

**DEVELOPMENT OF SOCIETY WITH
SCIENCE
ANOTHER ASPECT FOR SCIENCE
DIPLOMACY
(PERSONAL EXPERIENCE)**

Dr. Amal Amin Ibrahim S. Nada

National Research Center-Cairo-Egypt

Cofounder of Global Young Academy (GYA)

**Member of Advisory Board (cofounder) of Egyptian Young
Academy**

*"Science is truth and
diplomacy is the
willingness of nations to
have respectful dialogue
about the truth."*

Christine Greene



Science Advice & Diplomacy

- In January 2010, the Royal society and the AAAS noted that "science diplomacy" refers to three types of activities:
- Science in Diplomacy: Global issues with science bases (climate change, global health, agriculture, sustainability, energy, etc)
- Diplomacy for Science: Getting things done for the science community
- Science for Diplomacy (Science Diplomacy): Science's direct role in affecting bilateral relations .
- Then, (Science advice) term appeared in August 2014 in New Zealand meeting as: (The process, structures and institutions through which governments and politicians consider STI in policy- and decision- making). INGSA was formed.



TWAS – AAAS SCIENCE DIPLOMACY PROGRAM



- **Bringing the policy-making/diplomatic community with the scientific community (experts and young researchers) to discuss and assess policies on critical development issues. Tackling global challenges requires scientific collaboration.**
- **No country can do it alone.**
- **No country should want to do it alone.**





Journal of the American Academy of Child and Adolescent Psychiatry

U.S. Youth and Adults with Autism: A National Survey

Journal of the American Academy of Child and Adolescent Psychiatry, 2010, 49, 118-126



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Autism in children

Significant increases in the prevalence of autism spectrum disorders (ASDs) have been reported in many countries, including the United States, over the past 2 decades. The most recent estimates of the prevalence of ASDs in the United States range from 1 in 100 to 1 in 50 children (1).

ASDs are a group of neurodevelopmental disorders characterized by impairments in social interaction and communication skills, and by restricted and stereotyped patterns of behavior (2).

ASDs are diagnosed based on clinical criteria, and the most commonly used diagnostic manual is the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR) (3).

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"Our machine needs more
diverse ideas and solutions,
researchers and engineers. It
needs to embrace and reward
the people who care deeply,
expand our understanding of
humanity, and work to improve
people's lives."

Mark Zuckerberg

"Scientists have discovered
the benefits of the pursuit
of discovery in our quest
for knowledge."

Stephen Hawking



STEPS OF THE ROAD

- Inspired by Marie Curie as role model and her work as governess to learn and to become the first and the only woman scientist getting Nobel prize for two times
- Starting from chemistry department at faculty of science-Cairo to PhD (Germany/Egypt) in new field to share in development of country
- Accompanying family against rules and stereotypes in different cities with hectic schedule and cultural differences but determination to finish PhD fast.
- Returning back the night of 10th of September and determination to change the world with science as the only logic way to change.
- Insistence to save better future and better world for new generations. (working inside and outside Egypt)





Starting from inside Egypt

- Member - Sub Coordinator of nanotechnology group at center of excellence (NRC)
- Founding President and coordinator of Egyptian Society and Arab network for Advanced Materials and Nanotechnology
- TWAS Young Affiliate



COFOUNDING OF GYA

CHANGING THE WORLD WITH SCIENCE



- Empowering young, mid career scientists and youth as future leaders.
- Encouraging international networking and multi-disciplinary research work
- Promoting excellence and Sharing in enhancing research environment to reverse brain drain in developing countries.
- Sharing in development plans.
- Increasing public awareness by enhancing science communication/ science literacy/science education (science & society)

