



**THE GLOBE PROGRAM**

**Welcome  
from the GLOBE Program Office**

**Dr Andy Tasker  
Director**

**Monday 18 July 2011  
Washington DC**

























## The GLOBE Program

Support Learning and Observations to Benefit the Environment  
An International Environmental Science and Education Program

Dear Partners,

30 June 2011

At the end of my first month as Director of the GLOBE Program Office (GPO) I thought I should write to you to let you know about progress. I intend to write every month to keep you up to date with developments and help improve communication throughout the GLOBE Partnership. This letter is for internal use only, so please don't pass on any parts to the media without checking with me first!

My first 2 weeks were hectic, spending time getting to know all the staff here, meeting our sponsors NASA, NOAA and the National Science Foundation in Washington DC, and visiting our satellite office in Tyler, Texas. These meetings have given me a great insight into where we are now, and where we should be.

One of the key areas for all of us going forward is a strategic plan for the whole GLOBE Program, and for the GPO too. Accordingly we've made a good start on a Strategic Plan for the five year period 2012 – 2017. We will have a draft of this to share at the Annual Meeting, and we will also circulate it to all partners who are not there, so that everyone can have a say in the direction of GLOBE. How many schools do we want by 2017? How many teachers trained? We are also developing a plan for web-based teacher training of some basic areas, so we could have 'GLOBE e-Teacher' as an introductory level before full GLOBE training. What do you think of such a move? It should allow many more teachers to get involved!

We're also printing a GLOBE Annual Review for 2010 to highlight just some of the activities around the world carried out by GLOBE partners, teachers and students. We'll be printing enough for 20 copies per country, for you to pass on to key contacts and supporters, and can print more if you want.

There is also good progress on the website refresh, where NASA has kindly put additional funding into a subcontractor (Raytheon) to develop an entirely new website. The Technical Team here has been working hard to make our antiquated database into a fit state to work within this new site.

Finally, and with regret, we've had to make some staff reductions in order to remain within our budget for 2011. We've lost 3 members of the Technical Team over the last two months (Daniel Berger, Russ Gonsalves and Jason Roth) and have had to release another 3 people from the Science & Education Team (Mike O'Toole, Martos Hoffman and Sheila Yule). Several had been with the program for many years, and each has made invaluable contributions to GLOBE. I'm sure I speak for you all in thanking them for their many inputs and wishing them well in their future careers.

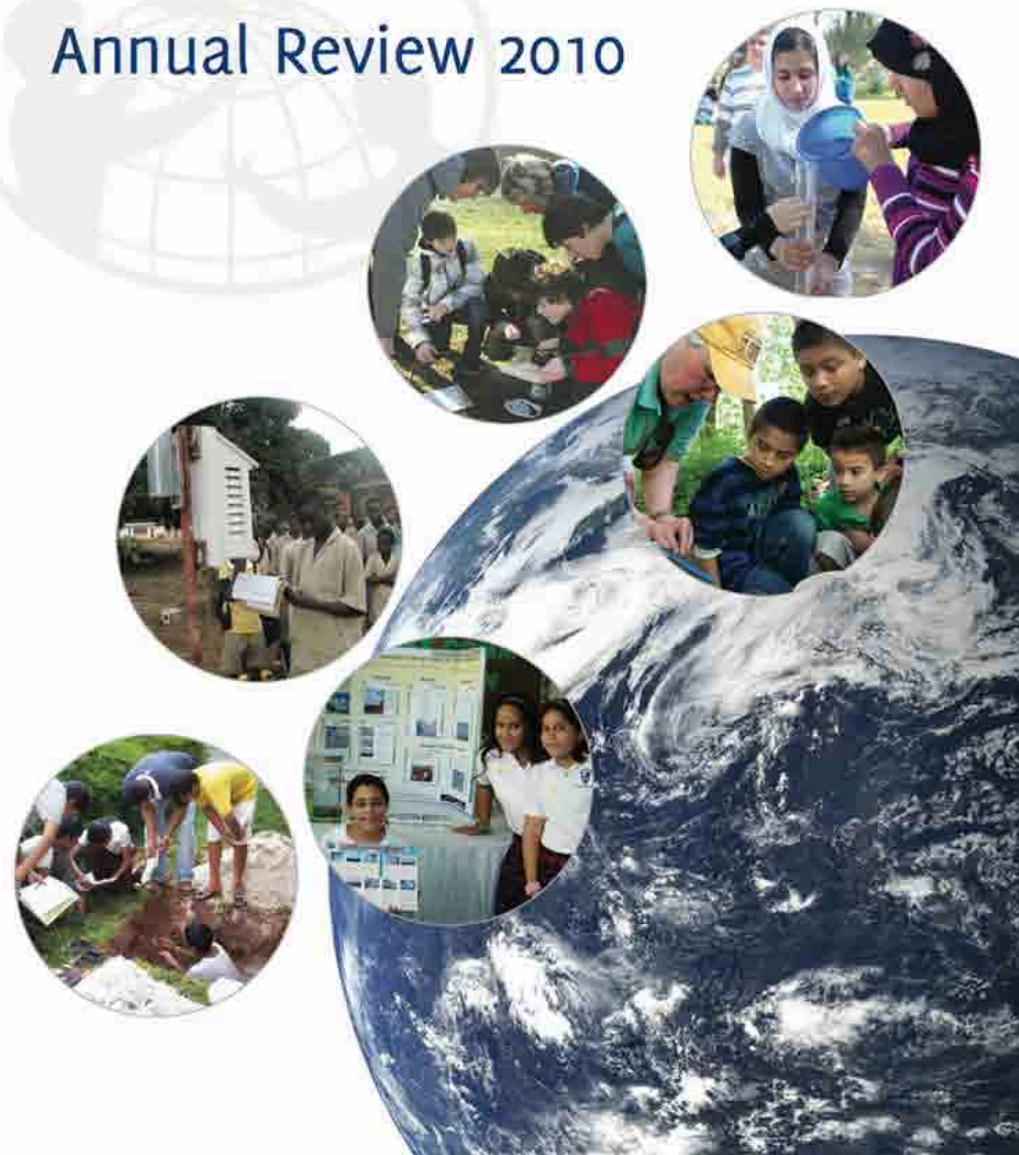
I hope to see as many of you in Washington DC as possible,

