
caps bioscience


Amighettis
EXPRESS
MIGHETTIS
Nutrition Facts


AMIGHETTIS
THE HILL
HUSKIES
Summer Tennis
FINAL FOUR
KANSAS
UNITED STATES NAVAL ACADEMY
SUMMER SEMINAR

Kansas City

Memorial Dr

EXIT ONLY

TO INTERSTATE 70 EAST

Illinois

EXIT ONLY


BP
gasoline
with Invigorate
SELF
bp
stop engine
USD 229
SELF SERVICE
ISLAND
WARNING
NO SMOKING
STOP ENGINE
Invigorate


EXIT 104
INDIANA
9
Maxwell
Greenfield
1 MILE


COUGAR
FIELDHOUSE


GREENFIELD-CENTRAL
HIGH SCHOOL
HUSKIES
iGEM
International
Genetically Engineered
Machine Competition


Accent of Italy
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EXIT


iGEM
iGEM HS 2012 Jamboree
International Genetically Engineered Machine
2012 Jamboree
Greenfield Central High School
June 29-30
NAME Pep
NAME Sausage
NAME Sausage
CHICAGO'S


caps
Arom-'Clock
iGEM
MIT
Austin Rottinghaus, Brandon Wilczinski, Tim Schaefer, Graham Wehmeyer,
Jonathan Hermenson, and Ryan McLean
Problem & Concept
Foundations & Outreach
Safety & Laboratory Methods
Results & Future
Canning .022's
Rise & Shine
Endless Pans
WESTERN
GINKGO

Arom-O'Clock

Austin Rottinghaus, Brandon Whitcomb, Tim Schaefer, Graham Wehmeyer, Jonathan Hermanson, and Ryan McLean