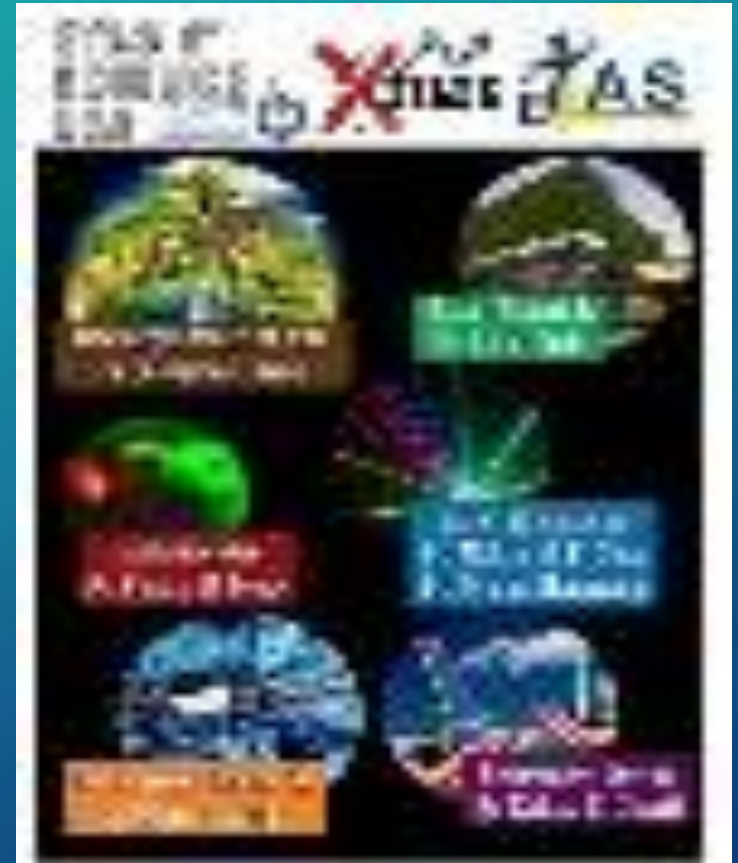


EGYPTIAN YOUNG ACADEMY OF SCIENCES



- **EYAS has the same aims of GYA in empowering young scientists and youth where Egypt is a juvenile country with 60% youth of total population.**
- **EYAS shares in increasing public awareness for science and enhancing science communication (Engagement with the public-science for all)**
- **Survey on the state of young scientists in Egypt to enhance research environment and reverse brain drain to brain gain**
- **Shared in some S &T policy advices.**
- **Collaboration with international organizations and representing Egypt abroad.**

SCIENCE DAYS



- In the beginning, the targeted audience were students of universities and high schools at rural areas.
- Theme, X-files or phenomena
- Target to enhance science literacy by explaining the up-to-date scientific complicated facts in simple way by story telling and interactive sessions.



"Education is not
the learning of
facts, but the
training of the mind
to think."
-Albert Einstein



- The world is full of people who
are not interested in the world
around them, but only in the
world they are living in.
-John C. Maxwell

SUSTAINABILITY THROUGH NYA

Research and Education

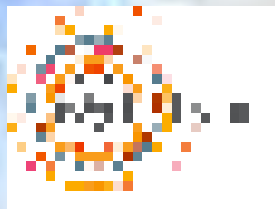
- In 1860's France had serious problem with silk industry, Pasteur moved to the south of France, then:
- He identified the challenges, and engaged the public
- Trained young women to make scientific observations, articulated Germ theory, initiated public health research and outreach
- Developed new fields of inquiry, new funders and new institutions (Pasteur Institute)



Kim M. Weiss (2012) Ph.D. Thesis
University of California (Greg Weiss
lecture in SA-2012)

OTHER ACTIVITIES

- **World Economic Forum (2009 & 2010)**
- **World Science Forum (2015 & 2017)**
- **TWAS young affiliate-Alumni-TWAS-TYAN member**
- **TWAS-UNESCO – ISESCO – ISTIC – IAP – UN- ICSU-GYA meetings**
- **Ambassador of New York Academy of Sciences**
- **Nomination for global prizes (IUPAC- WIS)**
- **Traveled to and worked at several countries and tens of events**
- **Two memorandum of understanding and many international projects**