Andy Tasker

Andy Tasker, GLOBE Program Office Director



## Annual Review 2010

























## GLOBE Around the World Africa

GLOBE Africa Region:  
22 Countries; 642 Schools;  
1,108 Teachers; 1,097,138 Measurements

GLOBE Africa held its fourth regional meeting in Dakar, Senegal in February 2010, bringing together 20 representatives from 13 countries to discuss joint projects and plan future activities.



GLOBE Africa's fourth regional meeting in Dakar, Senegal.

The meeting included GLOBE representatives from Benin, Cameroon, Cape Verde, Ethiopia, Kenya, Madagascar, Namibia (via Skype), Nigeria, Rwanda, Senegal, South Africa, Tanzania and Uganda. Discussions ranged from preparation for the Student Climate Research Campaign to the Africa regional Mt. Kilimanjaro Project. The meeting was followed by a GLOBE Train-the-Trainer workshop, where 30 teachers from 25 schools were trained in GLOBE Protocol activities aimed for inclusion in student

inquiry projects. The newly trained teachers received equipment ready to set up their study sites to help students build inquisitive relationships with the Earth.

### SPOTLIGHT ON Senegal prepare GLOBE students to become tomorrow's leaders

Lycée Seydina Limamoulaye, a GLOBE High School in Dakar, Senegal, has consistently excelled in a national student achievement test, taking first place in the number of overall students ranked for the past three years. The contest – known as "Concours Général" – functions as a nationwide challenge for schools in the areas of biology, mathematics, chemistry, languages, history, and geography, with awards being made by His Excellence, the President of the Republic of Senegal.

According to Madame Ngossé Fall Bousso, GLOBE Senegal Country Coordinator, "The results are presented again by students on World Environment Day, celebrated on the 5th of June each year in Senegal to stimulate environmental awareness." In 2008, Birane Diouf, now a GLOBE Alumnus still involved with GLOBE activities at Lycée Seydina Limamoulaye, was placed second in Concours Général for the Earth and Life Sciences category.



GLOBE students from Lycée Seydina Limamoulaye study clouds using the GLOBE Cloud Charts.

## GLOBE around the world Asia/Pacific

GLOBE Asia / Pacific Region:  
16 Countries; 2,456 Schools;  
1,148 Teachers; 1,265,548 Measurements

The Regional Office for GLOBE in Asia and the Pacific conducted a myriad of activities in 2010, ranging from student climate research events, hosting school visits by NASA officials (see below), and increasing the training team for the region. Twenty representatives from the Asia/Pacific region, including GLOBE Country Coordinators, Government officials, teachers and scientists met in Dhaka, Bangladesh in April 2010, to plan future student inquiry activities in the region. Following the meeting, trainers from Bhutan, India, Nepal and Thailand attended a regional workshop in New Delhi, India, where a new regional training guide was used for the first time.



GLOBE representatives gather to plan future student inquiry activities in Asia and the Pacific.

### SPOTLIGHT ON GLOBE and NASA link-up in India and Nepal

The GLOBE Asia/Pacific Regional Office in India welcomed Dr. Michael Freilich, NASA Earth Science Division Director in August 2010. Dr. Desh Bandhu, GLOBE Regional Office Director, described the activities of GLOBE in the region and Mr. Rajinder Mehta, GLOBE India Country Coordinator, discussed the role of the Ministry of Environment and Forests in implementing the GLOBE Program in India itself. The NASA team then called in on a GLOBE School - Aileon International School – where Dr. Freilich joined GLOBE students collecting data from their weather station. He went on to give a speech emphasizing the value of the Earth, encouraging students to love and care for their planet in their everyday lives, ending with a question and answer session for students to find out more. This event demonstrates a unique attribute of the GLOBE Program: a platform for students and teachers to interact with real scientists face to face.

In October 2010, NASA Administrator Charles F. Bolden, Jr. visited Yasodhara Baudha Secondary School in Kathmandu, Nepal. Mr. Bolden talked to students and teachers about his experiences as a NASA astronaut, presented books to the teachers, and spoke about the importance of working hard in school to achieve personal and professional goals. He encouraged students not to be afraid of failure and to seek answers to their questions through research and international scientific collaborations. Both visits were an honor for the schools and the GLOBE Asia/Pacific Region.



