



# The **DEVELOPer** Spring 2014

**Global Precipitation  
Measurement (GPM)  
Core Observatory satellite**

# LAUNCH!

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**46** Great Smoky Mountains  
Ecological Forecasting  
Project Spotlight

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Highlights, updates, and activities  
from DEVELOPers across the country! ▶

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SPECIAL THANKS TO:  
*Amber Jones, Emily Voelker, Beth Brumbaugh,  
& DEVELOPers around the world.*

COVER IMAGE CREDIT: Bill Ingalls / NASA

**46** | *Evergreen Eastern hemlock* numbers are dwindling, due to an infestation of the *Hemlock Woolly Adelgid*, a non-native pest.

# Where on Earth!?

*Mystery Location #1*

Throughout this newsletter, you'll see *Earth As Art* images from around the world.

See if you can guess the location for each—or even what you're looking at!

*Answers on Page 49!*



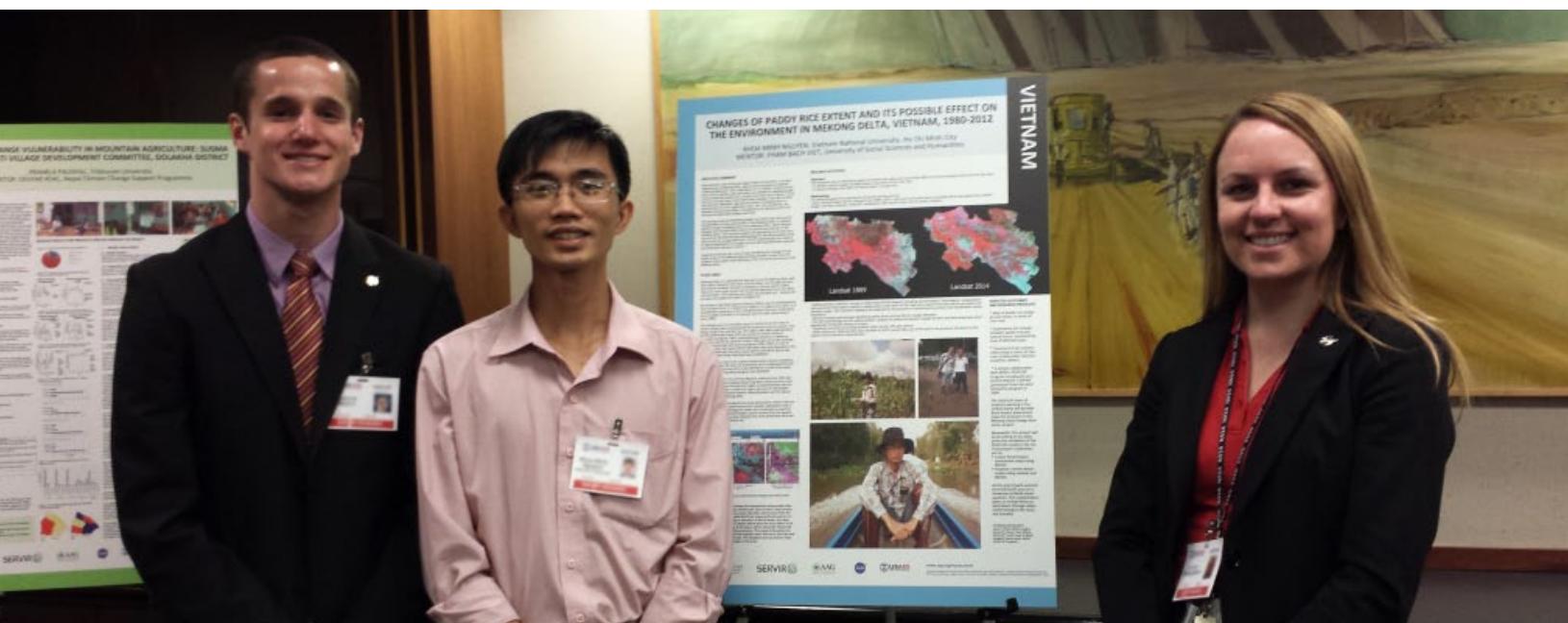
# NASA DEVELOP Program **Highlights**



▲ The attendees of the *2014 DEVELOP Strategic Planning & Leadership Retreat*.