MICHIGAN
TECHNOLOGICAL
UNIVERSITY



OTHER ACTIVITIES WORLDWIDE



Africa



Africa 2015



IAP-Korean workshop



Global Civics - Jordan 2014

ON THE WAY FOR WISWB



WIS – Malaysia 2015



- Invited to 2008 conference for WIS In Dubai.
- Founding women in science group in global young academy (GYA) in 2012
- Member of girls mentoring program/ GYA & New York Academy & three circles of Alemate (AAAS)

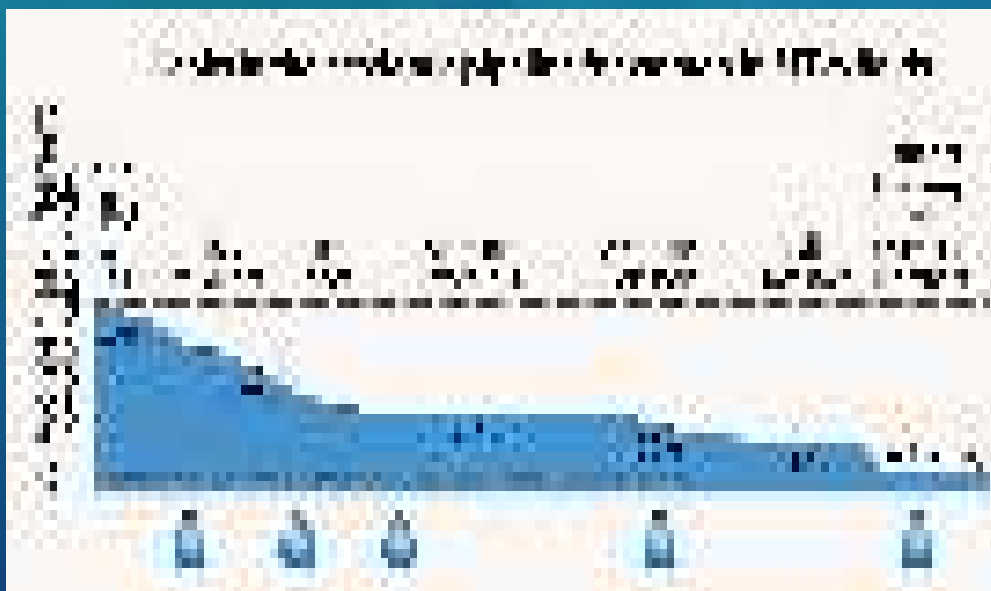
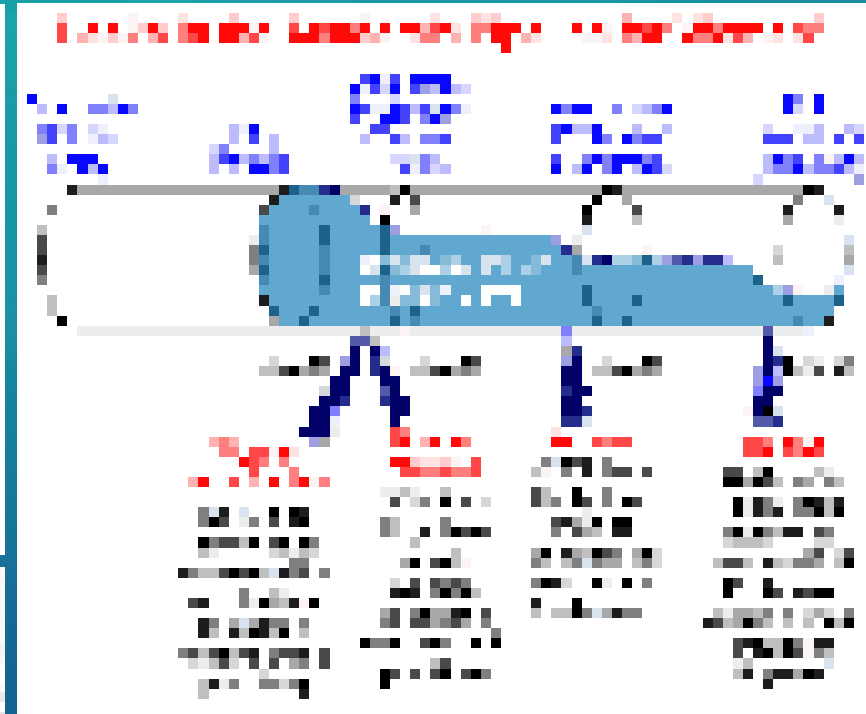
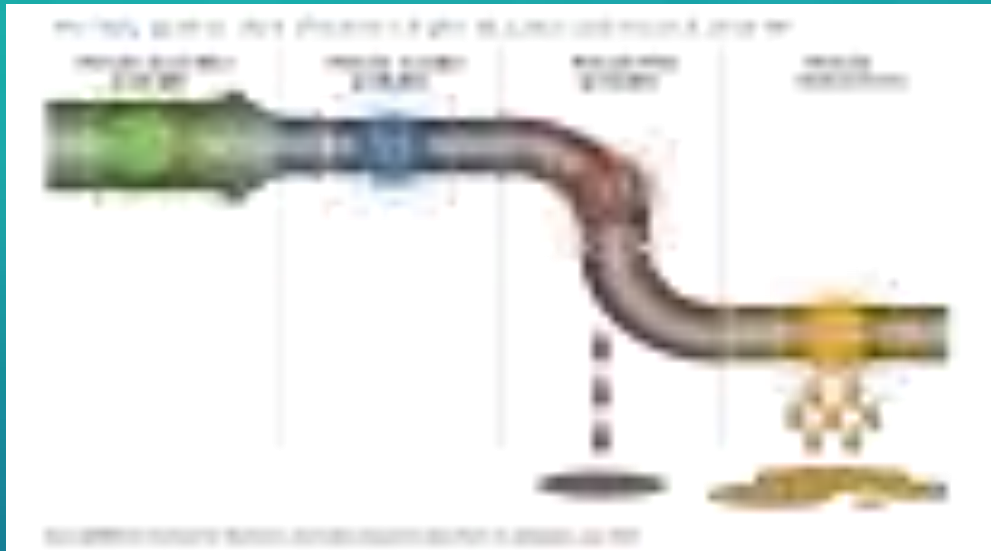


