

**LET'S TALK
ABOUT.....**

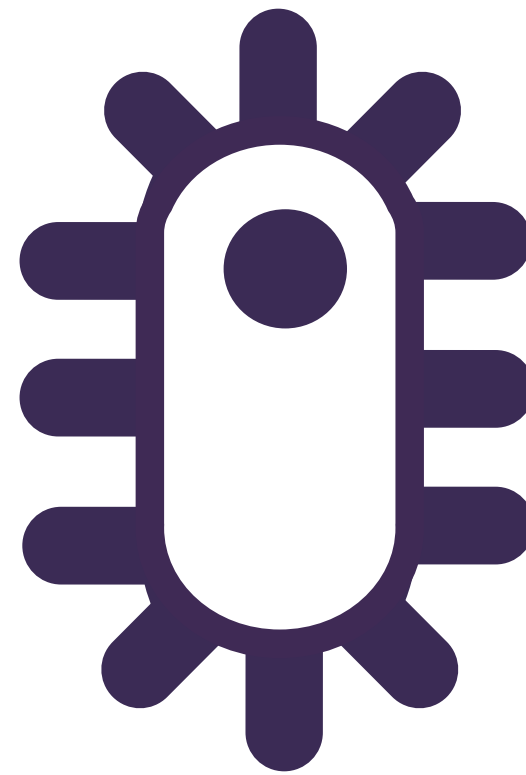
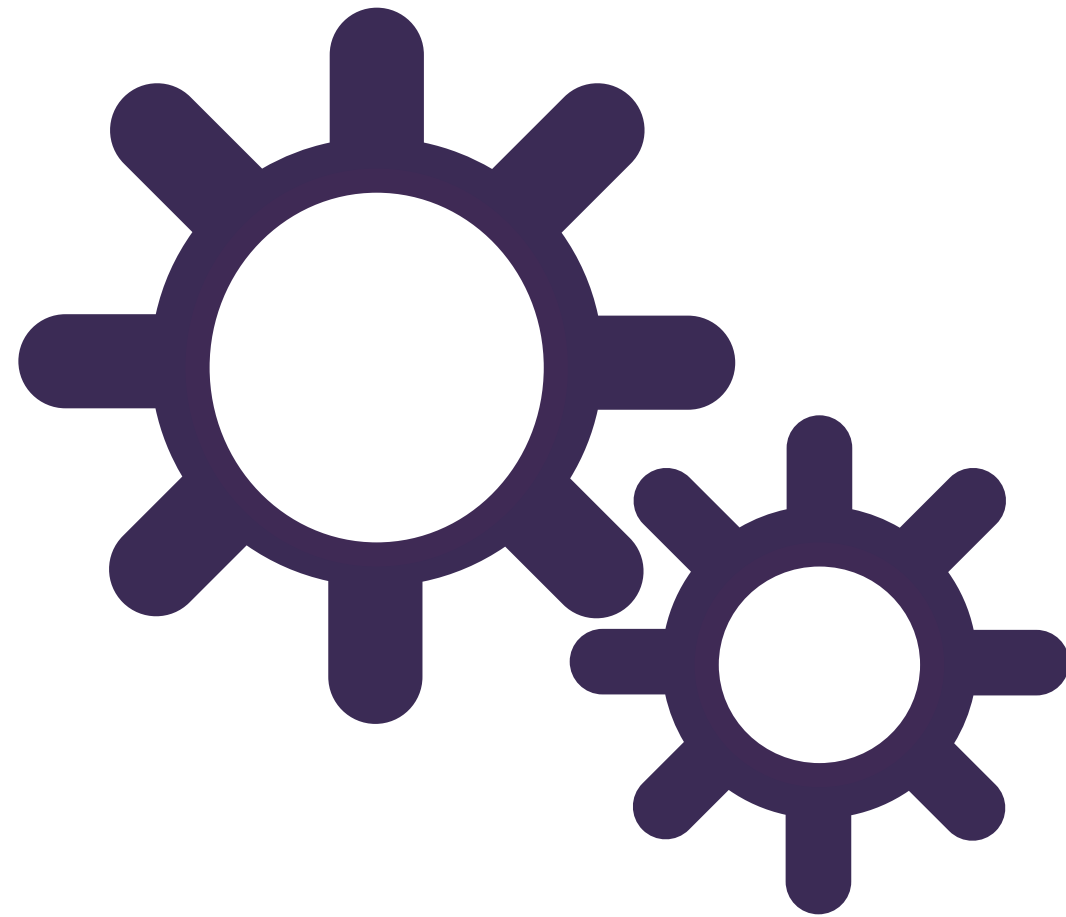
WHAT IS SYNTHETIC BIOLOGY?

WHAT IS IGEM?

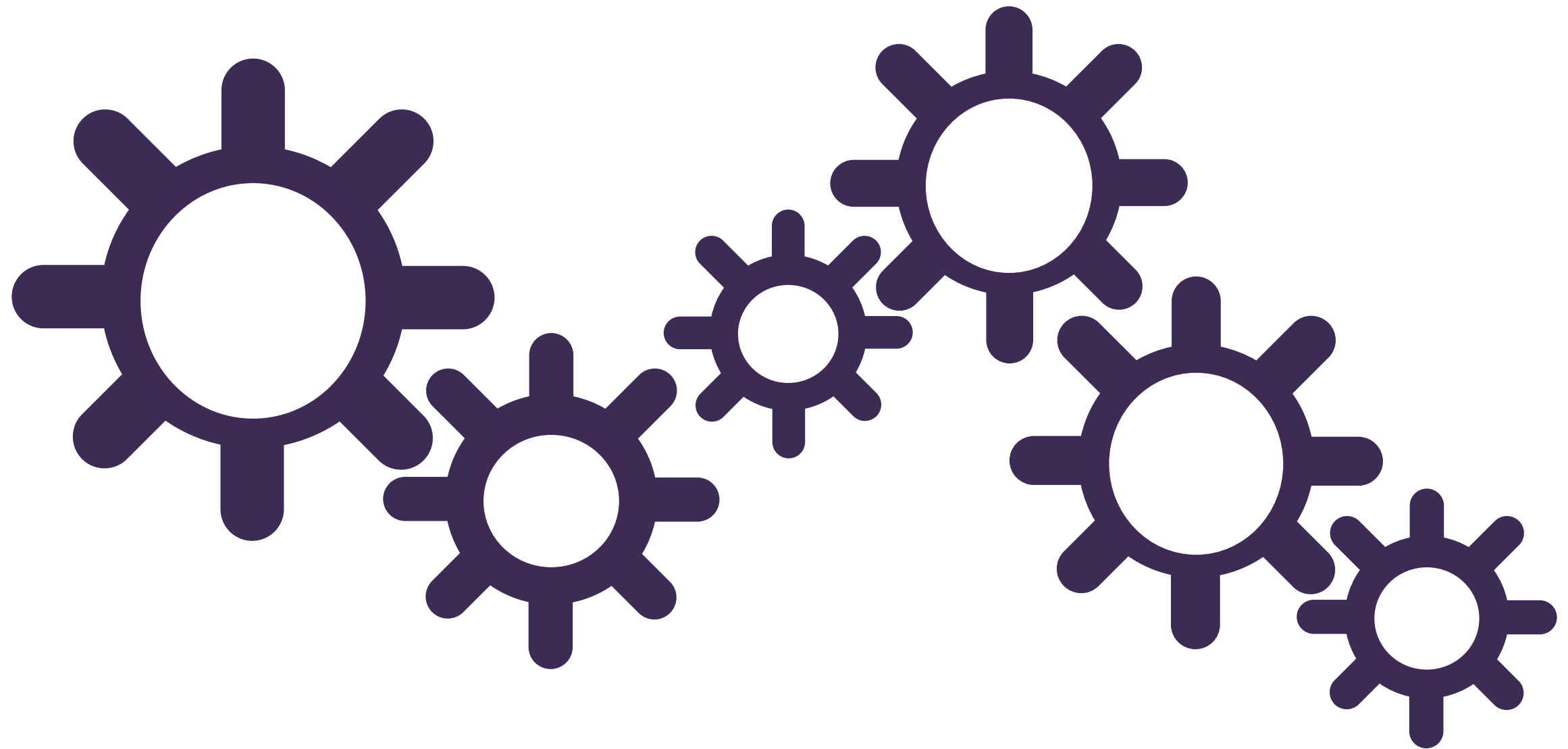
THE IGEM COMPETITION

MY IGEM EXPERIENCE

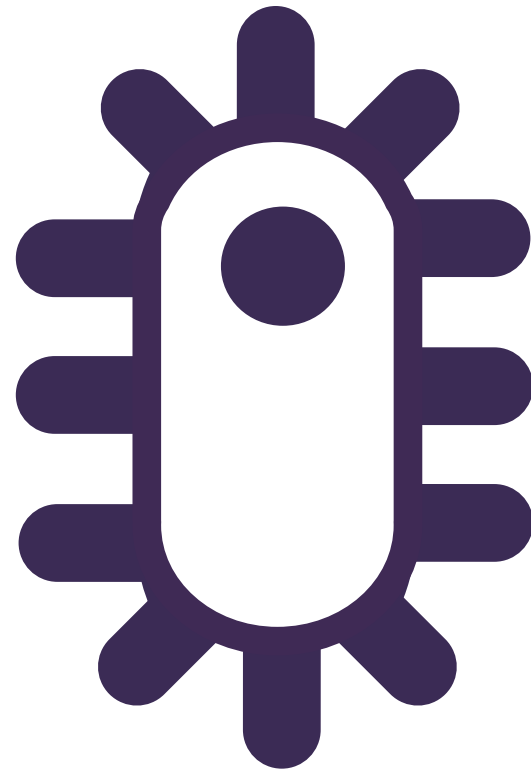
WHAT IS SYNTHETIC BIOLOGY?



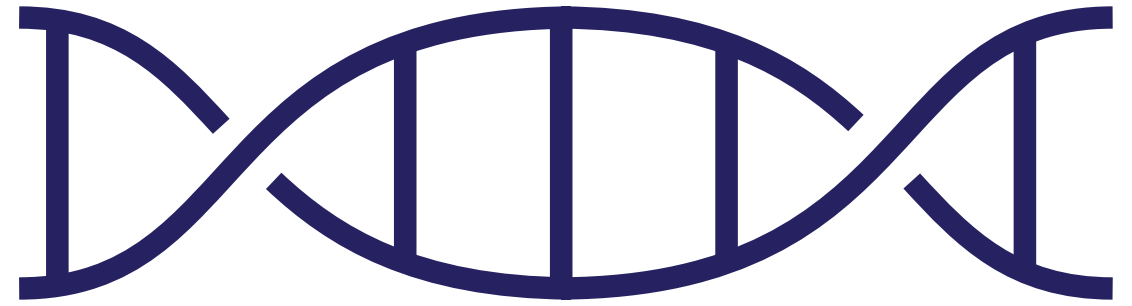
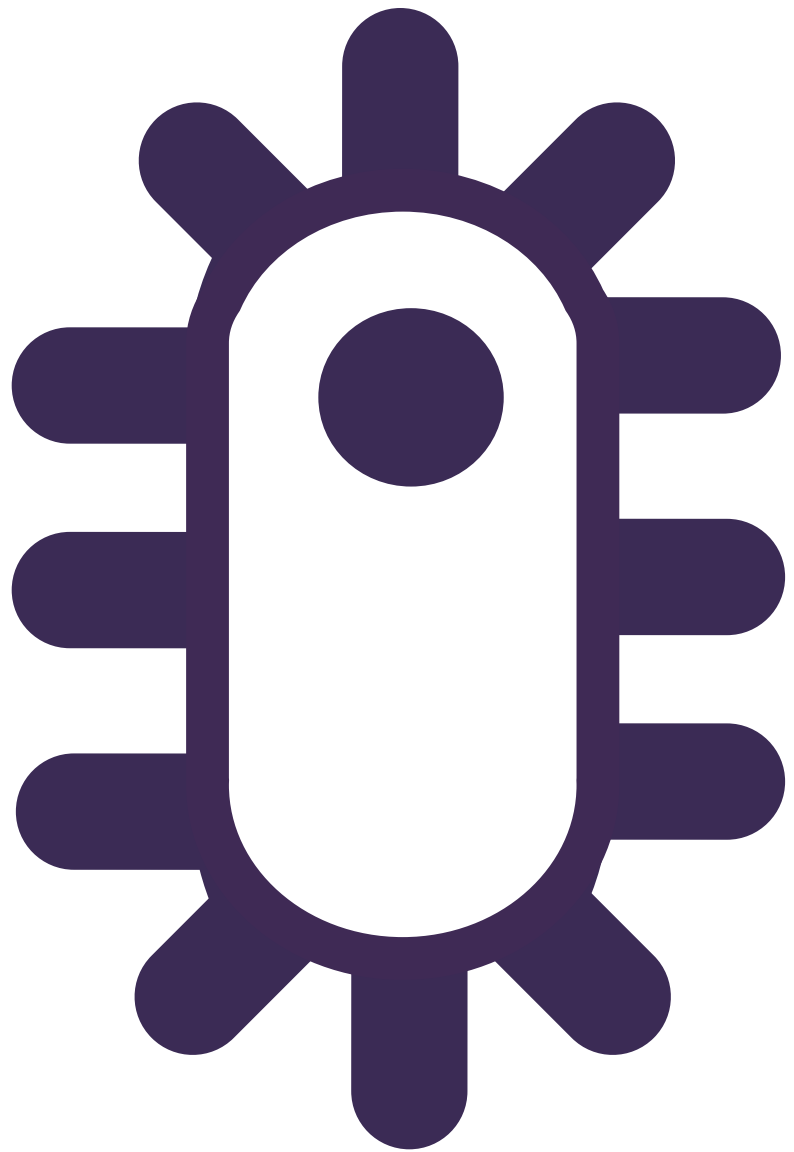
ENGINEERING + BIOLOGY



ENGINEERING
SIMPLIFY AND BUILD

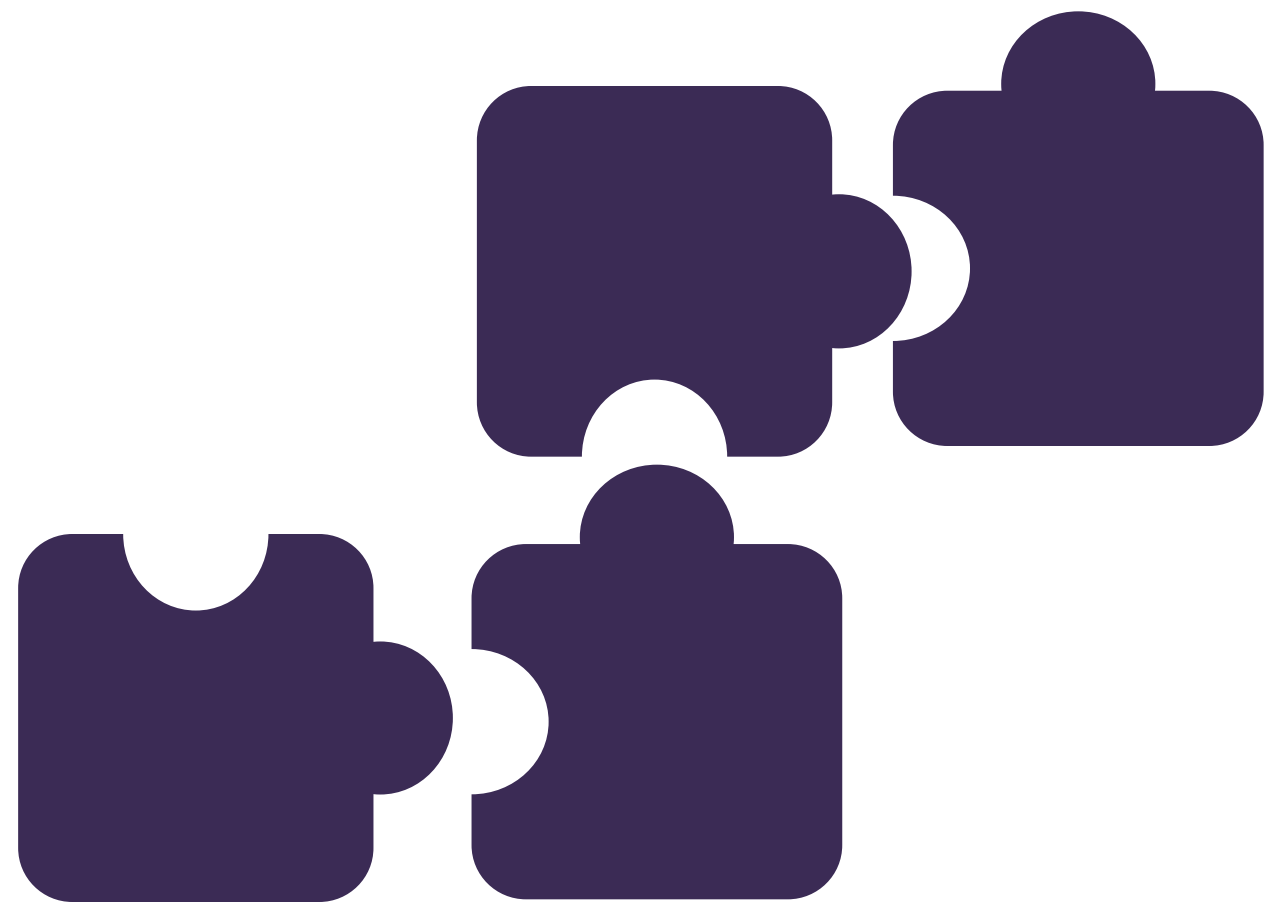
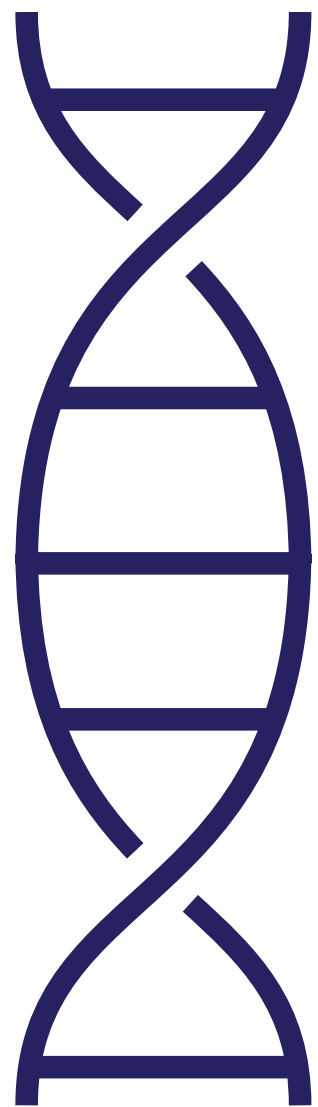


BUT...BIOLOGY
IS VERY COMPLEX!



