

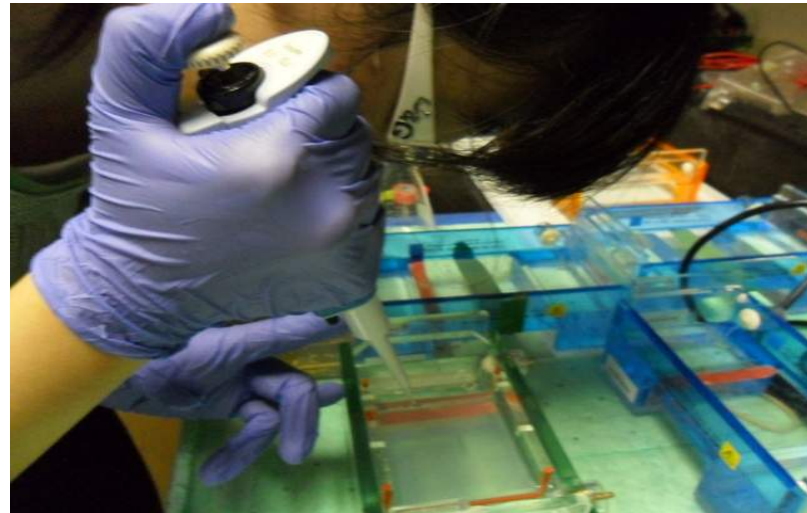
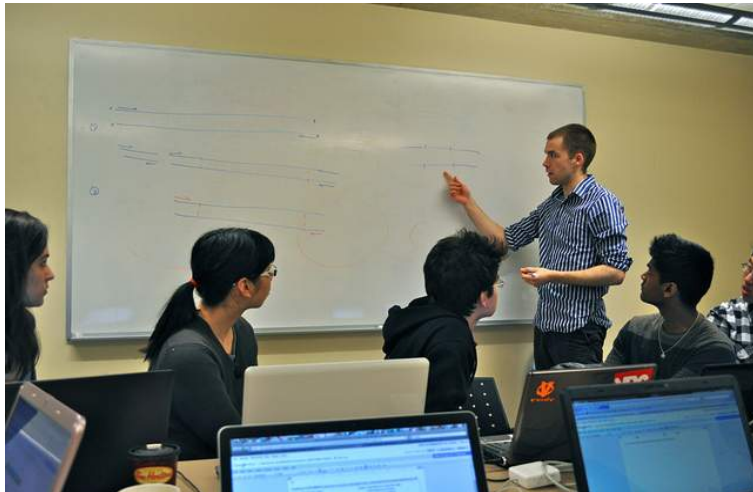
QGEM:
Queen's Genetically
Engineered Machine Team

WHO ARE WE?

The Queen's Team for the International
Genetically Engineered Machine Team (iGEM)
competition



- Multidisciplinary Team of Undergrads entirely Student run
- Members work over the summer on a project chosen annually by the team
- The team has won Gold Standard in the past two years of the competition



What is iGEM?



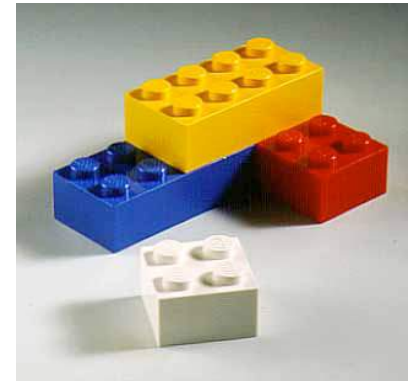
It is the premier undergraduate educational program in Synthetic Biology and the largest Synthetic Biology conference in the world!



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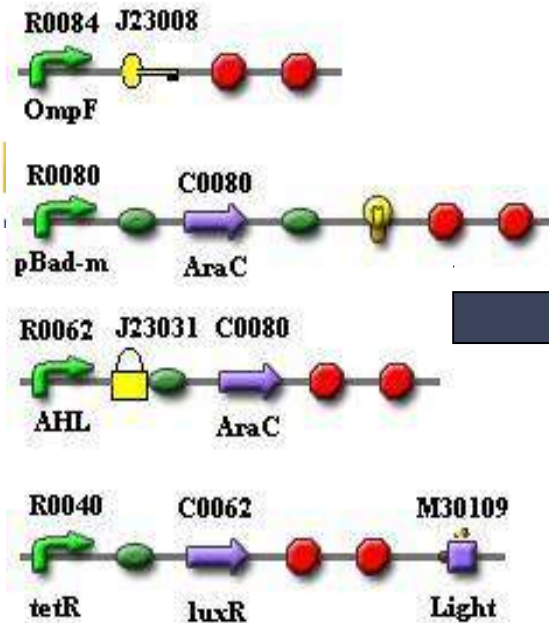
iGEM

- The goal of each team is to use standardized DNA parts called BioBricks to design and build biological systems and operate them in living cells
- Teams present their projects at the Championship Jamboree at MIT
- In 2011, 165 teams competed in 3 regional competitions leading to the finals



