

## SUMMER SCHOLARS PROJECTS

**PROJECT CATEGORY:** Biomarkers & Biomedical Research Tools

**STARTUP:** Stemloop, Inc.

**WEBSITE:** <http://stemloop.com/>

**PROJECT TITLE:** Transcription Factor Biosensor Discovery and Optimization

### PROJECT DESCRIPTION

At Stemloop, we repurpose nature's sense and response mechanisms to empower our customers with actionable information, solving information problems in biomanufacturing, environmental monitoring, and human health. Using cell-free biotechnology, we enable equipment-free, deployable and affordable testing for our customers to sense compounds of interest.

We are looking for excited and passionate summer intern to implement and iterate upon Stemloop's proprietary biosensor discovery platform to generate functional biosensors.

### JOB EXPECTATIONS:

To aid in the development of novel biosensors and expansion of Stemloop's platform, our Intern will carry out tasks related to database curation, data analytics, and sensor bioengineering. The principle responsibilities of the Intern will include:

- Perform literature review to identify sense-able compounds
- Curate sequence information for Stemloop's internal databases
- Implement data analytics approaches for sensor development
- Collaborate with team members to advance Stemloop's computational and biological platforms
- Present results at weekly Stemloop R&D meetings and provide recommendations for future research
- Maintain detailed documentation of all work

Present final work in a formal presentation and written report

### DESIRED EXPERIENCE:

**Required:**

- Enrolled in undergraduate or graduate bioengineering, computational biology, microbiology, biochemistry bioinformatics, or related field
- Prior internship or full-time role in a research lab (lab technician or equivalent)
- Comfort documenting and reporting progress in weekly technical debriefs
- Interpersonal skills to collaborate in results-oriented, fast-paced startup environment
- Basic Microsoft Suite fluency (Word, Excel)

**Preferred Requirements:**

- Python experience
- Familiarity with expression and purification of proteins in bacteria
- Portfolio of projects that they built and can demonstrate

### TIME COMMITMENT:

The intern is expected to work full-time during the internship period. Hours are flexible with expected participation in team meetings, which are typically scheduled in the middle of the day.

### TRAINING MENTORING:

Throughout the internship the student will work closely with the scientific team as well as Stemloop executives and Scientific Cofounders (Northwestern Faculty). The student will be provided with opportunities for informal progress updates as well as guidance and feedback on formal presentation and writing. The format of these informal and formal sessions are detailed below.

#### Daily Planning Sessions

- Intern will meet daily with their supervisor to discuss project progress, challenges, and plans for the day.
- Supervisors will assist interns in developing research/development plans to overcome challenges that arise

#### Weekly R&D Meetings

- Intern will present results, challenges, and next steps in a brief formal presentation consisting of slides and oral presentation during Stemloop's weekly R&D meeting
- Feedback on progress and future direction from Stemloop senior leadership will be given during these sessions

#### Final Presentation/Report

- Stemloop supervisors and leadership will guide intern in the development of their final presentation, including a practice session during a dedicated internal Stemloop meeting
- Clear descriptions of expectation will be provided, as well as regular feedback on progression during weekly meetings.
- Guidance on their final report will be provided