Trainers discuss implementation methods as they are refreshed on GLOBE Protocols.





Students from OFF College in Pakistan celebrate World Water Day 2010.

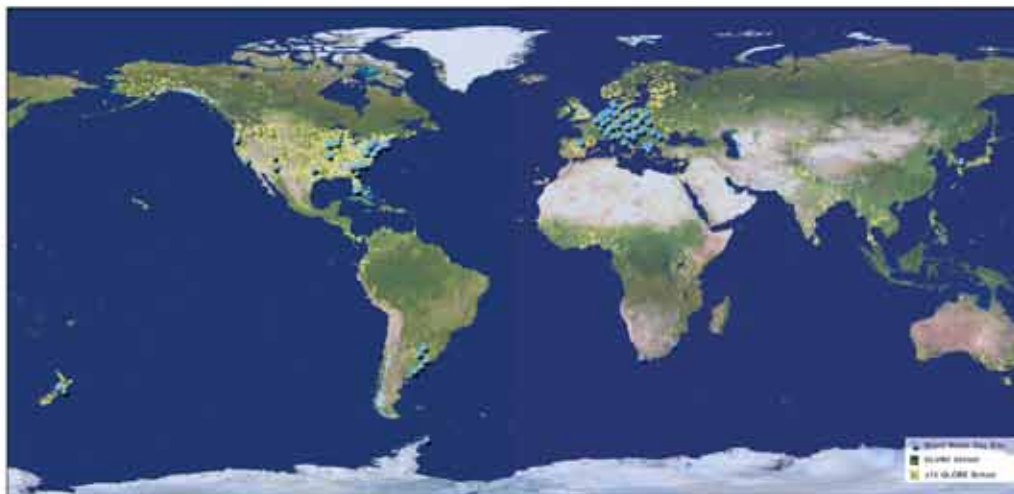
## GLOBE around the world

Students get their hands wet for World Water Day 2010.

GLOBE students from 67 schools in 14 countries participated in the U.N. sponsored World Water Day on March 2010. Students took part in learning activities and used GLOBE Water Protocols to gather data for research projects. Students collected water quality data on five continents during the day. "It is so exciting to see students have the opportunity to be a part of something bigger than just their school," said Dr. Donna Charlevoix, Director of the Science and Education Division for the GLOBE Program Office.

Examples of student participation from around the world included GLOBE school Escuela Provincial No. 38 Julio A Roca in **Argentina**. Here students measured water pH in the Argentine Base Esperanza, located on an island off the northern tip of the Antarctic Peninsula. Base Esperanza is in the middle of an Adélie Penguin rookery, containing roughly 100,000 pairs of resident penguins. The contribution of GLOBE data from this location expands the information for students, educators, and scientists learning about water quality in different parts of the world.

Students at Cape Hatteras Secondary School in Cape Hatteras, **North Carolina, USA**,



GLOBE Around the World - each yellow dot represents one GLOBE school

and the blue dots show those taking part in World Water Day 2010.

celebrated World Water Day with activities throughout the week. Each middle school and high school student



Cape Hatteras Students collect GLOBE Hydrology data in honor of World Water Day.

found one fact about water and they posted their facts throughout the school premises.

Students also created posters about the importance of conserving the limited amounts of usable freshwater available on Earth. Many students were surprised to learn that not everyone in the world possesses the same access to water as they do.

At the GLOBE School Overseas Pakistanis Foundation Girls College in Islamabad, **Pakistan**, students gave presentations on water conservation and conveyed the importance of access to clean water through beautiful art pieces that were then exhibited at the college. Dr. Khushi, a renowned scientist and teacher, delivered a lecture

emphasizing water quality. Students then went on a GLOBE Water Walk at Lake View Park and ended the day using GLOBE Protocols to collect hydrological data from the Rawal Lake and Chatrar Park.

GLOBE school Bandanawattia Parakrama Maha Vidyalaya in Gampaha, **Sri Lanka**, commemorated World Water Day



GLOBE Students in Argentina participate in World Water Day.

with a Hydrology workshop for students and teachers. GLOBE Country Coordinator Damayanthi Balasuriya and GLOBE Trainer Shanthi Siriwardhana collaborated with the Ministry of Education and the Gampaha Zonal Education Office to host the event. Sixth and seventh grade students from WP/Gm/ Parakrama Maha Vidyalaya participated along with GLOBE students and teachers from WP/Gm/ Dompe - Siyane Vidyalaya and WP/Gm/ Kuruwamulla Maha Vidyalaya. Students discussed the water crisis, and the relevance of GLOBE Protocols for

gathering data to use in research projects.

The George community in **South Africa** is familiar with effects of the water crisis as they are experiencing the worst drought in 100 years in the Western Cape of Africa. For World Water Day, GLOBE schools in George, Western Cape and Indwe, Eastern Cape, concentrated on the problem of water accessibility with a full week of activities. Students created awareness posters to express the harmful reality of water limitations and water audits were integrated into math classes to demonstrate the importance of preservation.