ON THE WAY OF WISWB INFORMATION ON WIS

- Less than 30 % (28%) of total researchers are women, 39.9 % for Arab states, 30.4 for sub-Saharan Africa, 32.2% for North America and Western Europe, etc.
- Dominance in life sciences majors such as medicine and nursing against remarkably low percentage in engineering, math and natural sciences where number of male engineers dominates female ones.



LEAKY PIPELINE



- High number of female in bachelor and BSC then the number decreases in PhD and then drop in higher levels

- Additionally, the number of females` Nobel prize winners is less than that of males specifically in physical and biological sciences as in physics (2/111), Chemistry (4/109) and medicine and physiology (12/108). Marie Curie was the only woman scientist who won Nobel Prize in two fields as Chemistry and physics.



WOMEN IN SCIENCE ACHIEVEMENTS

- **ELSEVIER** report, for 5.5 million papers and 27.3 million authorships: males produce 70 % of the total publications with 66 % first authorships even in the developed countries.
- Only 13 % of highly cited authors in 2014 were women but the number varies by discipline from 3.7 in engineering to 31 % in social sciences.
- Women are generally underrepresented with respect to innovations where the global share of women as inventors in PCT applications is only 14 % in 2011-2015.
- The percentage of patents with at least one woman among inventors is 28 % in 2011-2015.



