Cross Regional Breakout Session

Reflecting on 30 Years of GLOBE

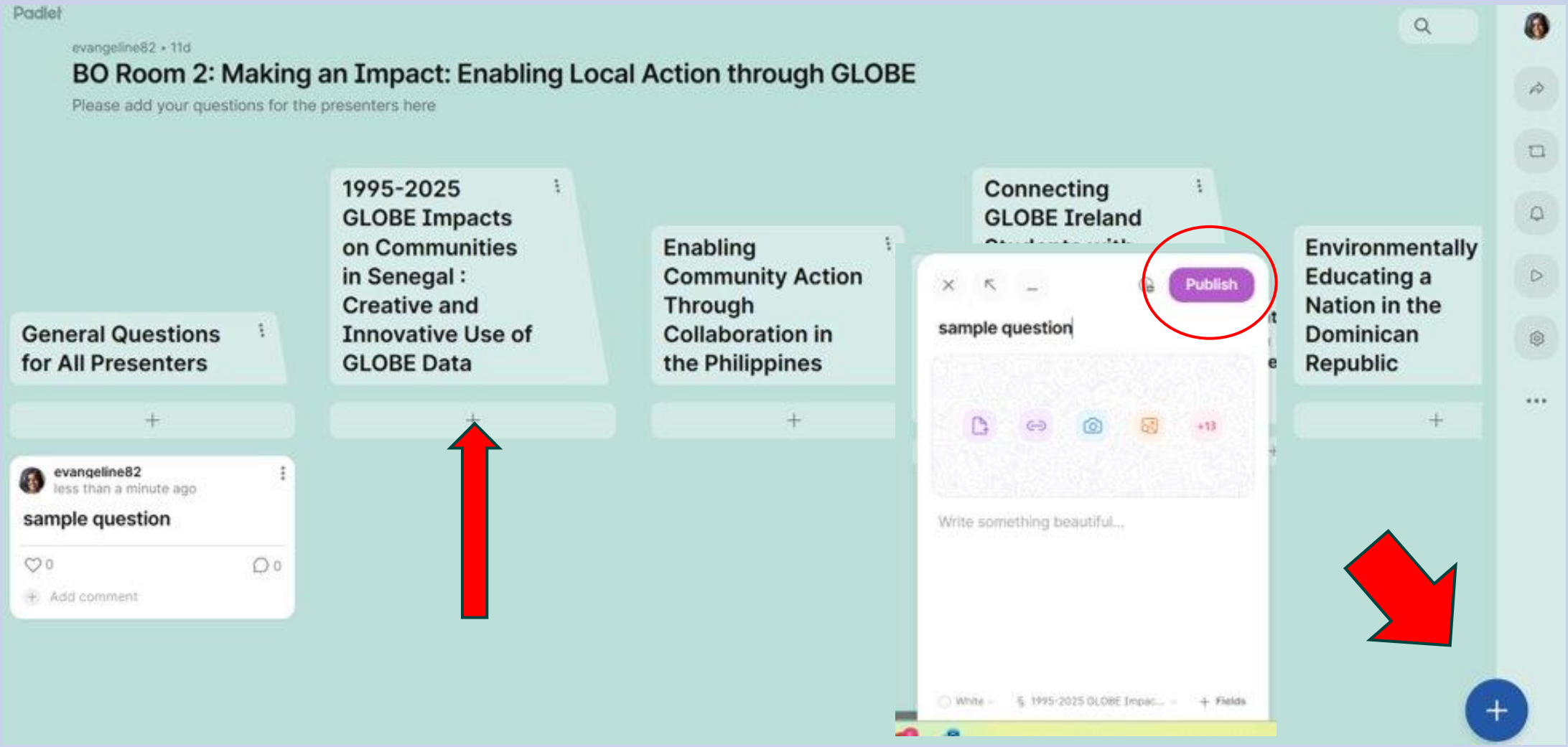
(Panel Discussion)

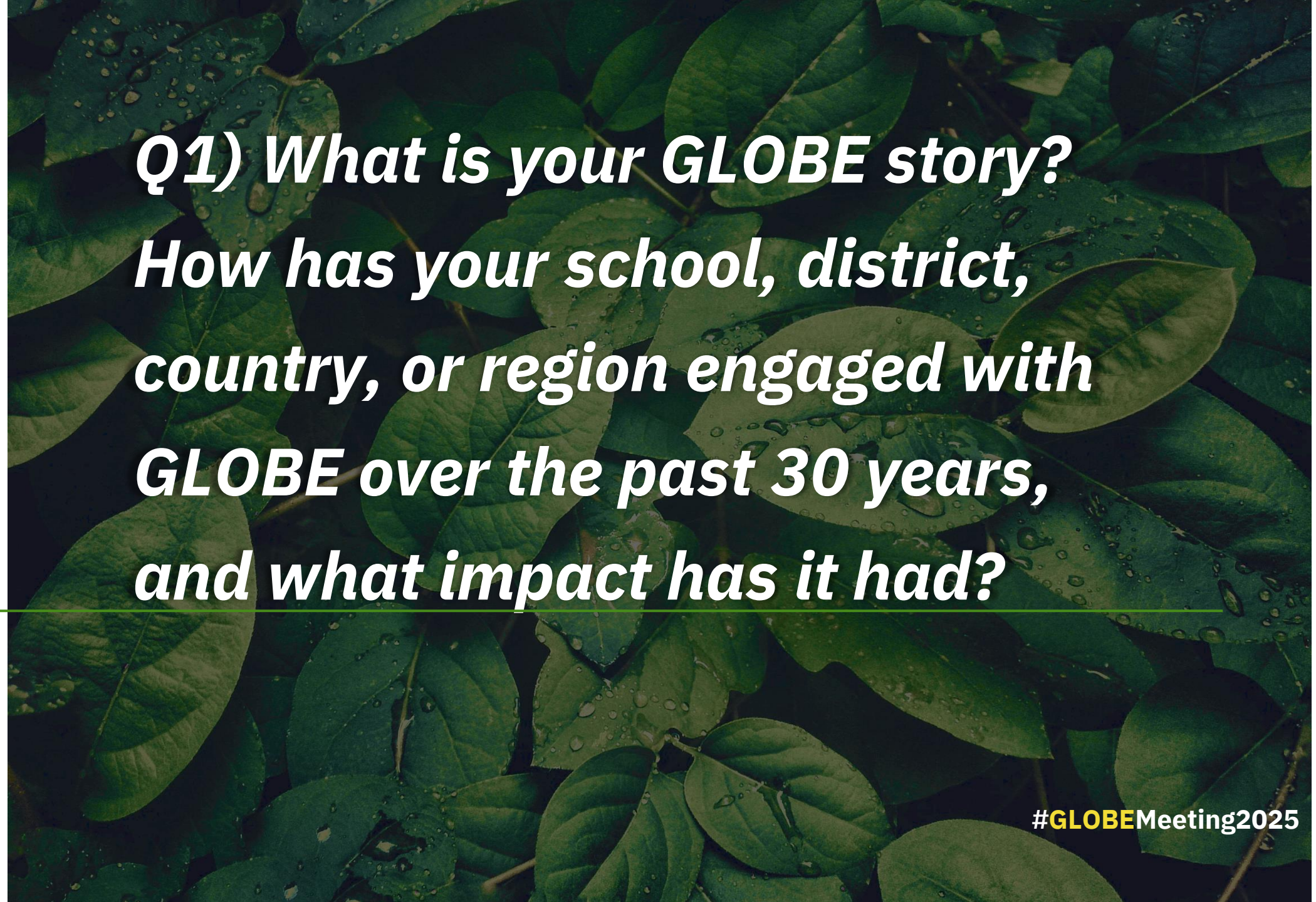
Sponsored by: NASA Supported by: NSF NOAA

Agenda

Time	Activity	Panelists
9:50-9:55	Welcome to the Reflecting on 30 Years of GLOBE Panel moderated by Rebecca Lewis • Use the chat to say hello and use the padlet to ask your questions to the presenters!	
9:55-10:37	**Panel Discussion** Q1. What is your GLOBE story? How has your school, district, country, or region engaged with GLOBE over the past 30 years, and what impact has it had? Q2. What challenges or roadblocks have you encountered while implementing GLOBE, and what lessons have emerged from those experiences? Q3. As we celebrate 30 years of GLOBE, what are your hopes, dreams, or vision for the next 30?	1. Pay Liam Lin (Taiwan Partnership/AP) 2. Marta Kingsland, Andrea Ventoso and Aline Veloso (LAC) 3. Joan Chepkemoi Tanin (Kenya Space Agency/ Africa) 4. Peggy Foletta and Leigh-Ann Olsen (USA/NA) 5. Diana Garašić, Sanja Klubička (Croatia/EE) 6. Bader Salim Hamed Al Mamaari & Fakhria sawad Mohammed Al Blush (Oman/NENA)
10:37-10:45	Audience Q&A and Closing	

Add Your Questions to the Padlet




Q1) What is your GLOBE story? How has your school, district, country, or region engaged with GLOBE over the past 30 years, and what impact has it had?
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Implementing the GLOBE Program in Taiwan—Challenges, Strategies, and Stories

Presenter:

Dr. Pay-Liam Lin
Taiwan Country Coordinator

Sponsored by: NASA Supported by: NSF NOAA

GLOBE Taiwan Story

E-mail: globe@pblap.tw

What is your GLOBE story?