Problem & Concept

Foundations & Outreach

Catching ZZZ's

Rise & Shine

BioBrick Parts

Safety & Laboratory Methods

Results & Future


iGEM
OIR
(Cougar Meeting Room)
iGEM
Auditorium


Universal Fare
Grill & Chill
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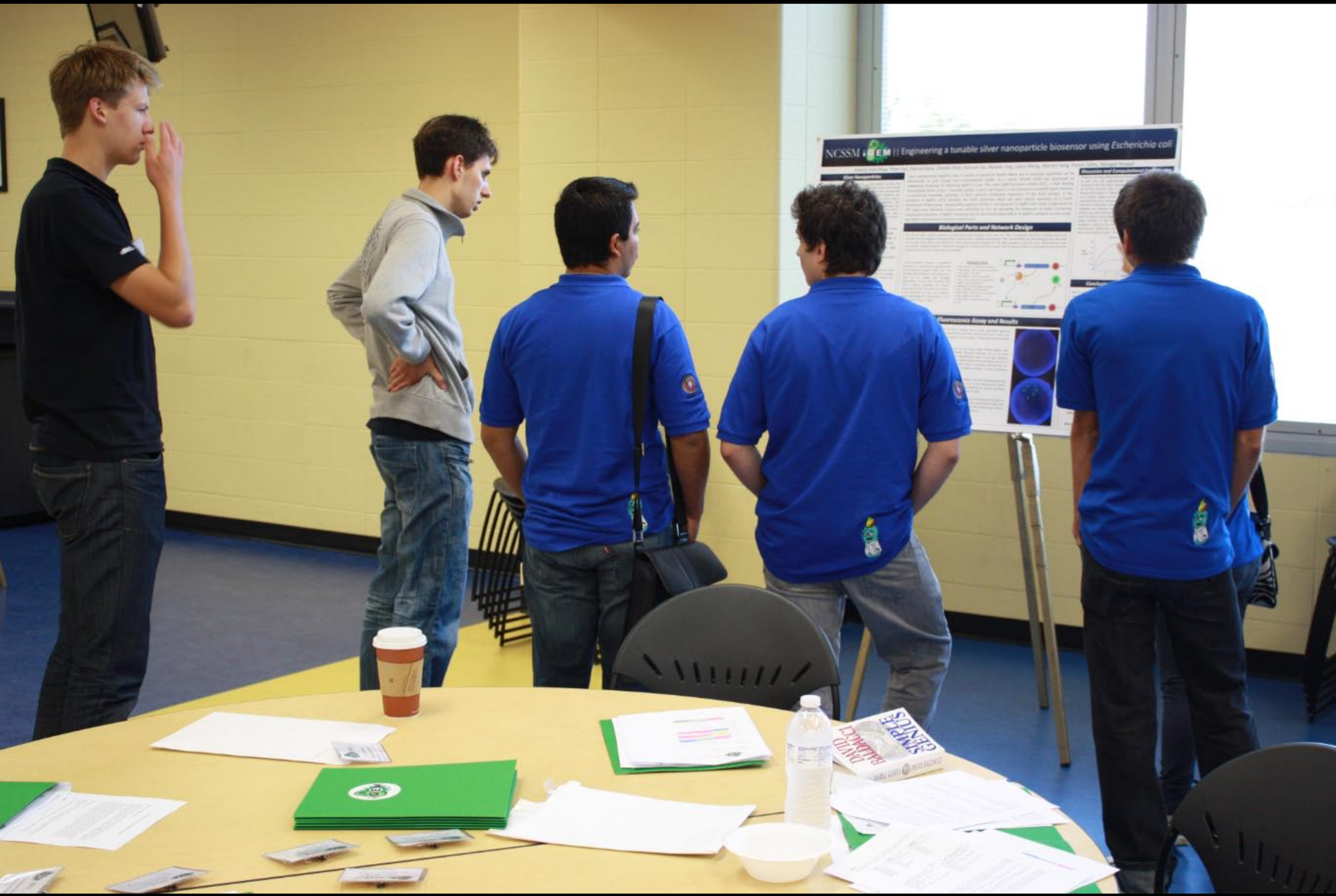
NCSSM iGEM || Engineering a tunable silver nanoparticle biosensor using Escherichia coli
Biological Parts and Network Design
Fluorescence Assay and Results
DAVID BALTIMORE
SIMPLE GENETICS


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2012


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Greenfield Central High School
Greenfield, Indiana, USA
June 29-30, 2012


