



2015 SPONSORSHIP PACKET

TEAM LETTER

Thank you for your consideration in sponsoring the 2015 Rock Ridge High School iGEM (International Genetically Engineered Machines) Team.

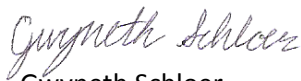
This is our first year competing in iGEM and we are thrilled with the opportunities that it has to offer. Although this is our first year, we are very enthusiastic and ready to meet this challenge, our mentor Mr. Saavedra has worked in industry and is very familiar with techniques that involve biotechnology and synthetic biology. The students that make up our team were carefully selected from all the biology classes in our school and they have proven to be a group of students that are dynamic, driven and eager to learn. We have also recruited students from other local high schools known as Broad Run HS and John Champ HS.

As of now, we are the only team competing in iGEM in the entire state of Virginia. As a first year school, we understand that we need to work really hard in order raise enough money to make our project successful. So far, our parents and teacher sponsor, Mr. Saavedra, have been so supportive in our efforts to create a working iGEM team. We have set up committees to reach our local communities and businesses and are hopeful that your institution will come forward and support this academic endeavor.

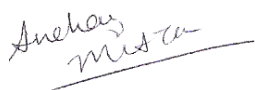
Your donation will not only buy consumables but also equipment that will stay at the school, the equipment will be available to all teachers and students from any school to perform experiments for the classroom, science fair or any other competition. Your business will be well represented as the donation will be credited towards you. It has been our experience that it is difficult for high school students to find a lab that is equipped and willing to help us with our projects. We hope that this will open a door to students that are interested in Biotechnology.

We are very proud to represent Loudoun County and Virginia as the only high school competing iGEM team, and we hope that you will be next to us in our journey to solving problems that afflict our community through synthetic biology.

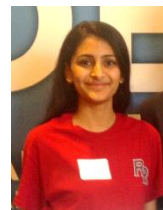
Sincerely,



Gwyneth Schloer
Team leader, 2015



Sneha Misra
Co-Team leader, 2015



WHAT IS iGEM?

iGEM is an international student competition centered in Boston, Massachusetts focused in the fields of synthetic biology. iGEM stands for International Genetically Engineered Machines. This program is composed of 266 high schools, colleges, and entrepreneurial teams across the globe. iGEM first started at MIT in 2003 and is the sponsoring institution for the competition. Ambitious students strive to create an open and informed community in the potential and risks of synthetic biology by having students create or design genetic systems that work on cells (bacteria or eukaryotic) to give them a new function that will help or solve a problem in the community or in the world. The teams share their findings and their tools (plasmids/Biobricks), which are placed in a repository accessible to any team in iGEM. The iGEM program is a wonderful program for individuals to find opportunities and pursue interests in the STEM field.



THE TEAM

The Rock Ridge High School iGEM team is a high school level biology team composed of 16 members in their freshman, sophomore, and junior year of high school. The team is in its first year competing at the MIT-run international competition, so the aspiring team relies on the donations from the community and the neighboring companies.

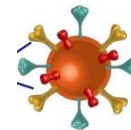
The members of our team are all highly devoted to gain a better understanding in the fields of synthetic biology. Our mission is to engineer a machine that will benefit the world and further our understanding of biology. In the process we are developing outstanding future researchers and biologists that will go on to have successful careers in any field of science they pursue.

THE PROJECTS

For this year's iGEM competition, we will work on two projects: A multi-vaccine platform using minicells derived from bacteria and a bacteria mimic to combat vector-borne diseases that affect our community .

Multi-vaccine Platform

Briefly; the project is based on the University of Virginia's iGem project on bacterial minicells used as a drug delivery system. We will use their system of making high levels of mini cells, but we'll use it as a vaccine platform system. We will also be using the Gibson Assembly method of making large DNA constructs and the Wolbachia surface protein as our immunogenic factor as well as our epitope presenting protein. We plan to make a vaccine that can carry more than 5 different antigenic factors, which means one shot will have more than five types of flu virus or one shot can have antigens against HIV, HBV, HPV, Tuberculosis, Malaria or any other. This project has a high likelihood of success, since we are reusing an already established Biobrick and the Wolbachia surface protein is very immunogenic. We hope that this process will create strong responses for the other antigens.