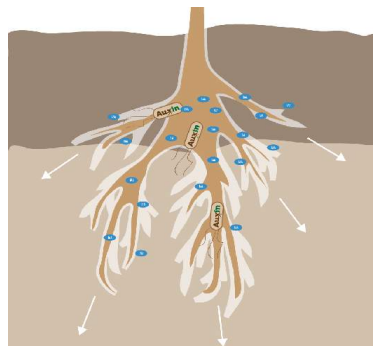
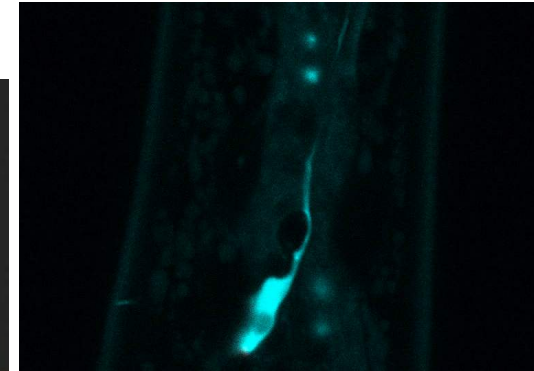
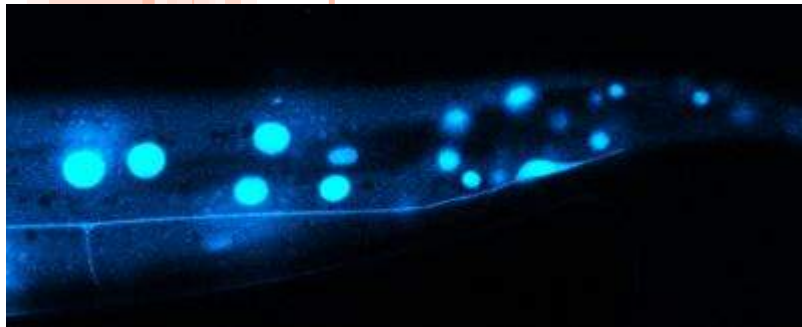
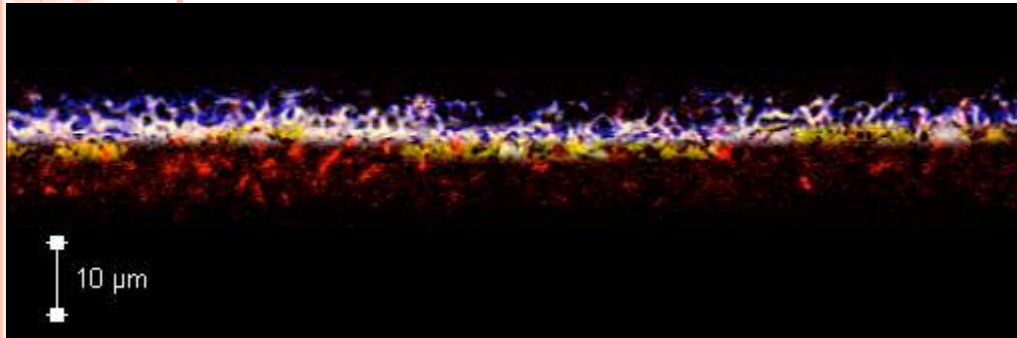
..... That's over 1500 participants worldwide!



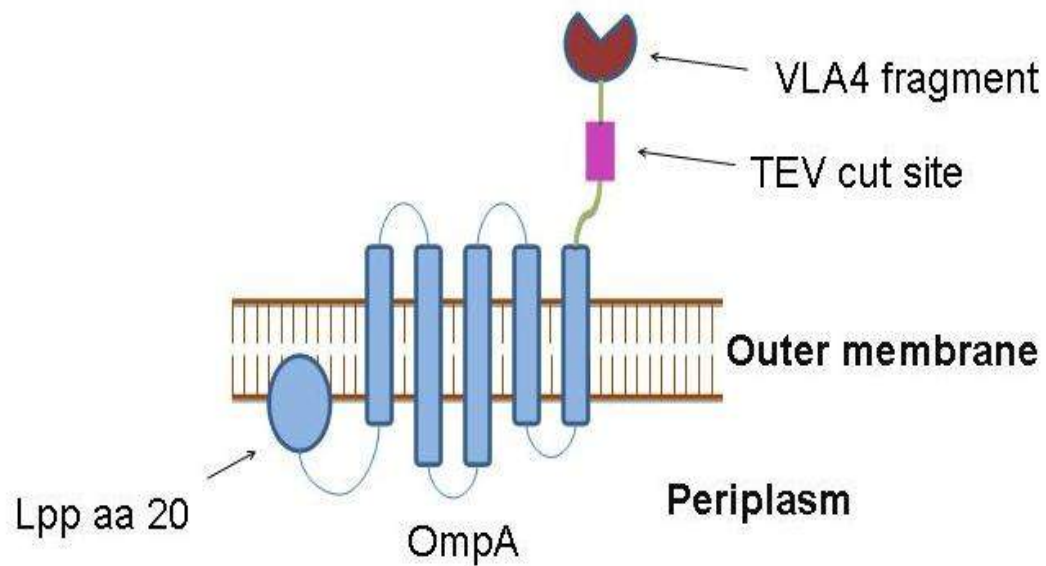
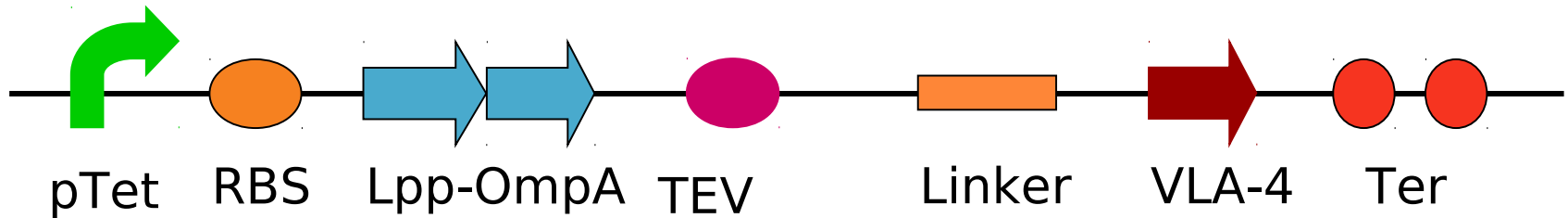