Forty-four schools from Europe and Eurasia participated in World Water Day, including eight schools from the **Czech Republic**. Students from Gymnazium Kadan, collected and removed garbage around an important spring and stream in a nearby village. They then carried out botanical surveys to learn about local water sources. At ZS Trebic School, older students taught younger students about the value of water sources, how to protect them and how to analyze the quality of water using GLOBE Hydrology Protocols. High school students at Integrova Sredni Skola, Valasske Mezirici, analyzed water quality and demonstrated tools that could be used within the GLOBE Hydrology Investigations for future research projects.

Dr. Teresa Kennedy, Director of the International Division for the GLOBE Program Office and GLOBE U.S. Country Coordinator, said: "It is phenomenal to see data received from all over the world for a common purpose. These simultaneous analyses by so many students in differing environments build useful knowledge about Earth's water supply and provide baseline data for future studies."







Thanks to our GLOBE Partners around the world ...



... and thanks to our global supporters!









## **Draft GLOBE Program Development Strategy 2012 – 2017**

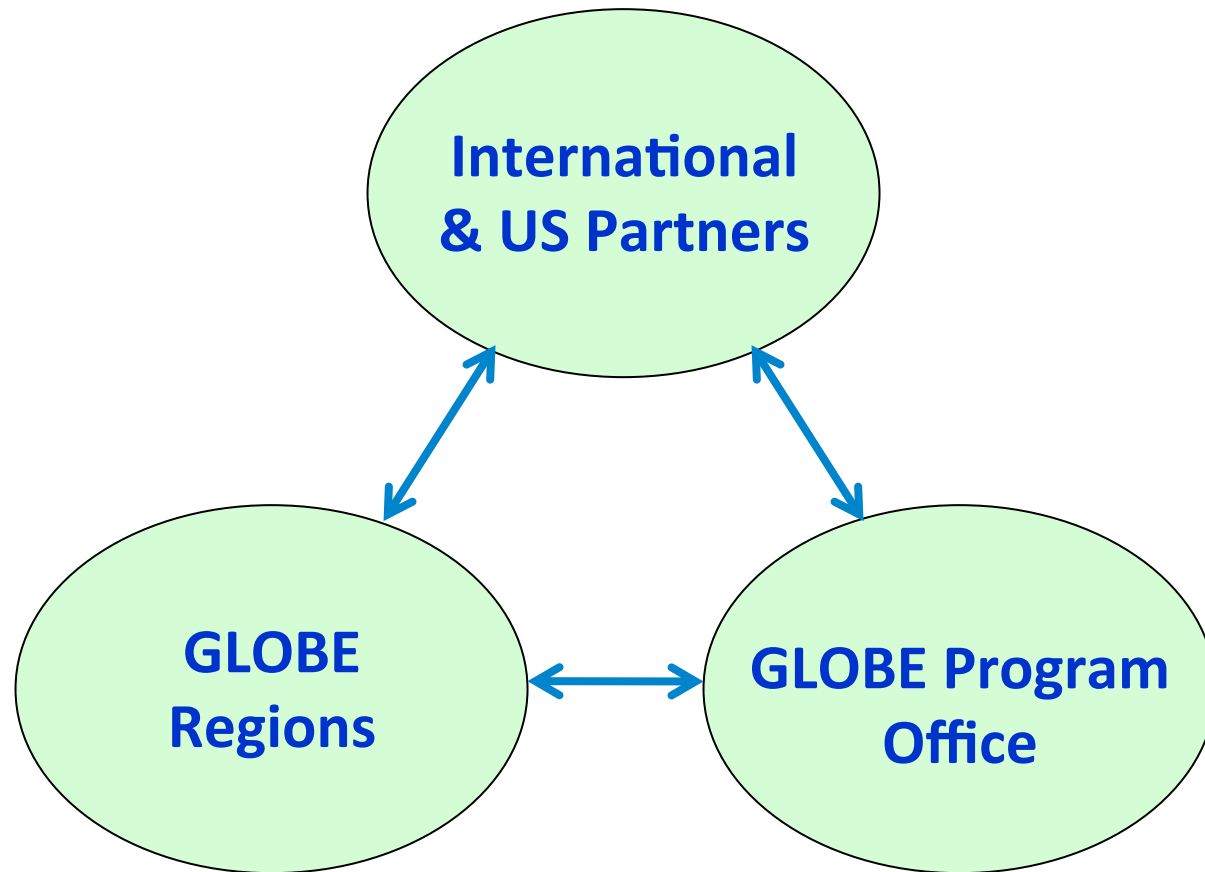
- 1. What is the GLOBE Program?**
- 2. The GLOBE Program Organizational Structure**
- 3. The GLOBE Program Operational Structure**
- 4. Opportunities over the next five years**
- 5. Draft Performance Measures, Goals and Actions**