ATGGGCAGCA
CCTAGGAATA
TCATTTTCGC

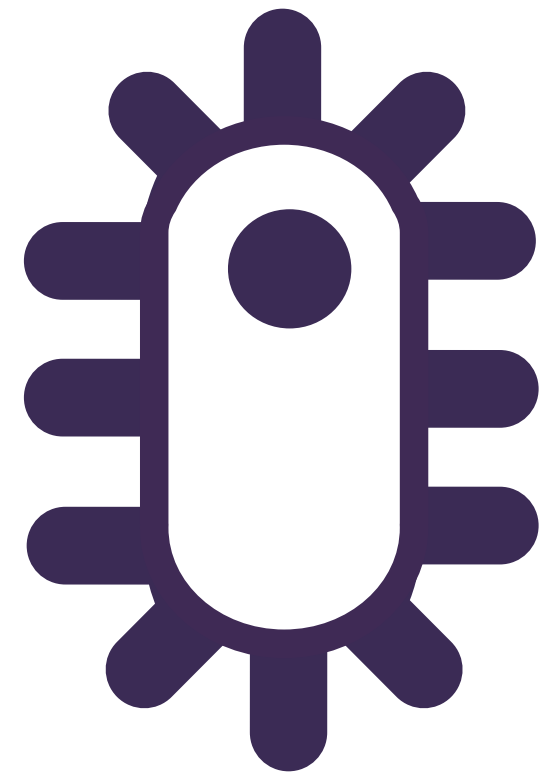
WE CAN USE
DNA SEQUENCES



BIOBRICKS

STANDARD DNA BUILDING BLOCKS

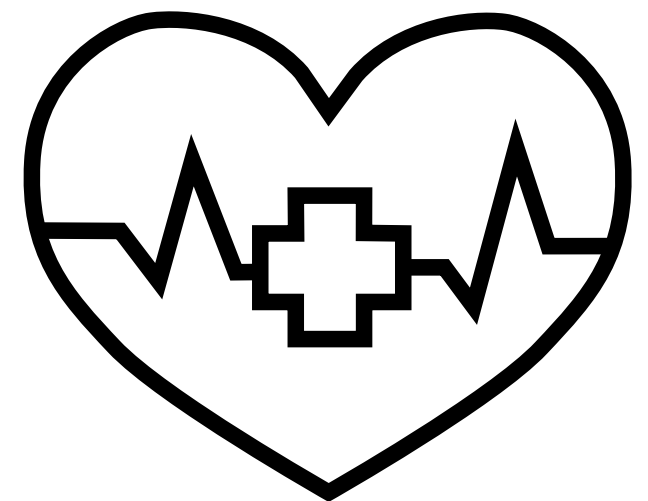
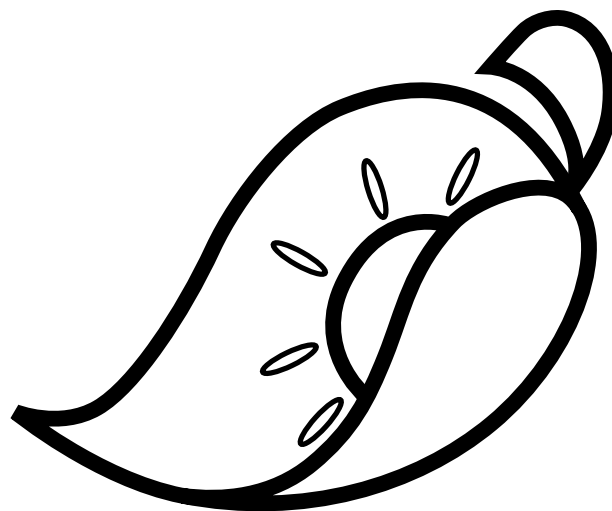
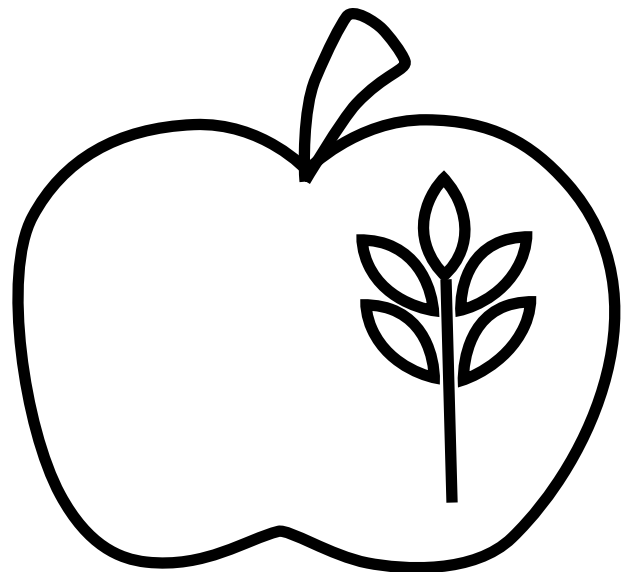
ATGGCAGCACCC
TAGAATATCAT
TTTCGCCCTCTG
ATATTCTATTTG
GTGTTCTCGA



PROGRAMMING WITH BACTERIA

USING SYNTHETIC BIOLOGY
TO SOLVE REAL WORLD PROBLEMS

PARTICULARLY LOCAL PROBLEMS



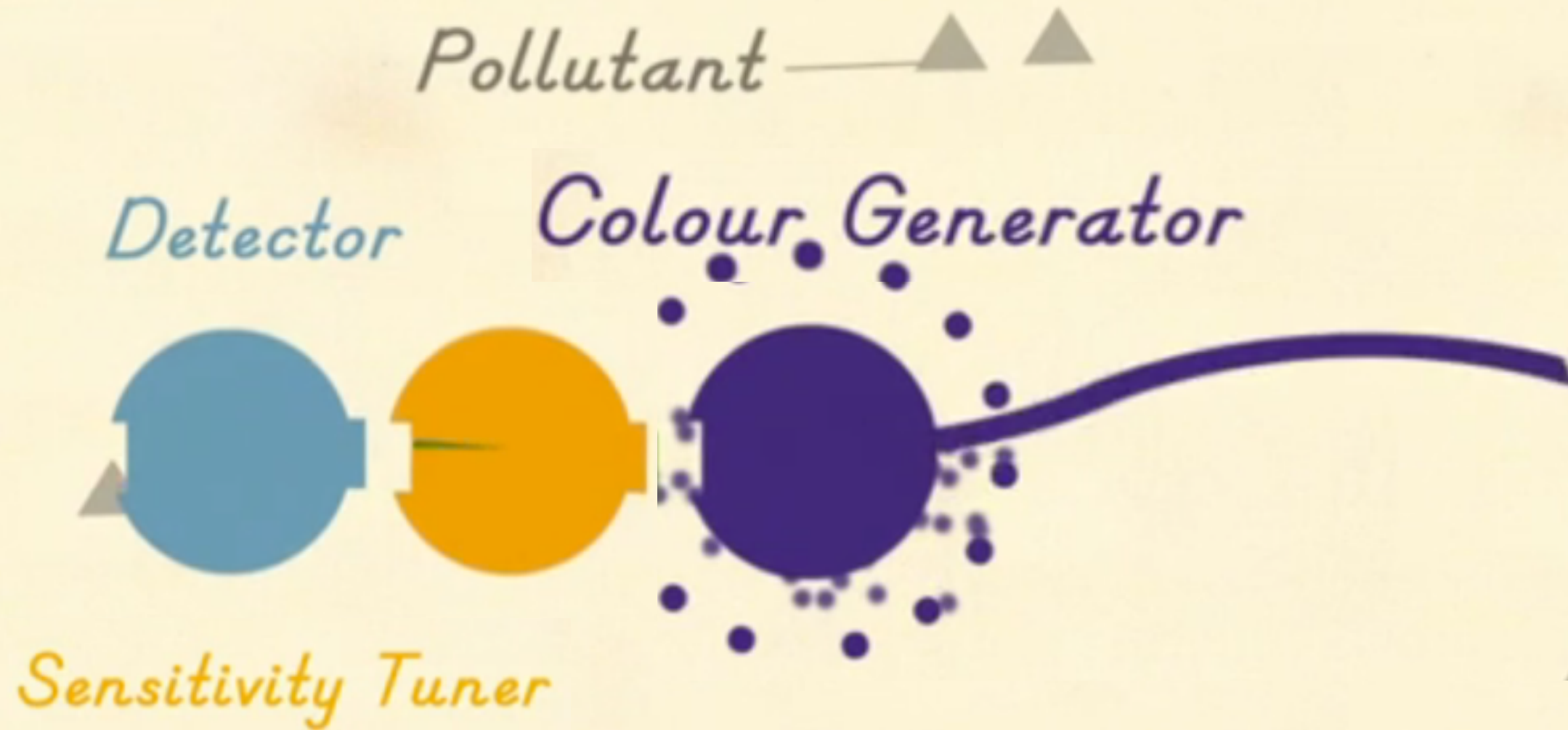
SYNTHETIC BIOLOGY

EXAMPLE PROJECTS

CAMBRIDGE 2009



BIOSENSOR DESIGN AND CONSTRUCTION
THE POTENTIAL OF COLOR GENERATORS



BIOSENSOR
THAT PRODUCES COLOR

Lycopene



Carotene



Violacein

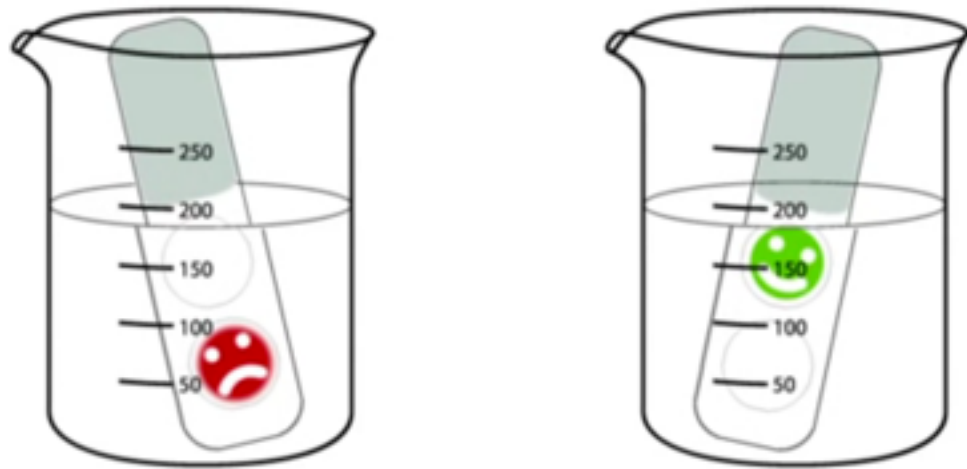




USING COLOR CREATED BY BACTERIA



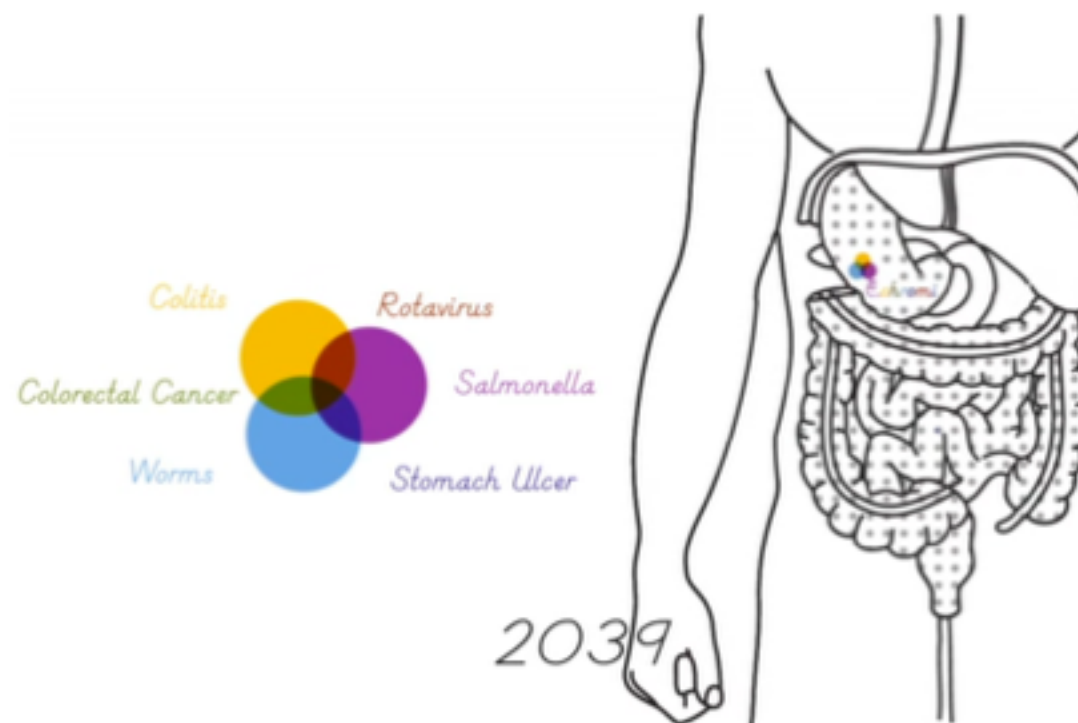
E.chromi



2010



2015



2039



2069

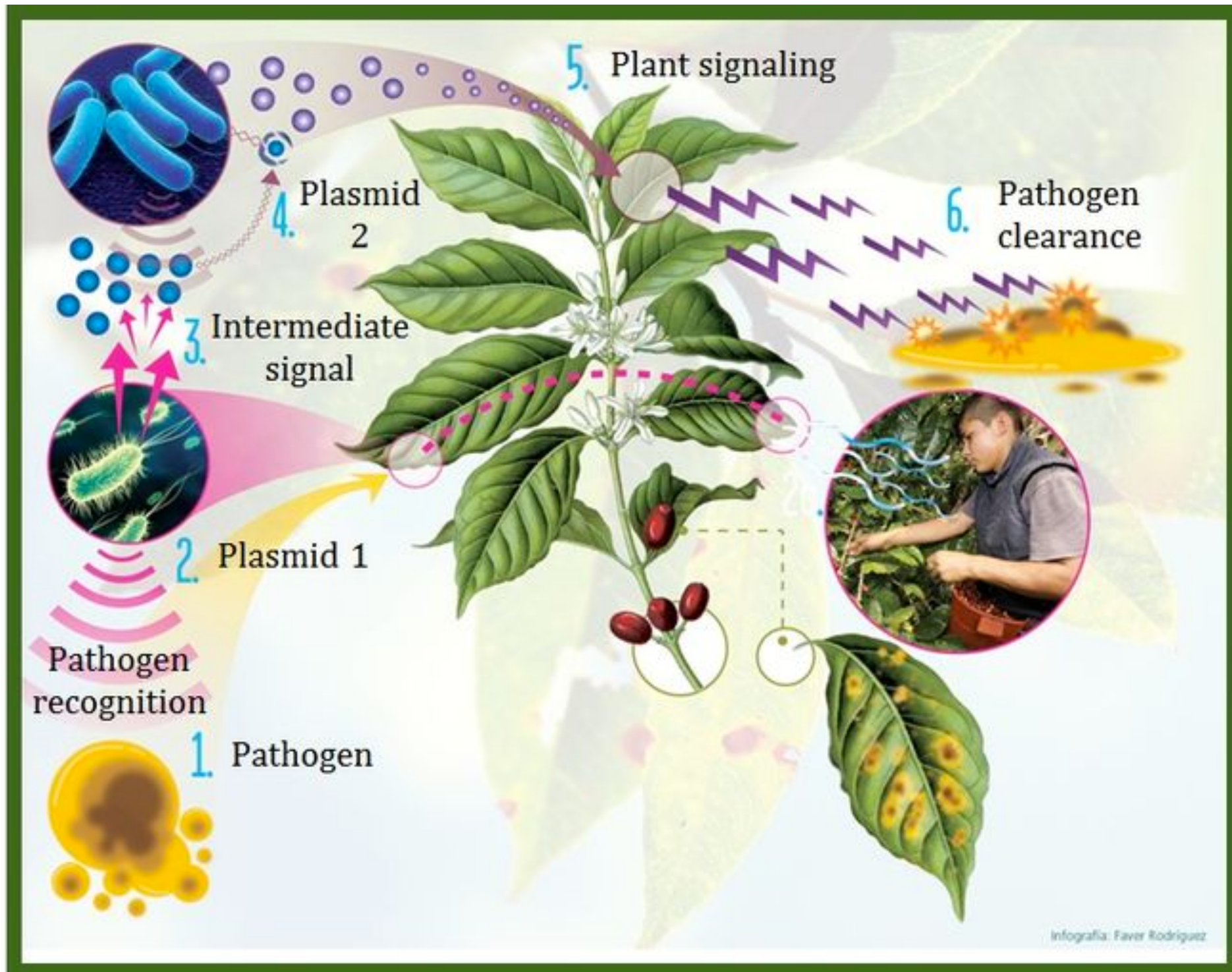
COLOMBIA 2012



iGEM
colombiateam

**SOLVING LOCAL PROBLEMS:
COFFEE**







A PROJECT DEFINED BY COMMUNITY BASED NEEDS

FORO ABRIENDO PUERTAS PARA LA INVESTIGACIÓN CIENTÍFICA EN COLOMBIA:

Obtención de permisos de investigación, contratos de acceso a recurso genético y colecciones biológicas.

LUGAR

Universidad de los Andes,
Auditorio Mario Laserna
Cll.19a #1-96 este.

HORA

8:30 am - 1:00 pm
(Registro desde las 7:30am)

FECHA

Lunes, septiembre 3 de 2012

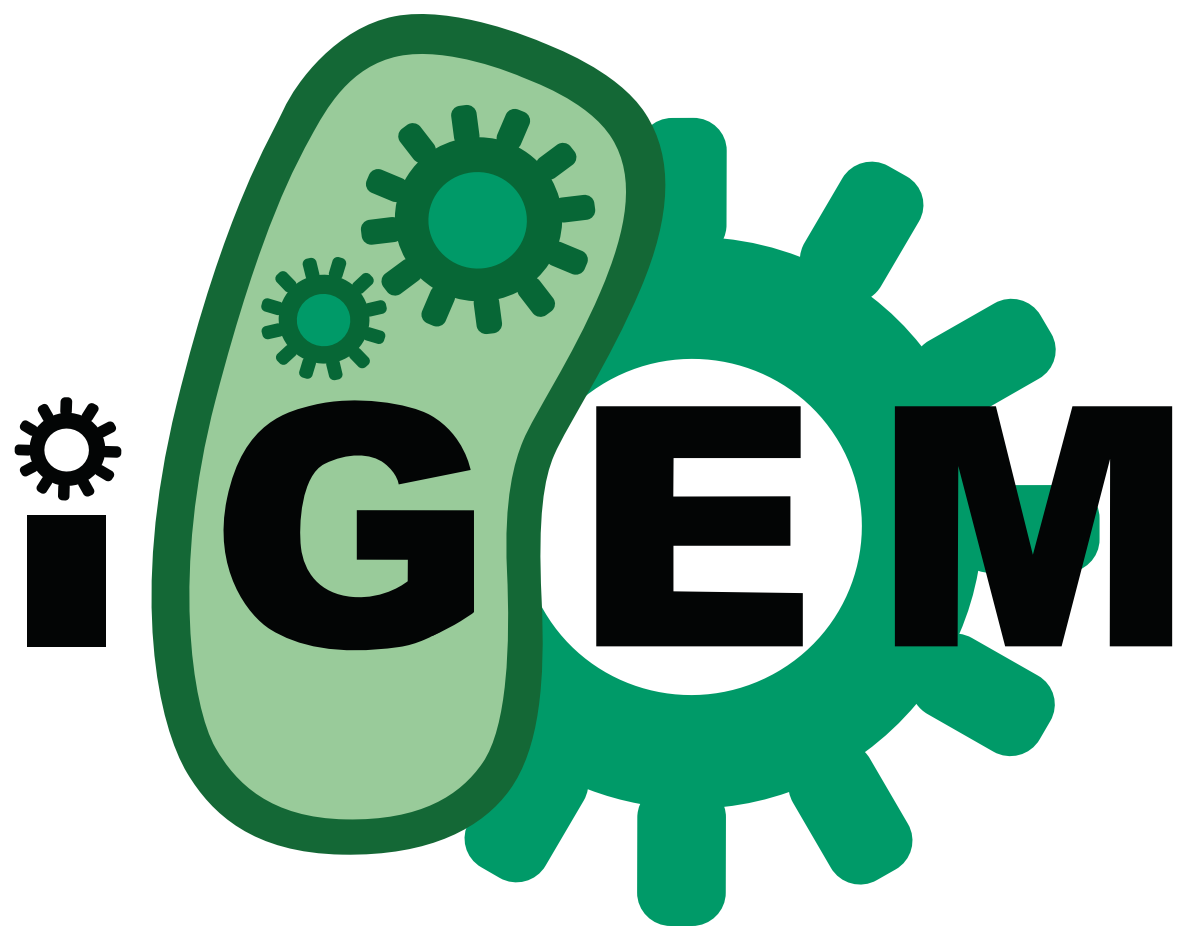
Entrada libre.

