

Examples of iGEM Research Projects

•Microbial Fuel Cell:

Using bacteria in a fuel cell to transport electrons outside of the cell and generate electricity

•Malaria Killer:

Equipping a bacterium naturally found in mosquitoes with a protein toxic to the malaria parasite

•Cancer-Targeting Virus:

Creating a toolkit to specialize a common, harmless virus to target specific cells and deliver genetic material, used specifically to kill cancer cells

•Soil Fertility Sensor:

Making a pellet full of bacteria that will fluoresce to quantify soil nutrition content so that farmers don't have to over-fertilize



Last year's fuel cell design project logo

Our Goals:

- To promote interdisciplinary collaboration for the advancement of engineering and science
- To increase awareness of and educate the public about our research and synthetic biology and its benefits
- To promote The Missouri University of Science and Technology nationally and internationally
- To collaborate internationally in order to develop engineering tools for biology
- To engage in meaningful research projects using a synthetic biology approach
- To establish an endowed scholarship to support students on campus
- To earn a gold medal at the Jamboree

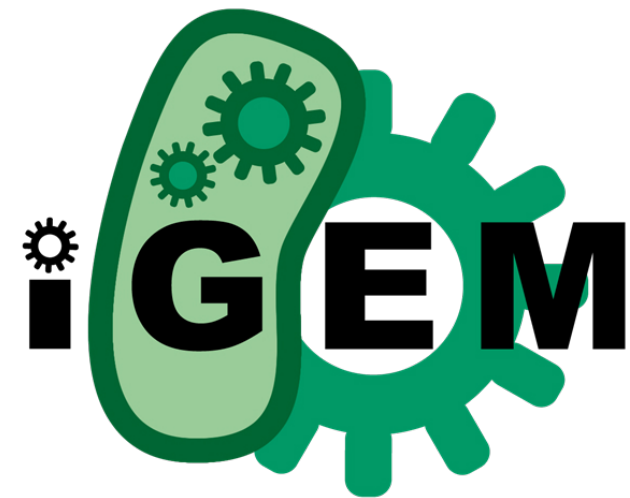


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MONSANTO



THE INTERNATIONAL GENETICALLY ENGINEERED MACHINES TEAM

-AT-



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WHAT IS iGEM?

International Genetically Engineered Machines Competition

iGEM is a synthetic biology design team.

It's an international collaboration to create an open gene library full of standardized biological parts for genetically modifying organisms. Teams from over 26 countries participate. Teams meet annually at the Jamboree to present research, discuss the progress of synthetic biology, network with other teams and, of course, compete.

Synthetic Biology:

The engineering of biological systems using standardized parts to create solutions to current problems in medicine, materials, agriculture, bioremediation, energy, and more.

This exciting new field was pioneered in part by the iGEM competition.

The Jamboree is fun!

Socialize with teams from other countries

Opportunity to travel



2010 iGEM Jamboree at MIT

iGEM Outside of Research

Educational Programs:

- We hold seminars and facilitate ethical discussions on campus, as well as conduct surveys to promote awareness of synthetic biology. We also do educational presentations and activities with groups visiting campus and students at Rolla High School.

Sharing our Activities:

- We actively maintain our iGEM wiki page to share our progress in and out of the lab with the iGEM community and the world.

Ethics:

- We explore the social, environmental, medical and economic impact of synthetic biology through ethical discussions and public opinion surveys.

Why join iGEM?

- Student Design Team
- Becoming part of the Student Design and Experiential Learning Center
- Get involved in meaningful research projects
- Synthetic biology has the potential to greatly influence the future, with applications in medicine, materials, agriculture, bioremediation and energy
- Unique research environment with the potential for facilitating teamwork across multiple disciplines
- Team-based learning atmosphere that only the most advanced classes provide
- Opportunity for paid research via OURE and OURE Fellows programs
- Be a part of a growing organization in an exciting new field

Who should join iGEM?

Anyone who wants to be involved in...

...Research

- Design and implement a synthetic biology approach to solving global problems
- Explore the safety, ethical, and environmental factors associated with the proposed project
- Compile and present work on our iGEM wiki page and at the Jamboree

...Supporting the organization through leadership and organization, exploring the ethics of synthetic biology, community outreach, getting sponsorship, and fundraising.

Current membership consists of undergrads and grad students majoring in:

- biology
- chemical engineering
- chemistry
- computer science
- economics
- mathematics
- aerospace engineering

We can always use a larger variety of majors, as there are so many ways to be involved, and our research can be applicable to a number of different fields.

Our Team's Recent Developments:

- Obtained our own lab
- Created a spring course (Bio 375 - Biological Design and Innovation I) to teach new members concepts and advanced lab techniques and to research and develop new project ideas
- Starting an intensive research program over the summer
- New funding from the university