Join Our Team This Summer!

Overview: Cures Within Reach for Cancer (CWR4C) is a nonprofit startup that is getting new and affordable cancer treatments to patients faster by repurposing generic drugs. This is a great opportunity for students to learn about the drug development process and get hands-on experience working at a cutting edge social impact startup at the intersection of artificial intelligence (AI), biology, and medicine.

About Cures Within Reach for Cancer: More than 200 drugs FDA-approved for non-cancer indications and now off-patent and inexpensive may also be effective for treating cancer. These repurposed generic drugs offer a major opportunity to improve outcomes for cancer patients and reduce healthcare costs. Yet these therapies are not being pursued due to a market failure for developing low-cost treatments. CWR4C harnesses AI and machine learning to mine "big data" from scientific literature and real-world evidence in order to identify the most promising drugs to repurpose for cancer. We are developing new funding models for clinical trials and enabling widespread adoption of the treatments.

Details: You will work directly with members of the founding executive team (www.cwr4c.org/team). Responsibilities may include one or more of the following:

- Literature review of preclinical and clinical data on repurposed drugs
- Conducting meta-analyses of scientific studies to aggregate clinical outcome measures
- Exploring strategies for patient engagement and the collection of patient-reported data
- Analysis of real-world data in electronic medical records
- Building machine learning models for text classification and evidence inference tasks
- Designing and building interactive web applications and data visualizations
- Researching social impact bonds or public policy changes to incentivize investment in clinical trials
- Preparing marketing and communications strategies and materials

Specific roles we are currently looking to fill are described in greater detail below. A commitment of 30-40 hours per week for 8-10 weeks is preferred. The team currently operates out of Boston and Portland, Maine; the ability to meet near either location is preferred, and some remote work may be possible. This is an unpaid nonprofit internship, so interested students should apply for funding through their school.

Qualifications: This is a highly cross-disciplinary effort that could be a good fit for students in diverse fields such as: biology, medicine, global health, computer science, statistics, biomedical informatics, design, business, healthcare economics, public policy, communications, or marketing. You should be passionate about expanding treatment options for cancer patients, a hardworking self-starter with attention to detail, and effective at both independent and collaborative work.

To Apply: First check out the CWR4C website (www.cwr4c.org) and watch the 5-minute overview video (http://bit.ly/cwr4c_video). Then send your resume and a short explanation of why you are interested in working with CWR4C to Founder & CEO Laura Kleiman at laura@cureswithinreach.org.

Internship Opportunities for Summer 2020

Biologist: Help us develop our research and evidence platforms to enable synthesis and integration of relevant information from scientific literature and various real-world data sources. The ideal candidate is pursuing a major in biology or a related biological sciences field and has experience in research and in conducting literature reviews. Specific knowledge of cancer biology-related concepts and of statistics is preferred.

Biomedical scientist: Review and implement statistical methods to rank drugs by combining clinical criteria (such as survival outcomes) and non-clinical criteria (such as publication bias) from multiple studies. Students should be familiar with meta-analyses and statistical approaches to calculate aggregate measures based on systematic reviews of scientific literature. The ideal candidate has a background in statistics, epidemiology, computer science, or biostatistics with the ability to analyze and interpret quantitative data using R or Python.

Qualitative analyst: Help us learn about off-label use of non-cancer generic drugs by cancer patients through engaging patients. Design and implement surveys, interview guides, focus groups, and other qualitative approaches to systematically capture and analyze patient experiences and outcomes. The ideal candidate has experience designing qualitative and mixed methods research, submitting IRB protocols and securing informed consent, conducting interviews, and performing analytic coding and data analyses.

Machine learning / data engineer: Help us build, test, and deploy NLP pipelines to extract features from scientific literature to handle language-based tasks (named entity recognition, parsing, classification). You will build infrastructure to manage extraction, transformation, and storage of data using AWS or other cloud-based technologies. The ideal candidate is majoring in computer science or another quantitative field and has experience implementing NLP techniques such as transformer-based models and machine learning frameworks.

UI / UX / front-end engineer: Conduct research on habits and digital interactions of target users to design UI/UX strategies and build elegant web applications for our drug repurposing AI platform. Create digital assets including design files, wireframes, and interactive mockups, and develop reusable HTML, CSS, and JavaScript code. The ideal candidate is a computer science major proficient in one or more JS frameworks (React, Node, Express, Vue), who enjoys creating data visualizations and is comfortable working across the technology stack.

Backend / full-stack engineer: Help architect and build our initial drug repurposing AI platform, including development of server-side logic, data pipelines, and micro services to interact with machine learning models in research and production settings. The ideal candidate is a computer science or engineering major proficient in one or more languages (Java, Python, Go, Node), with knowledge of databases and experience setting up production pipelines using AWS or other cloud technologies.