Taiwan officially joined GLOBE in 2013, but preparation began a year earlier with support from the National Science and Technology Council. Today, there are almost 70 schools actively participate, contributing to IVSS, GLE, and cross-border campaigns with countries like the Philippines, Thailand, and India.

We focus on:

- **the cultivation of students' foundational science education**
- **the collaboration of the GLOBE Taiwan community both internationally and domestically**
- **the promotion of public science outreach.**

GLOBE Impacts I
Fostering future scientists

E-mail: globe@pblap.tw

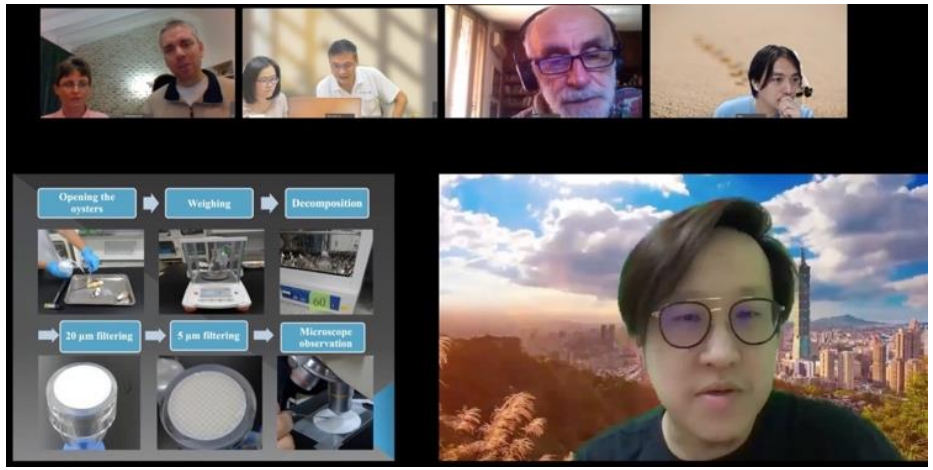
- **How has your country engaged with GLOBE, and what impact has it had?**
  - **IMPACT I: GLOBE Alumni**

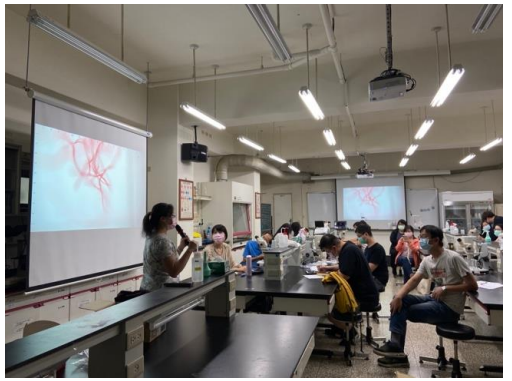
    Many GLOBE students influenced by GLOBE Program choose to study Earth ecology and environmental sciences.

Case Example:
In 2017, Taichung Girls' Senior High School student Ms. Yang presented her GLOBE research findings at the GLOBE Annual Meeting. Her work was recognized and encouraged by Dr. Ying-Hwa Kuo from the U.S. National Center for Atmospheric Research. Motivated by her personal passion for science, the stimulating experience with GLOBE, and support from scientists, she chose to pursue studies in atmospheric sciences.

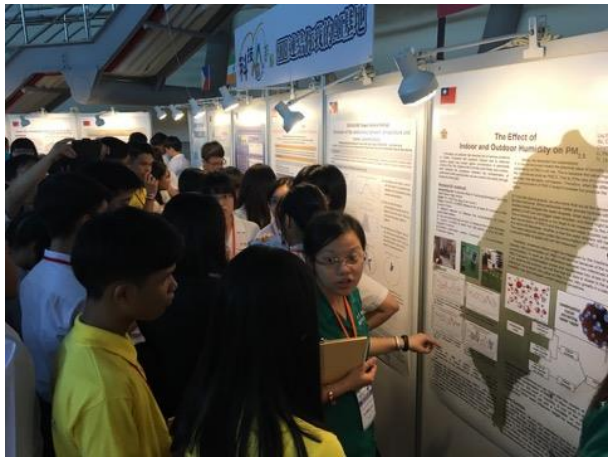
GLOBE Impacts II
International Cooperation

E-mail: globe@pblap.tw





In 2021, Taiwan joined GLOBE's microplastics protocol development, contributing field testing and lab expertise to enhance detection methods through international collaboration.



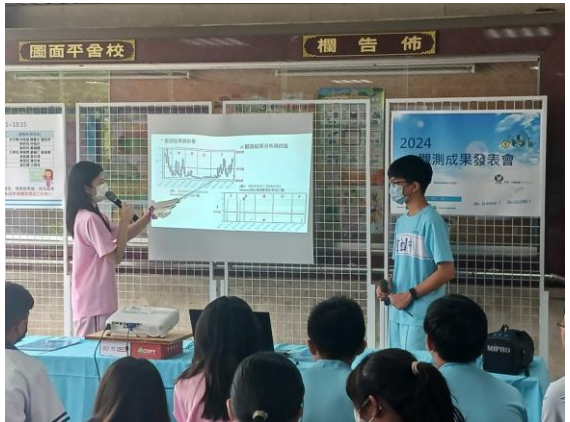
Students Exchange Program (Taiwan, Thailand, Philippines, Nepal, India, Mongolia, etc.)

GLOBE Impacts III
Citizen Sciences –Case Example

E-mail: globe@pblap.tw

In 2019, the **Kaohsiung Girls' Senior High School (KGHS)** has joined a CO_2 monitoring project with **Nagoya Sangyo University**. The team has completed three research phases, focusing on CO_2 and the environment, and promoting green tree surveys.
In the 2023–2024 project, KGHS expanded its outreach to nearby schools, and successfully partnered with **Cianjin Junior High School**. Together, they will conduct joint observations and create a CO_2 concentration map of their campuses.

Cianjin Junior High School holds an annual GLOBE inquiry exhibition, inviting community members to participate. The school also takes part in science fairs at the **National Science and Technology Museum**, showcasing GLOBE learning and research achievements to the general public.



Three Decades of Impact: GLOBE's Success Stories from Argentina, Uruguay and Brazil

Presenter:
Marta Kingsland (CC)

Presenter:
Andrea Ventoso (CC)

Presenter:
Aline Veloso (CC)

July, 2025

Sponsored by: NASA Supported by: NSF NOAA

Argentina

GLOBE Program Brief Story: A 30-Year Odyssey of Progress

1995

GLOBE Program starts to implement in Argentina

➔ Three schools and three educators began the adventure in the city of Buenos Aires


Jueves 20 de agosto de 1998

Alumnas de Nuestra Señora de la Misericordia viajaron a Finlandia

(Germán González)

1998

➔ Students from two schools went to the inaugural GLE in

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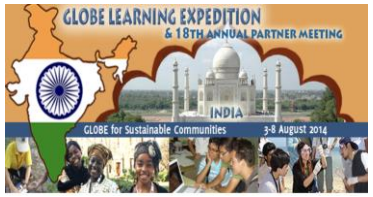
Argentina

2013

IVSS presentations: from 2013 up today, 67 IVSS Students Research Reports have been presented

2014



Launch of the Working groups in New Delhi.

Argentina joins the Education Working Group

2022

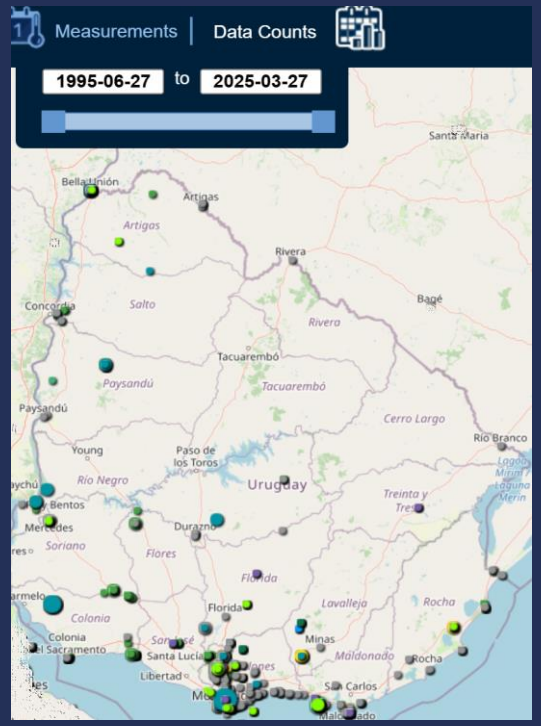
Despite the pandemic, we continued working virtually, offering workshops to teachers, and students prepared excellent projects that they later presented in in-person activities.

By 2025 we are: 250 schools, 627 educators, 9455 students,119 Honor Rolls, 562992 Data Entries, 2721 GLOBE Observer Citizen scientists

We continue leading virtual and in-person workshops Organizing activities with the U.S. Embassy, such as contests for students and educators. Supporting educators. Collaborative projects.

Main achievements during the actual Coordination (2009-2025):

- Inclusion of Secondary School teachers in GLOBE trainings and courses (before that, only Primary school teachers had access) 2014
- Translation to Spanish and updating of 317 GLOBE protocols, data sheets and activities in the 4 spheres for Uruguayan teachers (2015)
- Translation and edition of 40 GLOBE e-training modules to Spanish to do our own virtual trainings (started in 2017).
- Virtual trainings not only for Uruguay, but for Argentina and Peru where the Country Coordinators shared mentoring with Uruguay
- 36 workshops and courses addressed between 2011 and present
- Regional projects shared in the region: ENSO Project, Butterflies and the environmental variables.