Inscripción previa en el link:

<http://eventos.uniandes.edu.co/s/investigacioncolombia>



WHAT IS IGEM?

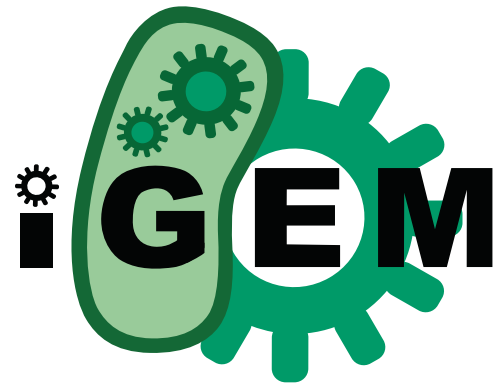


**INTERNATIONAL
GENETICALLY
ENGINEERED
MACHINE
COMPETITION**

**THE
INTERNATIONAL
COMPETITION
FOR STUDENTS
INTERESTED IN
THE FIELD
OF SYNTHETIC BIOLOGY.**

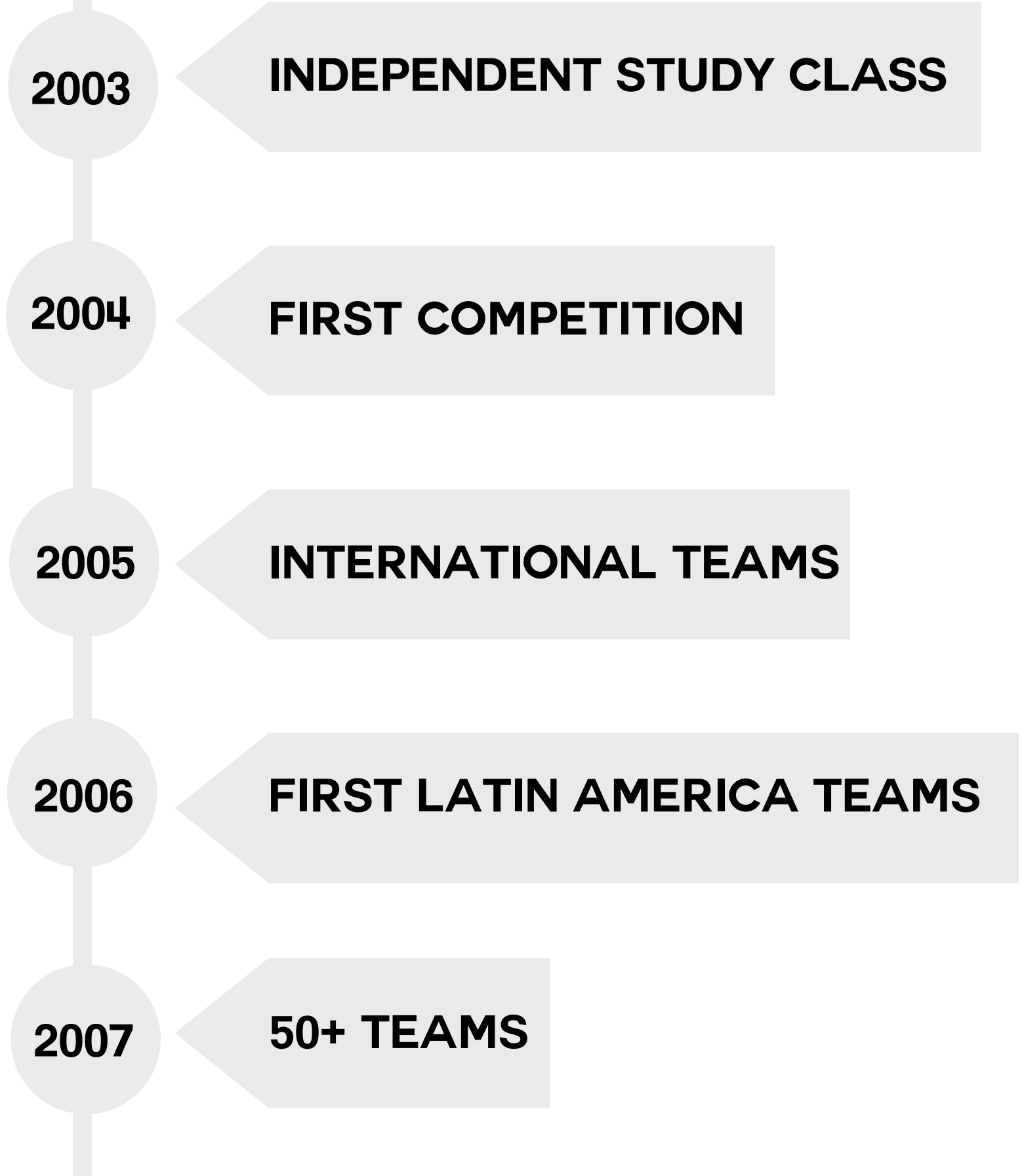
HQ STAFF

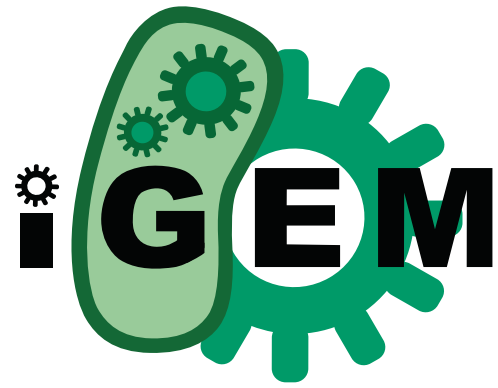




HISTORY

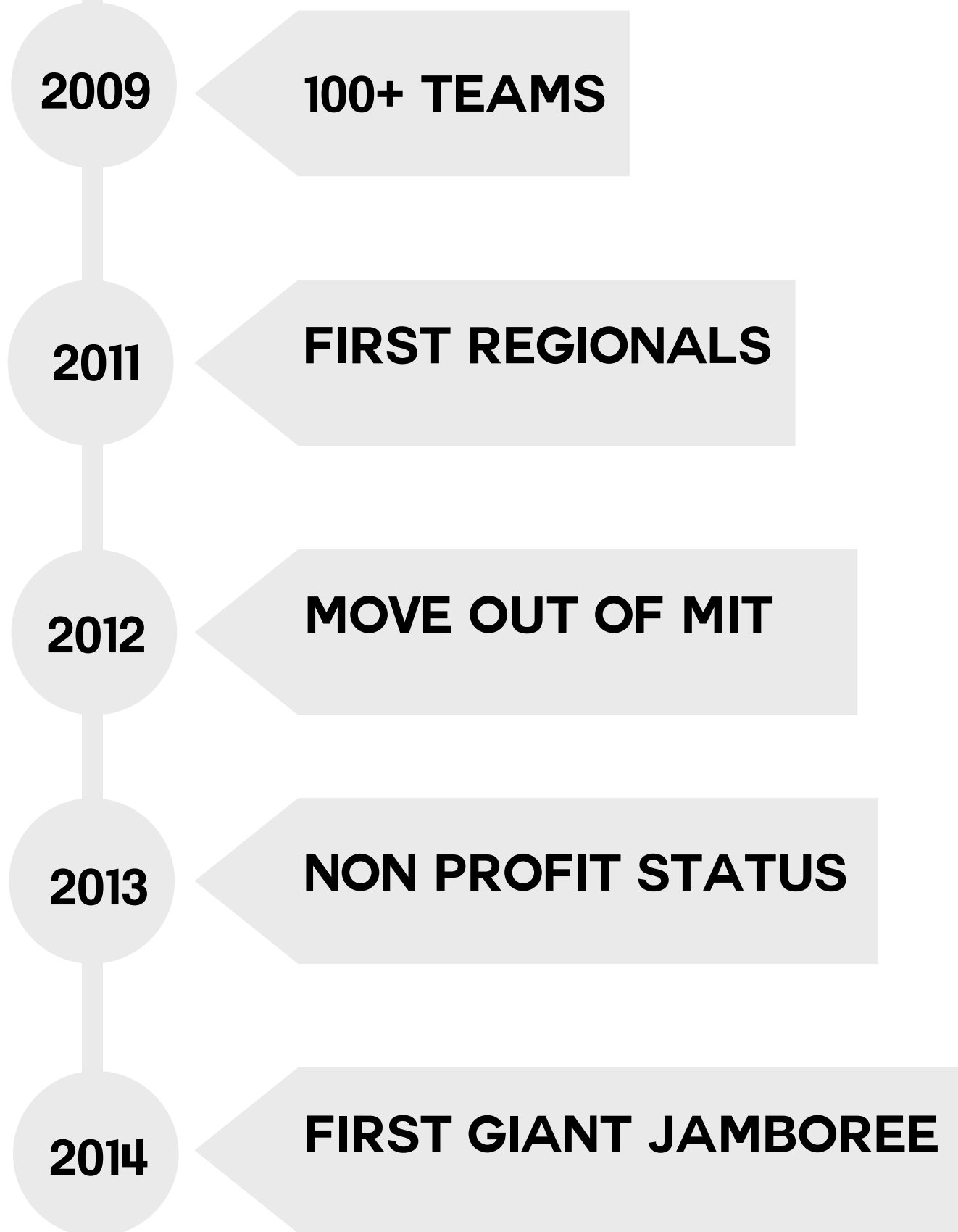
2003–2014





HISTORY

2003–2014

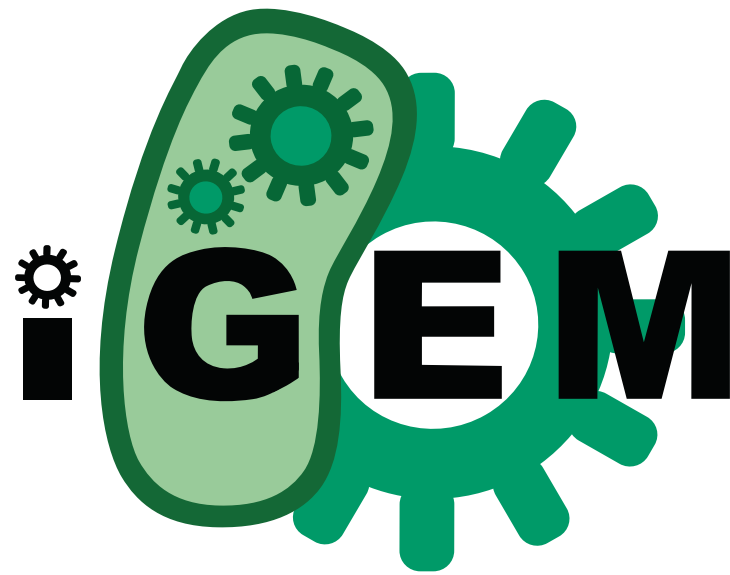




**FIRST COMPETITION
2004**

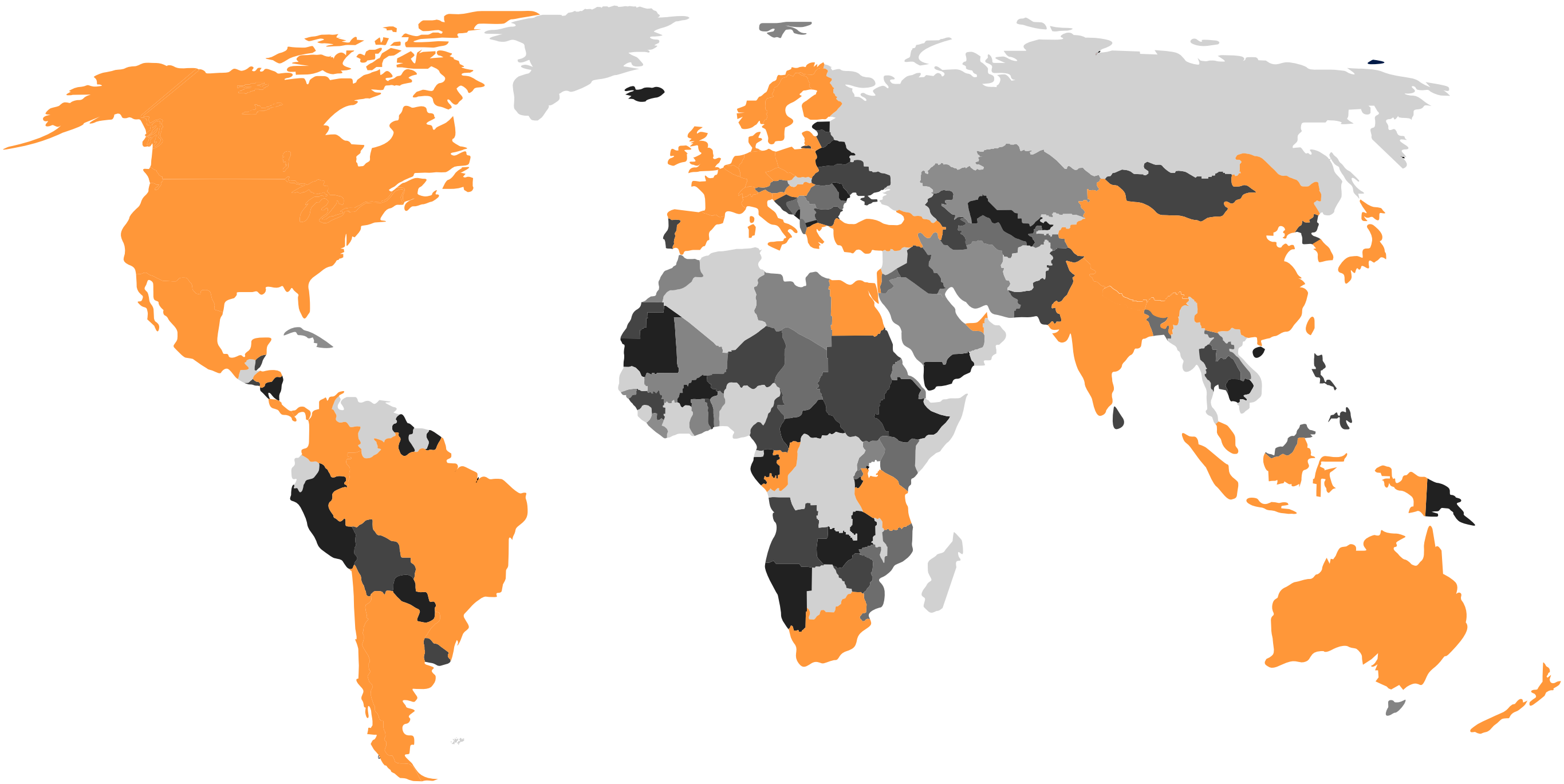
GIANT JAMBOREE 2014





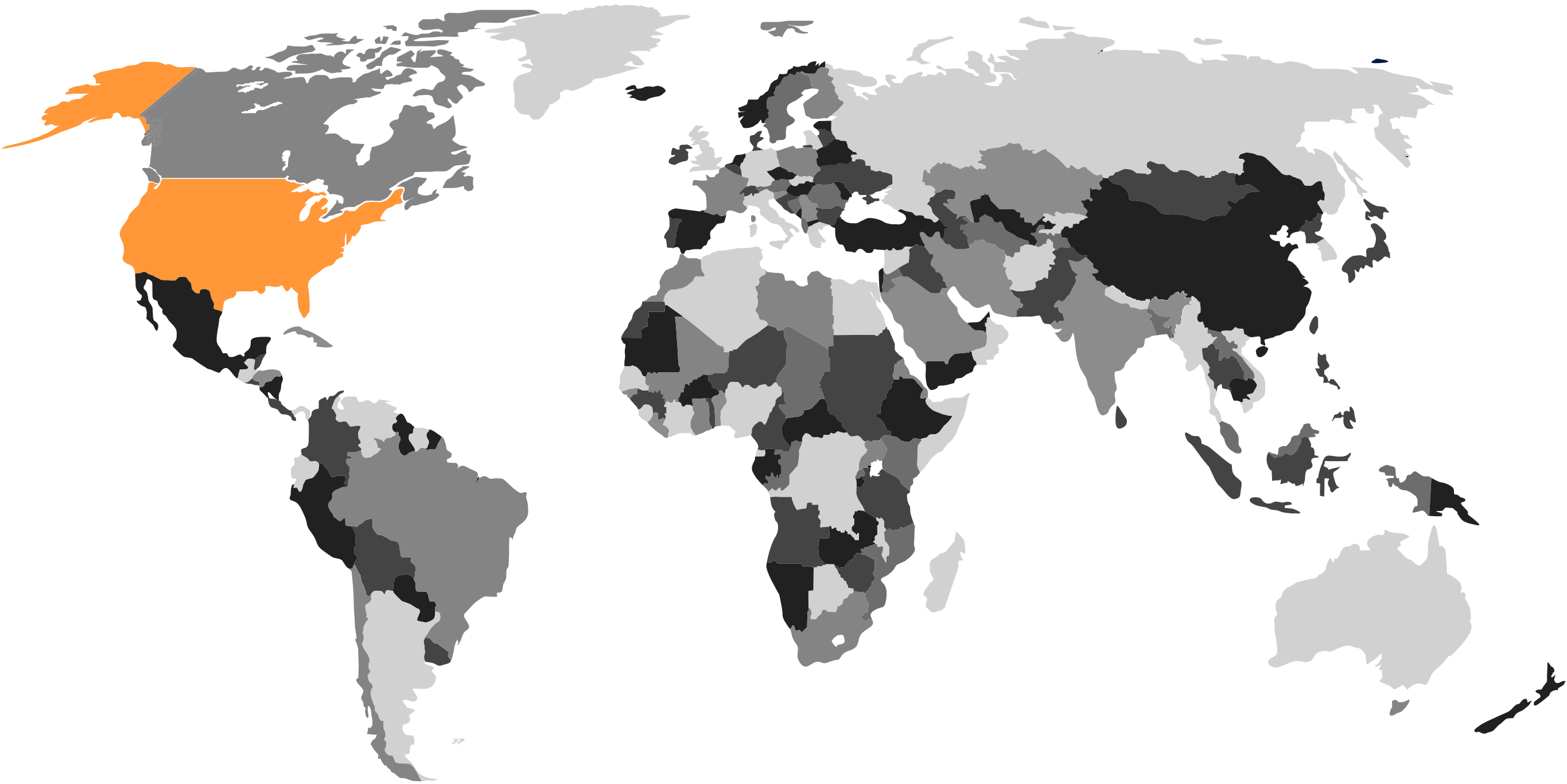
AROUND THE WORLD

2004 – 2015



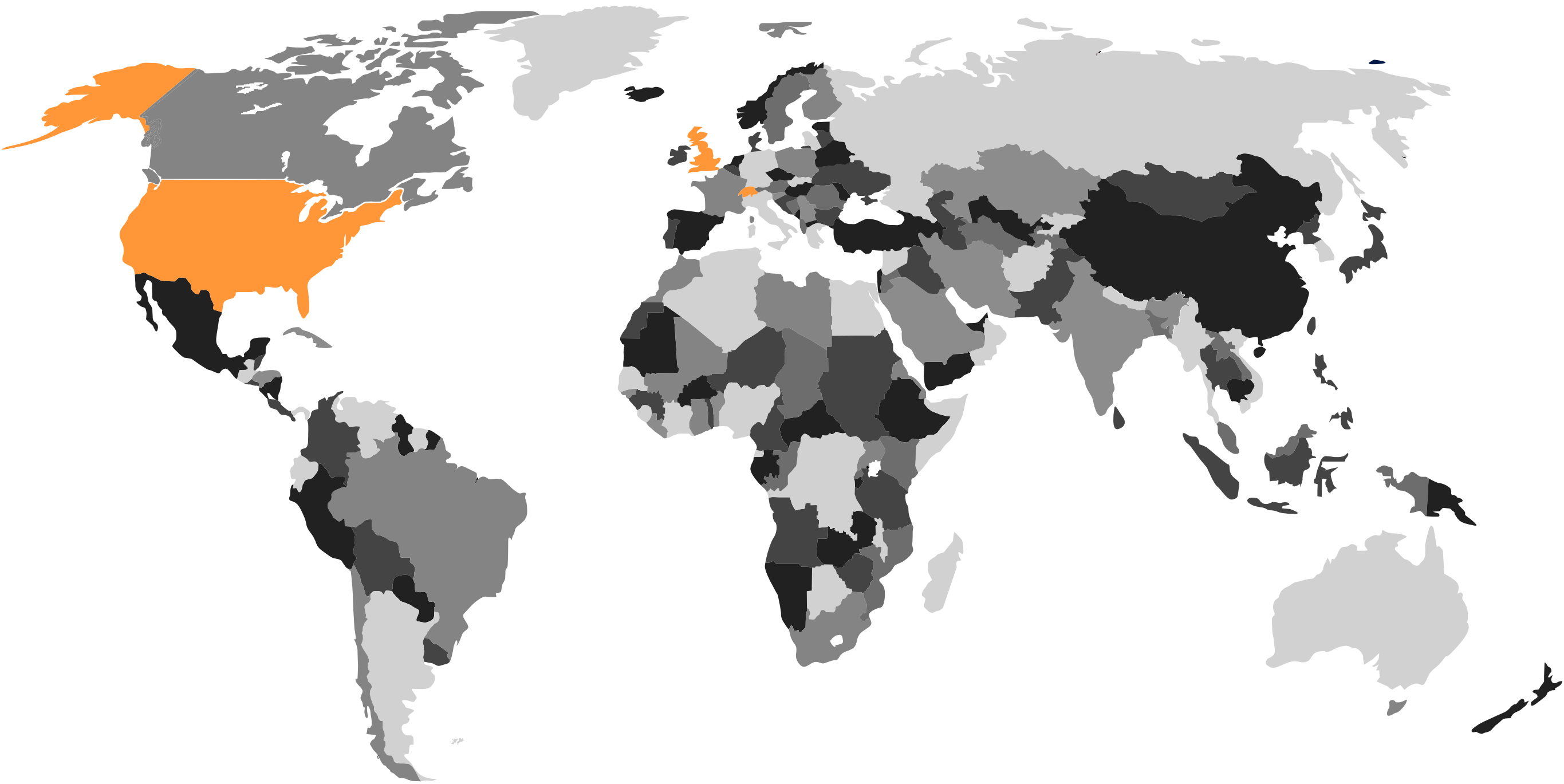
ALL COUNTRIES

5 TEAMS



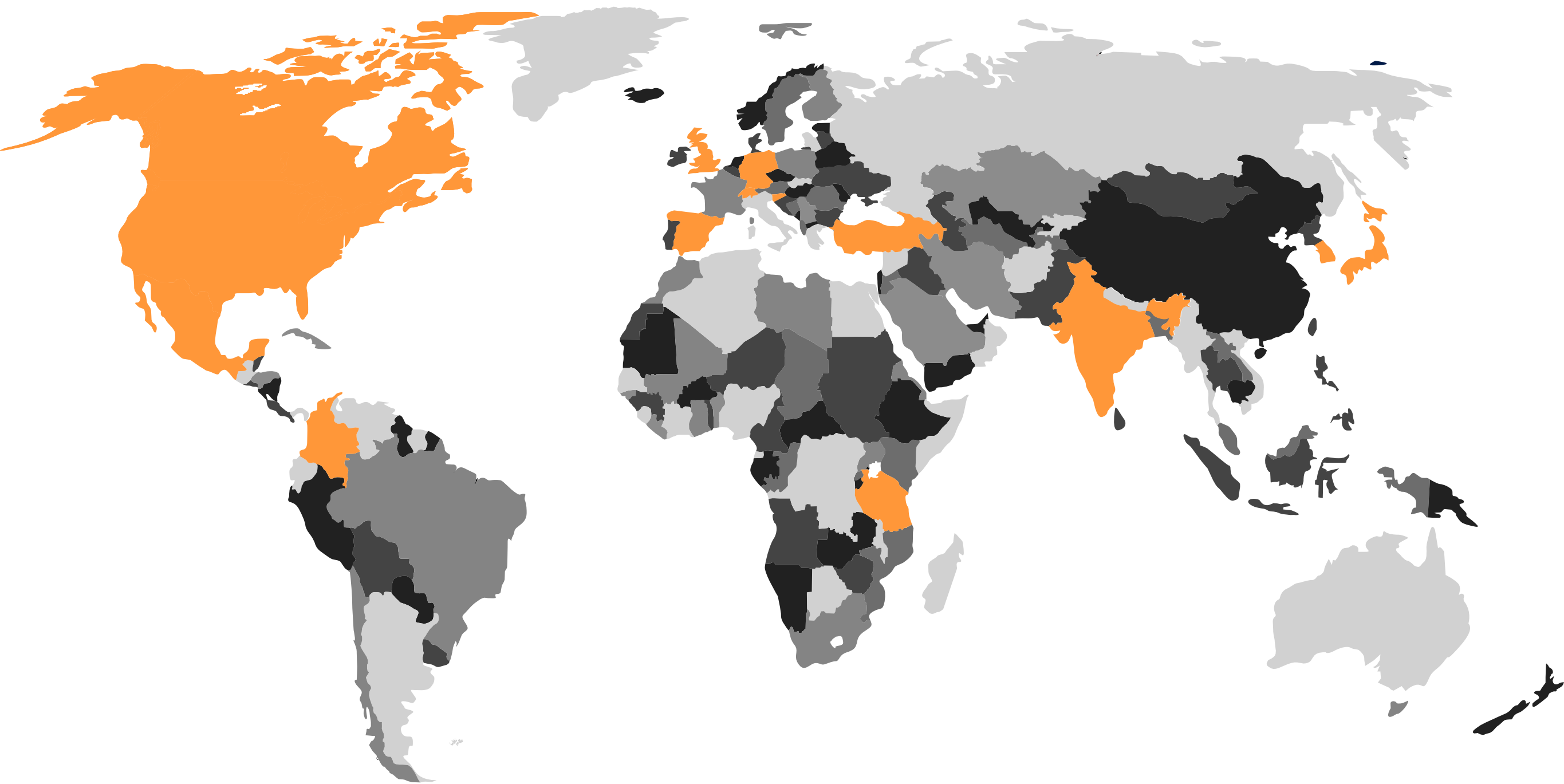
2004

13 TEAMS



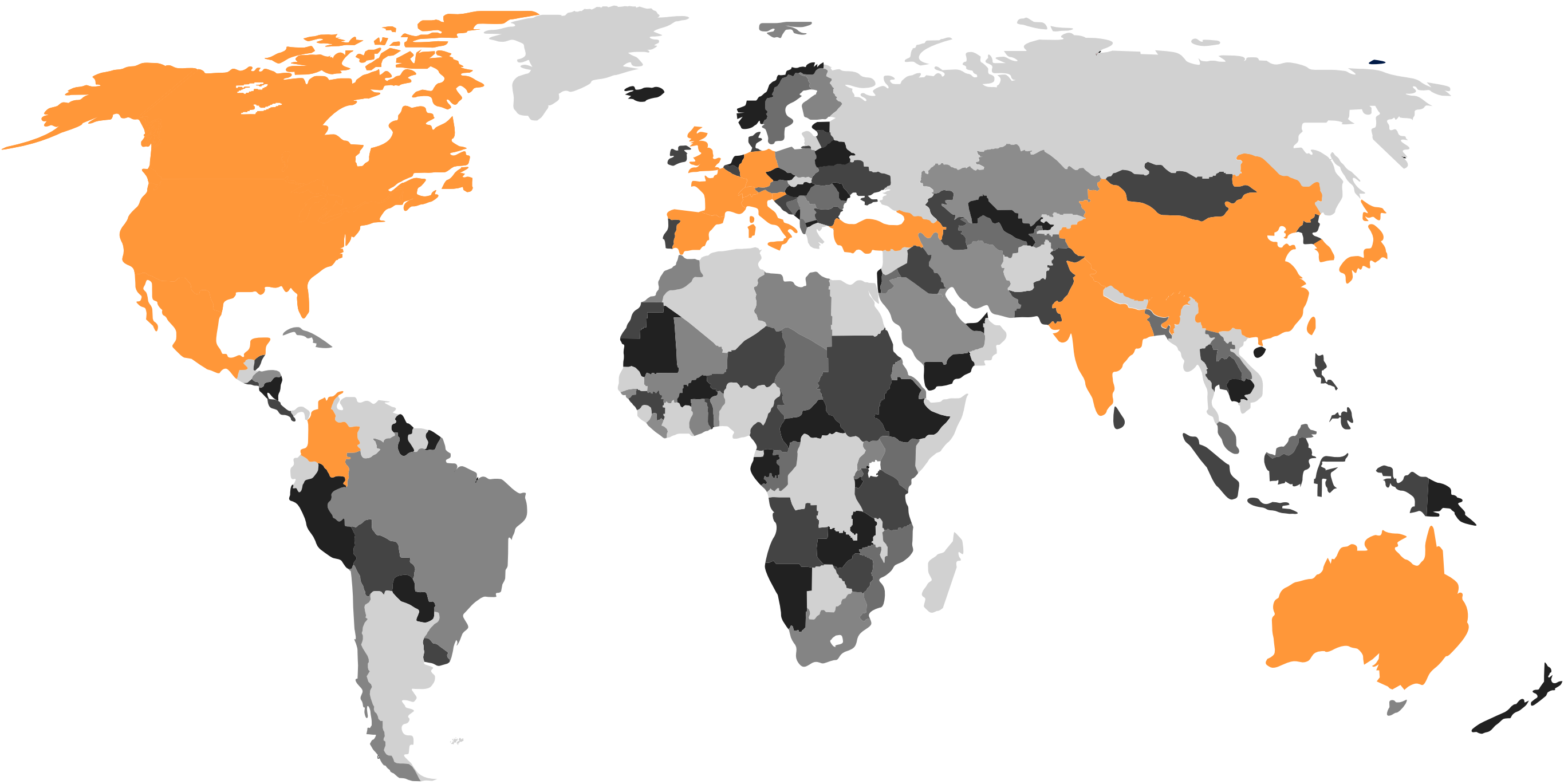