WOMEN IN SCIENCE WITHOUT BORDERS (WISWB)



- **Founding WISWB as movement for cooperation between male and female scientists to reach to sustainable development with the impact of science**
- **“ It is not a matter of women or men scientists, but it is a matter of increasing cooperation between both sides for the sake of sustainable development”**

SUSTAINABLE GOALS



Girls are one of the most powerful forces for change in the world. When their talents are recognized, their needs are met, and their voices are heard, they drive the positive change in our communities and the world.



July 2014

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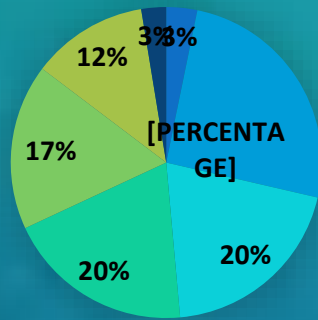
WISWB

No of applicants 2456 / 27 countries

No of selected Applicants 350

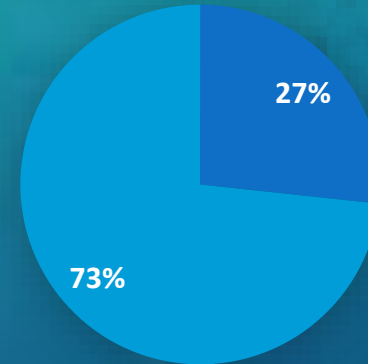
Age

avg = 31.84706



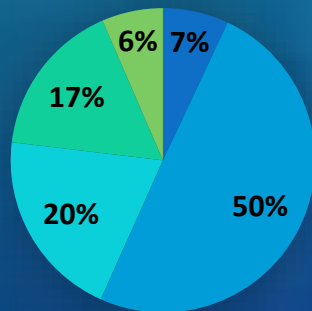
■ 18-20 ■ 21-25 ■ 26-30 ■ 30-35 ■ 36-40 ■ 40-50 ■ 50-81

Gender



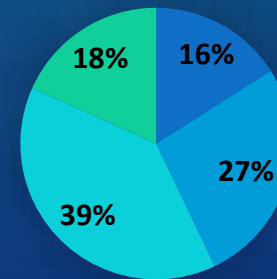
■ Male ■ Female

Academic Position



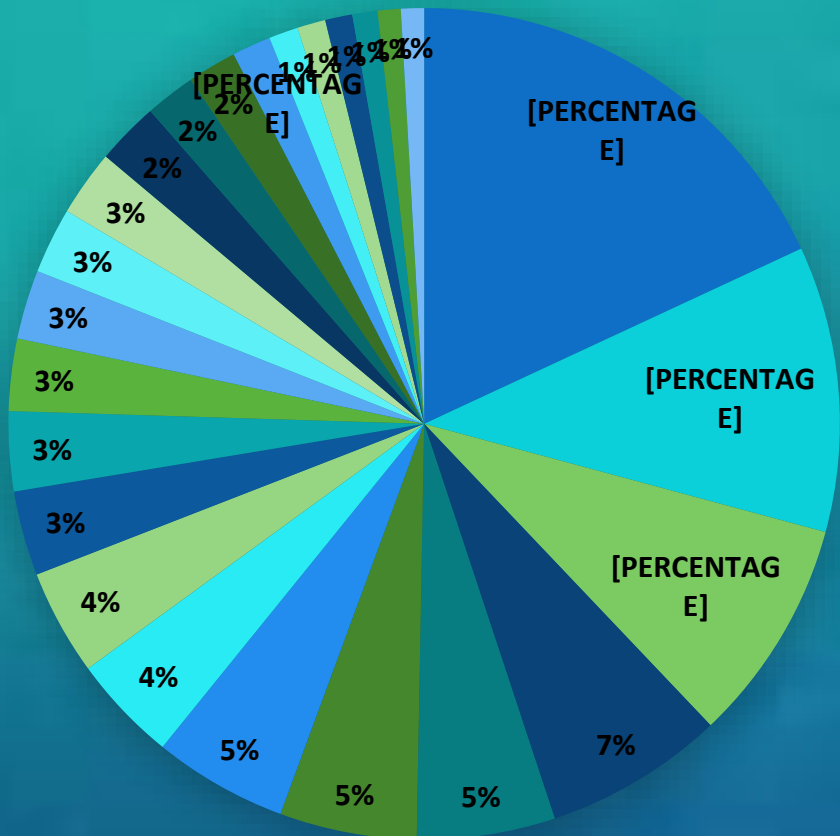
■ Professor ■ Other
■ Lecturer ■ Teaching Assistant
■ Associate Professor