► **The DEVELOP Strategic Planning & Leadership Retreat** took place Jan 7–10th, providing an opportunity for the Program to review 2013 achievements, assess progress driven by the 2012–2022 Program Strategy, and clarify strategic initiatives and action items for the upcoming year.

- The new **DEVELOP online application system** went live on January 20th providing an entirely paperless process for summer application collection and review.
- DEVELOP chaired a special session at the **ASPRS Annual Conference** in Louisville, Kentucky titled “*Applications of NASA Earth Observations*” with nine projects presenting and taking place in the session.
- The **2014 Spring Virtual Poster Session** launched on March 30th and featured 25 projects and their videos, highlighting the applications of NASA data to concerns around the globe.



▲ DEVELOP representatives Sam Weber and Lauren Childs-Gleason with Nguyen Minh Khoa at the *My Community Our Earth / SERVIR Capstone event*.

- ▶ DEVELOP kicked off a collaboration with **SERVIR's My Community Our Earth (MyCOE) Program**, pairing up a Goddard DEVELOP project with Vietnamese MyCOE fellow Nguyen Minh Khoa and his advisor. The program culminated in a capstone event at NASA Headquarters.
- ▶ The DEVELOP **Project Strength Index (PSI)** was created as DEVELOP's response to the need for an Application Readiness Level (ARL) scale used by the Applied Sciences. ↪

▼ DEVELOPers at the *ASPRS Annual Conference* in Louisville, Kentucky.



# Global Precipitation Measurement (GPM) Launch



IMAGE CREDIT: Bill Ingalls / NASA

ON FEBRUARY 28, 2014, NASA AND THE JAPAN AEROSPACE EXPLORATION AGENCY (JAXA) launched the *Global Precipitation Measurement (GPM) Core Observatory satellite*, equipped with the advanced instruments necessary to set a new standard for precipitation measurements from space.

GPM builds upon the legacy of the *Tropical Rainfall Measuring Mission (TRMM)*, which was launched in 1997 and has demonstrated the importance of taking measurements at different times of day to improve weather system observations and hurricane monitoring. As its name implies, TRMM measures rainfall in the tropics; however, the GPM Core Observatory will extend observations to higher latitudes—covering the globe from the Antarctic Circle to the Arctic Circle. GPM instruments will have the capability to detect snow, measure light rain, and provide insights into precipitation microphysics.

The global precipitation data collected by GPM will have far-reaching impacts, from extending capabilities in monitoring and predicting hurricane and other extreme weather events to improving forecasts for natural hazards such as floods, droughts and landslides as well as enhanced agricultural crop forecasting and freshwater resource monitoring.

DEVELOPers across the country took part in a GPM Launch Party, watching the live feed from Tanegashima Space Center, Japan. ▶▶



▲ GPM launch parties at several DEVELOP nodes.  
Congratulations GPM!

Goddard Space Flight Center's

# Fritz Policelli



## ***How did you come to work with NASA?***

I WATCHED THE APOLLO II LAUNCH TO THE MOON WHEN I WAS 5 YEARS OLD. My dad woke me up because it was late at night when Armstrong stepped on the moon. He had a tripod set up with a polaroid camera aimed at our black and white TV, and when Armstrong stepped on the moon, he snapped a picture.

My dad worked in aerospace, so I guess I was immersed in the aerospace culture, and realized that's really what I wanted to do.

I was in the Cornell University class of '86, and studied mechanical engineering. My first job was with Pratt & Whitney commercial jet engines. While there, I worked on 757 engines, and got my masters degree in mechanical engineering. I went from being a paperboy to a jet engine designer in 4 years, and I always say that's the power of an education.

I worked there for a while, and decided what I really wanted to do was work for NASA, and so I looked for places that had work in propulsion. The big work was being done at Marshall and Stennis, so I packed up and moved to southwest Mississippi.

*“That's the power of an education.”*

*“...1) Water, 2) Water, and 3) Water.”*

## **So you started in engineering! How did you come to find yourself where you are now, in Earth Sciences?**

In '98, there was an opportunity in the Earth sciences on a really cool project: the commercial data buy. I went to work on it. We were trying to see about getting commercial sources of data for the scientists. There were no IKONOS or QuickBird or Worldview then, and, in fact, part of the mission was to help to develop that industry.