Or, in other words...

Making cells do cool things!



EXAMPLE



<http://www.youtube.com/watch?v=rD5uNAMbDaQ>

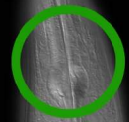


NEMOREMEDIATION

engineering *C. elegans* for advanced bioremediation

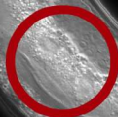


**Queens Canada
iGEM 2011 World Championship
Jamboree**



chemotaxis

biodegradation



reporter system

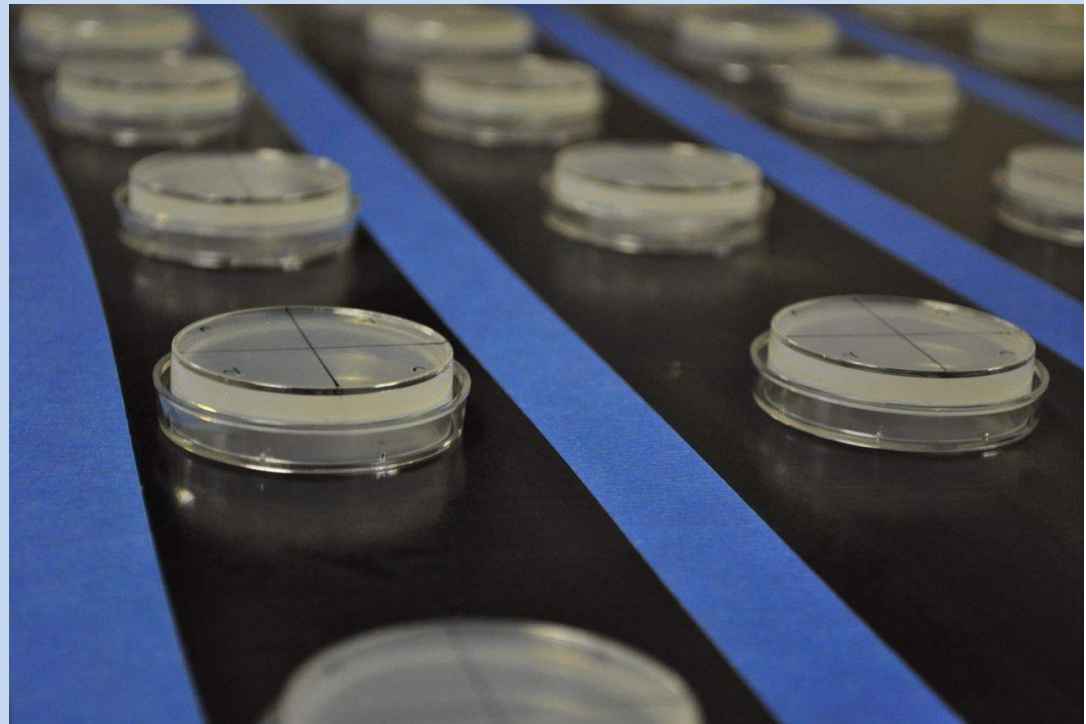
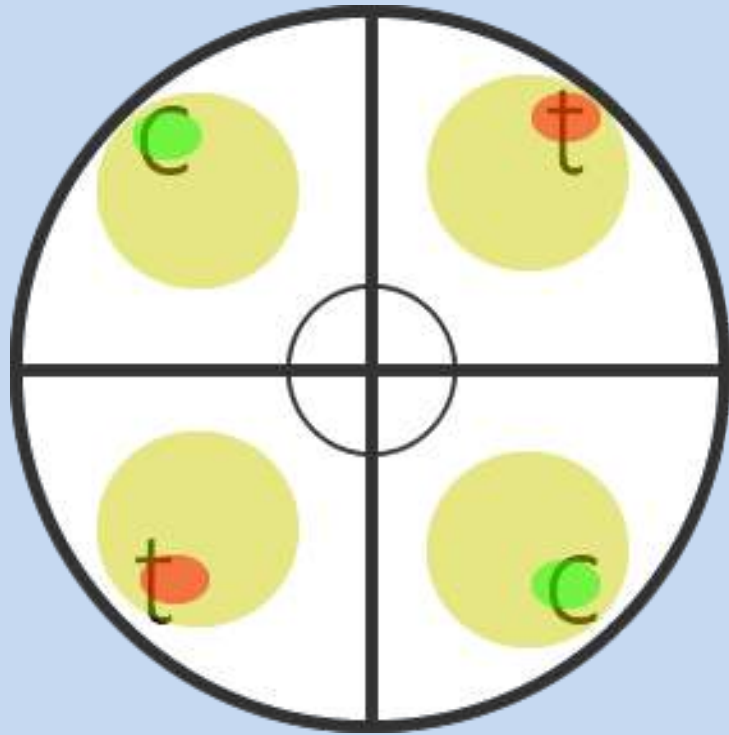


