Northwestern | BUFFETT INSTITUTE FOR GLOBAL AFFAIRS

Buffett Undergraduate Research Fellowship Opportunity

Global Epidemiology of Hidradenitis Suppurativa: A Comparative Analysis of Healthcare Utilization and Disease Burden in the U.S. and Japan

Faculty Mentor: Ziyou Ren, Assistant Professor, Feinberg School of Medicine

Full Synopsis: Hidradenitis Suppurativa (HS) is a debilitating chronic inflammatory skin condition affecting between 0.05% and 4% of the U.S. population. It is caused by follicular occlusion, rupture and inflammation of pilosebaceous units, leading to painful lesions that primarily affect apocrine gland-bearing areas. The disease is characterized by painful nodules, abscesses, sinus tracts and scarring. Patients with HS often experience painful flare-ups that require emergency department (ED) visits and inpatient care.

Previous research (Martin et al., 2025) found a rising frequency and cost of ED visits for pediatric HS patients in the U.S., based on data from the Nationwide Emergency Department Sample. The faculty mentor's research focuses on global health, particularly chronic inflammatory skin disorders, using large real-world medical record databases. This project aims to expand this work beyond the U.S. to gain a broader global perspective.

As a member of the Society for Investigative Dermatology (SID), the faculty mentor attended the 2023 SID International Conference in Tokyo and established connections with research labs in Japan that use the JMDC Claims Database—the Japanese counterpart to the U.S. database we utilize. This project will collaborate with these labs to analyze and compare HS patient trends in the U.S. and Japan. Our findings will be submitted for presentation at the 2025 Japanese SID Conference, and both the principal investigator and a student will apply for the JSID/SID Young Investigator Collegiality Awards.

Project Term: Summer and Academic Year

Project Location: Hybrid, remote with one-week trip to Japan

Job Description:

I expect the student will work on:

- Getting to know about the basic workflow of epidemiological studies on HS and other inflammatory skin diseases.

- Learn the data structure and key elements in large healthcare databases (e.g., Nationwide Emergency Department Sample, JMDC Claims Database).
- Apply fundamental statistics analysis on trends in disease burden, healthcare costs and utilization across different populations.
- Help to summarize the analysis results in tables and text in the context for manuscript preparation and conference presentations (e.g., Japanese SID Conference 2025, SID Annual Meeting).
- Learn how to communicate scientific results effectively with people in the field and outside the field.
- Understand and help to prepare materials to apply for research grants and investigator awards

I would like to student to have the following background:

- Some background in real-world data analysis such as medical record databases or open-source databases.
- Some experience in statistical programming (e.g., SAS, R, Python or Stata).
- Previous course work in statistics or global health.
- Strong written and verbal communication skills.
- Self-motivated to take on challenges and solve problems.
- Ability to work independently as well as collaboratively.

Time Commitment: The time is flexible and the work is hybrid. Students may work full-time over summer or part-time over the summer and continue into the academic year, based on mutual availability and as the grant allows.

Number of available positions: One