# THE GLOBE PROGRAM

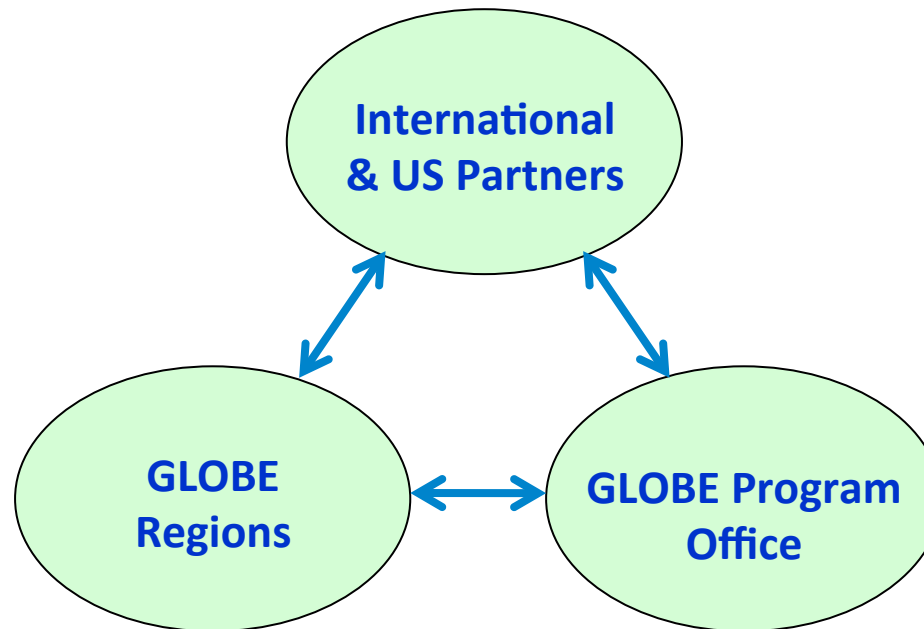
## Structure



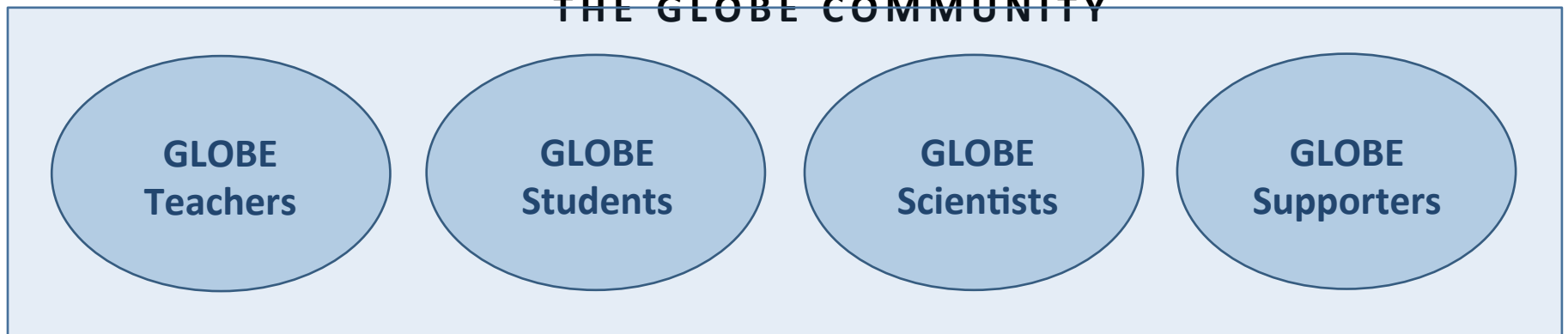




# THE **GLOBE** PROGRAM



## THE GLOBE COMMUNITY







# THE **GLOBE** PROGRAM

## Function

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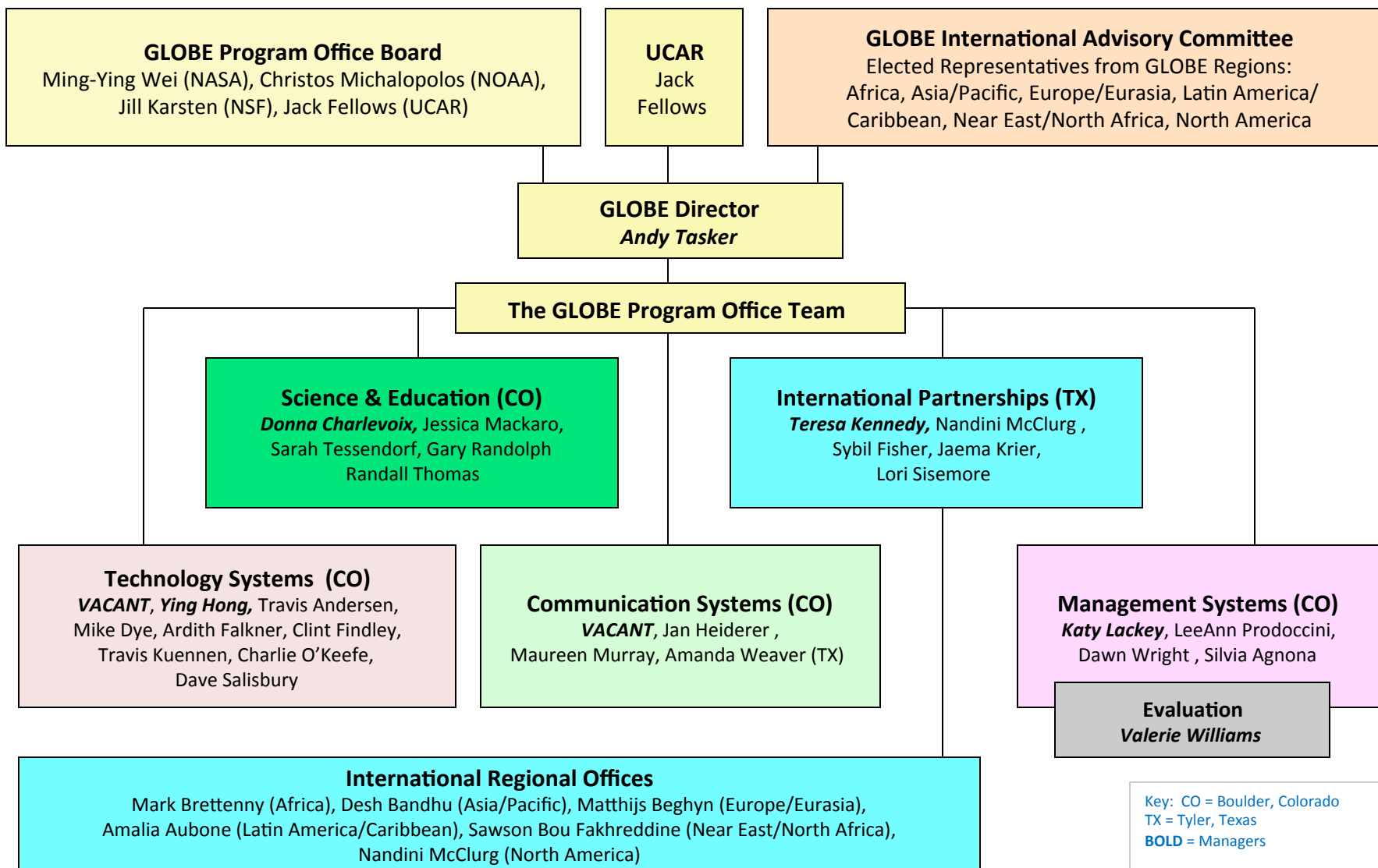
Primary Purpose

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# GLOBE Program Office Organizational Chart

17 July 2011







THE **GLOBE** PROGRAM



## **GLOBE Learning Expeditions**

**Helsinki, Finland, June/July 1998**

**Fayetteville, Arkansas, U.S.A., June 2000**

**Šibenik, Croatia, June/July 2003**

**Cape Town, South Africa, June 2008**

**Where in 2013? Bids now sought!**

**(and Annual Meeting 2012)**









THE **GLOBE** PROGRAM

15<sup>th</sup> **GLOBE**

**Annual Partner Meeting**

17 - 22 July 2011

*Washington, D.C.*

**Expanding International Perspectives About Climate**

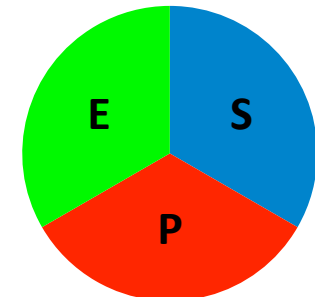




## Monday - Learning

**Monday, 18 July**  
**GLOBE Program**  
**Updates**  
**09:00 – 17:00**  
**& Posters**

09:00	Opening and welcome
11:00	Keynote speaker: Dr. Waleed Abdalati, NASA Chief Scientist
12:00	Lunch
13:30	Regional Projects