Educational Level



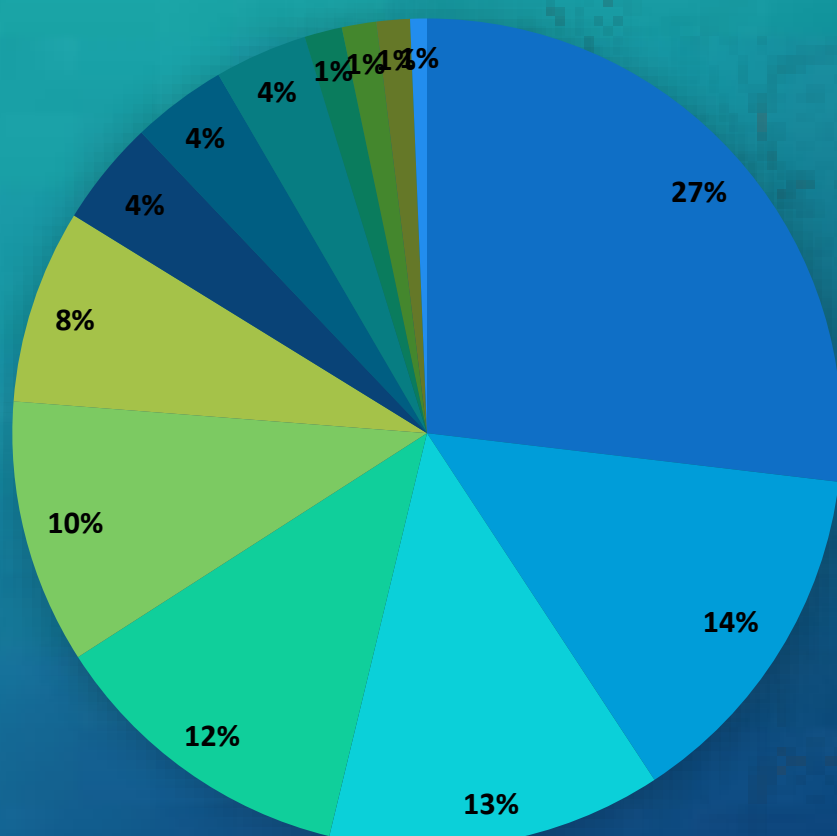
■ Undergraduate ■ Graduate Student
■ Ph.D. Holder ■ Other

Universities



- Cairo
- Other
- Alex
- NRC
- Mansora
- Zagazig
- Tanta
- Suze canal
- Private universities
- Assiut
- Minia
- Fayoum
- Ain Shams
- El-Azhar
- 6 October University
- Helwan
- Benha
- Menofia
- Forigen Universities
- ARC
- Benisuif
- Petroleum Research Institute
- Upper Egypt
- Atomic Energy Authority

Faculties



- science
- medicin
- arts
- national centrs
- other
- commerce
- economy
- dentist
- pharmacy
- education
- nursing