PROGRAMA **GLOBE**
Un Programa Mundial de Ciencias y Educación
URUGUAY

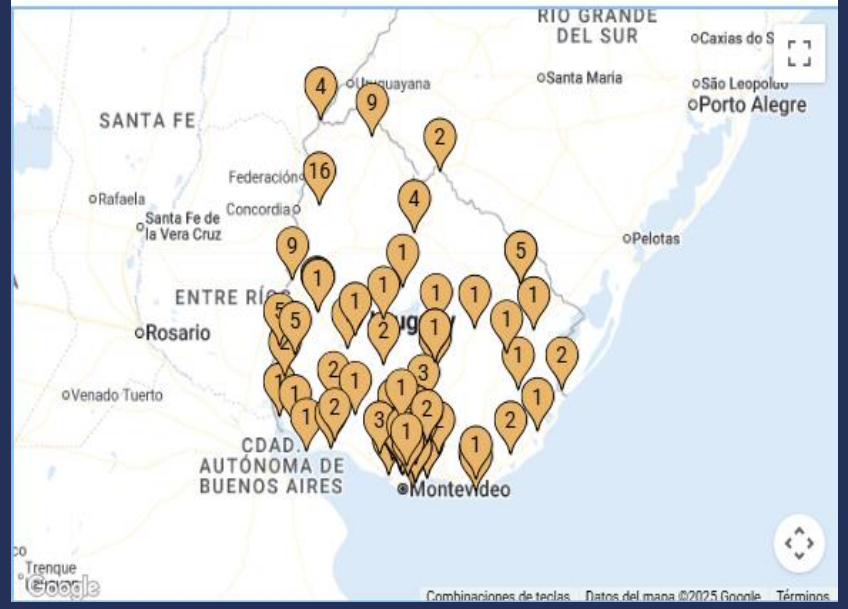
Coordinator active roles in GLOBE:

- Representation of the LAC Region in various committees:
  - GIAC (GLOBE International Advisory Committee) 2011-2013
  - GLOBE Evaluation Working Group (2014-2016) (2017-2019)
  - GLOBE LAC Academic Committee (2022)
  - GLOBE LAC Leader for the Trees within LAC Campaign (2023-2025)
- Certified as GLOBE Teacher, Trainer (2016) and Mentor Trainer (2022).
- International workshops given in Costa Rica, Paraguay, Peru, Mexico, Colombia, and Guatemala and training for students in U.S.A. during the annual meetings.
- IVVS judge during the last 7 years.

Uruguay

Year Joined: 1995

School / Informal Education Organization Locations



COUNTRY AT A GLANCE

Participation | Training

3283	Students
306	Educators
12	Pre-service Teachers
349	GLOBE Observers

9366	Data Entries
215	Schools / Informal Education Organizations
9	Honor Rolls

30 YEARS OF GLOBE
Comparing Data Past and Present

Special strategies implemented in Uruguay

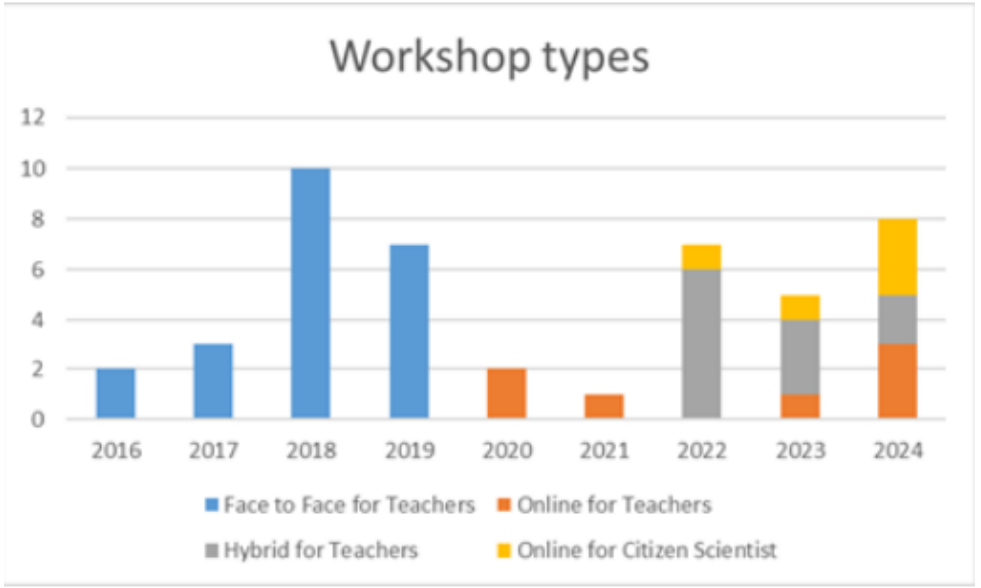
- Grants obtained from the USA Embassy and YLACES for instruments and materials, field trips and in-person workshops
- Lending instruments from the Coordination Office to the teachers who propose a project to implement at school
- Implementation of virtual courses since 2017 which later facilitated doing activities during the pandemic and avoid inactivity
- Collaboration with other CCs and countries in the region in order maximize human and economic resources
- Promotion of collaborative research between teachers from Uruguay and other countries in LAC
- Visits to schools to do follow up, mini-workshops and show the use of instruments and GO app.

Brazil

GLOBE Brazil

- In Brazil, since 2015
- Coordinated by the Brazilian Space Agency (AEB)
- In 2016, training activities began with support from Argentina and Peru
- In 2017, Go Mosquitoes Campaign
- Expanded with support from Universities (UFPR, UNILA, UFMA, and UFRN)

- Civil society participation via GLOBE Observer app
- Partner projects: “Zikabus”, “GLOBE & STEAM”, “Girls in Space”
- Online training through AEB Escola Virtual since 2021

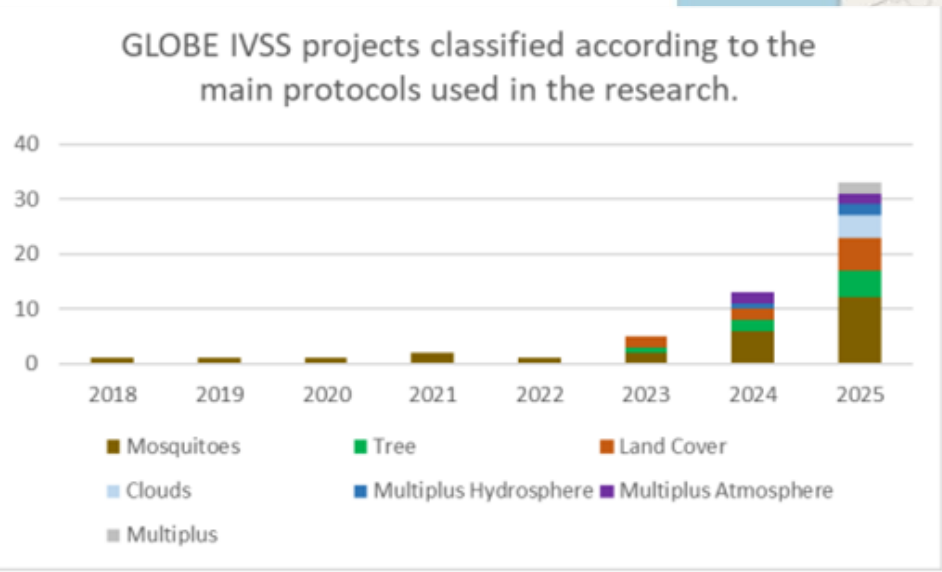


Brazil

AEB
AGÊNCIA ESPACIAL BRASILEIRA

Results of GLOBE in Brazil (2015–2025)

- 8,261 Students
- 756 Educators
- 290 Pre-service Teachers
- 6,184 GLOBE Observers
- 97,862 Data Entries
- 330 Schools
- 52 Honor Rolls
- 60 Student projects
- 33 Projects in 2025 IVSS



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Empowering Science Education: GLOBE's Impact and Milestones in Kenya

Joan C. Tanin
KENYA SPACE AGENCY
Space Education and Awareness

Sponsored by: NASA Supported by: NSF NOAA

GLOBE IN KENYA

- Adoption of GLOBE by Kenya Space Agency (KSA) – Formerly Kenya National Space Secretariat(KNSS)
- GLOBE Partnership with Trans- Africa Hydro-Meteorological Organization (TAHMO)
- 3D-Printed Automatic Weather Stations (3D-PAWS)
- Space Challenge

SUCCESS STORIES

- Empowered students to become young scientists by engaging in real-world environmental data collection and analysis.
- Enhanced teacher capacity to deliver inquiry-based science education and integrate citizen science into their classrooms.

- Fostered global collaboration by connecting students, teachers, and scientists to address shared environmental challenges.
- Directly supported SDG 4, 6, 13, 14, and 15 by promoting quality education, climate action, and environmental stewardship through community-driven science.
- Provided access to high-quality, globally distributed data collected by students, enriching scientific research and outreach.