kill switch



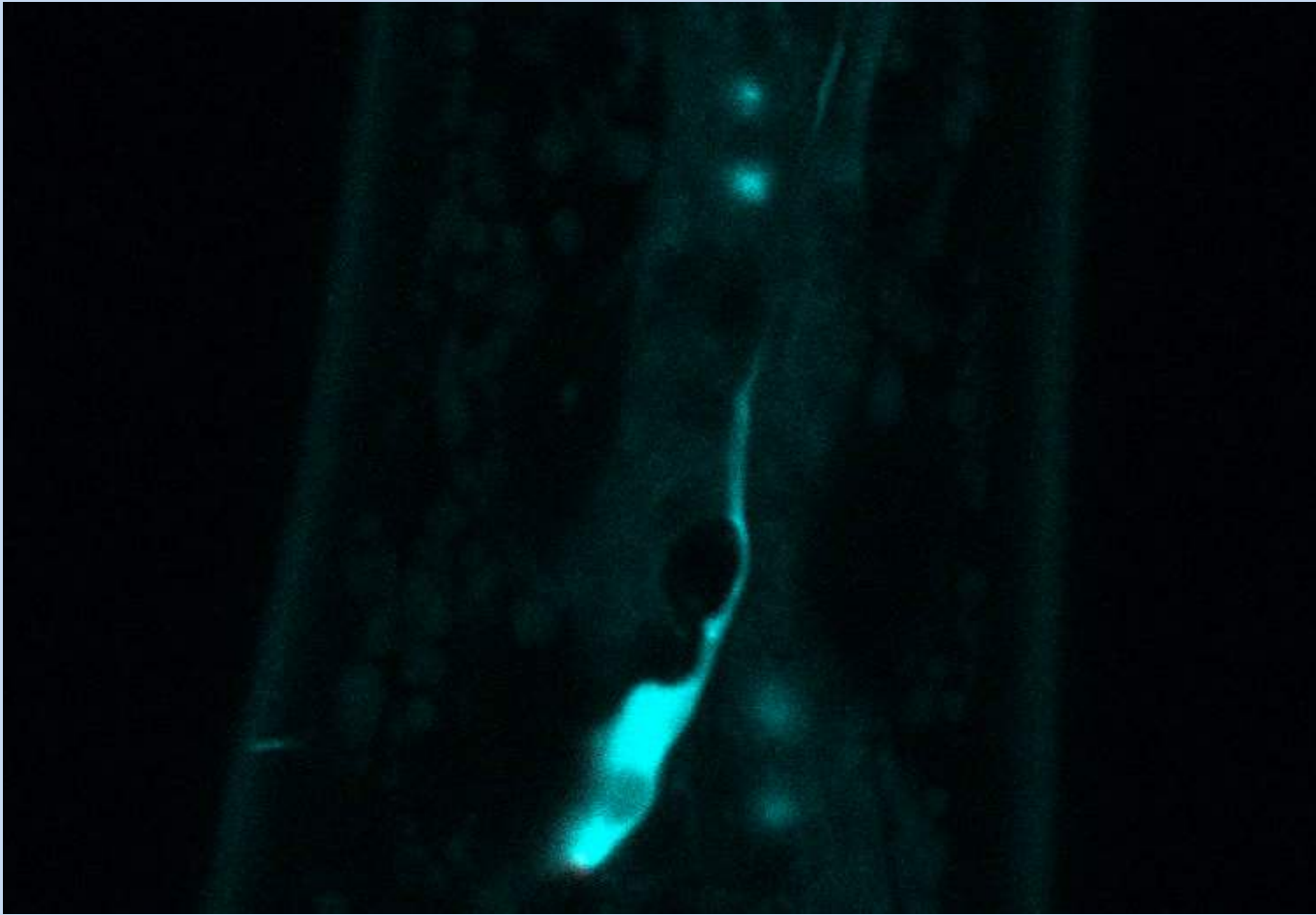
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NEMOREMEDIATION