Bacteria Mimic to Combat vector-borne Diseases (Lyme disease)

Briefly; we'll create a bacteria that will mimic insect specific symbiotic bacteria (Wolbachia) to combat a vector-borne disease (lyme disease), we will use *Drosophila Melanogaster* (fruit flies) as our insect model and proof of principle. To create our mimic, we'll add surface protein genes that are found in Wolbachia to BL21 or DH5-alpha cells (we will confirm the surface proteins by ELISA using antibodies against Wolbachia surface protein). Once our mimic is well established through several fruit fly generations (we will confirm this by PCR), we will add a fluorescent gene that will be activated by products generated by the Lyme disease bacteria (we will first do in-vitro studies to make sure it works). If this works we will do the same work on ticks which are the natural vectors for lyme disease and we will add another gene that will inactivate the lyme bacteria.

If our insects are released in the wild, they will mate and pass on our mimic bacteria. If they come in contact with the lyme disease, our ticks will generate the fluorescent marker which flags the insect as a lyme disease active organism, making them easier to identify and at the same time it will inactivate the lyme bacteria.

If this works we will be able to use this technology with other vector-borne disease organisms to combat Malaria, West Nile Virus, Dengue Fever, Ebola etc.



HUMAN PRACTICES AND OUTREACH

In order to encourage the youth in the Northern Virginia area to consider pursuing STEM careers, our team will be visiting local elementary, middle schools and high schools. At these events, we will present our projects and we will demonstrate different experiments that are related to synthetic biology, we will also lead the discussion on the benefits and problems with this technology. We are organizing a science exhibition for students that live in our area, we plan to use this opportunity to also explain our project and gather support from the community. At this event, students will be able to make and take their own science projects, play around with advanced technology, and participate in many more fun and engaging activities. We plan to visit different High Schools in our area and surrounding counties, we hope to create enough enthusiasm so they can also join iGEM in the coming years, and we will help them with our knowledge, equipment and experience for the competition.



PROJECT BUDGET

Materials	Amount	Description
Competition Registration	\$4500	Registration fee for 2015 iGEM competition
Primers	\$1000	Primers will be used to create and verify our constructs.
DNA Vectors	\$400	Genetic parts used for cloning.
DNA Sequencing	\$800	Sequencing was used to verify our genetic constructs.
Molecular Biology Chemicals and Reagents	\$7650	Some examples are antibiotics, antibodies, cells, tubes, gel materials, PCR materials, media components, various enzymes, etc.
Miscellaneous Lab Supplies	\$1000	Includes materials such as dialysis membranes and glassware.
-80 Benchtop cryogenic Freezer	\$6000	This cryogenic freezer will help our new team, save all living materials for the competition and for our classroom or for anybody who has a science project.
Incubator Shaker	\$4940	We will need an incubator shaker to be able to grow our bacteria in liquid medium
Outreach Supplies and Travel	\$200	Materials for demonstrations and fun activities that will be used to explain our project and synthetic biology (the good and the bad) to our community.
Total expenses	\$ 26,490	

BENEFIT OF SPONSORSHIP

Sponsors are posted on our Wiki from greatest sponsorship onwards, along with our presentation project for the competition, our team banner and also on our project poster. Being on these papers is a great opportunity for your company to be seen by future scientists and researchers that participate in iGEM, or to let our community know that you support young scientist=80. Along with an honorable mention, generous sponsors will be awarded with a gift basket full of complimentary treats!

Your company logo here

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DONATION FORM

Donation form

Thank you for your time.

Mailing Address:

Rock Ridge IGEM
Attn: Mario Saavedra
43460 Loudoun Reserve Dr.
Ashburn, VA 20148

Contact Information:

Team leaders: Gwyn Scholer and Sneha Misra
rockridgeigemvirginia@gmail.com
gwynethschloer@gmail.com
snehamisra12@gmail.com

General Information:

Name of Organization: _____

Mailing Address: _____

City: _____ Postcode: _____

Contact Information:

Contact Name: _____ Contact Title: _____

Phone Number: _____ Email Address: _____

Donation Information:

Gift in Kind:

What is the gift in kind? _____

Monetary Donation:

What is the donation amount? _____

Donor Signature: _____ Date: _____

School Tax ID: 54-600-1395

If you would want our representatives to collect any checks and take a picture, please let us know.

*All checks should be payable to: Rock Ridge High School