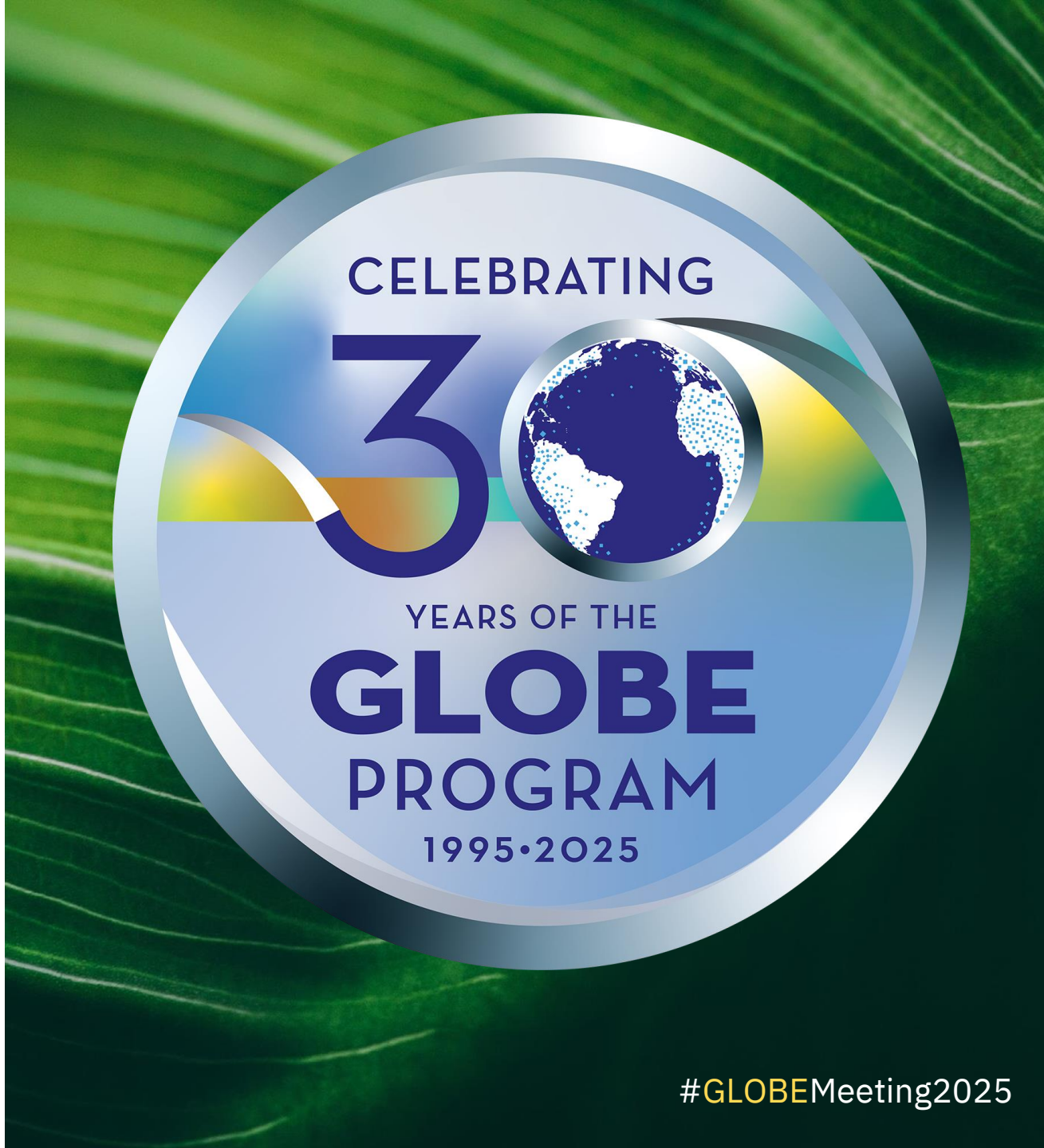
30 Years of GLOBE at Kingsburg High School (California, USA)

Peggy Foletta

Elkhorn Slough National Estuarine Research Reserve—Education Specialist &
GLOBE Partner and Mentor Trainer
Former Kingsburg High School Science Teacher (1995-2013)

Leigh-Ann Olsen

Kingsburg High School Science Teacher (2013-present)
GLOBE Partner and Trainer



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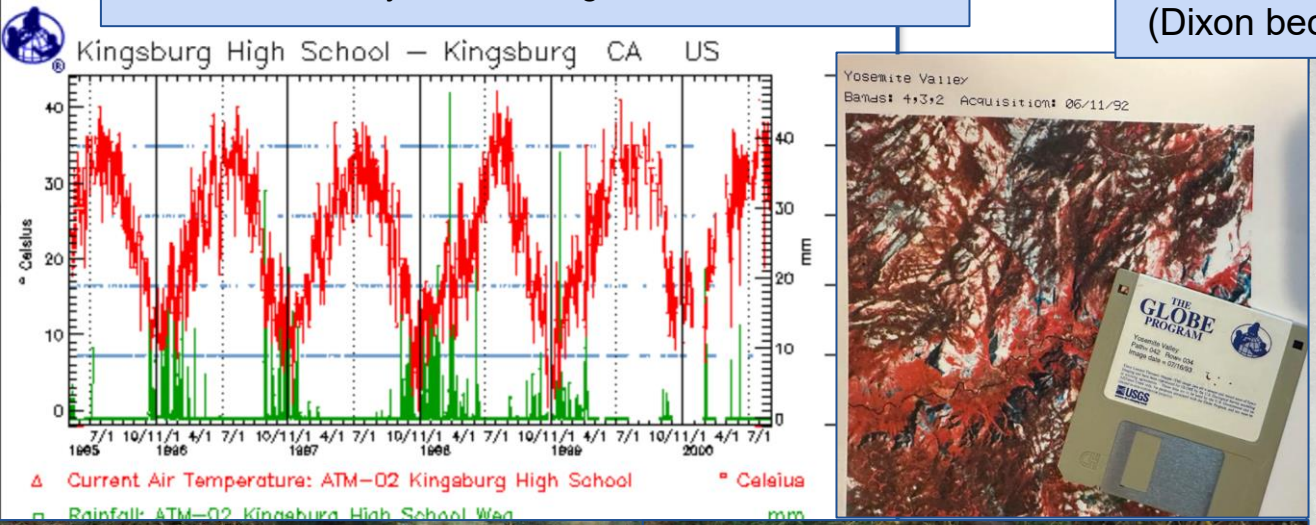
Early days of GLOBE at Kingsburg High School

GLOBE graph old format showing Kingsburg Current temp, Precip, and Cloud cover collected almost daily May 1995 to August 2000



Visiting GLOBE Chief Scientist Jim Lawless checks out KHS weather box. (Dixon became Chief Sci the next year!)

Peggy taking soil sample 1995

WEEKEND August 1-3, 1997

The South Valley

News from Tulare, Kings and southern Fresno counties

Kings River land used as living lab

■ Tulare County will preserve the 95 acres for nature day trips.

By Lewis Griswold
The Bee

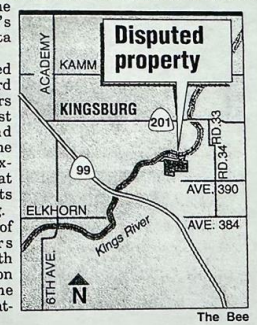
KINGSBURG — Science teacher Peggy Foletta takes her Kingsburg High School students to a living laboratory on the Kings River, where students count trees and learn to tell [illegible] from frogs.

But the land on the south side [illegible] almost lost to the students [illegible] Tulare, which owns the land, pro[illegible] a site for homes and a private c[illegible] things.

"It's about the only somewhat untouched natural habitat in the area that's left," Foletta said.

She showed up at a Board of Supervisors meeting last week and helped save the area by explaining what her students were learning.

The Board of Supervisors voted 4-0 with one abstention to keep the land in its natural state.



He said Kingsburg High School students and instructors have proved to be "good stewards" of the property. And, he added, limiting access to daytime educational use will keep the area from being overrun, he said.

The county will put the overnight camp on another body of water — perhaps Lake Kaweah — using proceeds from the sale of the land, he said.

How's that? Didn't the county decide not to sell the land?

Not quite. The property will be sold, but it won't be just any sale, said Supervisor Charles Harness,

Please see Lab, Page 4

Lab: County to manage land by Kings River

Continued from Page 1

whose district includes the area.

Rather, it will be sold as envi[illegible]

moved to Tulare County fro[illegible] Mariposa County, is credit[illegible] with coming up with the en[illegible] ronmental mitigation idea.

When Tulare County considered selling Kings River Park for development, I brought students to protest the move. With support from the Parks Director, the Board voted 4–0 (with one abstention) to preserve it for student study and keep it natural. Aug. 1997

First GLE in Helsinki leads to cross-cultural exchanges—1998-99

Image above is midnite canoe ride to island BBQ with Finnish friends. Below GLE team doing WQ testing in a Finnish bog.

First KHS GLE Team 1998

1999

■ Please see **Easter,** Back page egg hunt.

Finnish GLOBE students visit Kingsburg

RECORDER STAFF REPORT

Nine Finnish students brought an inter-

Following the conference, the KHS team rented a van and traveled around

knowledge of each other. Katrina Schmid, Yvonne Foletta and Matt Trautman were part of the team visiting Utajarvi and had met the students last summer.

Locally, the student visitors were taken to the Blossom Trail. They continued on to Kings Canyon National Park to view the giant Sequoia trees, which met with amazement from the visitors.