15:30	Ocean For Life Live Broadcast from Channel Islands, California
16:00	Community Presentations (concurrent sessions)
18:30	Poster Presentation Session I
20:30	Poster Presentation Session I End

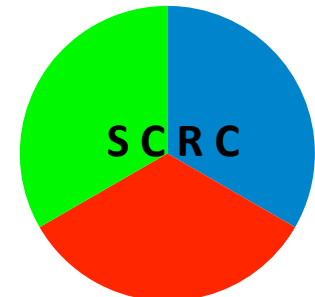






## Tuesday - Engaging

<b>Tuesday, 19 July</b> <b>GLOBE Community</b> <b>Input</b> <b>09:00 – 17:00</b> <b>&amp; Posters</b>	09:00	Overview of the Events for the Day
	09:15	Community Input on the Future of The GLOBE Program
	11:00	GLOBE Technology Refresh
	12:00	Lunch and Exhibits
	13:30	Update on Student Climate Research Campaign (SCRC) (concurrent sessions)
	18:30	Poster Presentation Session II
	20:30	Poster Presentation Session II End







## **GLOBE Student Climate Research Campaign (SCRC)**

### **1. Foundation Experiences**



These introductory activities allow students to study real data and understand key concepts of weather and climate.

### **2. Intensive Observing Periods**



Students from around the world will be encouraged to take themed measurements over a short period of time, and analyse their data.

### **3. Research Investigations**



Ultimately, students can carry out their own research projects, either alone, or with other schools in your country or around the world.





