Benjamin Fox

| RESEARCH INTERESTS

Data science for social good and health. Areas of interest include consumer wearables, public health, metabolomics, and natural language processing.

| EDUCATION

University of California, Santa Barbara, **Santa Barbara, CA**   **June 2019**
Master of Science, Computer Science; Graduate Certificate in Technology Management
Project: "Metabolomics Techniques and Assessment of Acute Kidney Injury on Distant Organ Function"
Committee: Linda Petzold (chair), Sarah Faubel, Xifeng Yan

Pepperdine University, Malibu, CA   **April 2017**
Bachelor of Science, Physics; Minor in Computer Science

| RESEARCH EXPERIENCE

Graduate Student, University of California, Santa Barbara   **2017-2019**
Department of Computer Science
Advisors: Linda Petzold and Sarah Faubel
- Studied the effects of acute kidney injury (AKI) on mice to develop metabolic profiles and approaches for diagnosing and treating AKI in humans
- Performed univariate and multivariate statistics on metabolomics data to decipher AKI's effect on the heart, lung, and liver in mice
- Found that AKI is associated with dramatic changes in heart, lung, and liver metabolism, ATP depletion, and oxidative stress, with the most dramatic effects in the heart

Research Intern, University of Colorado Anschutz Medical Campus   **2016-2017**
Division of Renal Diseases and Hypertension
Advisor: Sarah Faubel
- Studied the effect of early peritoneal dialysis (PD) on lung inflammation after acute kidney injury (AKI) in mice
- Found that high-doses of PD had no effect on AKI, but effectively cleared serum IL-6, and dramatically reduced lung inflammation, while low-doses of PD had no effect on any of these three outcomes
- Worked with a team of researchers to develop additional laboratory, computational, and bioinformatics methods to explore the effects of AKI

Research Intern, Pepperdine University   **2015-2016**
Natural Science Division
Advisor: Gerard Fasel
- Studied magnetic reconnection to investigate the interaction of solar winds and the Earth's magnetosphere
- Analyzed camera and graphical data to find poleward moving auroral forms (PMAFs)
- Conducted funded (Explorer's Club and Pepperdine University) research in December 2016 for data collection and observation at the Kjell Henriksen Observatory in Longyearbyen, Norway

| WORK EXPERIENCE

Data Scientist, Evidation Health; San Francisco, CA   **2019-Present**
- Constructed physical activity features from consumer wearable device data, such as <u>personalized activity intelligence</u>, to help users better understand their medical conditions and health
- Built infrastructure to deliver physical activity and other health insights in visual and textual format to user population of four million people
- Paired with clients for research studies on <u>women's health</u> and others to better understand disease using novel technologies and statistical techniques
- Developed dashboards for research study monitoring, study recruiting and targeting, and to understand key business metrics and performance indicators
- Worked across teams to help advance research studies, understand the user population, and drive the business forward
- Provided <u>data, observations, and visualizations</u> for the company blog
- Mentored and taught peers data science techniques and tools

Product Manager, Ernst and Young (EY) Global Innovation; Palo Alto, CA   **2018-2019**
- Helped build and scale the <u>GigNow</u> platform for enterprises to transform their talent management, sourcing, and hiring process
- Communicated with users, analyzed and drew insights from user data to make informed decisions around product features
- Discovered solutions with vendors for integrating external APIs for services within the GigNow platform
- Led engineering and design teams in the agile product development process to breakdown and build product features through epics and user stories
- Worked with the product team to continually iterate, roadmap, and build MVPs

| PUBLICATIONS

Published in peer-reviewed journals
1. **Fox BM**, Gil HW, Kirkbride-Romeo L, [and 18 others including Faubel S] "Metabolomics assessment reveals oxidative stress and altered energy production in the heart after ischemic acute kidney injury in mice." Kidney Int. 2019 03; 95(3):590-610. PMID: 30709662.
2. Altmann C, Ahuja N, Kiekhaefer CM, Andres Hernando A, Okamura K, Bhargava R, Duplantis J, Kirkbride-Romeo LA, Huckles J, **Fox BM**, Kahn K, Soranno D, Gil HW, Teitelbaum I, Faubel S "Early peritoneal dialysis reduces lung inflammation in mice with ischemic acute kidney injury." Kidney Int. 2017 08; 92(2):365-376. PMID: 28318621.

