cricket Behavior; data from Hadley Horch, 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

Publications

- O. Ellers PhD, C. Gordon PhD, M. Hukill, A. Kukaj, A. Cannell PhD, A. Nel PhD. *Induced Power Scaling Alone Cannot Explain Griffenfly Gigantism*, Integrative and Comparative Biology, Volume 64, Issue 2, August 2024, Pages 598–610, https://doi.org/10.1093/icb/icae046
- M. Hukill, "A Bayesian hierarchical mixture model with continuous-time Markov chains to capture bumblebee foraging behavior" (2021). Honors Projects. 300. https://digitalcommons.bowdoin.edu/honorsprojects/300

Posters and Talks

- M. Hukill, A. Yeung, T. Imam MD, "Trends in Peritoneal Dialysis Exit-Site Infection Rates in an Integrated Health Care Model in the United States." Poster presented at:
    - American College of Physicians, National Symptosium (Apr, 2025), New Orleans, LA
    - Annual Dialysis Conference, National Symptosium (Mar, 2025), Las Vegas, NV
    - American College of Physicians, Southern California Region I (Oct, 2024), Orange, CA
- M.Hukill, O. Ellers PhD. *Induced Power Scaling Alone Cannot Explain Paleozoic Griffenfly Gigantism.* Presented at: Geological Society of America, Paleontological Sessions (2024), Irvine, CA.
- M. Hukill, A. Argame, A. Bhatt MD, G. Vatakencherry MD, *Offloading Device Management for Diabetic Foot Ulcers*. Presented at Society of Interventional Radiology (2024), Salt Lake City, UT.
- M. Hukill, J. O'Brien PhD. *A Bayesian hierarchical mixture model with continuous-time Markov chains to capture bumblebee foraging behavior*. Presented at Mathematical Honors Defense Talk (2021), Brunswick, ME.
- 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.* Presented at KP East Bay Academy of Medical Educators Research & Scholarship Symposium (2019), Oakland, CA.
- M.Hukill, M.Hutheesing, 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, Clinician Clinical Linguistic Assessment certified), Portuguese (intermediate, mostly European), English writing coach (native tongue, rhetoric & grammar professional experience)
Computer skills: R statistical software, ggplot2 library, LaTeX, GitHub, Final Cut Pro, Adobe Premiere Pro, Anki flashcard markdown language (professional level); Microsoft Office, Avid Pro Tools, Stan (proficient); Mathematica, MATLAB, Python, Javascript, C++ (exposure)
Hobbies: tennis, classical piano, cooking/baking, cinema, videogames, board/card games, hiking, science-based resistance training, open-water swimming