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2012
2012
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iGEM 2012
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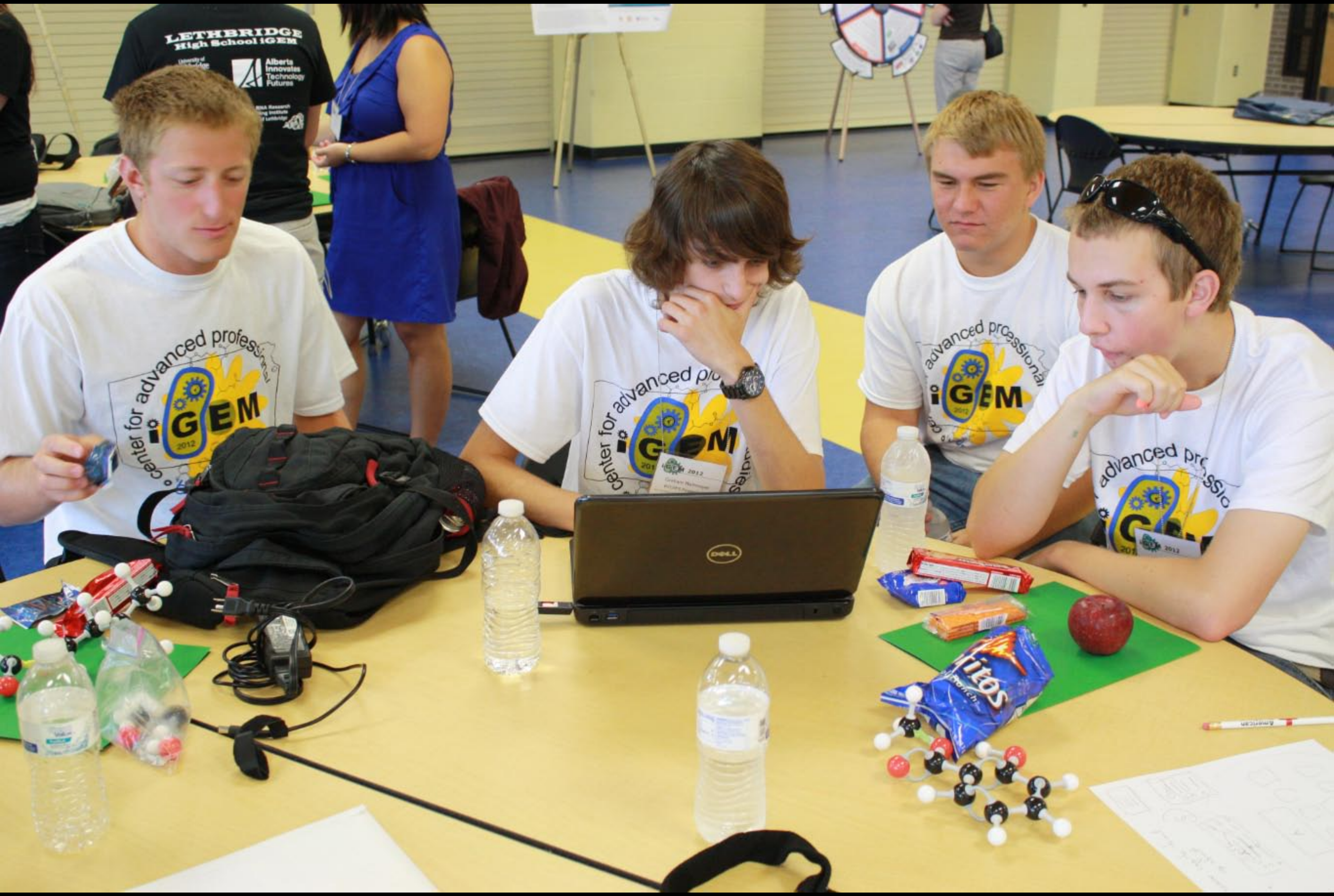
LETHBRIDGE
High School iGEM
Alberta Innovates Technology Futures
iGEM
2012
DELL
Fritos


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Country Cookin'
Oh' So Italian
Universal Fare
Grill & Chill
LETHBRIDGE
High School iGEM
iGEM
Tostitos


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iGEM
DELL


CIDEB
Universidad Autónoma de Nuevo León
Centro de Investigación y Desarrollo de Educación Bilingüe
Semi-Quantitative Biosensor based
on Sensitivity Tuners
IGEM- CIDEB


Acknowledgments
Special thanks to
Dr. Socorro Guajardo
CIDEB
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Italian
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LETHBRIDGE
High School iGEM