They spent two days in Yosemite National Park hiking the Yosemite Falls trail and around Yosemite Valley to view

Nuevo, whale-watching from the Monterey wharf and to the Monterey Bay Aquarium, where they viewed three pods of gray whales while out at sea.

The final day took the group to San Francisco to see Pier 39, the San Francisco Bay, Alcatraz and the Golden Gate Bridge, as well as Fisherman's Wharf and a stop at Ghiradelli Square for some chocolate.

"When we last heard from our friends, they said they constantly were thinking of all the wonderful things they saw. We

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Kingsburg Students' Experiences at GLEs

6-B THE SELMA ENTERPRISE ■ THE KINGSBURG RECORDER ■ Wednesday, August 6, 2008

KHS students present finds at international symposium

By Larry Miller
STAFF WRITER

Four Kingsburg High School representatives had the honor of presenting their findings at the International Global Learning and Observations to Benefit the Environment student conference at the University of Arkansas from June 25-28.

Attending the symposium were advanced-placement biology teacher Peggy Foletta and KHS students Kelly Dahl, Josh Embry and Lucy Levers.

Each presented findings to the symposium. The GLOBE project seeks to take, transcribe and categorize on-going scientific recordings of environmental data pertinent to the earth's ecosystem.

KHS has been a model school for the program and in the past has hosted visits from GLOBE teams from Europe.

What is especially remarkable about the presentations is that it is rare for high school students, or even college undergraduates, to present their findings in a peer presentation and review setting. Generally, scientific symposia are the arena of career scientists, professors and graduate students. For high school students to address the group is considered both prestigious and professional.

GLOBE conference: Sharing knowledge

by Peggy Foletta
KHS AP BIOLOGY TEACHER

Peggy Foletta

As a science teacher, my primary goal is to produce scientifically literate students who can make rational decisions. So, it was especially gratifying to see dents showing such compotheir presentations at the ional Global Learning and tions to Benefit the Envi- (GLOBE) Student Con- at the University of is this past June 25-28. evel of their accomplishs on par with that of a colarch project and they com- ed like professionals. was taking notice. scientists present at the ce met with the students suggestions to them for udy, as they praised their ter, in the teachers-only t was reiterated that the -Pipestem Park Biome on project was just the search project they were see: Students collabom different parts of the ring usable scientific data other.

vironment is a vital area rational decisions are a veryone's future. I want s to look at the facts and med decisions. You can't h to students as the adult and expect them to thing you say. The envias been greatly affected

The AP biology class from Princeton joined the KHS AP biology class in the study of the similarities and differences between biomes at the same latitude but differing in the amount of rainfall and other factors. GLOBE protocols were used as a standardized method for comparison. The teams were also attempting to validate or "ground truth" the satellite images (or put ground-observed meaning to the individual pixels in the images) given to them by GLOBE.

The two student groups were able to communicate live via satellite from the field and on the Internet for anyone to tune into because NASA Goddard Space Flight Center sent a technician and a quarter million dollar satellite communication device to each site so the students could communicate live from the field. Terrence, our satellite tech, taught the students how to set up and use the equipment at the various sites, usually in a meadow powered by generator. Tech leaders from the class emerged to fill that role. Terrence commented to me that he could not believe how quickly the students learned and problem-solved. He said he could communicate with these students as colleagues.

Each of the students became an expert collecting and reporting about the different aspects of the Yosemite environment. The students kept journals and prepared on-the-spot reports for the live broadcasts in December. They were under pressure, but up to the task and they were very animated and innovative. The Goddard team viewed the live broadcast and were extremely pleased with the quality of the reports. Each student team produced a final report of the analysis of their data and new questions emerged for future study.

GLOBE sent a member of their program evaluation team to observe the April experience. During that week, the team accomplished three major tasks: 1) collecting spring data; 2) helping the first GLOBE school in Yosemite, Wawona their weather sta- nd taught the dying the t; and 3) and West moder- lly these GLOBE like Bill moder- at. Stu- ece and Pipestem

o com- nt work t. Dixon confer- students ce with students n and e- ent this GLOBE Annapo- ng of the ors and US

KHS Globe student Josh Embry

and there that everything we had worked very hard on creating didn't just end there; it was a stepping-stone and example for all of our international connections.

My role in the Yosemite Project, other than the hands-on data collecting that we all did, was to compile all of our raw data into a user-friendly Web site that was interesting, informative, explanatory and working.

In the past few weeks I've experienced so much, now I can finally understand what it was all about, why I've been working so hard, so long. And now it has finally paid off.

On top of the Web pages, I created two slide shows showing our work on the project. At the conference, as at home, I was the "Web guy" and I ran the computer-side of the project while presenting. As the other two presented, I ran the silent slide show in the background. They correlated what they were discussing not only with the posterboards that they were presenting but also with the show running behind them.

When they finished, I began. My responsibility was to show and explain how the Web pages worked. I led the group through the site and invited them to take a closer look at our poster board presentation after the verbal was complete. As I later learned, whether we are from Finland, Spain, Israel, or the U.S., we all are sharing common goals that break the barriers of speech.

Feel free to participate in this program along with us. Find out more about this project and others at <www.geocities.com/korbin_75/yosemiteproject.html>.

Using GPS to data link with others

By Kelly Dahl
KSH AP BIOLOGY STUDENT

I love technology, so what better question for me to have to answer than: What is GPS? This is a question I had to ask myself before our online presentation from Yosemite National Park.

KHS Globe student Kelly Dahl

I found always find TDRSS right were we left, just as the space shuttle might when using this same satellite for its transmissions back to earth.

The satellites of the GPS system are not always in the same place, but that doesn't matter because GPS initializes itself and finds those satellites for you. At least satellites are needed for a good reading, but they also have be in the right place. The satellites have to able to triangulate with the hand held receiver. There has be two satellites on the horizon and two up above. Finding satellites through the dense coniferous forests of Yosemite was often a chore, but I enjoyed the challenge.

My technological duties ended with the Yosemite trip, because the GPS data did not need to be analyzed for the conference in Arkansas. So I began to look at the hydrology and macro invertebrate data. In this data, I discovered a life I know little about, the life of the waters of the Kings and Merced Rivers.

Transmitting from Yosemite to space

By Lucy Levers
KHS AP BIOLOGY STUDENT

Mrs. Foletta can be credited with starting it all.

KHS Globe student Lucy Levers

She has a fantastic knack for accidentally accumulating opportunities. One such opportunity was the offer proposed last year to utilize NASA's TDRAS satellite to field broadcast from the valley of Yosemite and contact a sister school in West Virginia.

The reason for the half-million dollar satellite and its operator to be sent out to California was for a test. NASA wanted to use Kingsburg

Cape Town 2008 GLE participant Chelsey Carlson:

"We were learning a lot about the environment, but we were also learning so much about collaborating with people… I learned to look at environmental issues on a global scale rather than just in the U.S… I realized how important it is for us to work together on these issues and share our findings with each other." Cape Town GLE team below

Hanford Sentinel Aug 20, 2008 Updated May 18, 2021

Leigh-Ann as a student (red hat, left) reporting on weather data in Yosemite National Park in 2000.
A few students also presented at the GLE in Arkansas later that year.

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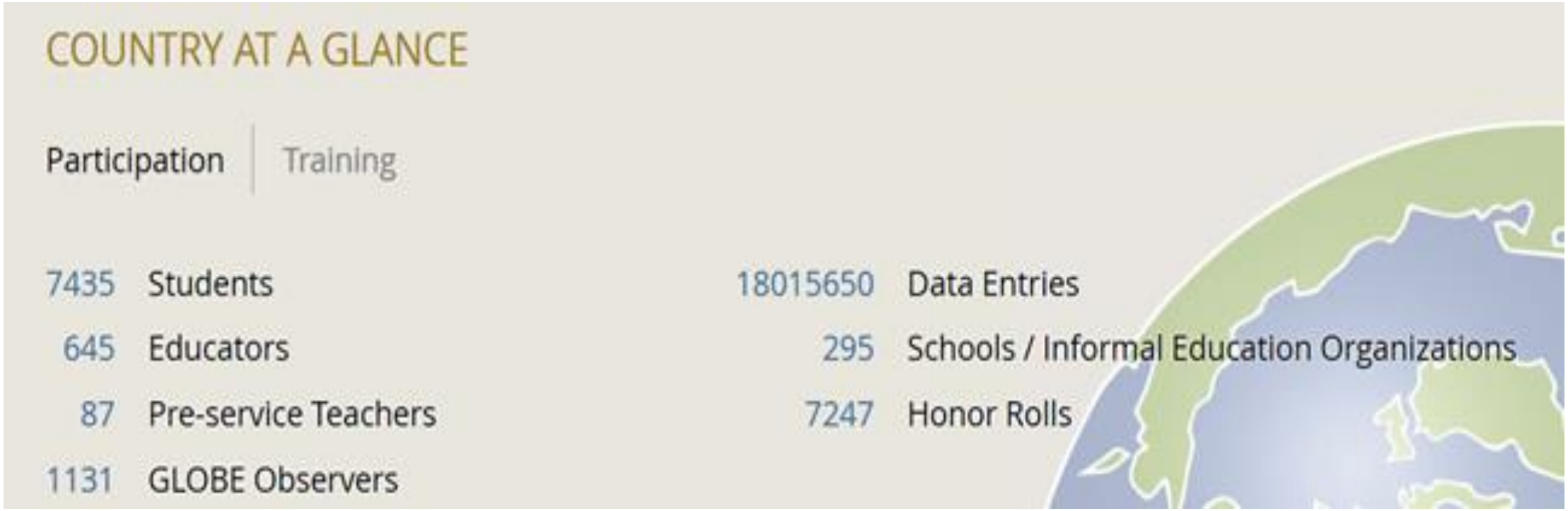
Leigh-Ann's GLOBE Story: Continuing the Legacy

- GLOBE impacted my career choice, encouraging me to get into teaching
- Sense of ownership over the data I had collected
- GLOBE Student Research Symposiums gave students a way to participate in science without the sense of competition
- Focus on collaboration, the process of science, and networking with scientists and researchers.