## Wednesday - Options

**Wednesday, 20 July**  
**Optional Activities**  
**10:00 – 17:00**

10:00	Optional Activities: <ol style="list-style-type: none"><li>1. Embassy and Government Visits</li><li>2. Earth: The Operators' Manual (Film Viewing)</li><li>3. Visits to Washington, D.C.</li></ol>
11:30	Lunch
14:00	Optional Activities: <ol style="list-style-type: none"><li>1. Embassy and Government Visits</li><li>2. Earth: The Operators' Manual (Film Viewing)</li><li>3. Visits to Washington, D.C.</li></ol>
15:30	Presentation on Social Media



[www.wmata.com](http://www.wmata.com)



Geoff Haines-Stiles



Ann Davison

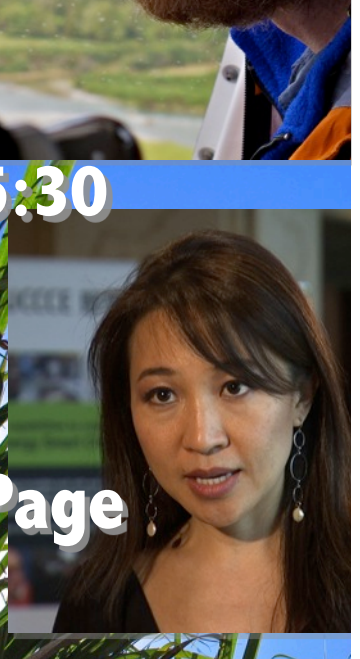
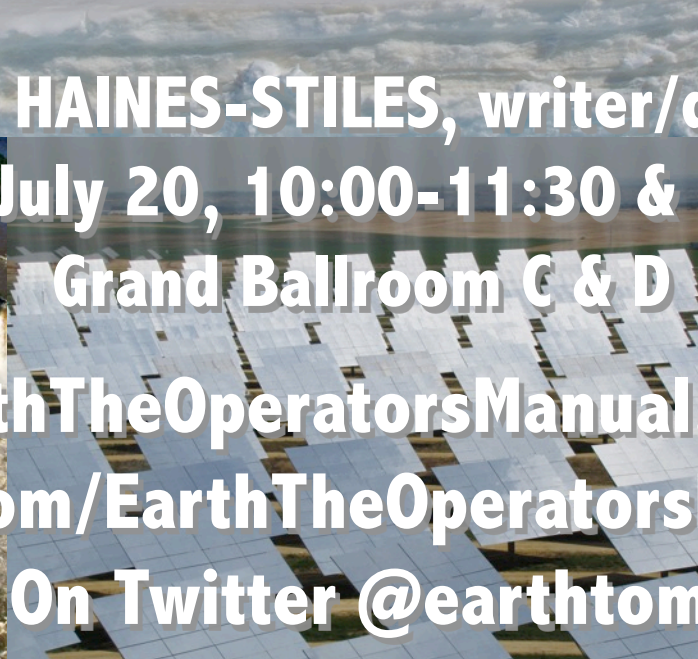




**“Your planet is due for  
an oil change!”**



**Earth science... climate change... & renewable  
energy, for a sustainable future.**



**GEOFF HAINES-STILES, writer/director**

**Wednesday July 20, 10:00-11:30 & 14:00-15:30**

**Grand Ballroom C & D**

**EarthTheOperatorsManual.com**

**Facebook.com/EarthTheOperatorsManual.Page**

**On Twitter @earthtom**





## Thursday - Discovery

<b>Thursday, 21 July</b> <b>Field Day</b> <b>07:00 – 17:00</b> <b>&amp; Banquet</b>	07:00	Depart for Goddard / Patuxent – ‘Exploring the Connections among Spheres’
	15:30	Leave Goddard / Patuxent
	18:30	Banquet with guest of honor NASA Administrator Charles F. Bolden, Jr.
	20:00	Group Photograph
	22:30	Banquet End







## Friday – ESSPs and beyond

**Friday, 22 July**

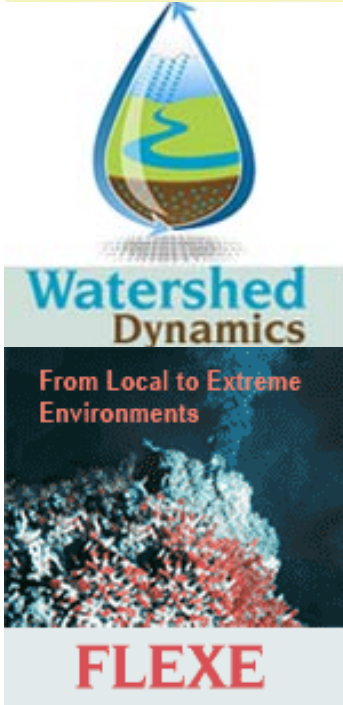
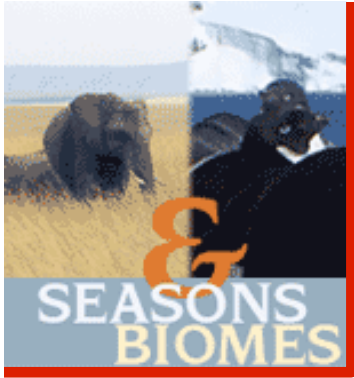
**GLOBE Community  
Workshops and Next  
Steps**

