Eric Cramer

+1 650 339 0250 • cramerericm (at) gmail.com • ericmcramer.com

Experience

- **Systems Neuroscience and Pain Laboratory, Anesthesiology, Stanford MedicinePalo Alto, CA USA**
  Data Analyst *11/2019–06/2021*
  I work on a variety of clinical research and computational research infrastructure projects such as analysis of symptom clusters in chronic pain patients, predicting patient satisfaction with tapering off of their opioid medications, and development of distributed computing platforms to enable multi-institution collaborations.
- **Institut Curie, Genotoxic Stress and Cancer Unit (UMR 3348)** **Paris, France**
  Bioinformatics Engineer *10/2018–10/2019*
  Conducted experiments in the Bava lab on tissues and cell cultures (tissue fixation, *fluorescence in situ hybridization*, etc.). Ran computational analyses of experimental data including processing microscopy images (confocal, fluorescence, spinning disk), RNAseq analysis, FACS and mass cytometry analysis. Developed novel algorithms, machine learning pipelines, and data visualizations.
- **Invuity, Inc.** **San Francisco, CA USA**
  Freelance Biomedical Data Analyst *07/2018–09/2018*
  I worked with the senior director of advanced imaging at Invuity and with an OBGYN clinician to analyze data produced by a clinical trial of Invuity's product. The resulting manuscript was submitted to the FPMRS journal.
- **Systems Neuroscience and Pain Laboratory, Anesthesiology, Stanford MedicinePalo Alto, CA USA**
  Research Assistant, Data Manager *06/2015–08/2018*
  Assisted with data collection and programmatic analysis. Helped to write and revise study protocols and grants. Assisted in clinic with patient treatments for clinical trials. Conducted independent research as an undergraduate (Bio X). Managed the Stanford Medical School's Collaborative Health Outcomes Information Registry (CHOIR) database.
- **Palo Alto Unified School District, Henry M Gunn High School** **Palo Alto, CA USA**
  Head Wrestling Coach 09/2017–09/2018, Volunteer Assistant Coach 10/2019–05/2021
  Organized and managed daily practices including instructing technique, fitness, and character development. Produced practice plans, weightlifting routines, and nutritional regimens. Coordinated competitions, fund raising, travel, and logistics. Managed and hired assistant coaches.
- **Santa Clara Valley Medical Center** **San Jose, CA USA**
  Neonatal Research Associate and Lab Technician *06/2014–09/2014*
  Assisted in multiple NICU studies including analysis of umbilical cord blood biomarkers (in relation to diabetes) and analysis of the effectiveness of the NTrainer neonatal feeding device.
- **Caring.com** **San Mateo, CA USA**
  Data Manager and Web Developer *06/2013–09/2013*
  Collected, organized, and managed client data in a company-wide listing database. Developed website content and graphics utilizing HTML, CSS3 and Photoshop. Interviewed clients and maintained up-to-date listing and marketing information.

Education

- **Oregon Health and Science University** **Portland, Oregon, USA**
  MD-PhD Student *08/2021–present*
  Second-year student in the NIH funded Medical Scientist Training Program at Oregon Health and Science University (MSTP). Clubs & Student Interest Groups: Computation in Medicine, Internal Medicine, Pay It Forward and PSI Mentoring Programs, Triathlon, *The Differentialists*.

- **Stanford University, School of Medicine** **Stanford, CA USA**
  M.S. Biomedical Informatics *09/2016–06/2018*
  Masters Project: Predicting the incidence of pressure ulcers in the intensive care unit using machine learning
  Courses: Cancer Biology, Immunology, Genetics, Pharmacogenomics, Biomedical Algorithms, Meta-Analysis, Medical Informatics
- **University of Washington** **Seattle, WA USA**
  Summer Institute Certificate in Data Analysis *June 2017–July 2017*
  Two week intensive program focusing on organizing, tidying, analyzing, visualizing and conducting reproducible research with biomedical big data.
- **Stanford University, School of Engineering** **Stanford, CA USA**
  B.S. Biomedical Computation *09/2013–06/2017*
  Notation in Science Communication. Portfolio available: https://purl.stanford.edu/xn623tj0433.
  Undergraduate Project: Predicting opioid cessation using longitudinal clustering
  Courses: Machine and Statistical Learning, Data Mining, Signal Processing, Embedded Systems, Physiology and Anatomy, Organic and Analytical Chemistry.