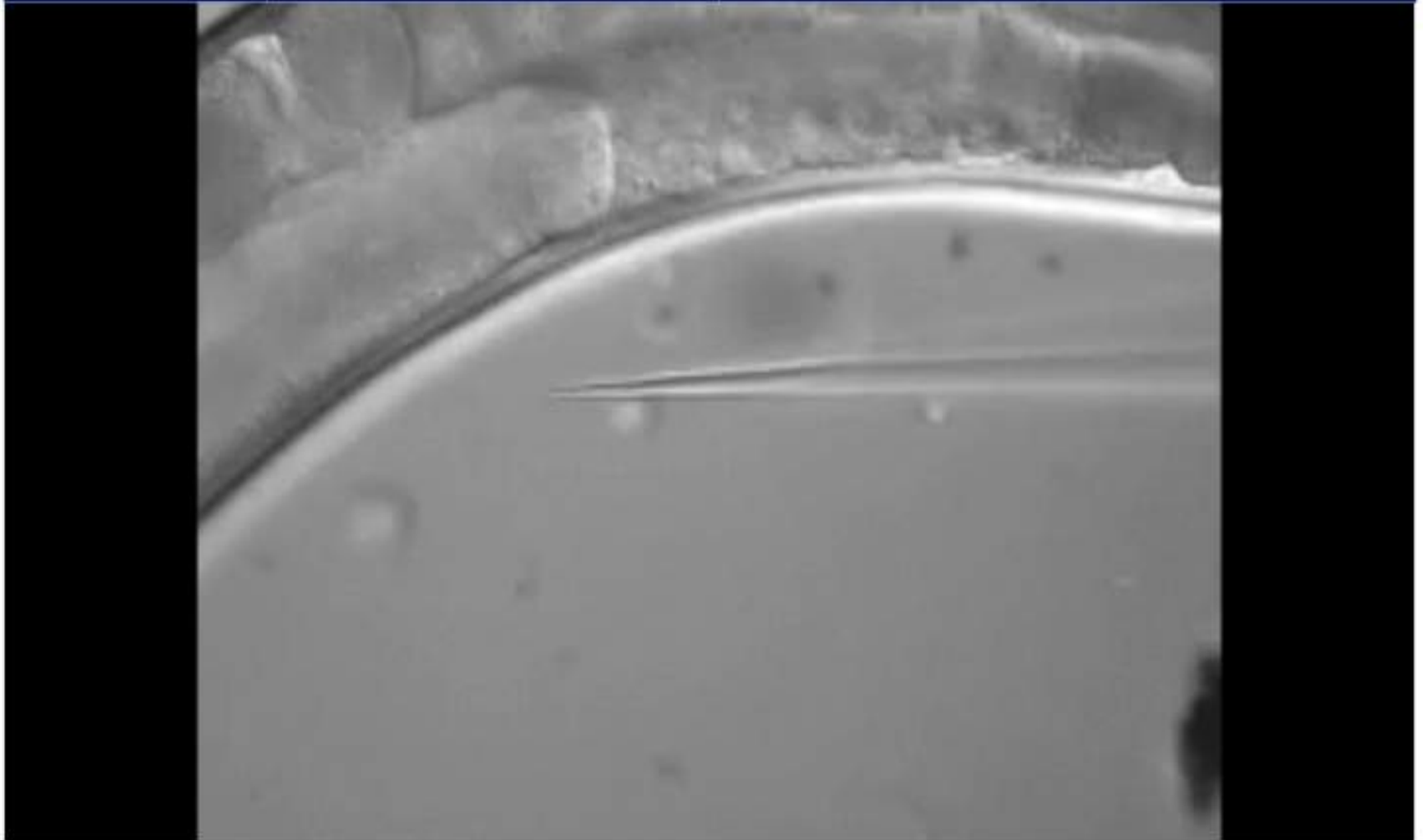
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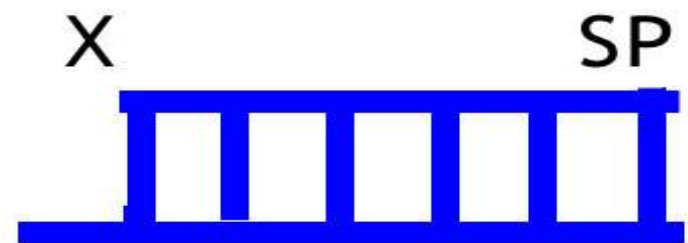
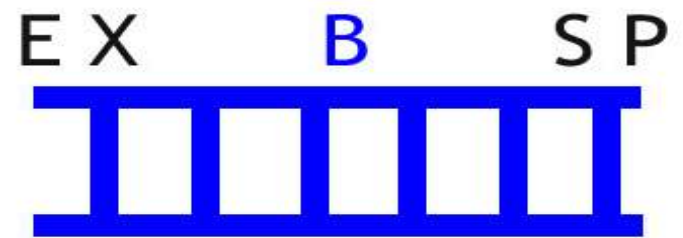
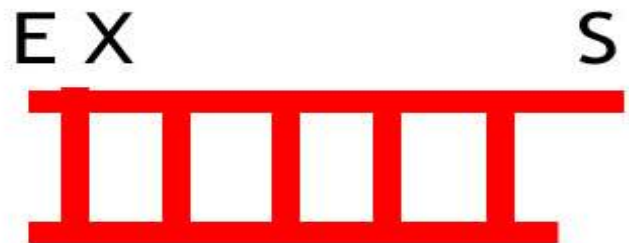
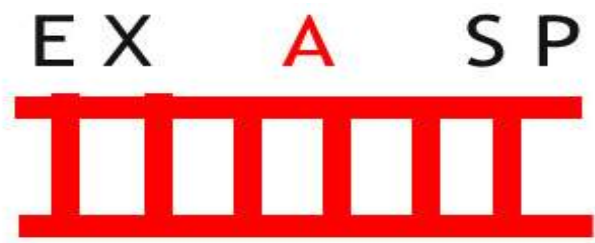
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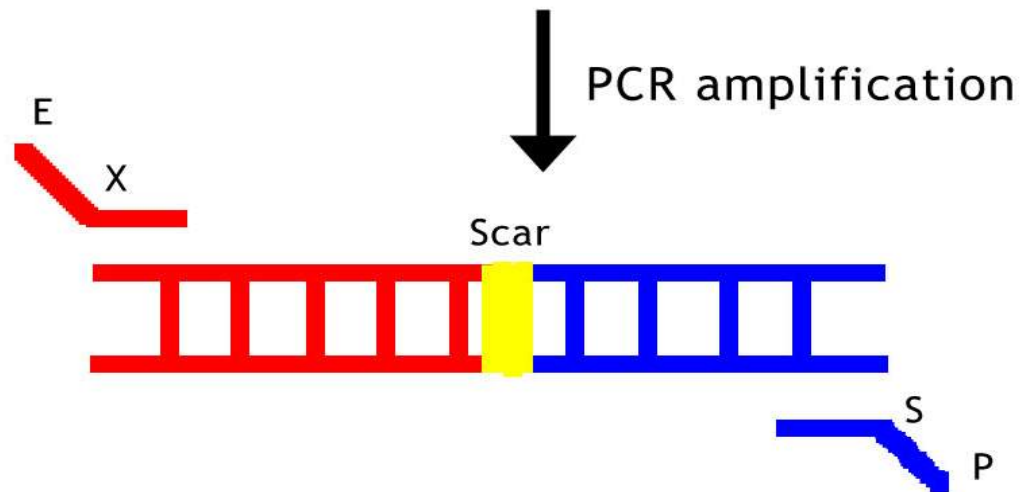
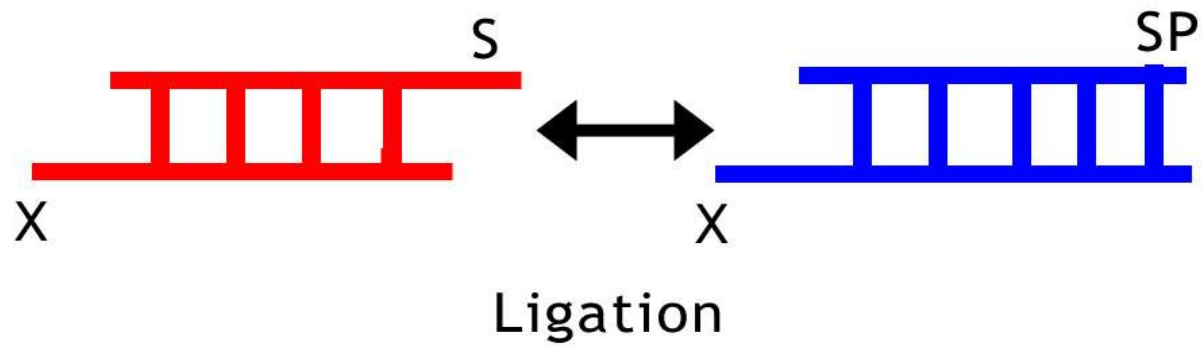
engineering *C. elegans* for advanced bioremediation