WISWB

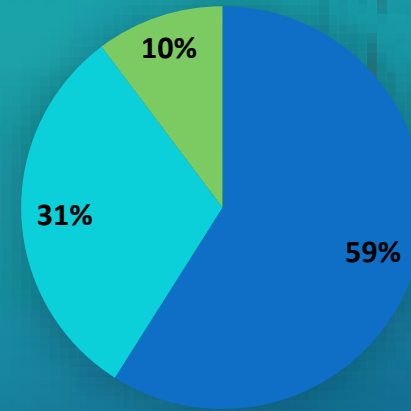
No of applied Teams 92

No of selected Teams 48

No of winners Teams 16

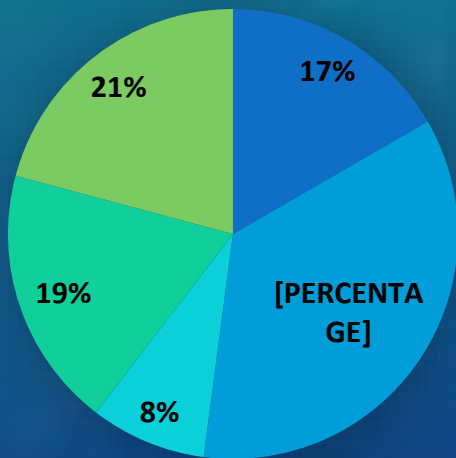
Subjects: Food, Water, Energy, Education, Environment

Student Competition



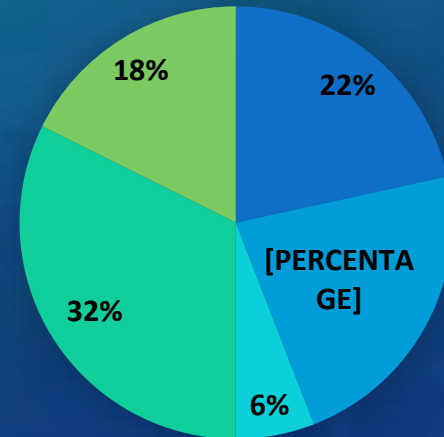
■ Applicants ■ Selected ■ winners

fields of selected teams



■ Education ■ Health ■ Food ■ Energy ■ Enviroment

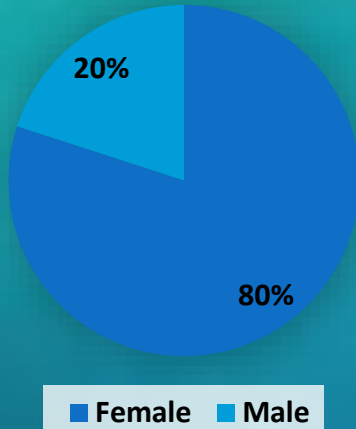
Fields of applied teams



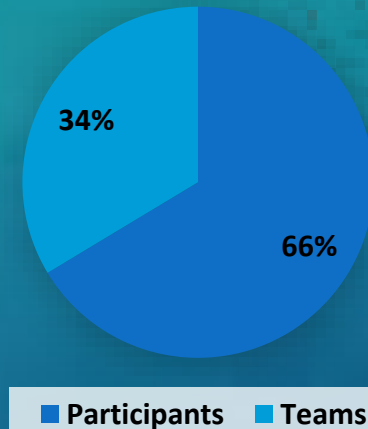
■ Education ■ Environment ■ Food ■ Health ■ Renewable Energy

Selected participants / Teams

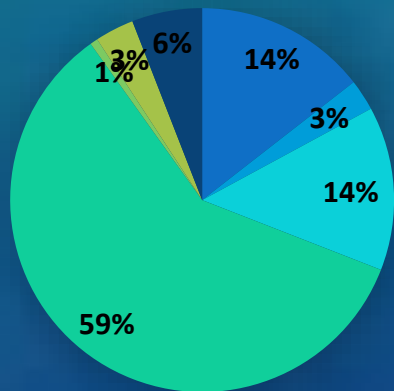
Gender



Participants Teams

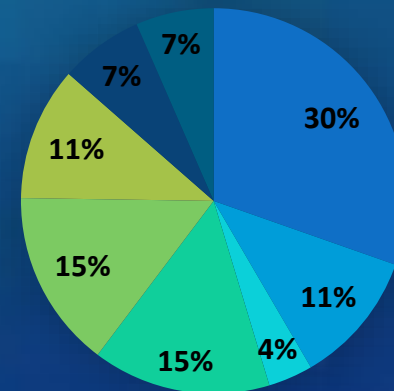


Academic Position



- Graduate student
- Ph.D. Holder
- Under Graduate
- Lecturer
- Professor
- Other
- Teaching Assistant

