

COVID-19 Data Analysis Internship

Position Summary: We are seeking an enthusiastic intern who is interested in COVID-19 data analysis. The intern will work on applications of mathematical techniques, data analytics, and data visualization in the operational impacts of COVID-19 in healthcare and society. The intern may interact with faculty, students, data stewards, and clinicians at the Whiting School of Engineering, the Department of Emergency Medicine at Johns Hopkins School of Medicine (CDEM <https://cdem.jh.edu/>), the Capacity Command Center at Johns Hopkins Health System, and the Center for Systems Science and Engineering (CSSE <https://systems.jhu.edu/>). The project focus on various analysis and visualization of data using data analytics, advanced interactive data visualization techniques, optimization methods, machine learning, website development, and large-scale electronic health record (EHR) data extraction. Current projects include healthcare capacity relations to deaths and improving hospital capacity management for COVID-19 patients.

The intern will receive multiple papers related to their assigned project. The goal of the student's project and its relationship to other work in the area will be discussed. The student will be provided with detailed guidance needed to conduct data analysis.

The internship will start as soon as possible and is expected to last 16 weeks. There is a possibility of extension depending on the performance of the student.

Benefits for the Student: This internship is ideally suited to students with strong analytic skills and an interest in pursuing healthcare- or public health-oriented research or careers. Interns will acquire theoretical and practical training in advancing public health and healthcare systems using data science and systems engineering. The intern will have access to faculty, staff, and students in the Center for Systems Science and Engineering, the Center for Data Science in Emergency Medicine, and the Malone Center for Engineering in Healthcare. The team includes experts from the fields of operations research, systems engineering, public health, and medicine. Experiences gained will be highly informative and advantageous to students who plan to pursue further training (Masters, PhD or MD) or work in this arena after graduation. The project will prepare the student to showcase their skills in data analytics, analytical thinking, and operations research while solving real-world problems.

Compensation: Credit or \$15/h up to \$5,000, depending on student availability and project needs

Required Education: Undergraduate or master's students in applied mathematics and statistics, computer science, systems engineering, management sciences, or relevant fields. No previous research/industry experience is required.

Desired knowledge, skills, and abilities:

- High-level communication skills
- Strong critical thinking and analytical reasoning skills
- Proficiency with multiple programming languages (including JavaScript and Python)
- Ability to execute assigned project tasks within established schedule
- Sound documentation skills (writes and communicates clearly and concisely)
- Prior experience or knowledge in data analytics and/or optimization is desired
- Prior experience or knowledge in web design and/or healthcare-oriented research is desired but not necessary

Application Process: Send your resume, one-page cover letter (describing relevant course work, research experience, and/or future plans about industry/research career) and contact information for one letter of recommendation. Please email applications to Tracy Marshall at tmarshall@jhu.edu with the subject line “MCEH Internship application”

Application deadline: Earlier application is highly recommended. Full review is not guaranteed for applications received after January 7, 2022

Anticipated start date: As soon as possible/negotiable (duration approx. 16 weeks)