microinjection

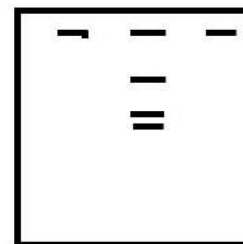


NEMOREMEDIATION
engineering *C. elegans* for advanced bioremediation





Gel Electrophoresis
and Extract





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OSLI | OIL SANDS
LEADERSHIP
INITIATIVE

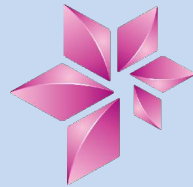
euromins
mwg|operon



SRIN
Oil Sands Research and
Information Network

VWR

nexen



IDT
INTEGRATED DNA TECHNOLOGIES

SUNCOR
ENERGY

Statoil

TOTAL

ConocoPhillips

PSI
Prestressed
Systems,
Inc.



NEW ENGLAND
BioLabs®
enabling technologies in the life sciences

Canada
alibrate, Inc.
The Pipet People™

MPB



NEMOREMEDIATION

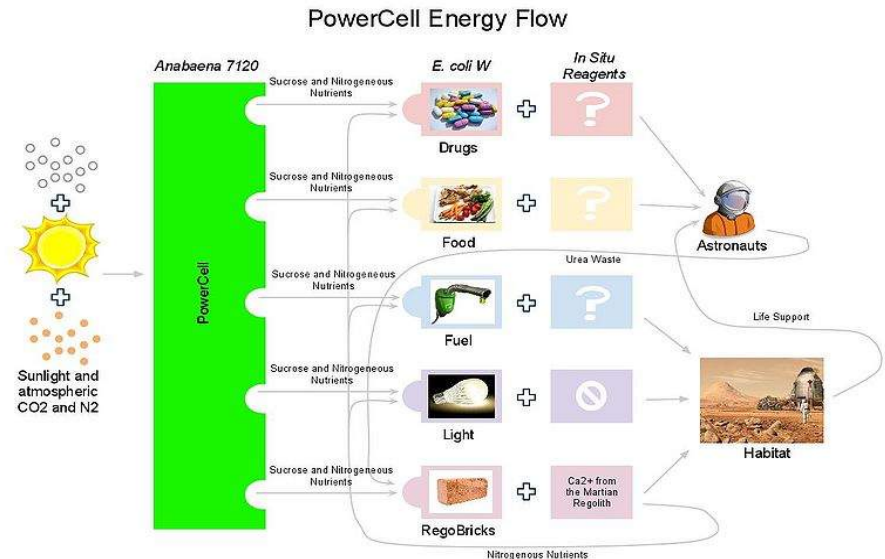
engineering *C. elegans* for advanced bioremediation