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Canon
DELL


Canvas
Times


Blue Valley CAPS Research


GREENFIELD-CENTRAL


G-C
COUGAR STADIUM
COUGAR FIELDHOUSE


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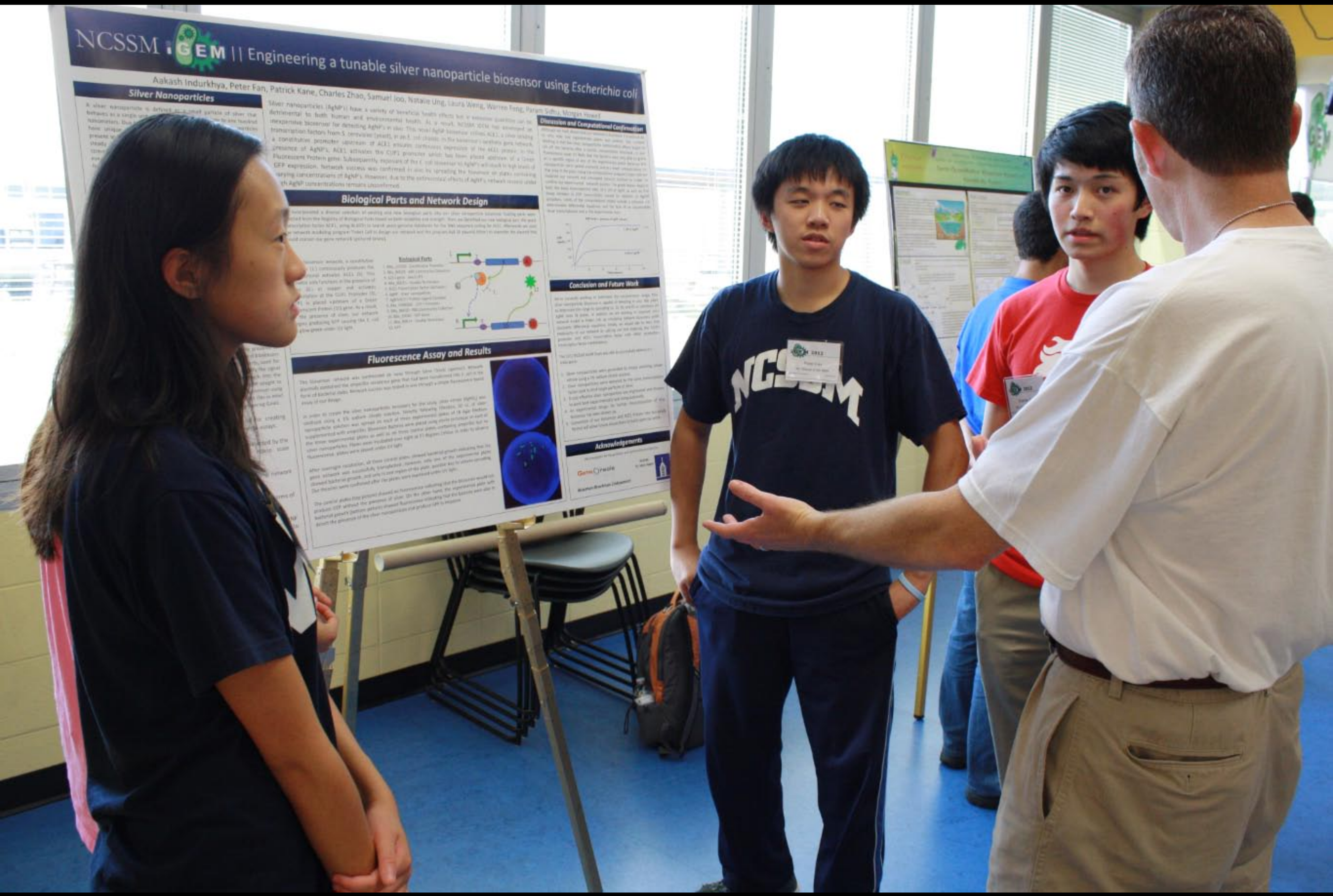
NCSSM iGEM || Engineering a tunable silver nanoparticle biosensor using Escherichia coli
Aakash Indurkhya, Peter Fan, Patrick Kane, Charles Zhao, Samuel Joo, Natalie Ung, Laura Weng, Warren Feng, Param Sidhu, Morgan Howell
Silver Nanoparticles
Biological Parts and Network Design
Fluorescence Assay and Results
Discussion and Computational Confirmation
Conclusion and Future Work
Acknowledgements
NCSSM


Seed Quantitative Biosensor based on Sensitivity Tuners


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Aram-'Clock

Austin Rottinghaus, Brandon Whitcomb, Tim Schaefer, Graham Wehmeyer, Jonathan Hermanson, and Ryan McLean

Safety & Laboratory Methods

As a prerequisite for working in the CAPS Bioscience laboratories, all team members were required to read through an comprehensive safety manual that included the following topics.