I had a total of 70 million dollars to work with, and established contracts with aircraft companies that were flying different types of sensors. We set up a web-based process for scientists to propose data that they needed, and we would make that data available to scientists.

I had something that the scientists wanted, so I got to learn about what the scientists wanted to do with this data. I learned a lot about different aspects of Earth sciences, that way.

In 2002, I went to D.C. for Senator Lott as a NASA detailee, and essentially worked as a staffer. I did that for a year, and I worked at NASA HQ for a while, where I met Shahid Habib, and then came over to work at Goddard.

Since then, I started working on other applications, including the effects of errordial mass ejections on the effects of power grids and satellites. I started working in water very early on. Our director used to say, ***“It’s all about 1) Water, 2) Water, and 3) Water.”***

I've worked on a lot of other applications, but the water ones are what I'm most interested in. Flooding was an interest early on, and then from there related applications like drought, water resources, and agriculture.

## **Could you tell us a bit about all the traveling you've been doing lately?**

I've been going to North Africa and the Middle East quite a bit, such as Morocco, Tunisia, Jordan. We're working with other countries; that's part of a NASA, USAID, and World Bank partnership to study water resources in that area, build use of remote sensing capacity.

The models all indicate that that region is going to get hit with very hard climate change, and there are a lot of people throughout the U.S. government and world organizations who are very concerned about the effects of that.

## **How did you start working with DEVELOP?**

My first experience working with a DEVELOP participant was when I was at Headquarters, since for a long time there was one DEVELOPer often stationed at HQ. I kind of made friends with him and kind of ended up being his mentor. Mike Ruiz knew that I was working with this person at HQ, and asked if I wanted to start up something at Goddard.

It was really small for a quite a while, with one, maybe two people. And I've just always enjoyed it.

## ***Thinking back to the DEVELOP projects you have mentored, if you were a participant, which one would you have most liked to work on?***

There have been a lot of good ones, but I'm always interested in water; I'd like some of the flood modeling and mapping ones we have happening right now.

## **Where are you hoping to see Goddard DEVELOP go in upcoming terms?**

We've got new satellite data coming—GPM was just launched, SMAP is going up in November, and GRACE will have new follow-on data. I'd like to see us using some of that.

## **One more question: Like some DEVELOPers, you're in school, now! What are you studying?**

I'm in the Earth and Planetary Sciences department at Johns Hopkins University, for my Ph.D. I've been part of the AIMS (Academic Investment for Mission Success) Program, which has paid for my classes and my time, which is really awesome. I think NASA is very forward thinking on that kind of thing.