OTHER COOL PROJECT'S OF IGEM 2011

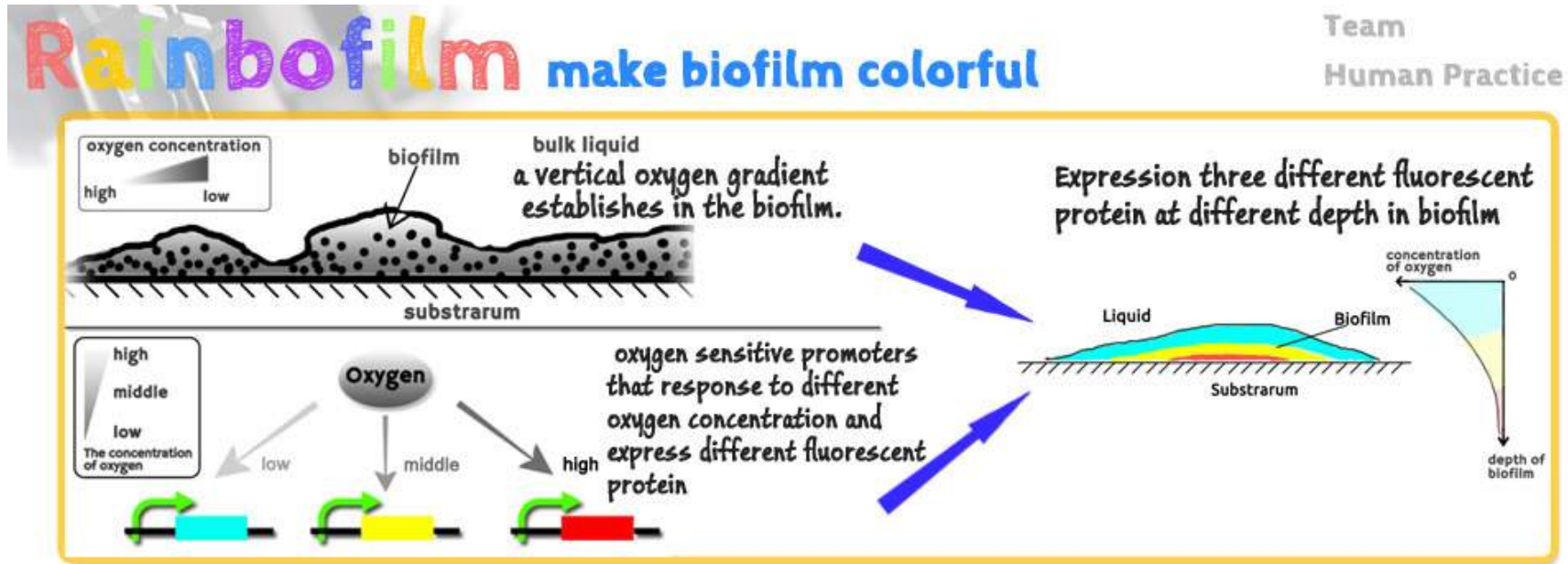
Brown-Stanford: Mars Bio Tools

Created a series of tools which would help in mars exploration and colonization.

Powercell – altered cyanobacteria to use CO_2 in the Martian environment to secrete sugars to sustain other biological tools.



REGObricks – uses bacteria to cement Martian and Lunar soil simulant into concrete like blocks providing in-situ building materials.



Using oxygen sensitive promoters to induce fluorescing proteins, they created a stratified response to oxygen concentrations within a biofilm.

Cool Applications: **Sugarfilm, Gluefilm, Sensorfilm**

These guys won 3rd place in iGEM this year!