2005

32 TEAMS



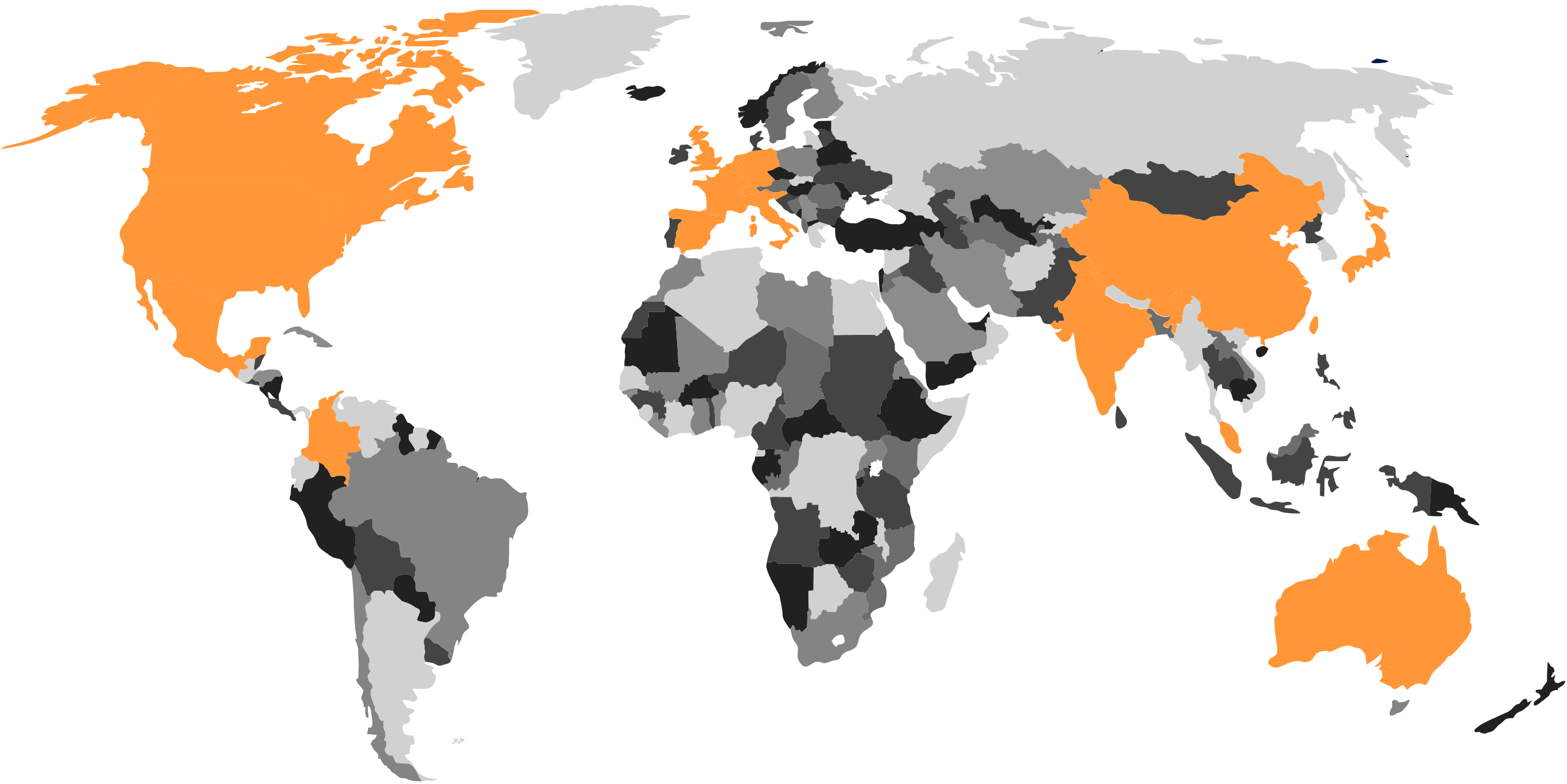
2006

54 TEAMS



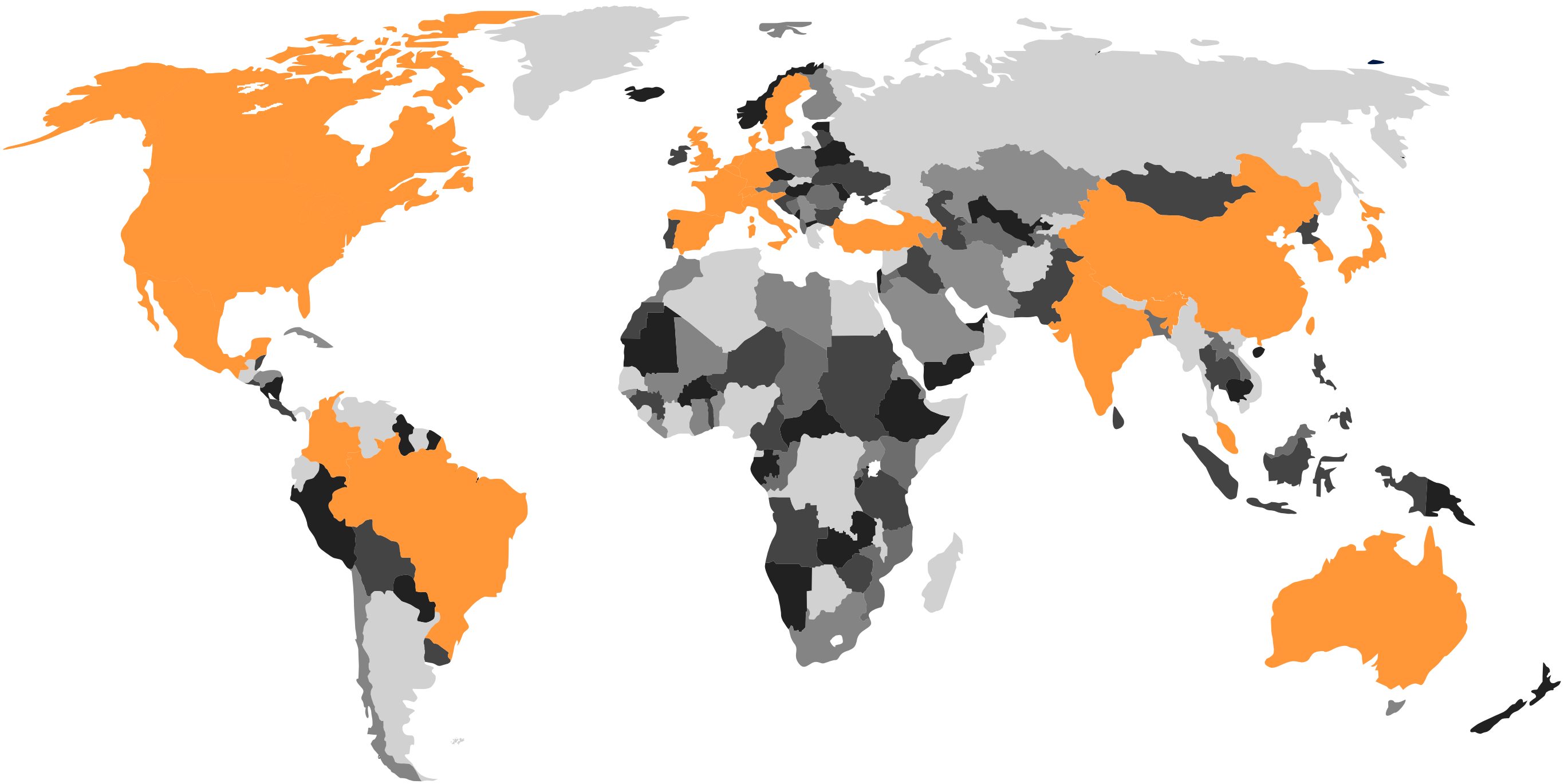
2007

88 TEAMS



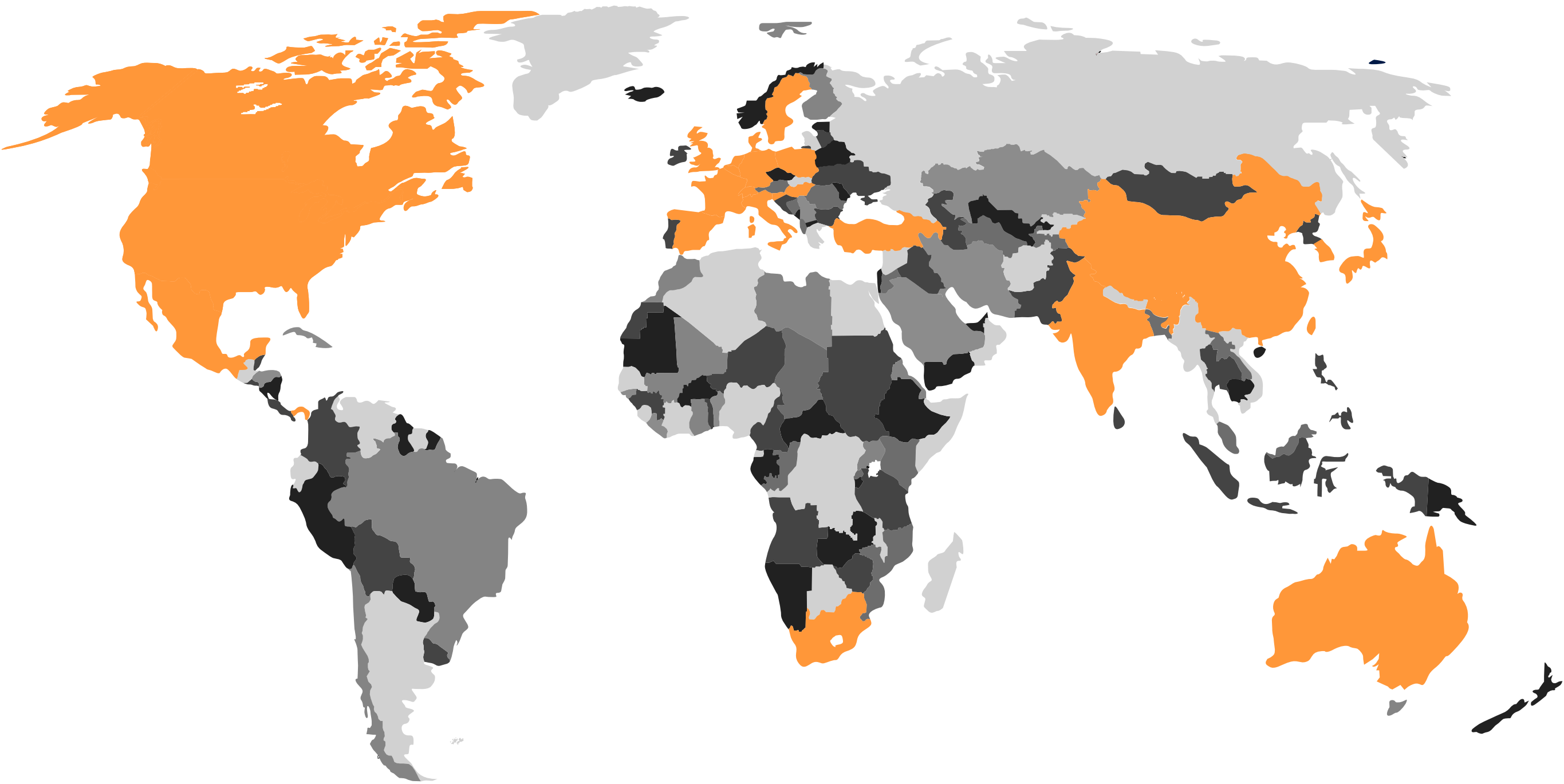
2008

113 TEAMS



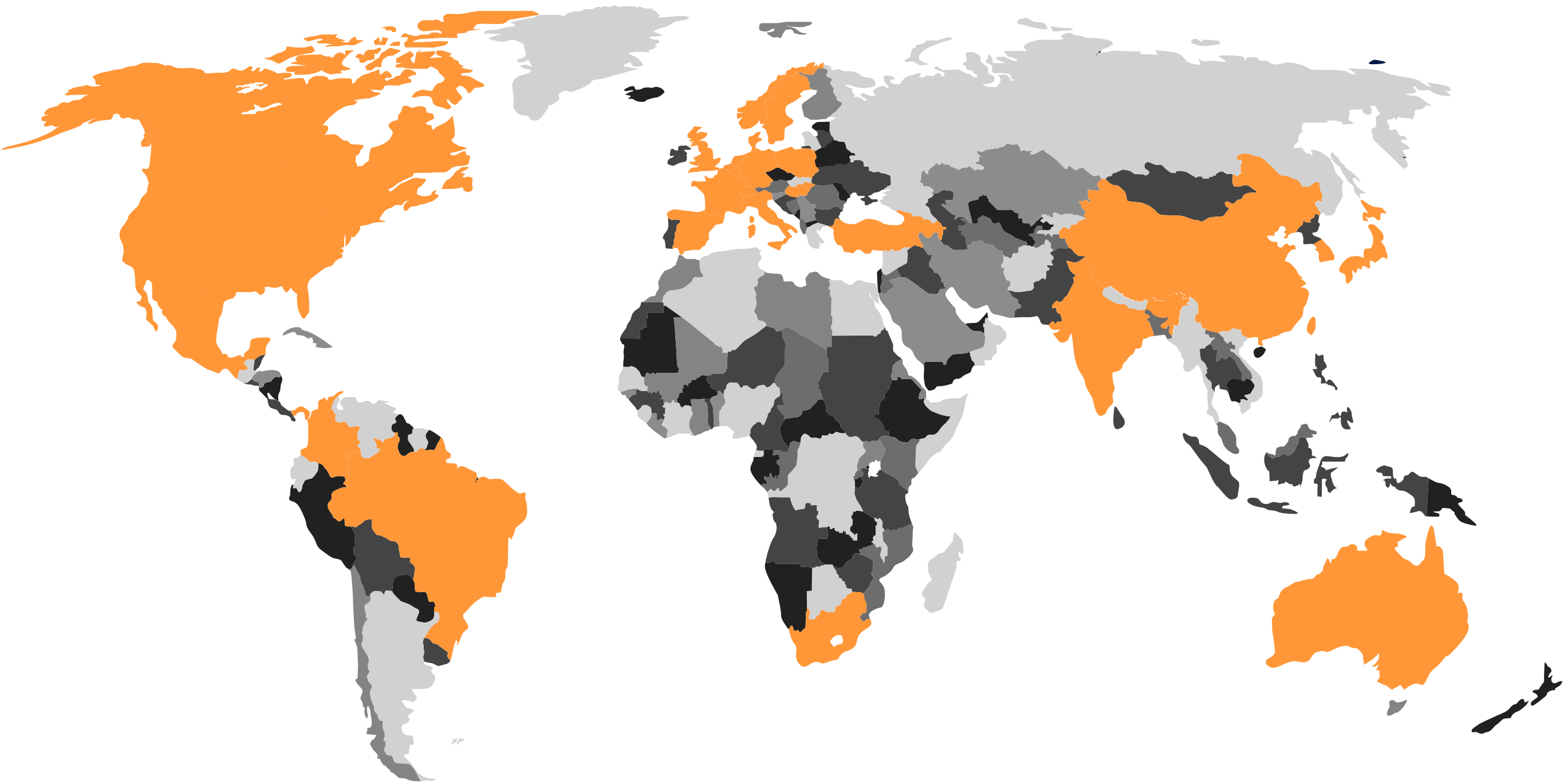
2009

128 TEAMS



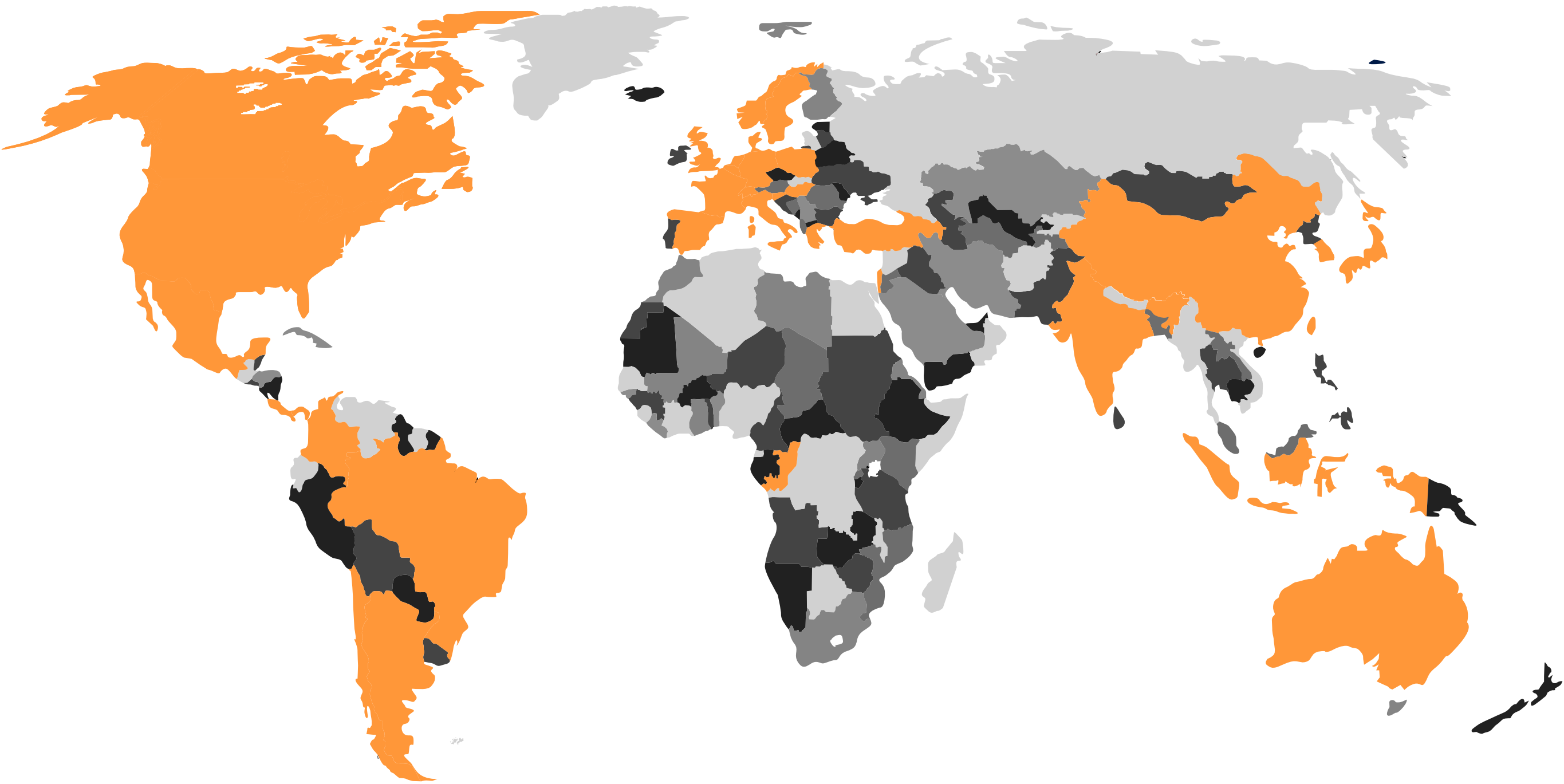
2010

165 TEAMS



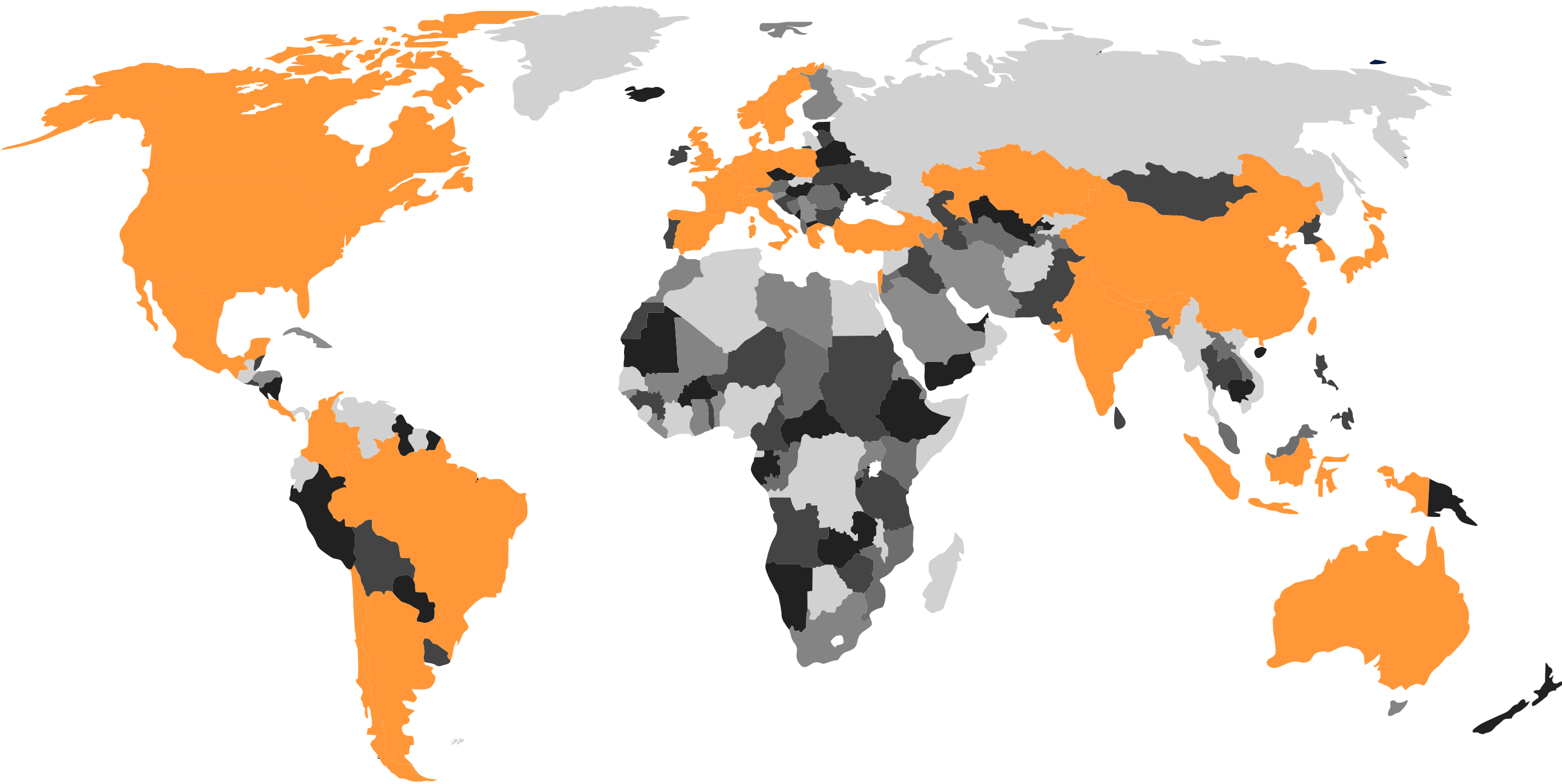
2011

190 TEAMS



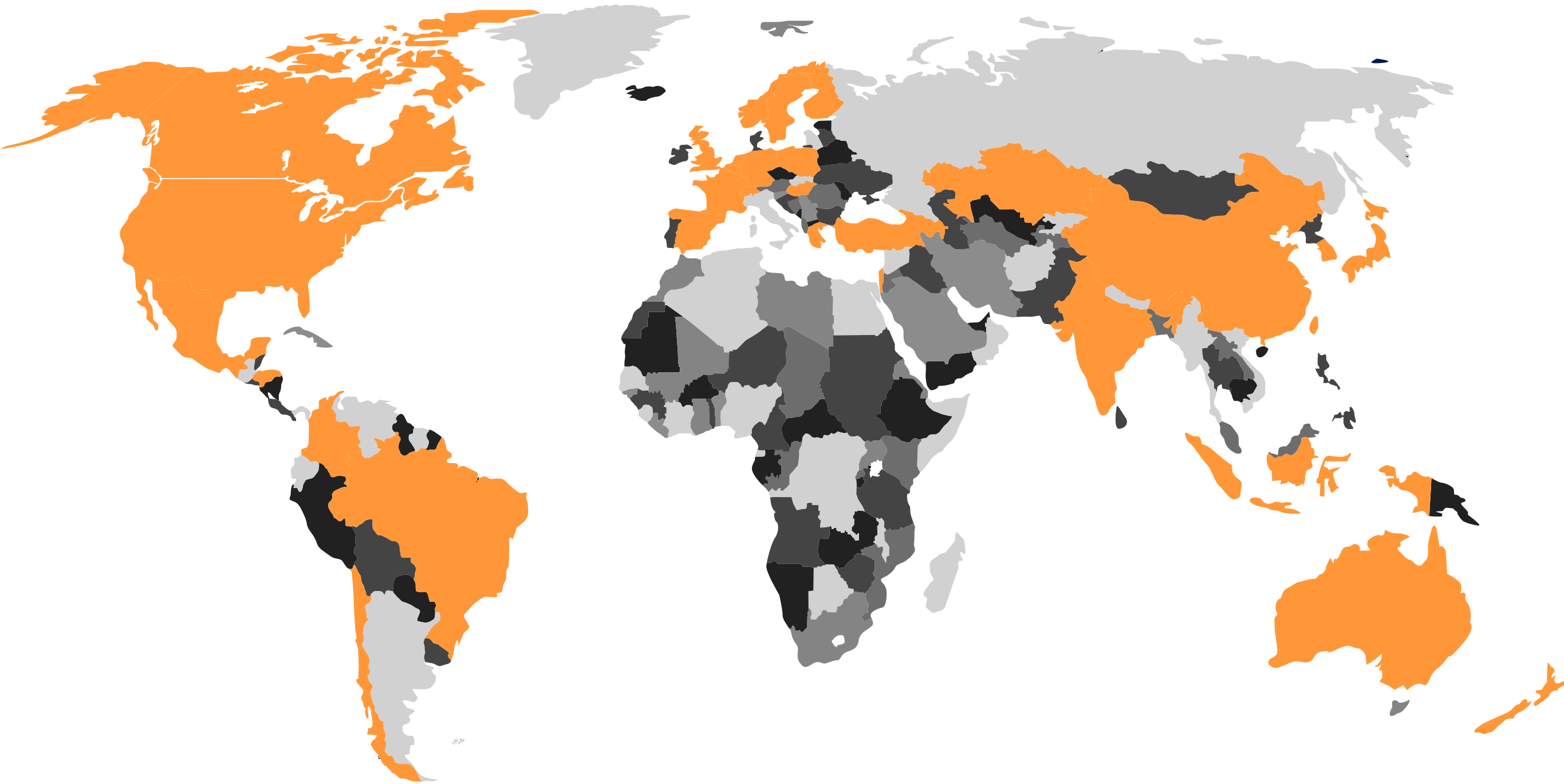
2012

215 TEAMS



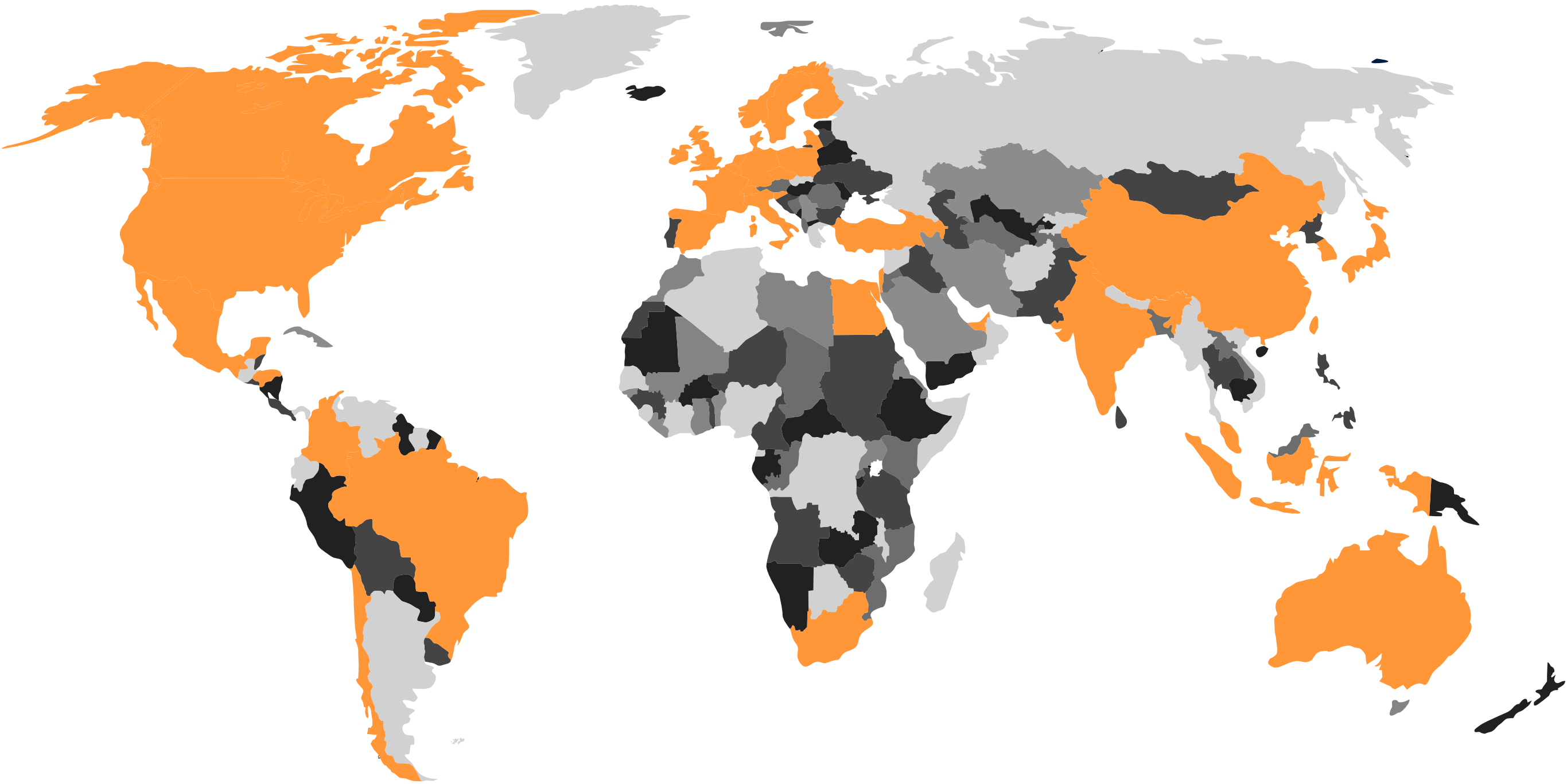
2013

245 TEAMS

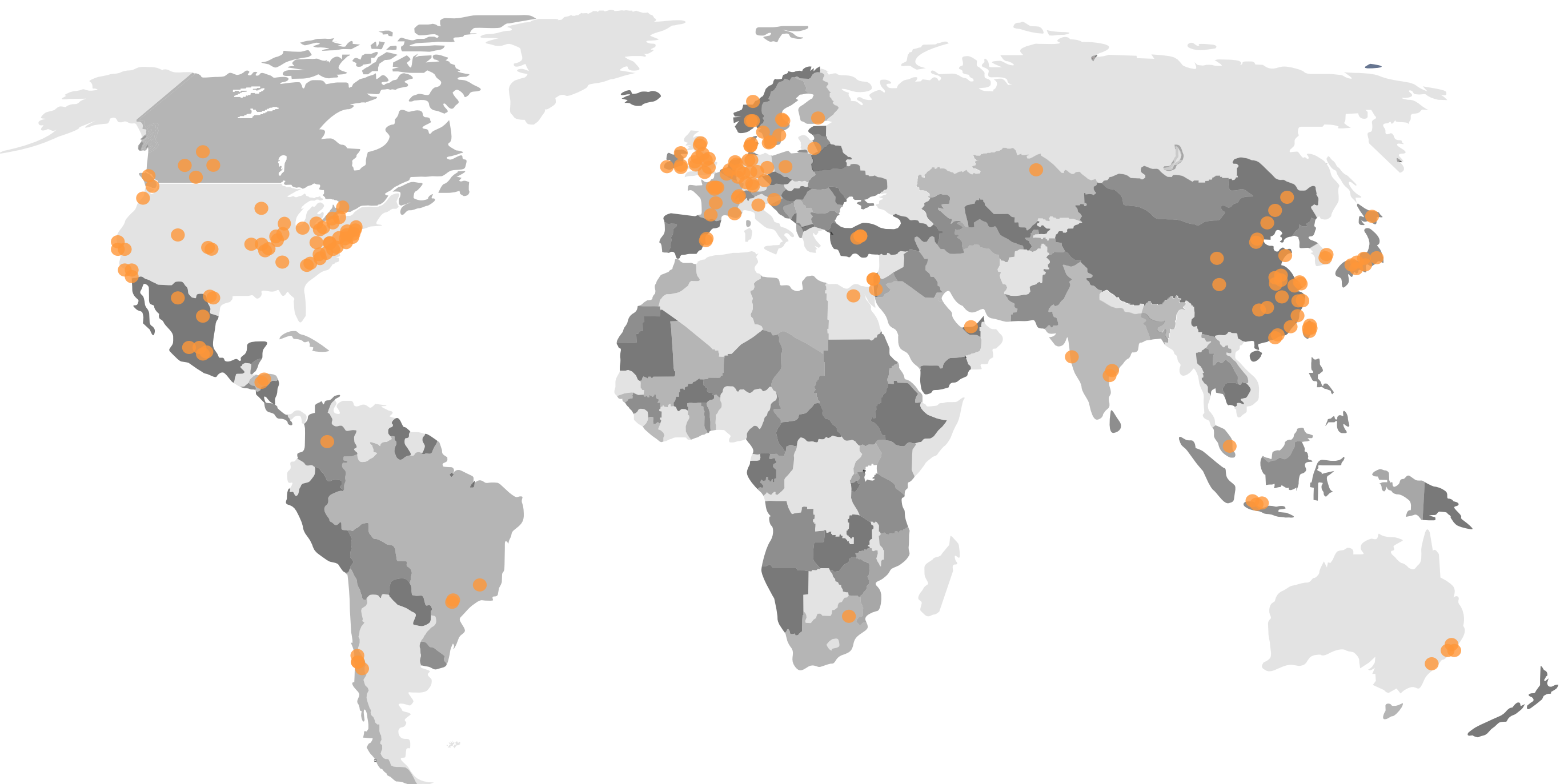


2014

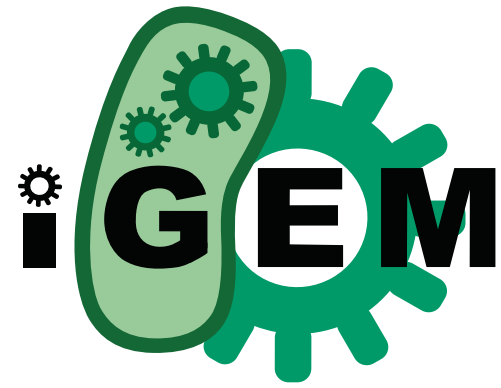
280 TEAMS



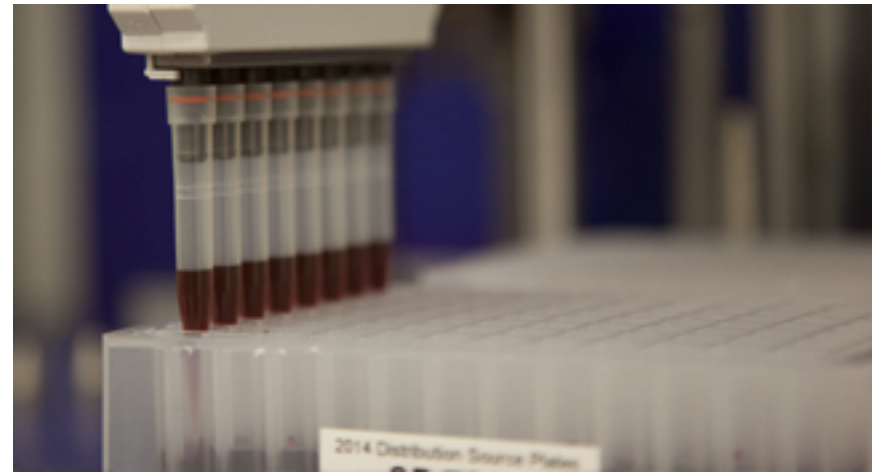
2015



2015 TEAMS



PROGRAMS



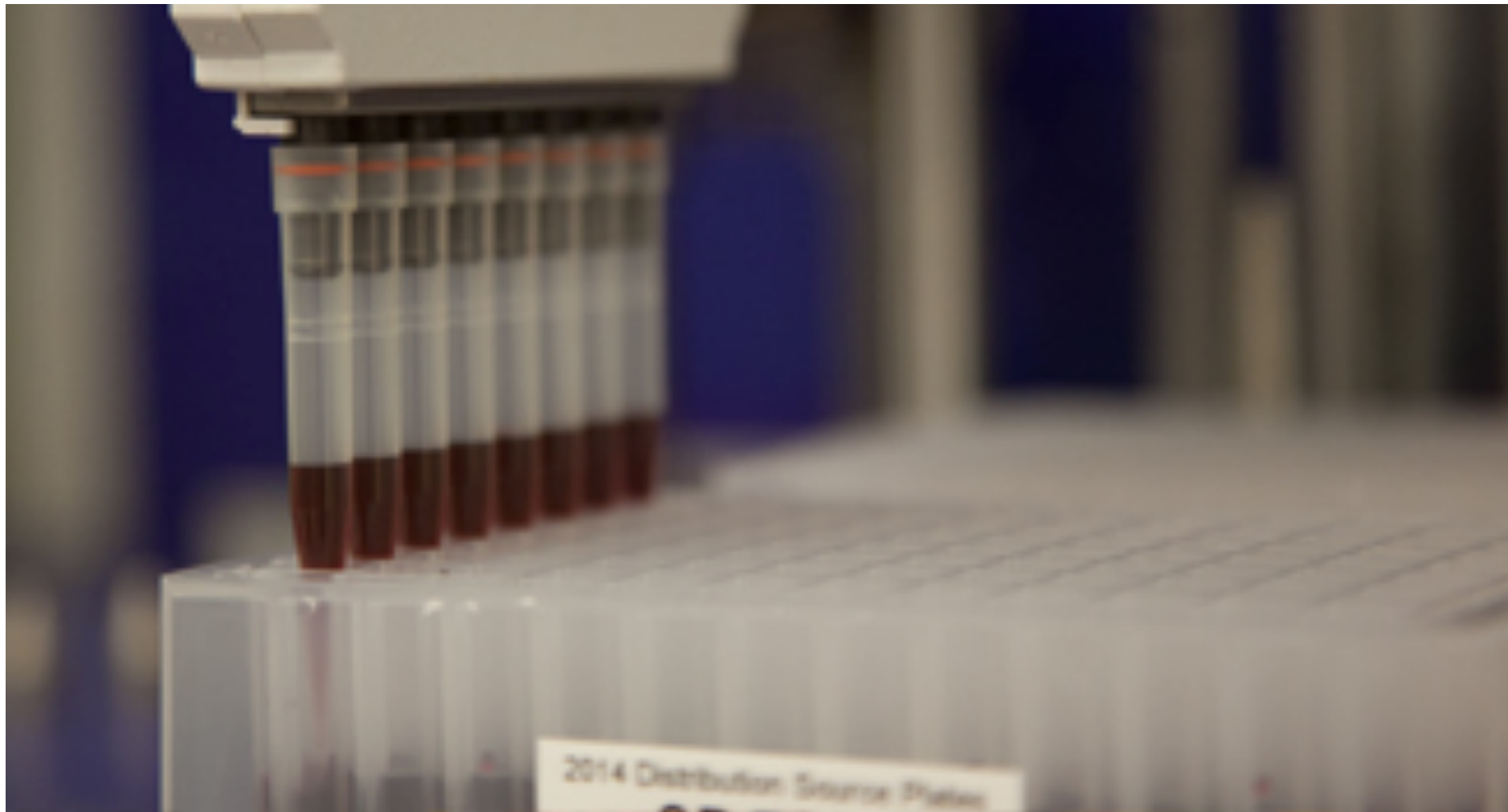
REGISTRY



COMPETITION



LABS



REGISTRY OF STANDARD BIOLOGICAL PARTS

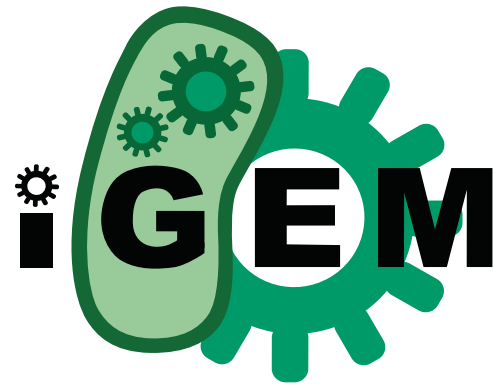
20.000+ PARTS AVAILABLE