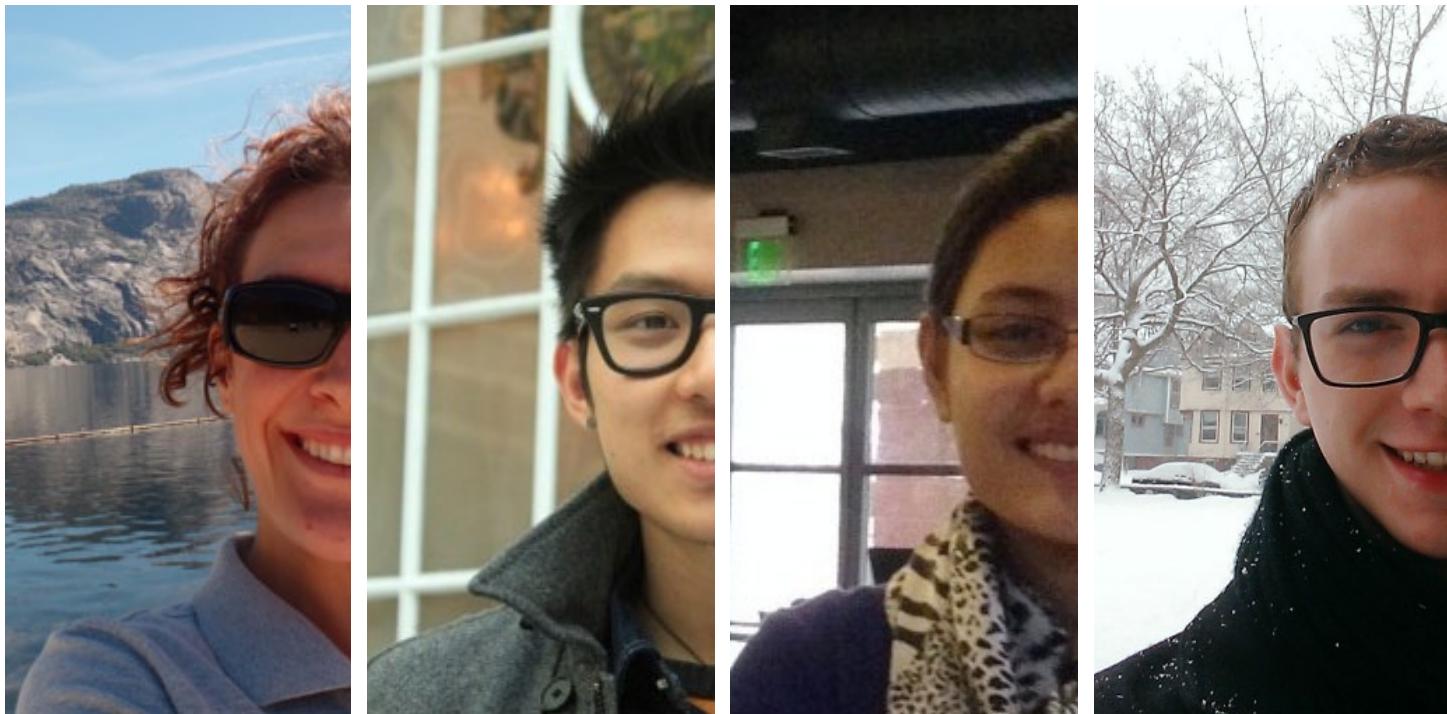
Now I'm studying for my qualifying exams. The time constraint can be hard, but what's the worst that can happen, I've got a job at NASA! ***And I love learning.*** 

*Mystery Location #2*



**Where on  
*Earth!?***

*Answers on Page 49!*



## **campus ambassador corps**

**Attention DEVELOPers!** If your summer with DEVELOP is as enriching and exciting as we expect it to be, then like the rest of us, you will probably want to stay involved and share news about this program with others! Luckily, there is an easy, rewarding way: *the Campus Ambassador Corps!*

The CAC is a network of DEVELOP alumni, typically summer participants, who return to their respective campuses in the fall with a volunteer commitment to host four recruiting events throughout the academic year (two per semester). Recruiting events can be simply handing out fliers to your peers between classes, or as active as staffing a booth at your next campus career fair! DEVELOP will support your efforts by providing orientation, facilitating virtual collaboration with other Ambassadors around the country and DEVELOP's Communications Young Professionals, and by supplying custom material to promote your events and program information to stock your events. We'll also acknowledge your efforts with a certificate of appreciation and a letter of recommendation.

This year, DEVELOP sponsored its inaugural class of seven Ambassadors. Four of them are here to share their experiences and highlight their events!

# Aimee Teaby

Aimee is a graduate student at Cal State in Monterey Bay. In the summer of 2013, she contributed to the Yosemite Water project at Ames Research Center. Amy exemplified DEVELOP Ambassadorship and set the bar high for what can be accomplished through active recruiting. She says, *"It has been quite rewarding to learn that many students from CSU applied to the various DEVELOP centers, several of whom were offered positions."* We're glad your hard work paid off, Aimee!



# Michael Gao

Michael is a civil engineering student at Johns Hopkins University who worked with the Africa Eco Team at Goddard Space Flight Center the summer prior to beginning his DEVELOP Ambassadorship. As an Ambassador, Michael has contributed many ideas that have helped shape how DEVELOP Young Professionals and Ambassadors collaborate. He also has some experience to share with you if you are thinking about becoming an Ambassador too: during campus events, *"having the project video displayed on a laptop helps engage people and to show (not just tell) the direct impact DEVELOP projects have. If possible, getting a table cloth (I went with a Navy color) helps your display look nice."* Michael didn't hesitate to borrow large signage from the DEVELOP node closest to him either! Way to go Michael!

