

INTERGRATIVE BIOLOGY

Education driving research – iGEM: The international Genetically Engineered Machine Competition

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Can simple biological systems be built from standard, interchangeable parts and operated in living cells? Or, is biology simply too complicated to be engineered in this way? The international Genetically Engineered Machine Competition (iGEM)¹ is an open design challenge for student teams that addresses this difficult question. Using a library of standardised parts known as BioBricks², groups of undergraduates from around the world spend their summer designing and assembling biological devices, to build genetic machines.

Synthetic Biology, the engineering of new biological systems³, is an exciting frontier, with opportunities for collaboration between biologists, programmers and engineers. The iGEM competition throws together students from different disciplines, requires them to initiate a novel scientific program over the summer, and challenges them to learn and share different skills^{4,5}. The competition has provided a new educational model in an exciting new field. In Cambridge, we are unreservedly positive about the educational aspect of the competition. As well as learning challenging new scientific skills, the competition allows students to experience project brainstorming, management, teamwork, presentation and other organisational skills – in a way that is essentially outside the undergraduate curriculum. The competition provides a powerful educational tool, exposing students to engineering challenges and a modern research environment, while in pursuit of their own goals. The talk will start with a brief introduction to the competition’s resources, development and goals, before highlighting some of iGEM’s notable achievements to date.

Further information:

<http://www.syntheticbiology.co.uk>

<http://www.igem2006.com>

<http://parts.mit.edu>

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