



TRAINING TOMORROW'S BIOMEDICAL INNOVATORS

The next generation of biomedical researchers must be able to think and communicate in a common language that spans many scientific disciplines.

The Chemistry of Life Processes Institute's (CLP) highly regarded **NIH Predoctoral Training Program and three laboratory-based undergraduate research programs** prepare students to work at the interface of medicine, biology, chemistry, computation, engineering and physics. Trainees work with dual faculty mentors and take specialized courses to master the tools and methods of different disciplines.

Seminars, research forums and workshops sharpen students' science communications skills. Career coaching by industry members, faculty and guest lecturers opens a world of possibilities.

CLP trainees and students are in high demand upon graduation. Eighty-three percent of the 60 undergraduates who participated in CLP programs have pursued PhDs at top graduate schools, enrolled in Medical Scientist Training programs, or attended medical school. 14 of the 19 graduate students who completed CLP's predoctoral training program were recruited by world leading pharmaceutical companies, including AbbVie, Eli Lilly, Genentech and Merck, biotech startups and prominent universities, the remainder went on to pursue law and medical degrees.

INCREASING DIVERSITY, EQUITY AND INCLUSION

Although one of the hallmarks of CLP's educational programs is the diversity of highly qualified students recruited into our program each year, major disparities persist in diversity, equity and inclusion across STEM education. As the table below illustrates, African American and Latino students represent just a small fraction of the overall student population in science and engineering doctoral programs.

Students in doctoral studies	Black or African American	Latino
Men	2.4%	5%
Women	4.6%	7%

Source: 2018 National Science Foundation

Numerous studies have shown that democratizing undergraduate research experiences across different socioeconomic groups may improve persistence, retention, and diversity of students pursuing postgraduate education. It is especially beneficial to expose students who attend local institutions— many of whom are first generation— to laboratory training in the setting of a major research university.

Interdisciplinary Summer Undergraduate Research Experience (I-SURE) Program

To create a stronger path to STEM careers for students from Chicago-area working class families, in 2022, CLP has created the **Interdisciplinary Summer Undergraduate Research Experience (CLP I-SURE)**.

Together with Northeastern Illinois University (NEIU), CLP provides diverse undergraduates with the opportunity for interdisciplinary research training and mentorship in its faculty laboratories. NEIU is a federally designated Hispanic-Serving Institution and has been ranked No. 1 among all Midwest colleges and universities as the most diverse by the *Wall Street Journal/Times Higher Education College Ranking*.

The **I-SURE Program** aims to increase the persistence of chemistry and biology undergrads in pursuing postgraduate education (medical, dental, and graduate school) and STEM-intensive careers. A secondary outcome is to create a conduit for diverse talent to Northwestern graduate programs and the CLP Predoctoral Training Program.



PROGRAM FEATURES

- Hands-on interdisciplinary research training by CLP faculty, postdoctoral fellows, and graduate students
- Participation in weekly research group meetings
- Mentored experience in reading research papers
- Participation in CLP seminars and career workshops
- Guidance in project presentation
- Weekly check-in with CLP staff
- Poster presentation at annual CLP Summer Undergraduate Research Symposium
- Poster presentation at Chicago Area Undergraduate Research Symposium
- Weekly group social activity
- Assistance in preparing applications

The new **CLP I-SURE Program** builds on more than a decade of experience in managing summer research experiences for Northwestern undergrads. The program provides funding for a summer stipend, lab expenses, and an opportunity for students to present at the annual Chicago Area Undergraduate Research Symposium. It leverages existing relationships with the NEIU Student Center for Science Engagement to identify potential candidates and to ensure that students are fully prepared to engage in laboratory research and benefit from their experience.