

The international Genetically Engineered Machines (iGEM) team at ASU enables SOLUR students to perform and engage in innovative synthetic biology research. Synthetic biology is an emerging field that brings together many disciplines such as molecular biology, bioengineering, computer science, mathematics, and bioethics to develop cellular machines to solve important problems. iGEM at ASU offers research positions to SOLUR students that develop comprehensive and creative synthetic biology projects over the summer for the annual iGEM competition in Boston.

The research project is based on a fascinating microbial cell-cell communication pathway known as quorum sensing. When a group of cells becomes crowded, they stimulate each other's gene expression. When they are spread out, gene expression is no longer activated. Bioengineers, including the iGEM students, have used the genetic code that programs this behavior to re-configure the system and use it to control the behavior of *E. coli* cells in creative ways. The work usually involves 12 hours in lab per week over the summer. Each year's iGEM research team typically includes 5 – 8 students from SOLUR and other programs. The team will be advised by 3 – 5 faculty mentors and 2 or more PhD student advisors. The undergraduate researchers will travel to Boston to present their work as an oral presentation, poster, and web site at iGEM, a unique conference that exclusively showcases undergraduate work.

Broadly, iGEM at ASU aims to make an impact on our community by building a network of students at ASU with skills and interest in interdisciplinary bioengineering, bioethics, and scientific communication. iGEM at ASU team aims to showcase innovative undergraduate research at iGEM, an international signature competition, and to engage students in an exciting new branch of engineering.

Applicants are selected based on good academic standing, motivation, focus (availability to commit to the project), and experience in experimental biology and chemistry, and/or computational science. For more details, visit <https://asuigem.wordpress.com/apply/>