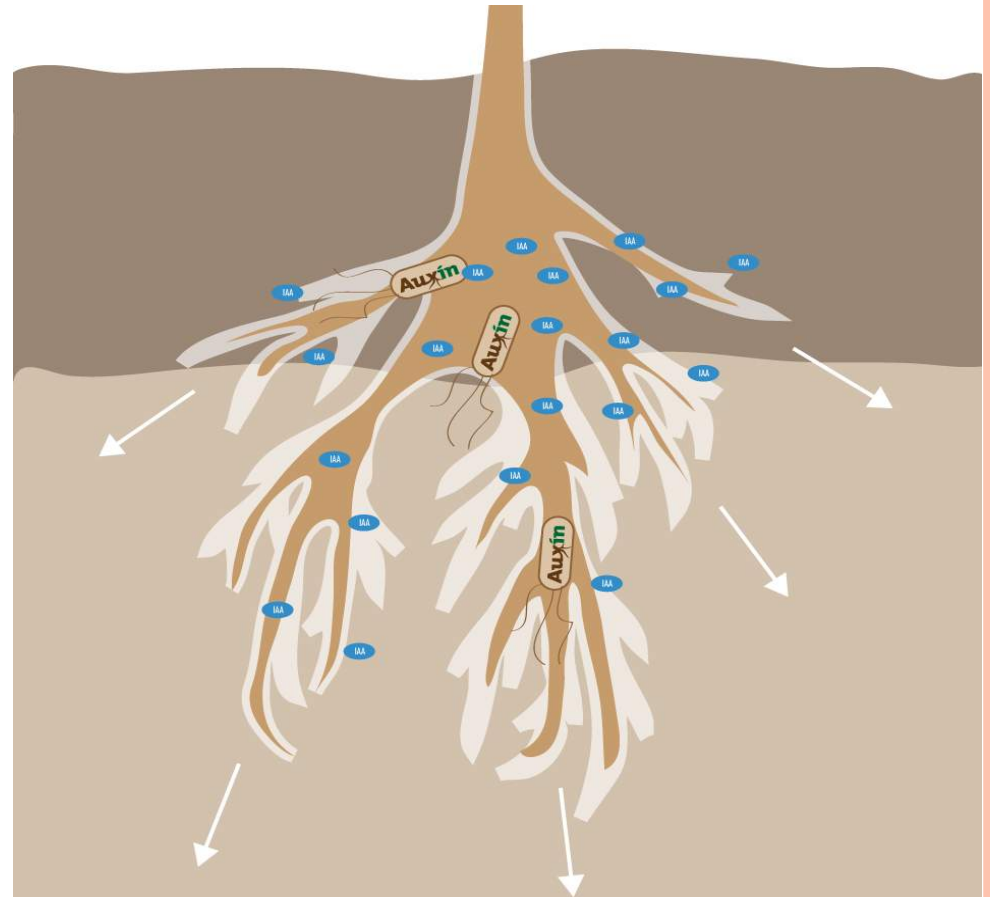


Imperial College London: Auxin

Created a system to combat soil erosion by manipulating *E.coli* so that it delivers the plant growth hormone **Auxin** to plant roots.

They also made a system to protect against **horizontal gene transfer**.

This team placed 2nd in the iGEM Competition!



Why iGEM?

- Project work and ideas are independent
- Sponsorship and management
- Unparalleled learning experience
- Research and lab experience
- Presentation, poster and website design



Not sure if iGEM is for you?

- If you're interested in science (even though you're not in a science degree) then working with QGEM is the place to be.
- Education
- Poster,
- Presentation,
- Website design,
- Sponsorship,
- Human practices,
- Creative ideas and solutions



iGEM Timeline



- January - February
Student Applications
- February - March
Student Interviews
Decisions
Weekly/Bi-Weekly Team Meetings Begin

End of School Year – Wet Lab Work Begins

September 2012 – Project Finalization

October 2012 – Regional Jamboree

November 2012 – World finals at MIT



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Executive Team Hiring Information

There are 4 committees to which you can apply:

Sponsorship
Recruitment
Education
Hiring



Executive Applications can be found on the **2011 QGEM team's website at:**

http://2011.igem.org/Team:Queens_Canada/Intro/Hiring

You can also visit the **AMS and Engineering Society websites** where the applications are found under the Jobs and Applications page.

DUE: Friday, January 27th by 5:30 pm



Summer Positions Hiring Information

Apply for Paid/Volunteer positions with the team through the **SWEP application process on Queen's Career Services website** at:
<https://careers.sso.queensu.ca/student/services/employmentPrograms/SWEP.htm>

The job ID is: **41802**

There are 4 paid positions available and we will offer as many volunteer opportunities as is feasible.

DUE: Wednesday, February 15th by 11:59 PM



Further Hiring Information



Interviews for the **executive positions** will take place from **January 28th-29th**.

Please note! This is the day after the deadline so be sure to include in your application any conflicts you may have on those days.

Interviews for **summer positions** will take place in late February to early March.

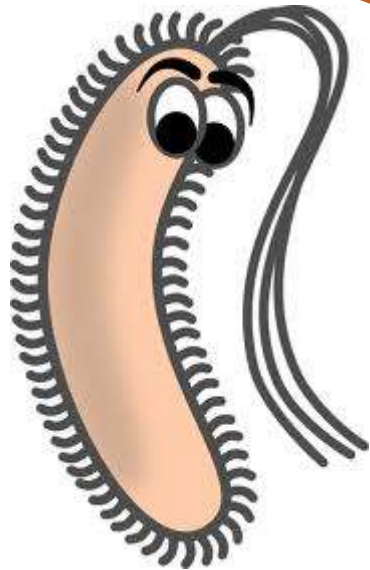
Questions concerning hiring, QGEM, or why people enjoy the Twilight series?

email us at: **apply@qgemteam.com**

... although we don't have the answer to that last one.



Questions?



Resources

- QGEM Homepage:
home.qgemteam.com
- QGEM 2011 website:
http://2011.igem.org/Team:Queens_Canada
- iGEM 2011 website:
http://2011.igem.org/Main_Page