- General Safety
- Laboratory Dress and Hygiene
- Chemical Safety
- Glassware and Handling of Equipment
- Microbiological Safety

Our iGEM project idea was the brainchild of Brandon and Austin, who were inspired by responses to a survey of CAPS Bioscience, Business, Humans Services, and Engineering strand students of the everyday problems that they experience. After learning the basic techniques of preparing solutions, growing broth cultures, streaking plates, isolating colonies, preserving stock cultures, and autoclaving samples, work on the main project ran from late March until the end of school in May. Tim and Graham joined the project midstream, and after school was out, Graham, Jono, and Ryan worked until just prior to the jamboree. More specific methods follow:

Transformation plates were grown at 37°C overnight in an incubator. Chemically competent cells were generated using a protocol obtained from New England Biolabs (NEB) using E. coli strain HB101. Additionally, we used NEB 5-alpha Competent E. coli cells for more recalcitrant transformations. We followed the New England Biolab's High Efficiency Transformation protocol for transformation of our parts. All bacteria were cultured in LB media with either kanamycin or ampicillin, and liquid cultures for plasmid prep were grown at 37° overnight in a shaking incubator and then used. For plasmid purification from the liquid culture, an Aurum Plasmid Mini Kit (spin method) was used. Concentrations of DNA were taken using a Eppendorf Spectrophotometer at a 10µl sample to 40µl dilutant ratio. All restriction digestions were performed with New England Biolabs restriction enzymes and buffers, and the reactions were incubated for 30 minutes at 37°C followed by a 20 minute heat-inactivation step at 80°C. All gels were 2% agarose with ethidium bromide added and run at 120V until complete. A Sigma GenElute™ Gel DNA Extraction Kit was used to extract the digested DNA out of the gel.

Results & Future

Brandon, Austin and Tim successfully transformed the banana odor generator, mint odor generator, and the OmpC promoter. However, multiple attempts to transform the Cph8 light sensor/EnvZ complex failed. Attempts at problem solving, including using different competent cells and antibiotics, proved unsuccessful.

In June, Graham and Jono made [illegible] transformed parts in prepa[illegible] concentrations were [illegible] promoter purificat[illegible] and the [illegible]

Problem & Concept

Foundations & Outreach

Catching ZZZ's

Rise & Shine

BioBrick Parts


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advanced professional
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JUICY
COUTURE


