

# Offering an alternative research experience within a taught masters programme

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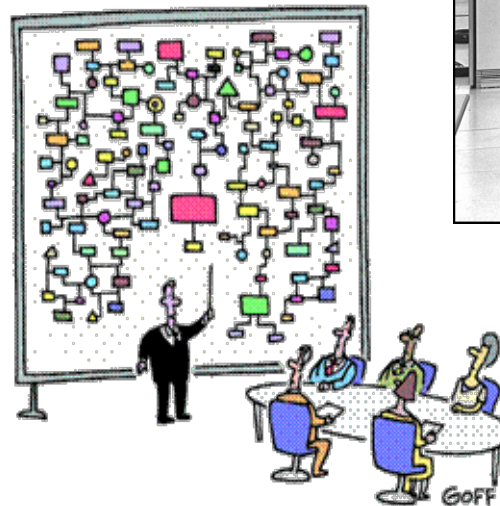
- iGEM introduction
- iGEM as a teaching resource
- MSc programme integration
- iGEM influence



- iGEM\* is a synthetic biology competition

\*International Genetically Engineered Machine

- Requiring multidisciplinary teams or interdisciplinary working



"And that's why we need a computer."



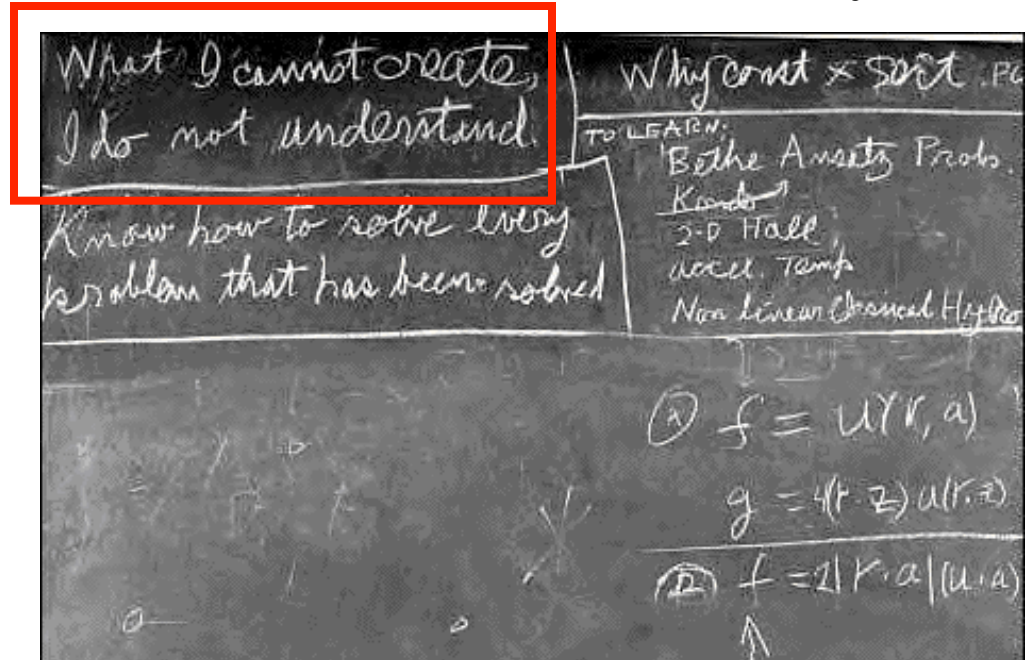
Arthur  
Lavine

- Promoting synthetic biology teaching and understanding



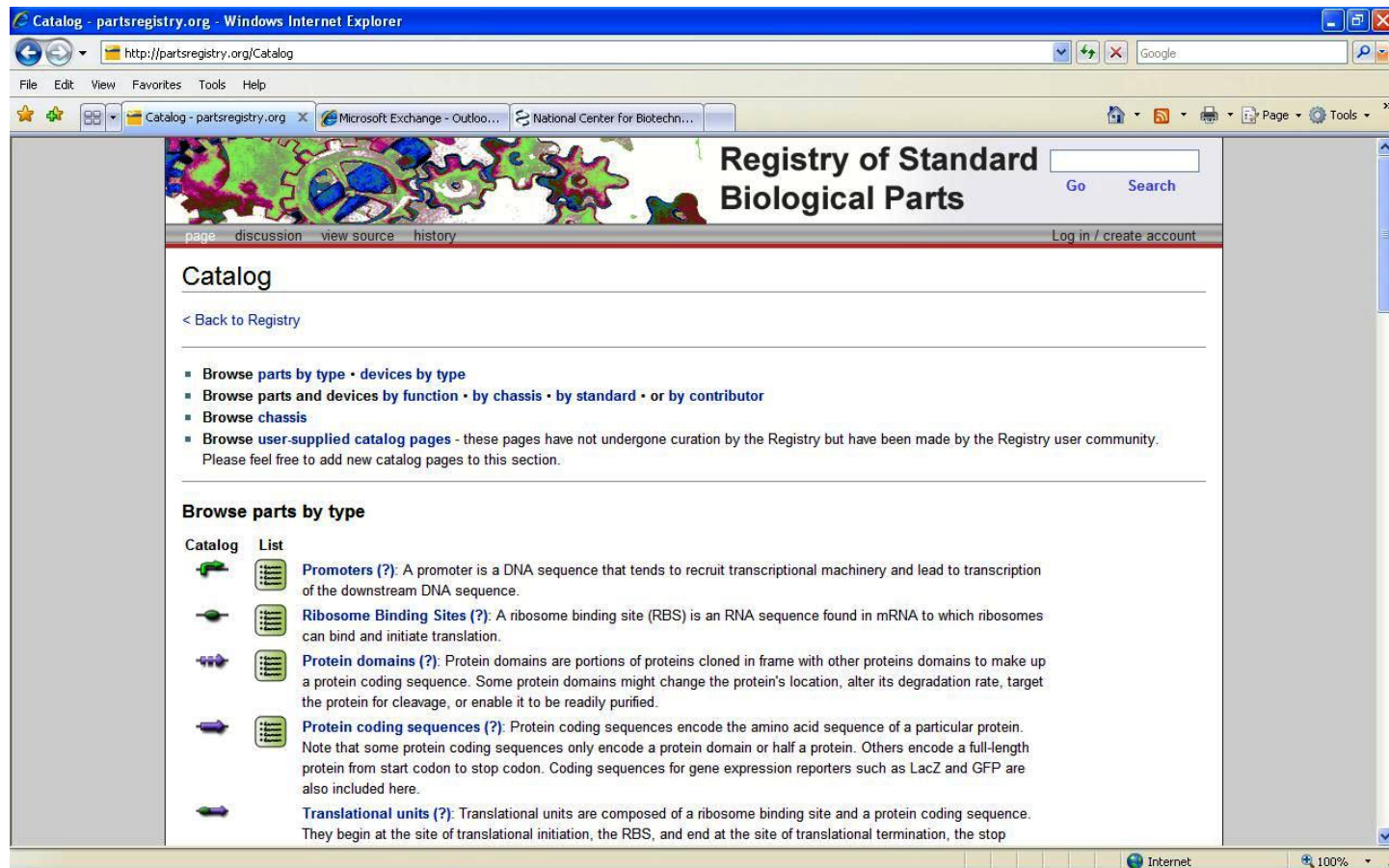
“What I cannot create,  
I do not understand.”