LABS PROGRAM

FOR ACADEMIC LABS

THE IGEM COMPETITION



COMPETITION TIMELINE

GETTING READY

STARTING YOUR PROJECT

DOCUMENTING YOUR PROJECT

PRESENTING YOUR PROJECT

AFTER IGEM



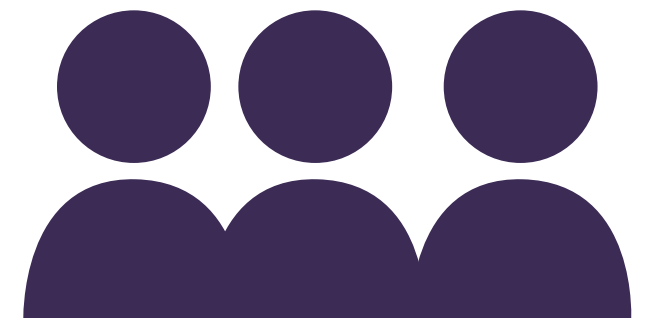
GETTING READY

BUILD A TEAM

BRAINSTORM IDEAS

FUNDRAISE

REGISTRATION



IONIS IGEM TEAM



TU DARMSTADT IGEN TEAM





Cualquier forma de colaboración les brindará mayor oportunidad de alcanzar el objetivo y así potenciar el desarrollo de este proyecto.

**UCHILE
OPENBIO
IGEM
TEAM**

EQUIPO IGEM UCHILE-OPENBIO LANZA CAMPAÑA DE CROWDFUNDING

Tras 2 meses de trabajo, el equipo iGEM UChile-OpenBio lanza su Campaña de Crowdfunding en la plataforma Fondeadora!. Se invita a todos a colaborar para ayudar a ubicar al PRIMER EQUIPO DE LA UNIVERSIDAD DE CHILE en la competencia internacional de Biología Sintética iGEM, que se llevará a cabo en Boston, Estados Unidos, entre el 24 y el 28 de Septiembre.

Te invitamos a conocer y apoyar el proyecto "Producción de un plástico biodegradable usando bacterias modificadas genéticamente" de las siguientes formas:

- 1.- Aportando directamente, en el link del proyecto, haciendo clic al costado del video (¡Fondear!). Los montos a aportar pueden ser desde \$2500 pesos.
- 2.- Compartiendo el proyecto entre tus contactos cercanos.
- 3.- Dando alguna recomendación o feedback sobre la campaña.

Para alguna otra forma de apoyo, puedes escribir a contacto@openbio.cl o finanzas@openbio.cl

Cualquier forma de colaboración les brindará mayor oportunidad de alcanzar el objetivo y así potenciar el desarrollo de este proyecto, con el cual, en el futuro, podría permitir reemplazar los plásticos convencionales por plásticos biodegradables.