Autónoma de Nuevo León
Biosensor based on
Tuners
model
Human Practic
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professional studies
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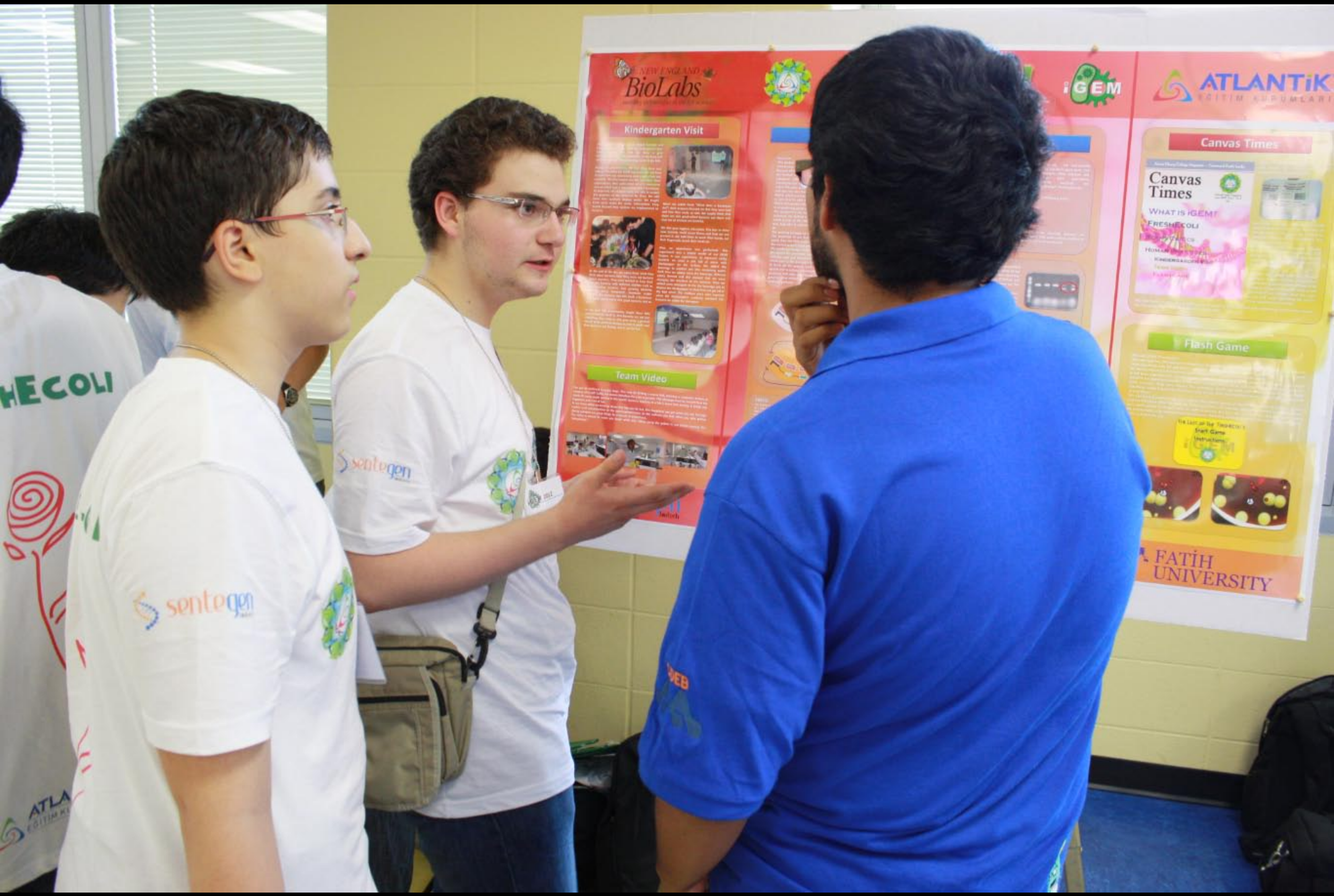
Results & Future
Rise & Shine


NEW ENGLAND
BioLabs
Kindergarten Visit
Team Video
iGEM
ATLANTiK
EĞİTİM KURUMLARI
Canvas Times
Canvas
Times
WHAT IS iGEM?
FRESH E.COLI
Flash Game
FATİH
UNIVERSITY
sentegen


Sensitivity Tuners
Math model
Human Practices
CIDEB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– more than just elegant
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Bracelet 15$


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– colorful into the summer
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Necklace

Surf 'n' Fly

– as cool as usual

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40$

22$


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Lily from México
UANL


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Machine Competition
Professional Stuff


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Erin Kerr


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Jamboree


M 2012
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Jamboree


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2012 Award
Ceremony!
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John Rihm
GCHS
Jenna Rickus
Judges
Volunteers
Vinoo Selvarajah
Kitwa Ng
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Best Hail Mary


iGEM
Best Model
CIDEB-UANL Mexico
iGEM 2012 iGEM High School Jamboree iGEM


Best Model
CIDEB-UANL Mexico
12 iGEM High School Jamboree


iGEM


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est Poster
2012 iGEM High School Jambor


iGEM
Best Poster
APS Kansas


Best Poster


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2012 iGEM High School Jamboree


Best Presentation


JCEMerz Award
Turkey


iGEM 2012 iGEM High School Jamboree


Grand Prize


Heidelberg


SCIENCE
Heidelberg
h School Jamboree


Grand Prize
Heidelberg LSL


Competition


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Machine Compet
GEM


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Machine Competition


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Machine Competition


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Wilson


wbank

CHUCK-A-BURGER

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CARRY OUT

PHONE IN FOR QUICK PICK UP

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Neon City


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WORTH DRAG RACER
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OPEN
Cheeseburgers


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ENVIROTHON