- Richard Feynman





- Providing the community with genetic parts and ensures the adoption of synthetic biology standards



- Democratising and popularising synthetic biology

2004





- Democratising and popularising synthetic biology

2005





- Democratising and popularising synthetic biology



2006

- Democratising and popularising synthetic biology

2007





- Democratising and popularising synthetic biology

2008





- Democratising and popularising synthetic biology

2009





- Democratising and popularising synthetic biology

2010





- Democratising and popularising synthetic biology

2011





- Democratising and popularising synthetic biology

2012





- Democratising and popularising synthetic biology

2013





- Democratising and popularising synthetic biology

2014





- Democratising and popularising synthetic biology

2015





- Democratising and popularising synthetic biology

2016





- Democratising and popularising synthetic biology

2017





- Democratising and popularising synthetic biology

2018

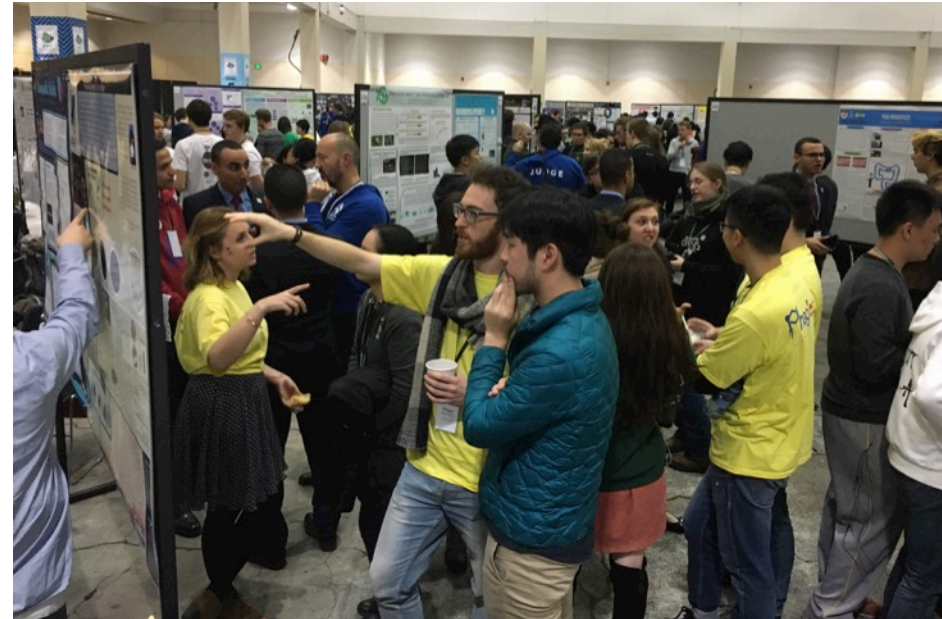




- Provides students with an international experience
- Welcomes them into an international research community
- Unites them through a shared experience
- Networks them with leaders in the field
- Encourages both entrepreneurship & further study



- respects individual learners
- demonstrates the effectiveness of self-regulated learning
- strengthens teaching-research synergies
- educates through hands on problem solving
- offers an authentic research experience
- transparent assessment/learning criteria
- evolving to further interdisciplinarity
- incredibly resource intensive, eats time and money





Semester 1  
60 credit  
taught component  
September – December

TSB Design project  
70% - 10 credit  
Biodesign – 10 credit  
from 2020

Semester 2  
60 credit  
taught component  
January – April

Research project proposal  
75% - 10 credit  
Social Dimensions  
20 credit

Semester 3  
60 credit  
research component  
May – August

- Research lab
- Industrial placement
- iGEM team

- Uses teaching lab space & technician
- More realistic research experience
- Individual projects for individual dissertations
- Degree takes priority until submission deadline
- iGEM deadline ~ October
- Interdisciplinarity becomes a challenge

- teach skills to enable independence
- importance of peer learning and self-regulated learning
- offer a rich, lively and vibrant learning experience
- ensure students can identify high quality work and can relate this knowledge to their own work
- continuing professional development and annual evaluation/revisions





- guided learning experience for both students and supervisors
- 2 levels of supervision, advisor and instructor – open to all
- experience in seeking funding, resource management, supervision, interdisciplinarity, translating through to impact
- focus on the medals not prizes the criteria are clear!
- as a supervisor, identify what worked and why
- pass it on
- builds networks for all



- not sponsored by
- not endorsed by
- not approved by



- iGEM diversity committee member



Thanks to...



UK Research  
and Innovation

And thank you for listening!