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# The International Genetically Engineered Machine Competition

The International Genetically Engineered Machine Competition (iGEM) is the premiere competition in Synthetic Biology. Working at their own schools over the summer, student teams build biological systems of their own design using standard, interchangeable parts. This combination of project design and competition format is an exceptionally motivating and effective teaching method. iGEM gives its participants the opportunity to learn not only science and engineering but entrepreneurship, leadership, safety & security, ethics, and more, all in a cutting-edge and motivational environment



## The iGEM Experience

iGEM teams design, build, test, and in many cases, measure and fully characterize novel biological systems using standard, interchangeable parts. Teams register with iGEM in March and pay a team registration fee. Teams must raise their own funds to run their operations over the course of the season. This may include registration fees, laboratory reagents and consumables, student stipends, and travel to the iGEM events. The average team budget is about \$30,000 to \$50,000, which is typically funded by their university, corporate sponsorship, scholarships, and research programs. In April all teams are sent a kit of standard interchangeable biological parts, called BioBricks™ from the Registry of Standard Biological Parts. Working at their own schools over the summer, teams use these parts and new parts of their own design to create their system. They then come together in the fall at the iGEM Jamboree to give a 20-minute presentation, present a poster, meet the rest of the iGEM community, and compete for awards and prizes.

The opportunity for students to conduct their own cutting-edge, self-driven research from such an early point in their careers is virtually unparalleled in biological science. This experience will undoubtedly affect future career decisions.

### Synthetic Biology in iGEM is more than bench work.

The iGEM community has long focused on bringing together industry, the general public, and other communities such as museums and science cafes in the development of the field of synthetic biology. In addition to the work they do in the laboratory, iGEM teams routinely engage others throughout the course of their project. Teams host workshops, give interviews, film documentaries, teach the next generation, engage in debates, and more in the effort to bring synthetic biology to others. Eventually our participants graduate to start their own companies, become professors, work in industry, and pursue countless other careers that will see them make a difference in the world – just as they set out do do when they began their iGEM careers.

### Standard Biological Parts

Students explore synthetic biology in a hands-on environment addressing challenges and making discoveries by building genetically engineered systems. The ease of designing and building these systems lies in the use of standard parts. iGEM maintains the world's largest open-source community collection of biological parts that all meet an established criteria to ensure compatibility between parts, allowing them to work together. The Registry of Standard Biological Parts ([parts.igem.org](http://parts.igem.org)) has over 20,000 BioBricks with access open to all iGEM teams and participating academic research labs.

## International and Truly Multidisciplinary

iGEM has seen teams competing from countries around the globe, including Turkey, Nepal, Kazakhstan, Indonesia, Brazil, Chile, the US, and Canada as well as many European nations such as France, Germany, Holland, Belgium, and the United Kingdom.

iGEM crosses all disciplines and combines the student's expertise to find solutions to today's biggest challenges. Not a biologist? Not a problem.

In iGEM, there is a place for everyone – from the first-year engineer to the seasoned anthropologist, from the artist who wants to create a palette of pigmented bacteria to the budding entrepreneur with the contact list that beats that of her local politician.



## Celebrating 10 years - The Giant Jamboree

Unlike previous iGEM years where teams participated in a regional event and a percentage advanced to the Championship, iGEM 2014 will have one single event. Our iGEM 2014 Giant Jamboree will be the largest gathering of synthetic biologists worldwide. We are already expecting a large amount of media coverage and press at this year's Jamboree.

For more information about iGEM 2014 see [2014.igem.org](http://2014.igem.org).



In iGEM 2014 over 3,675 participants from nearly 245 universities will take part in this international summer science competition.