**09:00 – 16:00**

08:00	Update on ESSPs
09:00	Community Workshops (concurrent sessions including ESSPs)
11:30	Lunch
12:30	Community Workshops (concurrent sessions including ESSPs)
15:00	Conference Summary and Next Steps
16:00	Close of Meeting







# ***GLOBE Seasons and Biomes***

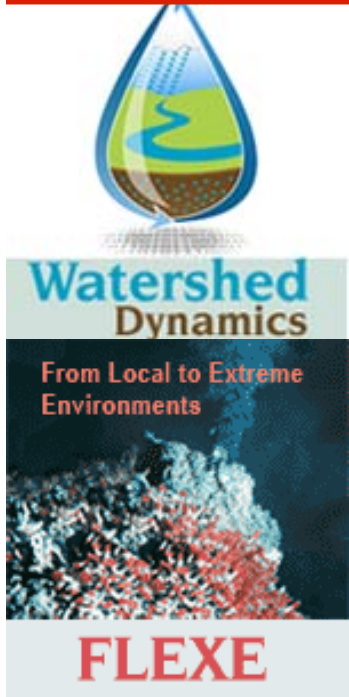
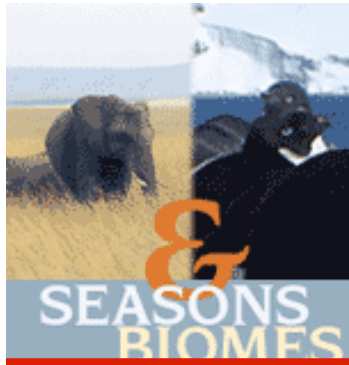
## ***Why Seasons and Biomes?***

- Engage students in earth science studies by monitoring seasons in their biomes
- Contribute to climate studies worldwide
- Participate in the International Polar Year

## ***Understanding earth system science through***

- New phenology and seasonality protocols combined with classic GLOBE protocols
- Inquiry learning activities
- PD model integrating GLOBE, earth system science, best teaching practices and student scientific investigation process
- Global learning communities





# ***The GLOBE Carbon Cycle Project***

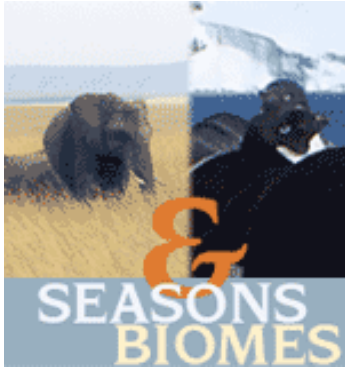
## ***Why the Global Carbon Cycle?***

- Central part of the Earth's climate system
- Altered by humans at unprecedented rates
- Primary driver of climate change

## ***Learning Carbon Cycle Science Through:***

- Field measurements of ecosystems
- Hands-on and computer models
- Classroom experiments with plants
- Mind-expanding activities designed to alter your view of the world!





# ***Watershed Dynamics***

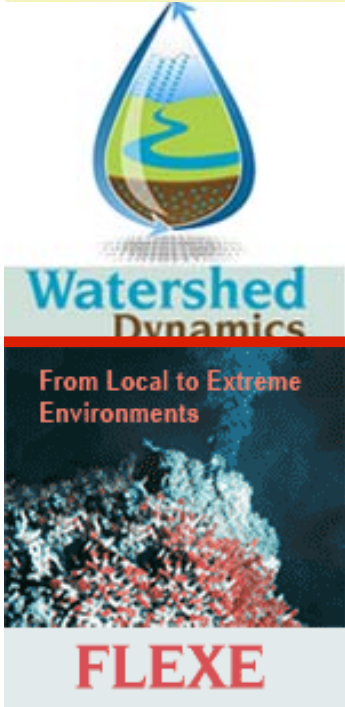
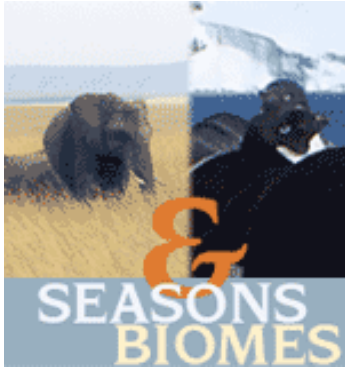
## ***The Watershed is a natural unit of study***

- Water is a limiting factor to sustaining life and the resources vary around the world
- Humans will impact the water cycle
- Watersheds provide natural boundaries for environmental investigations

## ***Using scientific datasets in GIS investigations***

- Access to large-scale scientific datasets and professional technology
- Ability to draw conclusions about global issues by asking geospatial questions





# ***FLEXE: From Local to Extreme Environments***

## ***Why Study Extreme Environments?***

- Hot vents and cold seeps offer novel examples of integrated earth systems
- “Extremes” capture students’ attention
- Comparison of local to extreme deepens students’ understanding

## ***Learning earth system science through:***

- Facilitated comparison of data/environments
- Links to the extreme environments (deep-sea datasets w/narrative, research cruise websites)
- Community of learners (student-student peer review, student-scientist forums)













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**Expanding International Perspectives About Climate**





**THE GLOBE PROGRAM**

**Thank You!**

**Dr Andy Tasker**  
**Director**

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