GLOBE in Croatia:

From Initial Ideas to National Impacts and International Collaboration

Diana Garašić,
Sanja Klubička



GLOBE in Croatia:
Our story—The beginning

- Post-war situation: country needed recovering from war wounds.
- Many school buildings were damaged, people displaced, insufficient teaching equipment.

- **The biggest issues were**:
- to provide the schools with computers and internet,
- import measuring equipment and GPS devices.

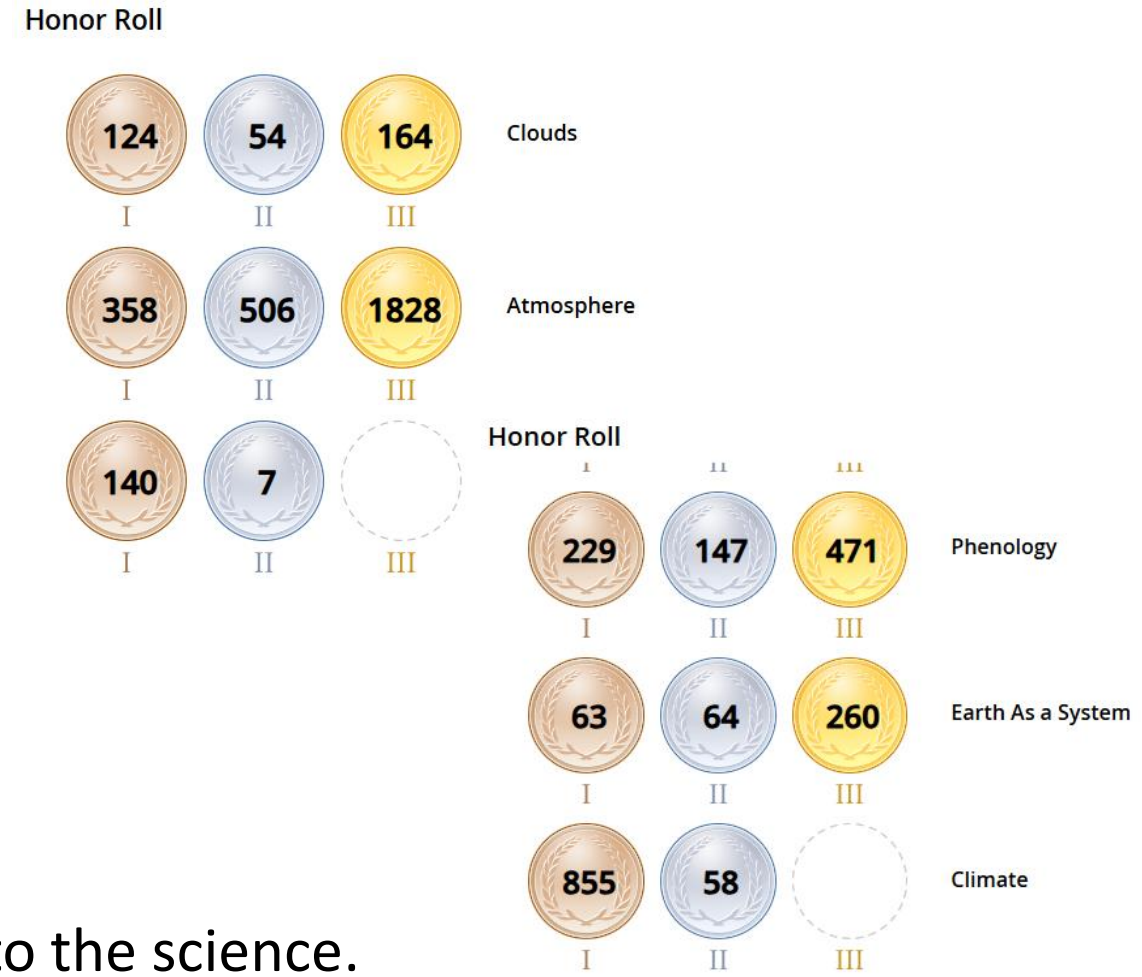
- **GLOBE did not match with national curricula** – implementation model was an extracurricular activity (after classes).

GLOBE in Croatia: Our story: Success

TEACHERS' MOTIVATION

GLOBE was different from everything that had happened in schools before:

- **outdoor and hands on learning**
- **simple equipment** for scientific methods.
- **inquiry based learning** and **project work**
- **developing data literacy**



STUDENTS' MOTIVATION

- Their measurements could contribute to the science.

GLOBE in Croatia: The Impact

SUPPORTING ICT LITERACY

- At the first GLOBE trainings, many teachers **used the computer for the first time** and learned how to use the internet (e-mail).

- Many schools in Croatia received their first computers for the purpose of GLOBE program implementation.

GLOBE Training, 1996.

GLOBE in Croatia: Impact on the School System

- CROATIAN CURRICULAR REFORM began in 2016: promoting
  experiential, hands-on and outdoor learning,
  integration of learning contents,
  problem based teaching inspired by real world surrounding.

- Unlike many others, GLOBE teachers clamed that they are already familiar with such teaching approach and those teaching methods.

- Basic **GLOBE protocols were incorporated in science curriculum**, to serve as the model for scientific methodology.

GLOBE significantly influenced the entire education system, given that many of the curriculum creators had previously gained experience as GLOBE teachers.

THE SULTANATE OF OMAN

AND THE GLOBE

PROGRAM

Presenters:

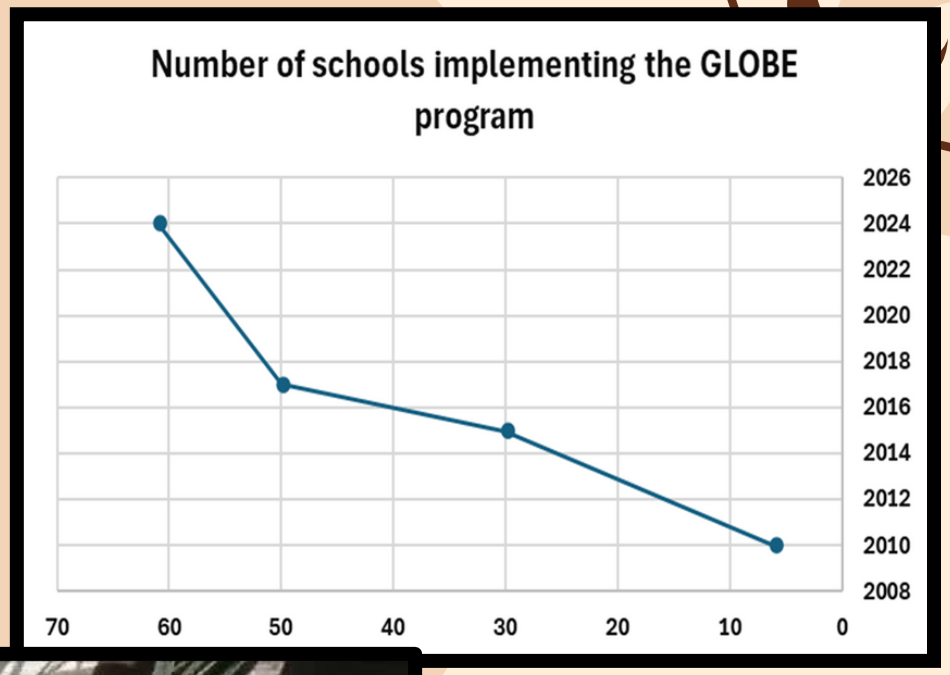
Bader Salim Hamed Al Mamaari
Fakhria Sawad Mohammed Al Blush

Sponsored by: NASA Supported by: NSF NOAA

8 DECEMBER 2009

Her Excellency the Undersecretary of the Ministry of Education in the Sultanate of Oman and the Administrative Assistant for External Relations at NASA in the presence of His Excellency the US Ambassador in Oman