Submitted Manuscripts
1. Ambruso S, Gil HW, **Fox BM**, Park B., Altmann C, Bagchi R, Baker P, Faubel S "Lung metabolomics after ischemic acute kidney injury reveals increased oxidative stress, altered energy production, and ATP depletion" (under revision)

| TEACHING EXPERIENCE

Graduate Teaching Assistant, University of California, Santa Barbara　　　**Winter, Spring 2019**
Course: Business Strategy
Responsibilities:
- Administered and managed the CAPSIM business simulation to ~55 students
- Presented CAPSIM results weekly to the class and explained the implications of each team's business decisions
- Held office hours weekly to elaborate concepts to students
- Provided constructive feedback on students' assignments and reports and met with students to offer guidance and support

Graduate Teaching Assistant, University of California, Santa Barbara　　　**Fall 2018**
Course: Artificial Intelligence
Responsibilities:
- Led two discussion sessions and office hours weekly to elaborate AI concepts to ~100 students
- Provided constructive feedback on students' assignments and reports
- Devised coding homework assignments with other TA

Graduate Teaching Assistant, University of California, Santa Barbara　　　**Winter, Spring 2018**
Course: Physics 201 Electricity and Magnetism
Responsibilities:
- Led two labs and office hours weekly covering concepts in electricity and magnetism
- Offered optional review sessions to go over homework problems and other questions to help students prepare for tests
- Provided constructive feedback on students' tests and lab reports

Graduate Teaching Assistant, University of California, Santa Barbara　　　**Fall 2017**
Course: Fluid Mechanics
Responsibilities:
- Held office hours weekly covering concepts in fluid mechanics and assisted students with homework problems
- Provided constructive feedback on students' tests and homework assignments

| PRESENTATIONS

Oral Presentations
1. **Fox BM** "Metabolomics Techniques and Assessment of Acute Kidney Injury on Distant Organ Function" University of California, Santa Barbara, Master's Project Presentation 2019
2. Faubel S, **Fox BM** "The Heart After AKI Looks like an MI, and How to Use and Interpret Metabolomics Data" University of Colorado's Renal Research Conference 2017

Poster Presentations
1. Fasel G, Brandt TG**, Fox BM**, Rothballer A, Gribble M, "The Brightening History of Poleward Moving Auroral Forms" American Geophysical Union Fall Conference 2016
2. Fasel G, Brandt TG, **Fox BM**, Rothballer A, Gribble M, "A Study of the Different Classes of Poleward Moving Auroral Forms" American Geophysical Union Fall Conference 2017

| HONORS AND GRANTS

University of California, Santa Barbara Harold Frank Scholarship (2018)
Explorer's Club Research Grant (2016)
Pepperdine Natural Science Award (2016)

| TECHNICAL SKILLS

Programming: Python, Pyspark, SQL, R, Bash
Data Science: data wrangling and visualization, time series analytics, NLP, metabolomics, bioinformatics, classification, clustering, information retrieval, computer vision
Other Technologies: LaTeX, Databricks, Domino Data Lab, Snowflake, Quicksights, Mixpanel, GitHub, Google Colab, Jira, Google Suite, Office Suite

| LEADERSHIP

Co-President, Pepperdine University Physics Club   **2016-2017**
- Arranged events, organized and delegated research tasks, applied for funding, and developed and planned research trip to Longyearbyen, Norway

Team Captain, Pepperdine University Men's Cross Country and Track Team   **2015-2017**
- Led practices and workouts and ran too much!

| MEMBERSHIP

Metabolomics Society (2017-2018)
American Geophysical Union (2015-2017)