Leadership and Societies

- **American Physician Scientist Association (APSA)** **Westford, MA**
  Technology Committee Co-Chair *2023–present*
- **Biomedical Engineering Society** **Portland, OR**
  Student Member *2023–present*
- **OHSU Computation in Medicine SIG** **Portland, OR**
  Co-Lead *2021–present*
- **Oregon Medical Association** **Portland, OR**
  Student Member *2021–present*
- **American Psychological Association**
  Student Member *2017–2018*

Honors and Awards

- NIGMS Medical Scientist Training Program at Oregon Health and Science University (2021)
- American Association of Pain Medicine (AAPM) Invited Lecture (2021)
- American Psychological Association Outstanding Poster Presentation (2018)
- Stanford University Award of Excellence (2017)
- Stanford Bio X Undergraduate Research Fellow (2016)
- National Collegiate Athletics Association Division I Varsity Athlete (4-year letter winner) (2013-2017)
- Boy Scouts of America Eagle Scout (2012)

Publications

1. Cramer, E., Seneviratne, M., Sharifi, H., Ozturk, A. & Boussard, T. Predicting the Incidence of Pressure Ulcers in the Intensive Care Unit Using Machine Learning. *eGEMs (Generating Evidence & Methods to improve patient outcomes)*. doi:`https://doi.org/10.5334/egems.307` (2019).
2. Hah, J., Cramer, E., Carroll, I. & Mackey, S. Acute Pain Predictors of Postoperative Pain Resolution, Opioid Cessation, and Recovery: Secondary Analysis of the START Randomized Clinical Trial. *Journal*

of the American Medical Association Open Network. doi:doi:10.1001/jamanetworkopen.2019.0168. https://www.ncbi.nlm.nih.gov/pubmed/30821824 (2019).

3. Gilam, G. *et al.* Classifying chronic pain using multidimensional pain-agnostic symptom assessments and clustering analysis. *Science Advances* **7,** eabj0320 (2021).
4. Hah, J. M., Nwaneshiudu, C. A., Cramer, E. M., Carroll, I. R. & Curtin, C. M. Acute Pain Predictors of Remote Postoperative Pain Resolution After Hand Surgery. *Pain and Therapy.* doi:10.1007/s40122-021-00263-y. https://doi.org/10.1007/s40122-021-00263-y (Apr. 2021).
5. Mardian, A. *et al.* Engagement in Prescription Opioid Tapering Research: the EMPOWER Study and a Coproduction Model of Success. *Journal of General Internal Medicine.* doi:10.1007/s11606-021-07085-w. https://doi.org/10.1007/s11606-021-07085-w (Aug. 2021).
6. Scherrer, K. H. *et al.* Development and validation of the Collaborative Health Outcomes Information Registry body map. *PAIN Reports* **6,** e880 (Jan. 2021).
7. Cramer, E., Ziadni, M., Scherrer, K. H., Mackey, S. & Kao, M.-C. CHOIRBM: An R package for exploratory data analysis and interactive visualization of pain patient body map data. *PLOS Computational Biology* **18** (ed Marz, M.) e1010496 (Oct. 2022).
8. Ziadni, M. S. *et al.* The impact of COVID-19 on patients with chronic pain seeking care at a tertiary pain clinic. *Scientific Reports* **12.** doi:10.1038/s41598-022-10431-5. https://doi.org/10.1038/s41598-022-10431-5 (Apr. 2022).