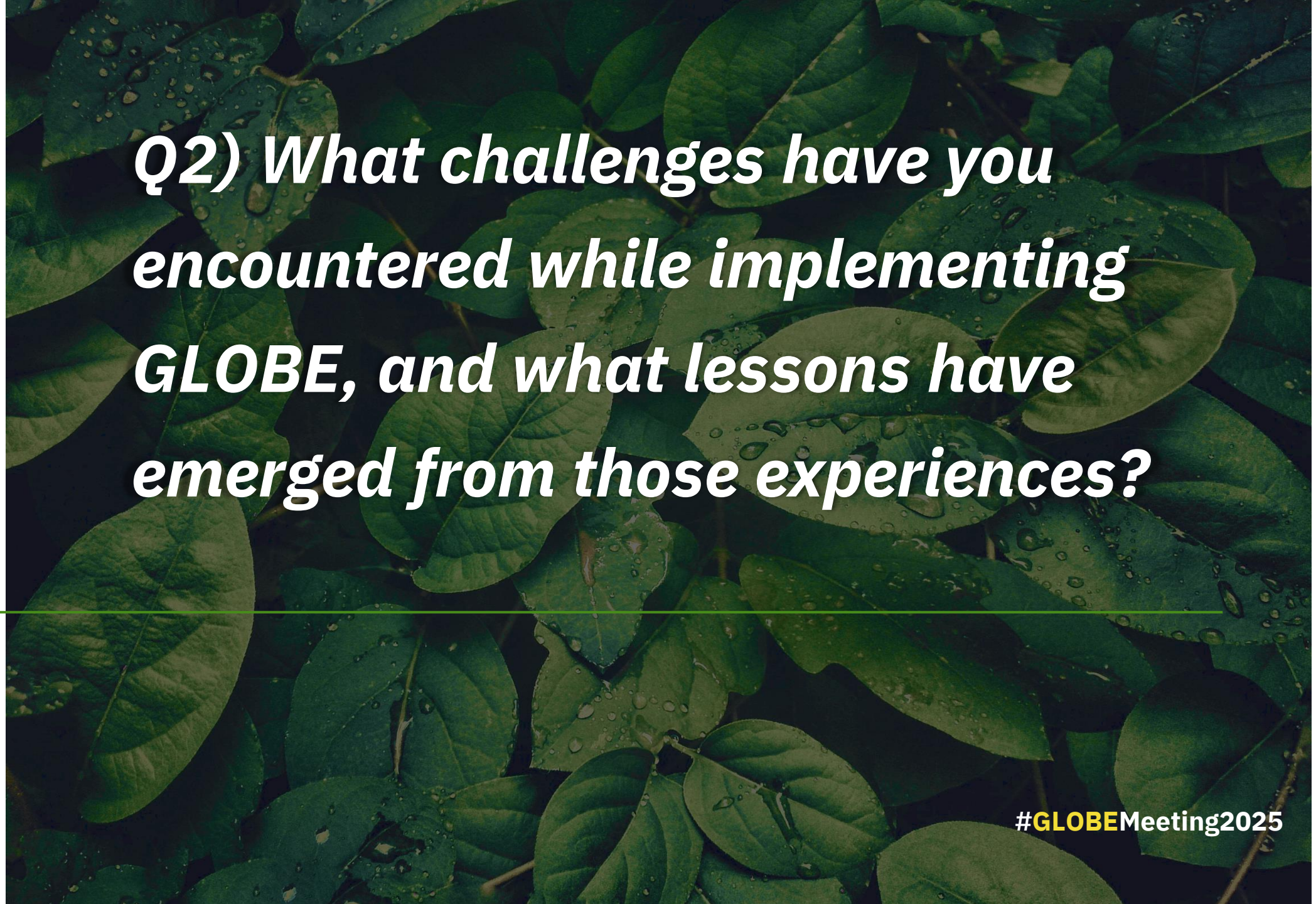
TEACHER AND STUDENT TRAINING



THE PRESENT: PARTNERSHIP


Envi

OMANI SOCIETY AND GLOBE PROGRAM ,INSPIRATIONAL STORIES


Q2) What challenges have you encountered while implementing GLOBE, and what lessons have emerged from those experiences?
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CHALLENGES AND LESSONS LEARNT—Kenya

CHALLENGES

- Funding limitations for scaling and sustaining GLOBE activities, especially in resource-constrained settings.
- Time constraints and competing priorities in the school system limit the adoption of inquiry-based approaches like GLOBE.

LESSONS

- Embedding GLOBE into existing national education or environmental programs increases sustainability.
- Aligning GLOBE activities with curriculum goals improves acceptance and implementation.
- Teacher champions and school leadership support are crucial for successful integration.

USA- KHS California

"**Science** is a continual loop of **questions**, **challenges, experimentation, observation,** and **discovery**, which is a lesson I could not have learned without **GLOBE**."

Saneh Kahlon (KHS GLOBE Alumnus)

Challenges and Roadblocks:

- Time constraints for planning and implementation
- Protocols not followed and missing metadata
- Less than ideal site

Lessons Learned:

- Technology (such as Observer app) is useful for saving time
- Teachable moments for future students
- Metadata critical for site definition and analysis
- This is a marathon, not a sprint; it will get better over time!

GLOBE in Croatia: Challenges and Lessons Learned

- We realized that just conducting the measurements does not sustain GLOBE implementation - additional encouragement was needed.
- **In 1998, we launched the GLOBE School Science Fair and Competition (GLOBE games)** funded by the Ministry of Education.
- **It soon became clear that this annual gathering is the main motivating factor for majority of school teams.**

GLOBE in Croatia: Challenges and Plans

The main problem in implementation is the lack of money, which is reflected in	Our plans targeting the problems:
reduced attendance at GLOBE meetings and trainings	introducing attractive topics in **online meetings**
reduced (limited) number of school teams that can be invited to the GLOBE Games	designing **additional opportunities** for gathering GLOBE participants, such as a summer school
reduced opportunities for participation in international events	withdrawing financial support from EU funds intended for international cooperation.
some teachers still hesitate to start **international cooperation** or participation in regional and wider events, challenges or campaigns.	**promoting good experiences** and examples of our schools who successfully joined international projects.

Challenges implementing GLOBE in the Sultanate of Oman

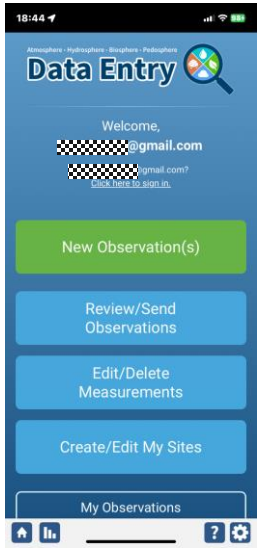
Challenges and Lessons—Taiwan Partnership

E-mail: globe@pblap.tw

➢ What roadblocks have you faced and what have you learned?

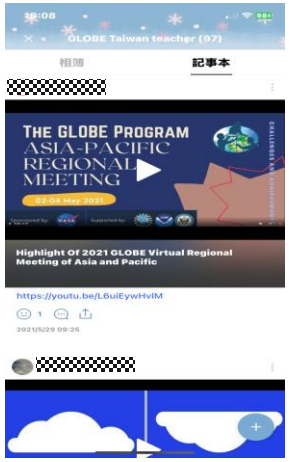
CHALLENGE: Language Barrier

IMPROVEMENT: We helped to translate GLOBE materials and hosted English Presentation Skills workshop for teachers.



CHALLENGE: High turnover rates among teachers and students have posed difficulties for interschool GLOBE collaboration.

IMPROVEMENT: We provides management support to assist schools in implementation and knowledge transfer, helping overcome challenges and ensuring continuity across participating schools.