Visita las redes sociales del Equipo Facebook – Twitter

Puedes hacer tu aporte aquí



STARTING YOUR PROJECT

DNA DISTRIBUTION KIT
WORK IN THE LAB
HUMAN PRACTICES
JUDGING GUIDELINES







TRINITY IGEM TEAM



METU HS IGEM TEAM

JUDGING HANDBOOK



2 0 1 5

Judging Handbook: Part 1
A Guide to Judging at the iGEM
Jamboree

DOCUMENTING YOUR PROJECT

WIKI

TRACK SELECTION

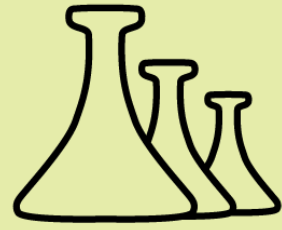
ABSTRACTS

SAFETY FORMS





**Art and
Design**



**Community
Labs**



Energy



Environment



**Food and
Nutrition**



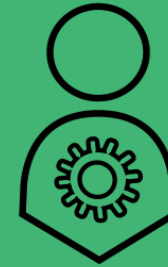
**Foundational
Advance**



Hardware



**Health and
Medicine**



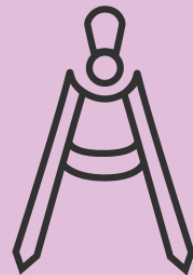
High School



**Information
Processing**



Manufacturing



Measurement



**New
Application**



**Policy
and Practices**



**Food and
Nutrition**



Innovation



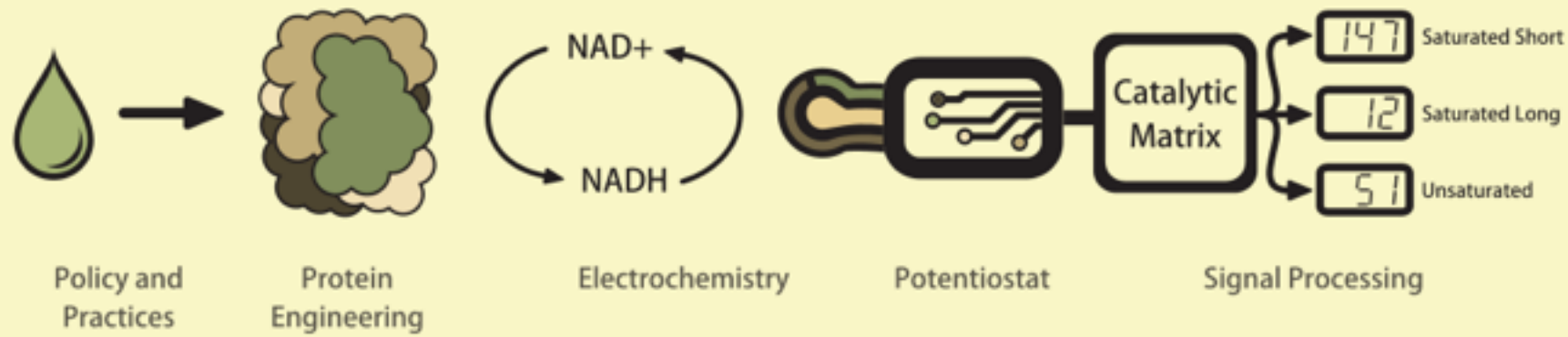
iGEM Wiki

Biophrame Technologies focuses in innovating, developing and improving technologies based on synthetic biology to create optimized and sustainable industrial processes which can guarantee quality products for our customers.

We believe the biotechnology we develop can help us not only to optimize time and resources, but to take care of the environment and improve the lives in our community, both regional and global. That is why raw material used in our processes is waste from other industrial process of other companies.



Project Overview



OliView: An Enzyme Based Electrochemical Biosensor Developed for Olive Oil Quality Control

Practical Implications for the Development and Deployment of Engineered Biosensors in Olive Oil Production

Prepared by:
UC Davis iGEM 2014

Prepared for:
2014 International Genetically Engineered Machines (iGEM) Jamboree in satisfaction of Gold Medal Requirements

In a report conducted by the UC Davis Olive Oil Center, it was found that more than 65% of the extra virgin olive oil on shelves around the US is defective due to poor handling or deliberate adulteration with extraneous, non-beneficial oils. The most prevalent and identifying defect in olive oil is rancidity, indicating the absence of expected health benefits such as antioxidants and polyunsaturated fats. This summer, we engineered a biosensor capable of quickly and cheaply evaluating rancidity defects in the chemical profile of olive oil, providing both consumers and retailers with a means of ensuring product quality.

The project consisted of four components: Protein Engineering, Electrochemistry, Development of a user friendly potentiostat and signal processing. We were able to provide proof of concept for each component of our device. With each component combined, we had a fully functional electrochemical biosensor that could distinguish rancid olive oil from fresh.

[Read full version of our practice and policy report](#)

2015 "About Our Lab" Questionnaire for Team Example

Mode: Edit ([click for view mode](#))

Example

Orange stuff is only visible to wiki superusers ([hide orange stuff](#))

[Go to Admin Mode](#) / [Go to Team Example](#) / Go to Username:

Team member who should be contacted about this form:

Name

Email

1. What is the Safety Level of your lab? [[Help about Risk Groups and Safety Levels](#)]

- Level 1 (low risk)
- Level 2 (moderate risk)
- Level 3 (high risk)
- Level 4 (extreme risk)
- Our team is not doing any wet-lab work
- Other safety level (please describe):

- We have several different lab spaces with different Safety Levels (please describe what experiments you do in each space):

- Unknown (please comment):

iGEM teams should not use Risk Group 3 or 4 organisms, and they should not work in Safety Level 3 or 4 labs.

If you are planning to work at Safety Level 3 or 4, contact safety (AT) igem (DOT) org right away!!

2. Which work areas do you use to handle biological materials? Please check all that apply.

- Open bench
- Biosafety cabinet / laminar flow hood

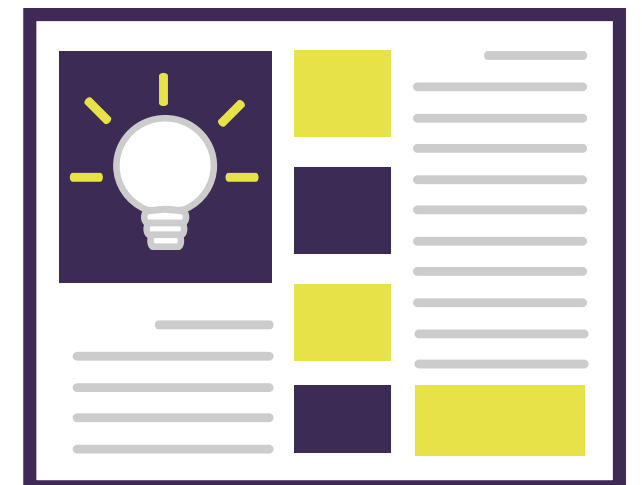
PRESENTING YOUR PROJECT

POSTER

PRESENTATION

REGISTER FOR THE JAMBOREE

ATTEND THE GIANT JAMBOREE



E.CO-LOCK



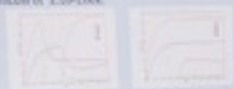
Background

The way we live today has been deeply revolutionized through rapid developments of low-cost drugs, novel chemicals and clean energies by newly engineered microorganisms. However, the problem of potential ecological contamination and accidental loss continues threatening the scientists, industries and public as synthetic biology makes progress.

Modeling

1. The model of E-co-Lock:

We combined the MIN system model (in single cell) with the model of layered AND gates so that we can simulate the whole process of E-co-Lock.



2. The model of MIN system:

Simulation results of different initial MIN concentration for MIN system (population model).



Ecologically friendly ;
Economically effective ;
E.coli based
Lock !

Project

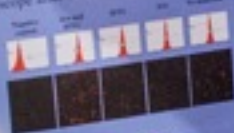
2sRNA Regulatory System

In order to enter the password successfully, we introduced a plasmid password-control system by using synthetic small RNAs into our system.



3.MIN System

MIN system contains a MinC protein, a MinD protein and a MinE protein. MinC system is the real password system as a kind of a 'Phac' is before activating a MinC-dependent division mechanism. Additionally, MinE is a topological factor.



Construction and Design

Mr. BIT-China's team mainly focused on the problems of bio-safety and bio-security. In order to mimic the function of electronic combination lock, we extracted the principle of electronic circuit and designed a circuit to meet the demand.

Education

A fresh way to protect industrial secrets

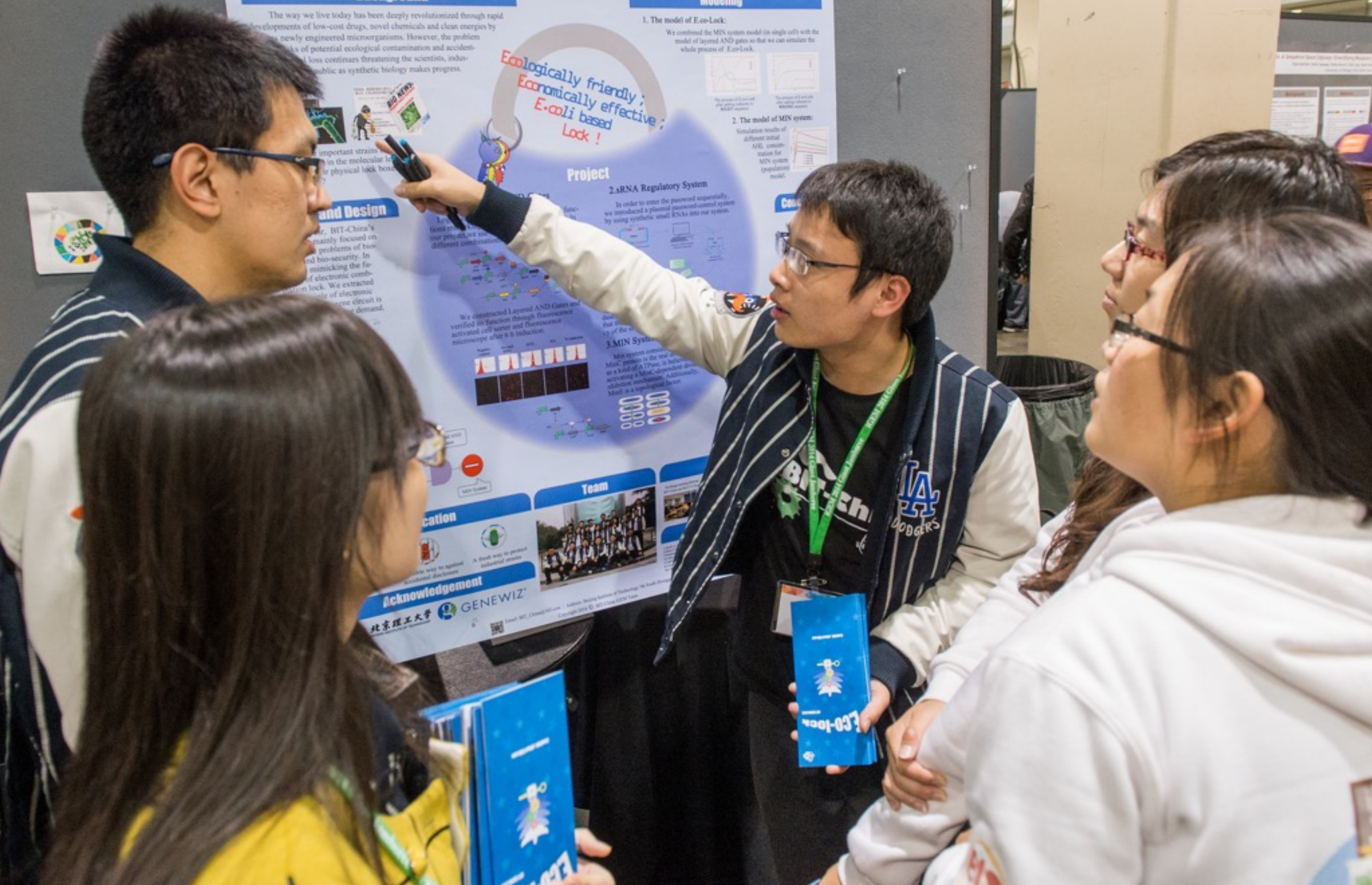
Acknowledgement

北京理工大学 GENEWIZ

Team



Team: BIT-China2017 | Address: Beijing Institute of Technology, 100084 Beijing, China | Copyright © 2017 BIT-China 2017 Team



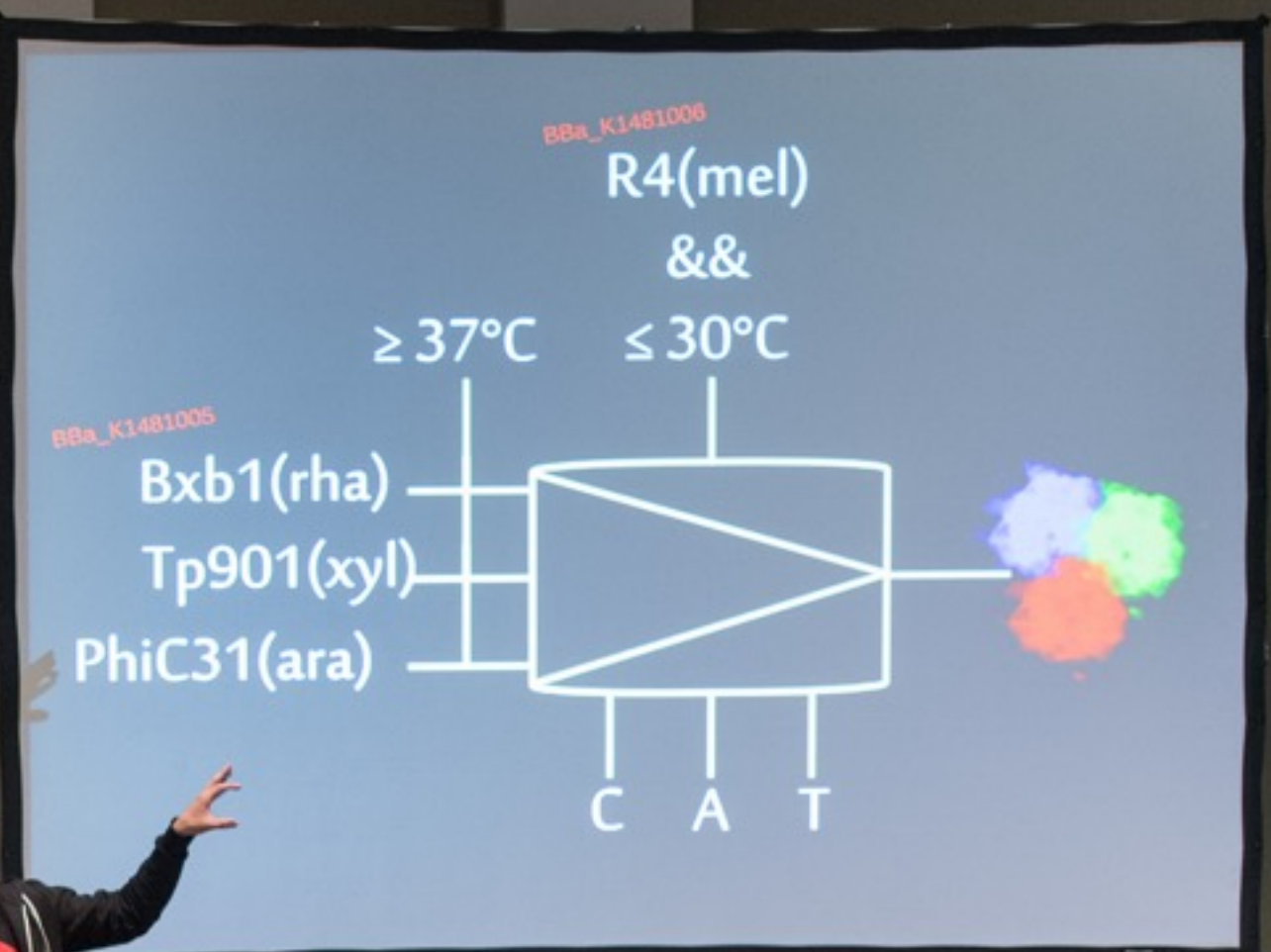


JENS J. KORB
Regional Manager
SGLS Denmark
SGLS IT

SARAH SCHULZ
Head Chef
SGLS Denmark
SGLS IT

€5
€10
€15
€20
€25
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€40
€45
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€65
€70
€75
€80
€85
€90
€95
€100

EXIT



JUDGE





REGHAN
ACEM
High School
2018

Ball
Ball Aerospace
& Technologies



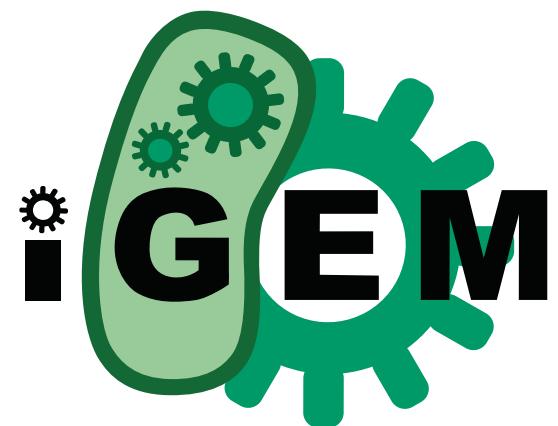
5G-DNA

JOHANNA
Chesnel
Ery

MONDAY LUNCH

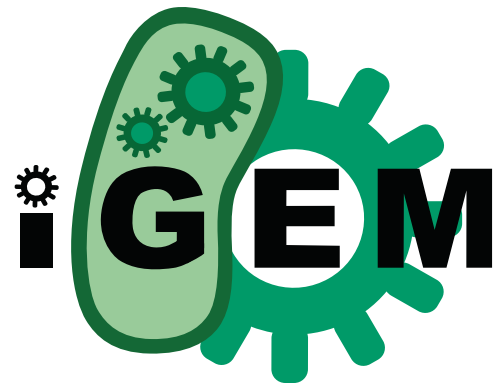


AFTER IGEM



**2 0 1 5
G I A N T
J A M B O R E E**

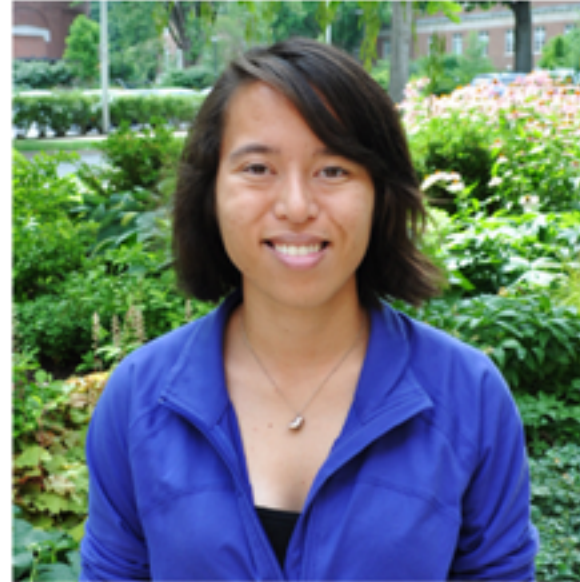




ALUMIGEM

Our Directors

Alyssa Henning



Cornell iGEM 2009, 2010

After graduating from Cornell in 2011, I interned at Ginkgo BioWorks for one year. I am currently a Ph.D. candidate at Penn State University.

- Hobbies: Running, playing taiko (Japanese drums), and translating clarinet skills to playing Japanese flute

Alec Lourenco



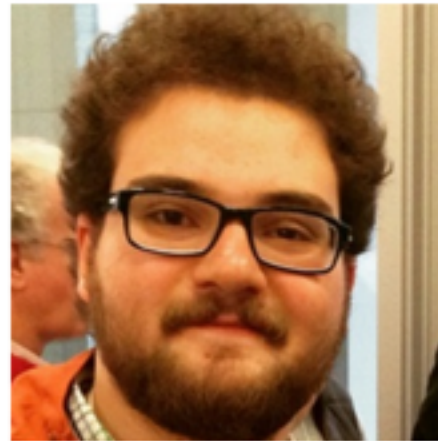
Caltech iGEM 2014

I am currently a rising senior at La Canada high school interested in synthetic biology.

- Hobbies: iOS development, drinking tea, moviegoing, attempting to sing, and, of course, writing college apps.