Presentations, Posters, and Abstracts

9. *Predicting remote pain and opioid use cessation using early trajectory clustering* Poster presented at Bio X 2016 Symposium and the Stanford Research Conference (2016).
10. *Predicting CRPS limb affectation from patient psychosocial and physical factors* Poster presented at the American Psychological Association 2018 Convention and won a divisional award. (2018).
11. *The somatic distribution of chronic pain and emotional distress utilizing the Collaborative Health Outcomes Information Registry (CHOIR) BodyMap* Abstract published in conference proceedings, poster presented at the APS 2018 Convention (2018). doi:https://doi.org/10.1016/j.jpain.2017.12.128. https://www.jpain.org/article/S1526-5900(17)30944-6/abstract.
12. *Patient choice and readiness to Taper (patient-level predictors) are associated with early satisfaction with clinician in a patient-centered prescription opioid tapering program.* Poster presented at the Patient-Centered Outcomes Research Institute (PCORI) Annual Meeting. (2020).
13. *The association of the Stanford Expectations of Treatment Scale (SETS) with expectations on pain and opioid dose in a patient-centered prescription opioid tapering program* Lecture given at the American Association of Pain Medicine 2021 Annual Conference. (2021).

Notable Projects

- **Seisr:** *TreeHacks 2016, Intel 'Best Use of Hardware' award winner* (https://seisr.com, Devpost)
- **Pharmascope:** *MedHacks 2017, Wolfram award winner* (bit.ly/Pharmascope, Devpost)
- **Bias Is Bliss:** *CitrusHacks 2018, Social and Civic Good award winner* (https://balee555.github.io/app, Devpost)

Certifications and Licenses

- *Professional*: R Programming, Python Programming, Computer Vision, National Federation of High School (NFHS) Athletics Coaching Certification, Citi HIPAA Certification
- *First Aid*: American Heart Association CPR, Stanford Wilderness Medicine (WFA), Red Cross Basic Aid Training (BAT)
- *Recreational*: PADI Advanced Open Water and Dry Suit SCUBA Certification

Skills and Interestes

- **Languages:** English (native), Spanish (CEFR A2), French (CEFR A2)
- **Programming Languages and Tools:** R, Python, Matlab, SQL, Git, Bash, HTML/CSS, and LaTeX Basic ability with: C, C++, Java, and JavaScript
- **Laboratory Skills:** tissue and cell fixation, FISH, CODEX, confocal and fluorescence microscopy, cytometry
- Journalism and writing (former contributing author to Fascinate, Stanford's online science magazine)
- **Personal Interests:** Wrestling, SCUBA diving, triathlon, backpacking, cooking, guitar, travel

Leadership, Volunteering, Community Service, and Other Activities

- *Eagle Scout, Boy Scouts of America*: I was elected to all Boy Scouts of America leadership positions twice. I organized and oversaw regular volunteering projects, activities, and outings. I completed my Eagle Scout project in 2012.
- *Stanford Pre-Orientation Trip (SPOT) Leader*: I led pre-college orientation camping trips for incoming students.
- *2nd Mile Housing Project*: I renovated and refurbished buildings for low income housing in East Palo Alto.
- *Stanford Science Pen Pals*: exchanged letters with young students interested in learning more about science.
- *Silicon Valley Armory and Interfaith Hospitality Network*: I help cook meals and organize shelters for homeless families every Thanksgiving.
- *Nightline Paris*: I volunteered taking calls at the hotline for English speaking students suffering from depression, stress, domestic abuse, or suicidal thoughts.
- *Jewish Family and Children's Services (JFCS)*: I volunteer to deliver groceries from the JFCS food bank to seniors and families in the Peninsula communities of the San Francisco Bay Area.
- *Teaching R Programming*: I teach R programming for researchers at the Stanford Systems Neuroscience and Pain Laboratory, and tutor the subject for college students.
- Ad hoc reviewer for the Journal of the American Medical Association (JAMA) Open Network
- Founding member of the Computation in Medicine student interest group at Oregon Health & Science University
- Case race organizer for the Internal Medicine Student Interest Group at Oregon Health & Science University

References

Available on request.