# Suravi Shrestha

A Westminster College student and Summer 2013 Virginia Health & Air Quality team member from DEVELOP's Wise County node, Suravi says the most rewarding aspect of being a Campus Ambassador was being “*able to represent and share DEVELOP to students who previously did not know about the program and who really showed great interest in it. I was glad that I was able to spread the word about DEVELOP to these students.*” We are glad too, Suravi.

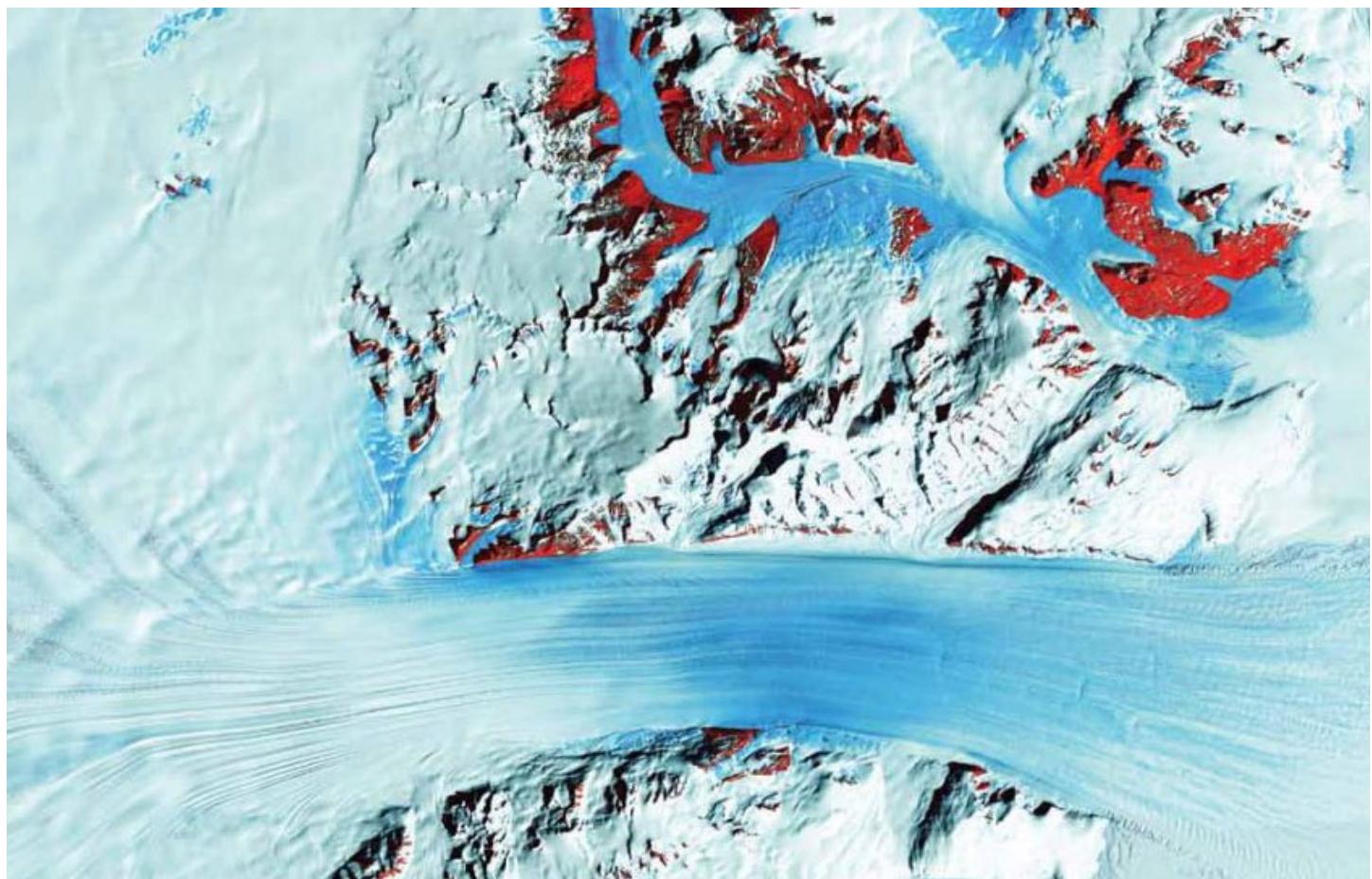


# Corey Walters

From Saint Louis University, Corey is an Emergency Management major who participated in the DEVELOP Pacific Oceans project at Langley Research Center during the summer of 2013. Here is what he says about his decision to become an Ambassador: “*To be a Campus Ambassador is to give back to NASA DEVELOP: to build even greater capacity for the program and to bring awareness to the great issues that NASA DEVELOP is tackling. Serving as an Ambassador is an opportunity to better the program, which means greater outcomes for the environmental issues DEVELOP addresses.*” Thank you for sharing the vision, Corey.

