

# iGEM Makerere Uganda Team 2018

## Undergraduates

Kyabarongo Alex | BVM II  
Mukabaliisa Patience | BBLT II  
Oketcho Michael | BVM III  
Ssemanda Paul | BSc. Biotechnology  
Nalumenya David Paul | BBLT II  
Wagaba David | BVM II  
Wagaba David | BBLT II  
Mukisa Pius | BBLT II  
Singoma Crispus | BVM II  
Matovu Wycliff | BBLT II  
Kyoyagala Sarah | BVM II  
Ssemambo Ronald | BBLT  
Tamale Henry Charles | BBLT II  
Ayoto Christine | BBLT II  
Baluku Erikan | BBLT II

## Graduate Student Mentors.

Ali Milton | MSc. Molecular Biology  
Balikuna Sulah | MSc. Molecular Biology  
Cuu Gloria | MSc. Molecular Biology

## Core College Advisors.

Dr. Okuni Julius Boniface, PhD | Dept. Chair  
Dr. Kaziibwe Anne, PhD |  
Dr. Odongo Steven, PhD | Bioengineering  
Dr Saimo Kahwa, PhD |  
Dr. Clovice Kankya, PhD | Assoc. Prof.

## Instructor iGEM Makerere| Coordinator SynbioUg |

**Mr. Otim Geoffrey** | BSc. MLS | PGD Health Mgt. | MSc. Molecular Biology.  
SB7.0 Synthetic Biology and Biosecurity Fellow 2017.

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@iGEMMakerereUg



Create

Educate

Innovate

collaborate

## Tasks to:

**Construct** a novel biologically engineered system that has the potential to improve our environment and push the frontiers of synthetic biology

**Troubleshoot** difficult and messy problems that demand advanced solutions through multidisciplinary innovation

**Stimulate** intellectual excitement about interdisciplinary biosciences at both Makerere University and abroad.

**Develop** a radical and integrated collaboration

between the schools of veterinary, medicine, engineering, natural science, and law.

**Train** a selected group of undergraduates the principles of synthetic biology using an approach that reproduces the learning processes of scientists and engineers.



**Otim Geoffrey MSc**, Instructor iGEM Makerere and Coordinator SynbioUg Establishment. SB.7 Synthetic Biology and Biosecurity Fellow 2017

## About Us:

### Makerere University iGEM: Synthetic Biology for a better World

#### What is iGEM?

The International Genetically Engineered Machine (iGEM) competition is an international competition in which students interested in synthetic biology and its real-world applications for problem-solving gather to develop ideas, set project goals, and build unique biological systems that can operate in living cells. iGEM is an interdisciplinary project that joins students with diverse interests and talents and encourages them to explore new ideas and develop a plan for building genetically engineered systems to tackle issues in their community and the world.

Every year, over 2,000 undergraduates from different countries World-wide gather at the Massachusetts Institute of Technology (MIT), USA to compete in the International Genetically Engineered Machine (iGEM) competition.

## ENGINEERING Bacteria: To Solve Environmental Problems.

#### WHAT IS SYNTHETIC BIOLOGY

**Synthetic Biology** is a relatively recent science area where new biological functions and systems are created or redesign of the existing biological system. This is achieved with the use of BioBricks/parts, these are standardized DNA sequences. Synthetic biology has quickly emerged as an innovative process where DNA from microorganisms, such as yeast or bacteria, is modified and used analogously to small factories or machines that convert raw materials into a finished product.

The applications of Synthetic Biology are very diverse and can range from the production of vaccines, Novel drug discovery, chemicals or bio-fuels to the creation of biosensors and so much more!

## We need you: To support our plastic degradation project.

Plastics are a waste product that pollutes the environment we live in more especially clogging the sewage system in urban centers and toxins from decomposed plastics are introduced into ecological systems that humans often manipulate for food. A biological approach to resolving this problem is favorable because of its practicality and efficiency. *Ideonella sakaiensis* is a bacteria that naturally decomposes polyethylene terephthalate, we decide to genetically modify *E. coli* cells to model the plastic degradation process by adding the Lipase and Chlorogenate Esterase genes from *Ideonella sakaiensis* into *E. coli* bacterial cells. With an ambitious project of significant size and scope, iGEM Makerere seeks considerable support, this involves monetary contributions and in-kind donations to cover the project expenditure.

## BUDGET COST

Summer research stipends (\$500*15)	\$7,500
DNA synthesis	\$3,000
<b>Team Registration (Urgent!)</b>	<b>\$4,500</b>
<b>Lab reagents</b>	
Competent cell lines	\$1,500
Restriction enzymes	\$1,000
Miniprep kits	\$900
Antibodies for protein detection	\$700
PCR primers	\$300
Disposable lab supplies	\$200
Pipette tips	\$250
Plates	\$150
Gloves	\$200
Miscellaneous equipment and supplies	\$1,000
<b>Travel, Hotel and Jamboree expenses</b>	
Travel to MIT(USA) Jamboree (\$1,150*15)	\$17,250
Hotel at MIT Jamboree \$250/Night/2ppl	\$1,875
Jamboree Fee (\$659*15) .....	\$9,885
<b>TOTAL</b>	<b>\$50,210</b>



## Giving back to our sponsors:

The annual iGEM competition at MIT is a unique event that is widely recognized as being of the highest caliber. Since the iGEM competition gathers considerable public and media attention, sponsoring Makerere iGEM team is an excellent promotional opportunity. As our valued sponsors, we will include your company's name and logo in all our public announcements, interviews, publications and websites. If your company would like to establish a long-term relationship with us as our primary sponsor, we would be honored to name our iGEM team after your company's name.

Your contributions will directly support undergraduate research and learning at Makerere University which is the largest premier public university in East Africa.

## PARTNERSHIP OPTIONS

#### GOLD- \$30,000+

The team name will take the form of Makerere 'yourcompany' iGEM team  
Leading logo and hyperlinks on Makerere iGEM Team website/wiki  
Leading logo on team uniforms

#### SILVER - \$20,000-\$30,000

10 Makerere iGEM team members will each be the recipient of Makerere 'yourcompany' iGEM Research Fellowship.  
Logo on team website, and uniforms.

#### BRONZE - \$10,000-\$20,000

5 Makerere iGEM team members will be the recipients of Makerere 'yourcompany' iGEM Research Fellowships, logo on our website.

#### VVIP - \$1,000-\$10,000

Company profile page on website  
Access to team members for any corporate functions, logo on team website, uniforms.

#### VIP - \$100-\$1000

Promotion during all media interviews and public appearances.  
Logo on team uniforms.

## EXPECTED MEDIA EXPOSURE

NTV Uganda

NBS TV Uganda

Capital FM

Bukkedde TV

K FM

The New Vision

The Daily Monitor

Urban TV

BBC

Rupiny