Faculties



- Science
- Agriculture
- Engineering
- Medicine
- Pharmacy
- Dentist
- Veterinary
- Education



Sponsors & Supporters



PRESS RESPONSE









“ The price of success is hard work, dedication to the job at hand and determination that whether we win or lose, we have applied the best of ourselves to the task at hand”

Lombardi



TIPS FOR SUCCESS

- From my experience, before start deciding any about your future , you must:
 1. **Have faith in yourself and your abilities but be real and honest.**
 2. **Define and prioritize your dreams. Dream high and big with great passion.**
 3. **You have to have mentor or role model (great inspiration)**
 4. **Think out of box (creative and innovative)**



5. Always learning , training and developing yourself
6. Optimist, humbled, sincere, patient and strong (every drop is a new start and the light will come at the end of the tunnel. Do not look behind, just go forward.
7. Be accomplished with everyday to do list (do not lose time) with very hard work.
8. Enjoy what you do, be happy even with small details , Loving and caring for life, people and society



"Science is not only a study and
research about the natural world,
and outside."

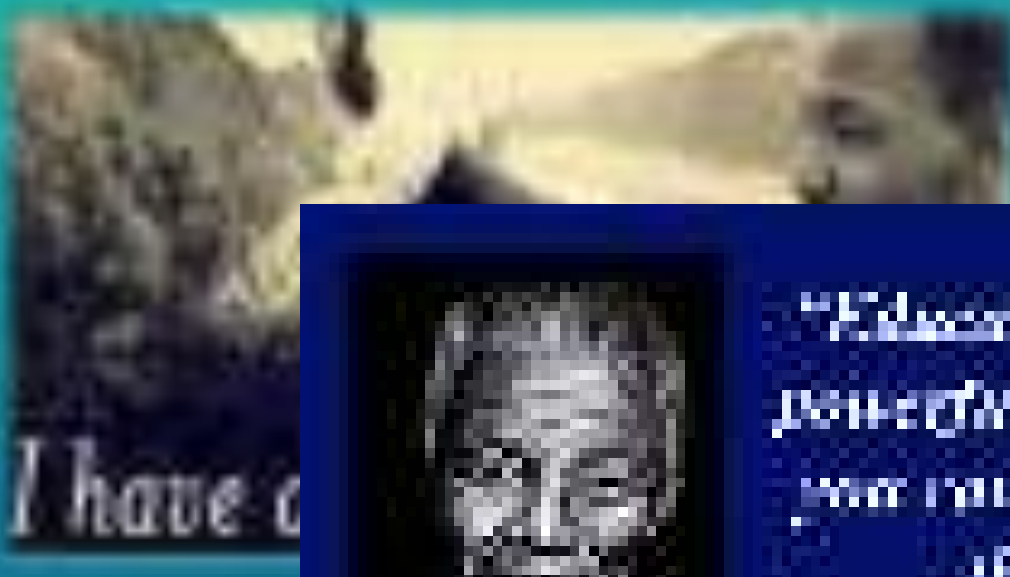
Chyngolauky



Education is not just for the sake of the
child. It is for the child. We must have
a government that will invest in education
and research. The more we know,
the more we can do for the world.
Education is the key to a better world.
Maurice Strong



DREAMS FOR THE FUTURE



"Education is the most powerful weapon which you can use to change the world."

Nelson Mandela

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- http://uis.unesco.org/en/topic/women_in_science
- **Women in Science: What Explains Gaps? Part I | Psychology Today, Lee Jussim Ph.D.**
- **WOMEN'S ROLES IN THE SCIENCES. women in science | The Franklin Chronicles**

THANK YOU