Our Coordinators

Furkan Bestepe



ATOMS_Turkiye iGEM 2013, 2014

HS AUC_TURKEY iGEM 2012, 2013, 2014

I am a Student Intern in Harvard Medical School/Massachusetts General Hospital until January 2016.

- Hobbies: Computer Games, Knowing about and

Ricardo Chavez



Tec-Monterrey iGEM 2011, 2012, & 2013

I graduated from the Biotechnology Engineering program at ITESM, Mexico. I am currently working as a Laboratory Technician at my University.

- Hobbies: playing video games (MMORPGs, RPGs, Strategy) and mixing music

Galen Gao



Caltech iGEM 2014

I am currently a rising senior at Caltech studying bioengineering.

- Hobbies: Swimming, Water Polo, pretending I can still play the violin, wasting time on Facebook

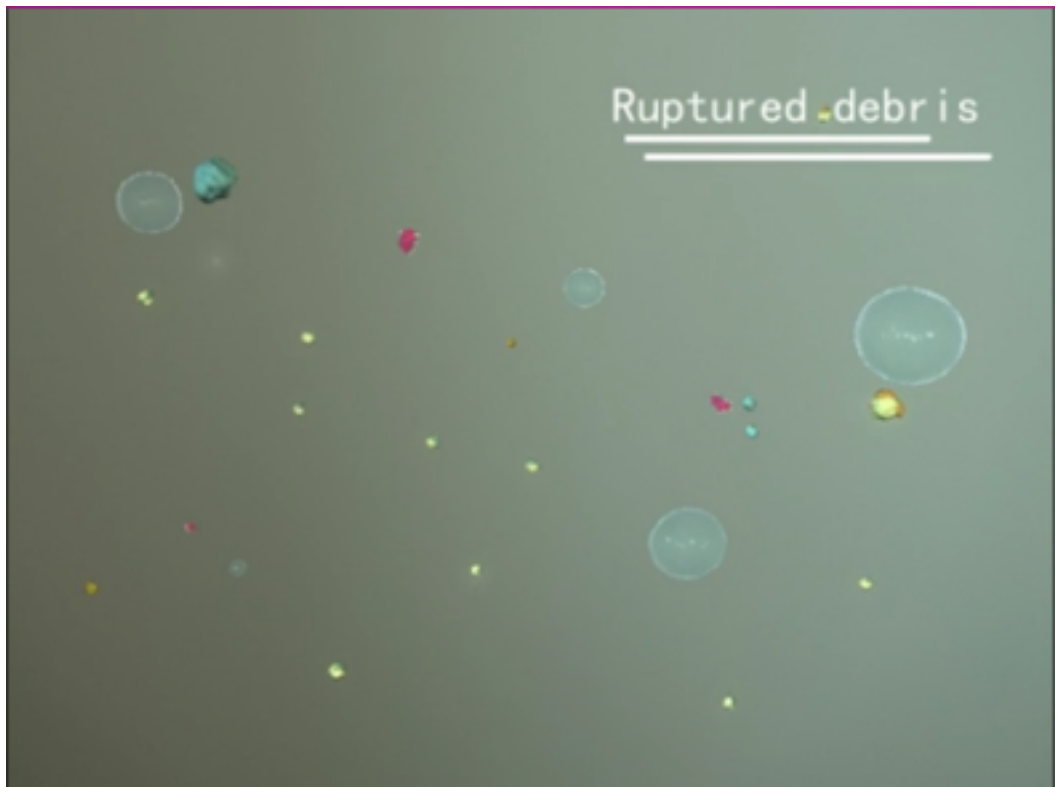
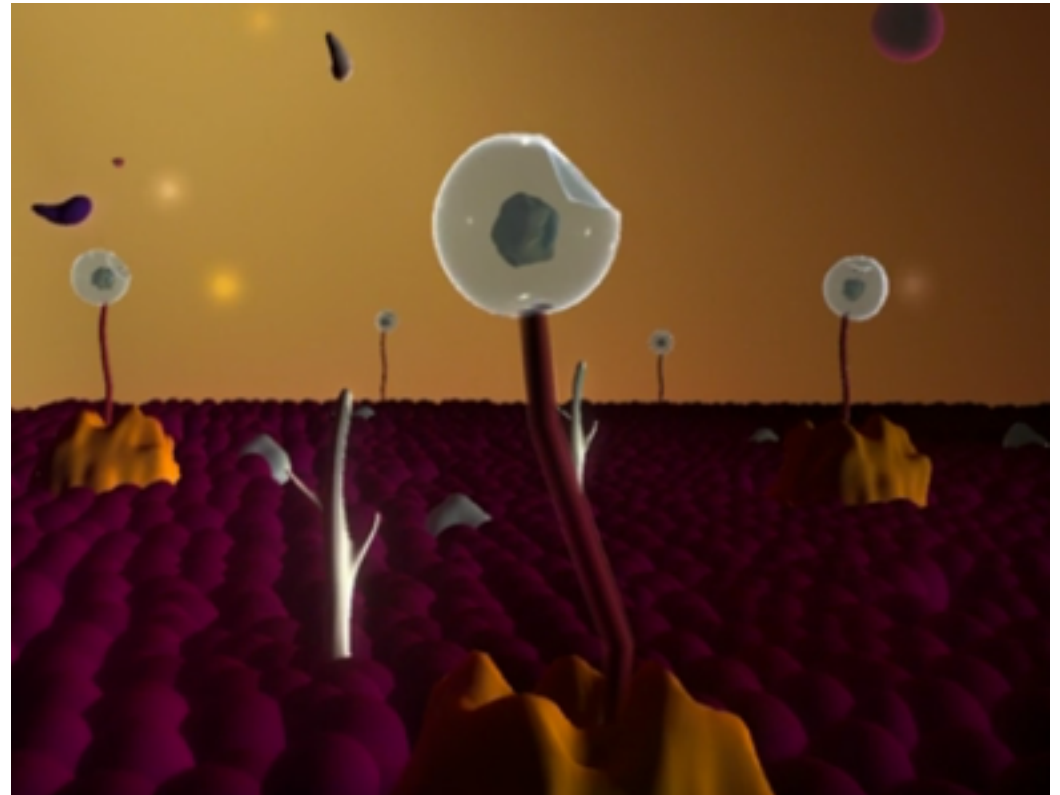
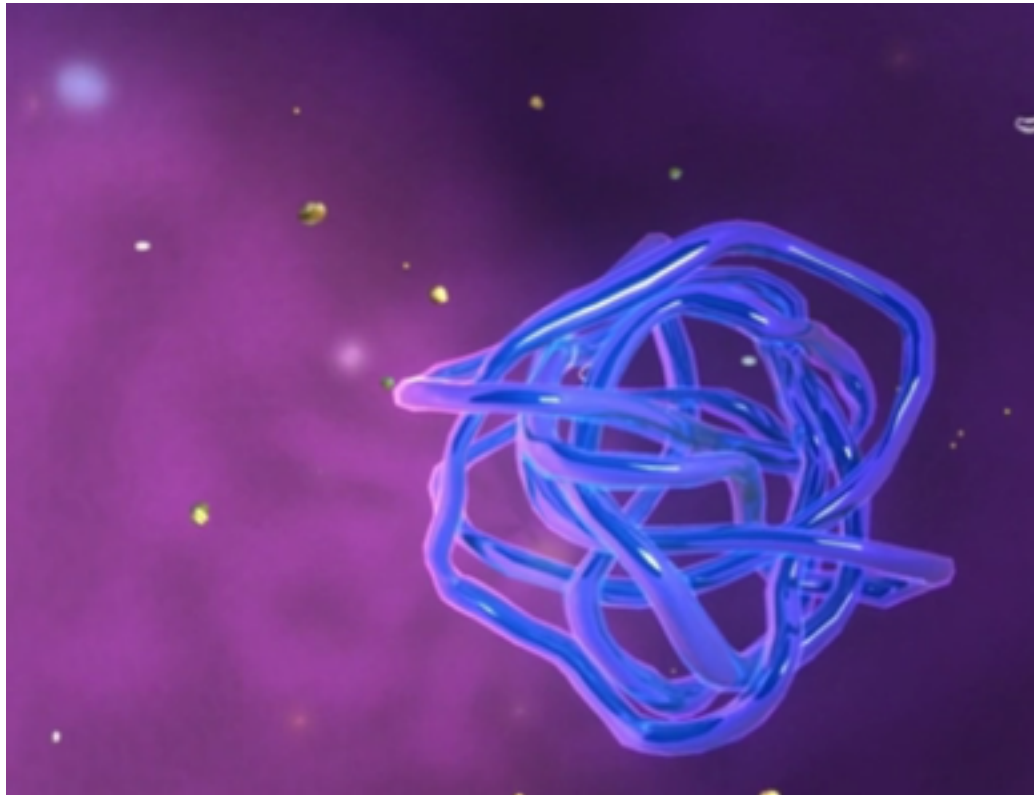


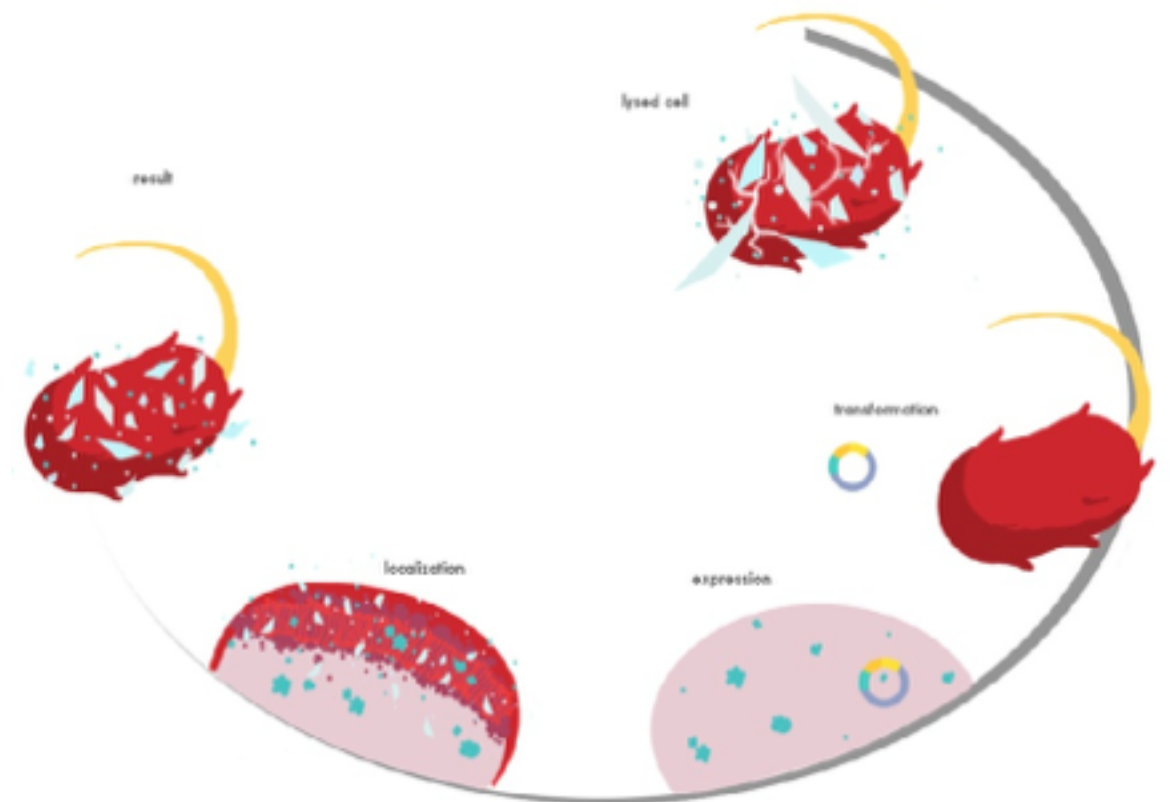
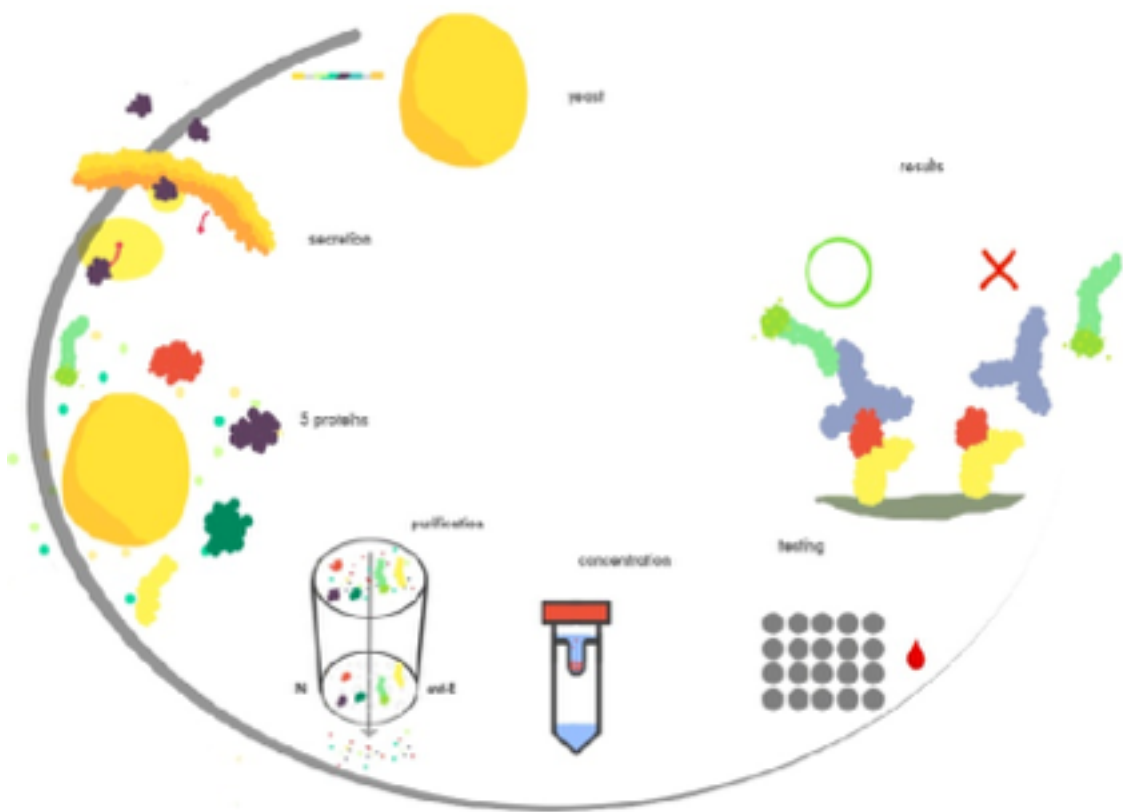
STARTUPS

MY IGEM EXPERIENCE



TEC-MONTERREY 2011 + 2012





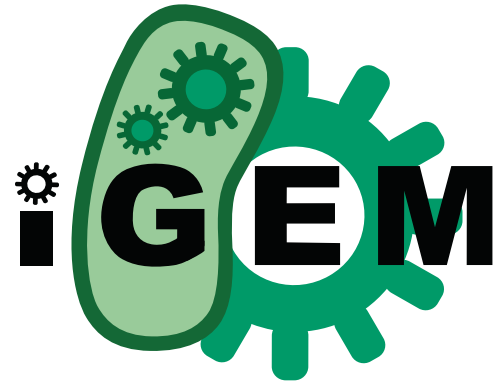
Allergen Yeast

Allergy detection kit
produced by *P.pastoris*.

Freeze resistant
E.coli strain



Antifreeze Protein



WHAT DID I DO?

WIKI

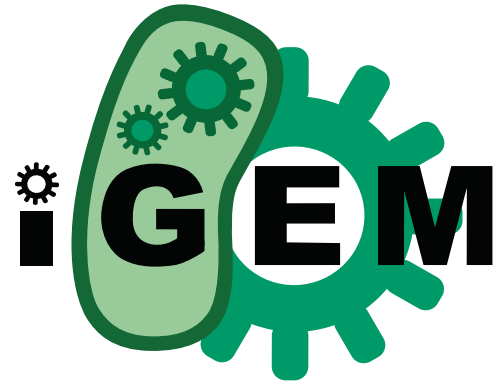
PRESENTATION

POSTER

MARKETING

BRANDING DESIGN

FUNDRAISING



**A PLACE FOR
EVERYONE**

COMPUTER SCIENCE

GRAPHIC DESIGN

PHYSICS

MARKETING

LAW

MATHEMATICS

SOCIAL SCIENCES

MECHANICAL ENGINEERING

CHEMISTRY

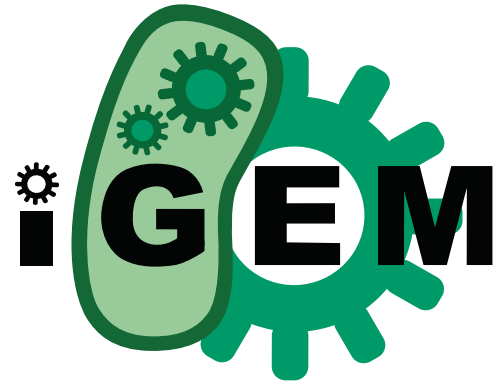
PRODUCT DESIGN

MEDICINE

ART

MORE THAN A COMPETITION





FACETS

COMPETITION

EDUCATION

TEAMWORK

TECHNOLOGY

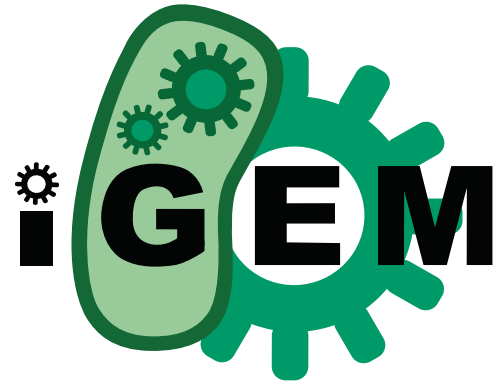
SAFETY & SECURITY

ENTREPRENEURSHIP

RESPONSIBILITY

COMMUNITY

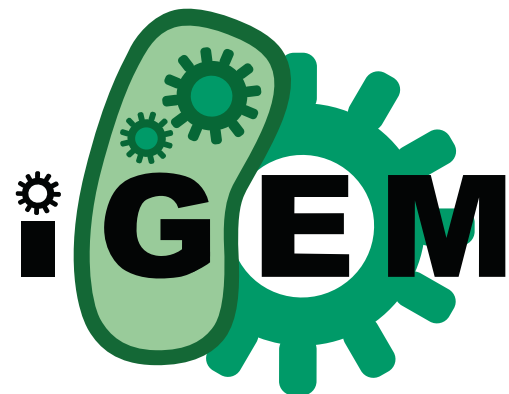
SHARING



**THE
OPPORTUNITY
TO LEARN AND WORK
ON SOMETHING
I AM PASSIONATE
ABOUT.**

**JOIN US AT THE
GIANT JAMBOREE!**

**SEPTEMBER 24 – 28
HYNES CONVENTION CENTER
BOSTON, MA**



**2 0 1 5
G I A N T
J A M B O R E E**

THANK YOU!

GRACIAS

OBRIGADA