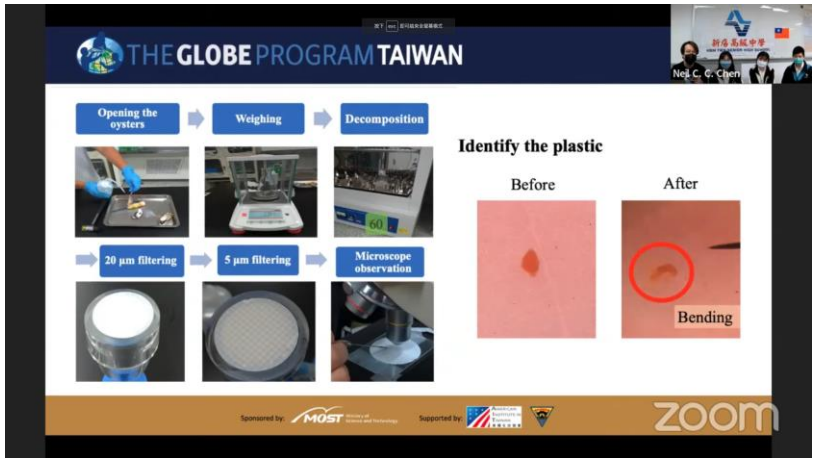
Challenges and Lessons

E-mail: globe@pblap.tw

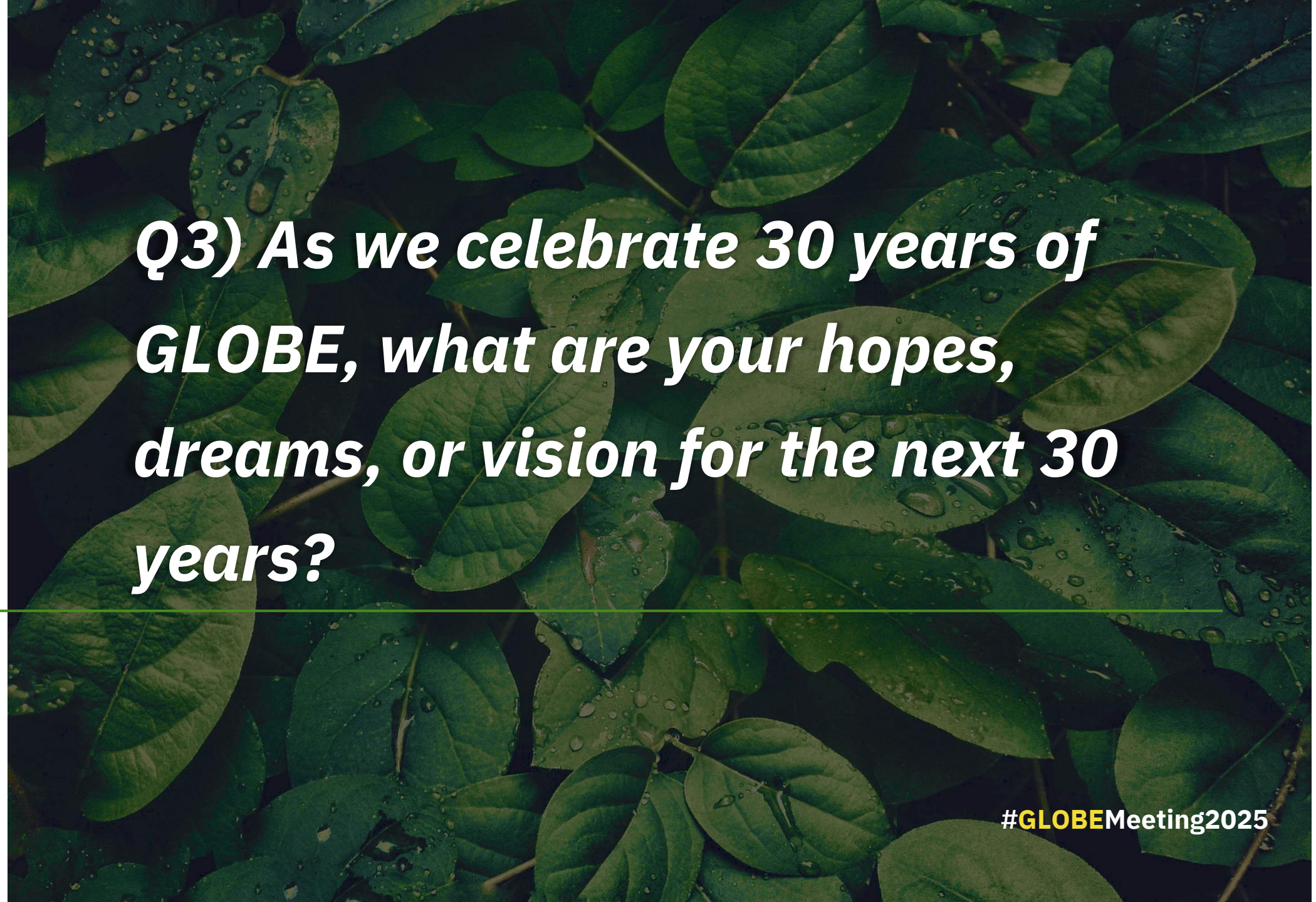
➢ **What roadblocks have you faced and what have you learned?**

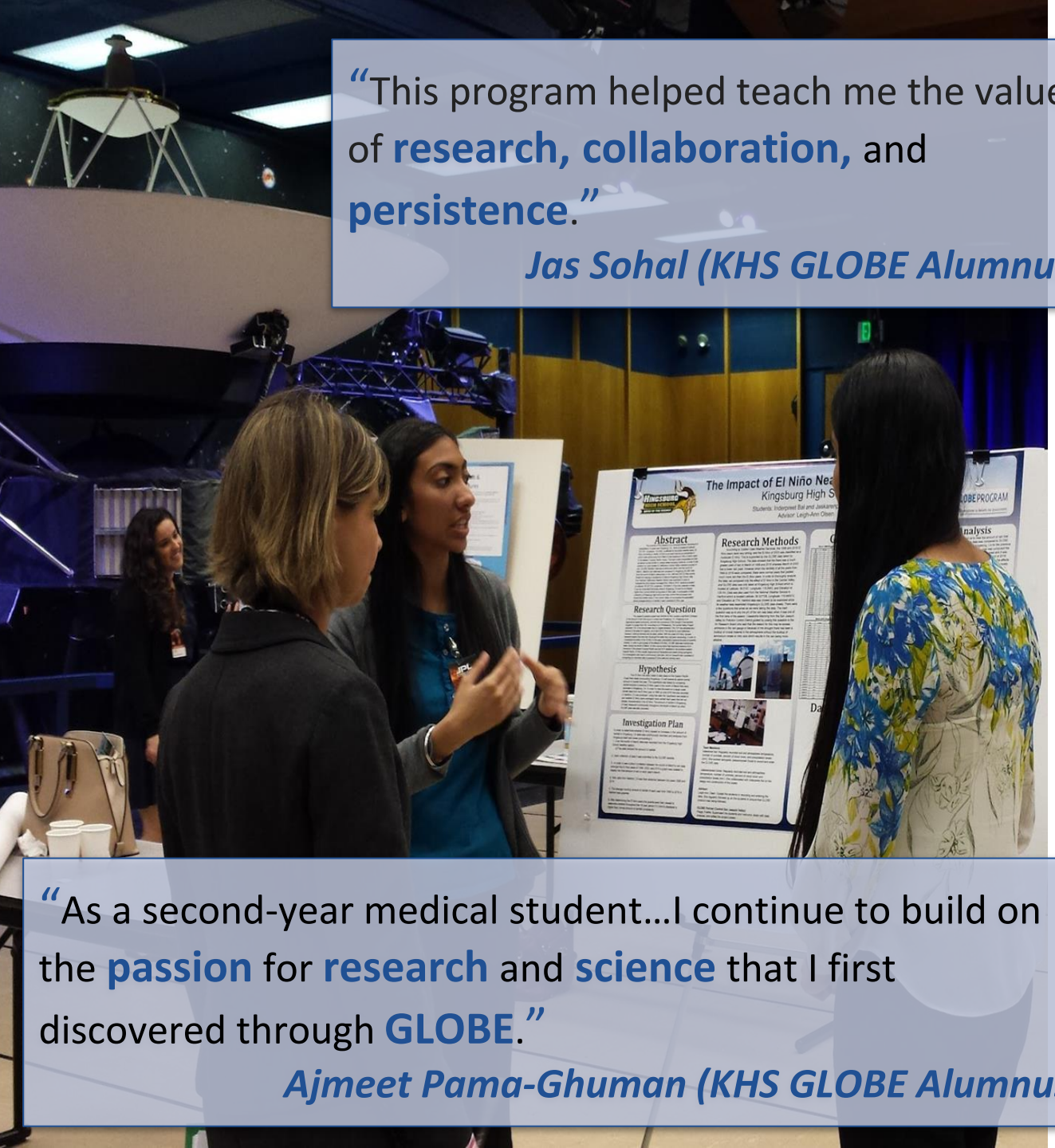
CHALLENGE: COVID-19 Pandemic

IMPROVEMENT: Implementing GLOBE through video conferences or online trainings



Challenges of Implementing GLOBE in Argentina, Uruguay and Brazil


Q3) As we celebrate 30 years of GLOBE, what are your hopes, dreams, or vision for the next 30 years?
#GLOBEMeeting2025



"This program helped teach me the value of **research, collaboration,** and **persistence**."

Jas Sohal (KHS GLOBE Alumnus)

"As a second-year medical student…I continue to build on the **passion** for **research** and **science** that I first discovered through **GLOBE**."

Ajmeet Pama-Ghuman (KHS GLOBE Alumnus)

The Future of GLOBE at KHS

- Peggy's passion for science turned KHS GLOBE into an institution
- Funding is critical to its continued success; lucky to have the support
- Students continue the work of their family members who contributed
- Technology assists students, does not replace them

E-mail: globe@pblap.tw

Looking Forward- Taiwan Partnership

➢ What are your hopes or dreams for the next 30 years of GLOBE?

- In the near future, we will keep deepening international collaboration and student-led research. Moreover, we plan to integrate **AI technologies** and **drone observations** to enhance students' technological literacy and address environmental challenges. Therefore, we plan to invite more experts and scholars to strengthen interdisciplinary and cross-sector collaboration.

- To maximize the impact of the GLOBE Program in Taiwan, we aim to strengthen students’ scientific inquiry and sustainability literacy by integrating local resources and technologies. **Cross-institutional collaboration** and resource sharing will support deeper local engagement and raise international visibility. (Institution: Central Weather Administration, Ministry of Environment, Water Resources Agency, Agency of Rural Development and Soil and Water Conservation, MOA, etc.)

GLOBE’S VISION IN KENYA

To empower learners, educators, and communities across Kenya through hands-on environmental science education, promoting data-driven decision-making, sustainability, and a scientifically literate society that actively contributes to local and global environmental stewardship.

Vision for GLOBE in Argentina, Uruguay and Brazil in the Next 30 Years

#GLOBEMeeting2025

LOOKING AHEAD—The Sultanate of Oman

The GLOBE Program as a Path to Vision 2040 and Carbon Neutrality

The Sultanate recognizes the GLOBE Program as an innovative educational tool that supports several objectives of Oman Vision 2040, including:

Promoting environmental sustainability by instilling a culture of scientific inquiry among students.

Fostering innovation and research in STEM fields to tackle pressing environmental challenges.

Achieving carbon neutrality by increasing awareness about climate change and empowering students to take action through localized data collection and analysis.

By engaging students, teachers, and communities, the GLOBE Program is cultivating environmentally conscious citizens who contribute to the Sultanate's long-term sustainability goals.

Vision for GLOBE in Croatia in the Next 30 Years

Audience Q & A

THANK YOU...

See you in the main Zoom room for the Student Exhibition!

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