**We are looking for our 2014–2015 Corps!** A DEVELOP Ambassador is someone who is committed to excellence. Are you? **The application process for the 2014–2015 Campus Ambassador Corps will begin in July.** Without you, DEVELOP will not be able to personally reach as many future DEVELOPers who, right now, may not even know about the experiences and opportunities awaiting them with NASA DEVELOP. And if you have recently graduated, read on for other opportunities announced in this edition of the DEVELOPer Newsletter! ☺☺

### *Mystery Location #3*



**Where on  
Earth!?**

*Answers on Page 49!*

Langley Research Center's  
**Lauren Makely**



*“I didn't know at the time how much I would grow with the program.”*

**How did you first find out about DEVELOP, and when you applied did you have an idea of where you would go with the program?**

I WAS LOOKING FOR AN INTERNSHIP OPPORTUNITY FOCUSED ON GIS / REMOTE SENSING, because I wanted to gain experience in remote sensing but my program had limited class opportunities. Some of my classmates had been in DEVELOP and encouraged me to apply. I came into the program wanting to expand my knowledge and skillset, I didn't know at the time how much I would grow with the program.

## We know each DEVELOP node is a bit different—can you tell us a bit about Langley DEVELOP and your role?

Langley DEVELOP is unique in that it's the largest node and we share a floor with the National Program Office, which helps facilitate feedback and iron out ideas. The National Science Advisor, Dr. Ross, is located at Langley, and he is a great resource for a variety of projects. As Center Lead at Langley I'm sort of a "jack-of-all-trades", I write proposals, help with initial literature reviews, edit deliverables, meet with each team weekly, and my GIS background means I can help teams with some issues. With the large number of teams at Langley, my role is more of a project manager, overseeing rather than being on a project.

## How did your experiences with DEVELOP prepare you for the role of Center Lead?

I gained increasing levels of leadership in each of my terms with DEVELOP—in my first term as a team member, I learned how to work with individuals of different educational backgrounds and skill levels, resolve conflicting approaches, and meet deadlines. Last summer as the Langley Assistant Center Lead and a Team Lead, I was able to balance Center-level and project duties as well as build connections with Center and Program-level staff.

## What interests you the most about Earth science? How did you discover your passion for it?

Natural disasters: I'm interested in explaining why different disasters occur and learning from them to better understand and predict future hazards. I discovered my passion for Earth science while working at the Virginia Modeling, Analysis and Simulation Center (VMASC) at Old Dominion University. We were studying flooding in the Hampton Roads area of Virginia, and that experience showed me how you can apply GIS to real issues and affect the lives of others. There's so much still to be learned about how disasters shape our lives.

*"I gained increasing levels of leadership in each of my terms with DEVELOP."*

## **Do you have any other passions?**

I am also passionate about photography and art. One of the coolest things I've gotten to do with DEVELOP was to photograph the summer 2013 closeout and show off other people's passion for their research. Working on the design elements of DEVELOP's social media and DEVELOPedia have gotten me involved in web design—I am interested in how to make things easy to use and understand, experimenting with color, and utilizing clean and simple designs that are still interesting. I also have an adorable niece that I love spending time with and I foster puppies whenever I have the opportunity.

## **What's your favorite part about being Center Lead?**

My favorite part of being Center Lead is getting to be involved in all of the projects, especially because the projects are so diverse. It has given me the opportunity to learn a lot about a variety of different topics, and I have also gotten to meet and work with a lot of different types of people which has helped me improve both my leadership and communication skills. 

### *Mystery Location #4*



**Where on  
Earth!?**

*Answers on Page 49!*

# NASA DEVELOP Node Highlights

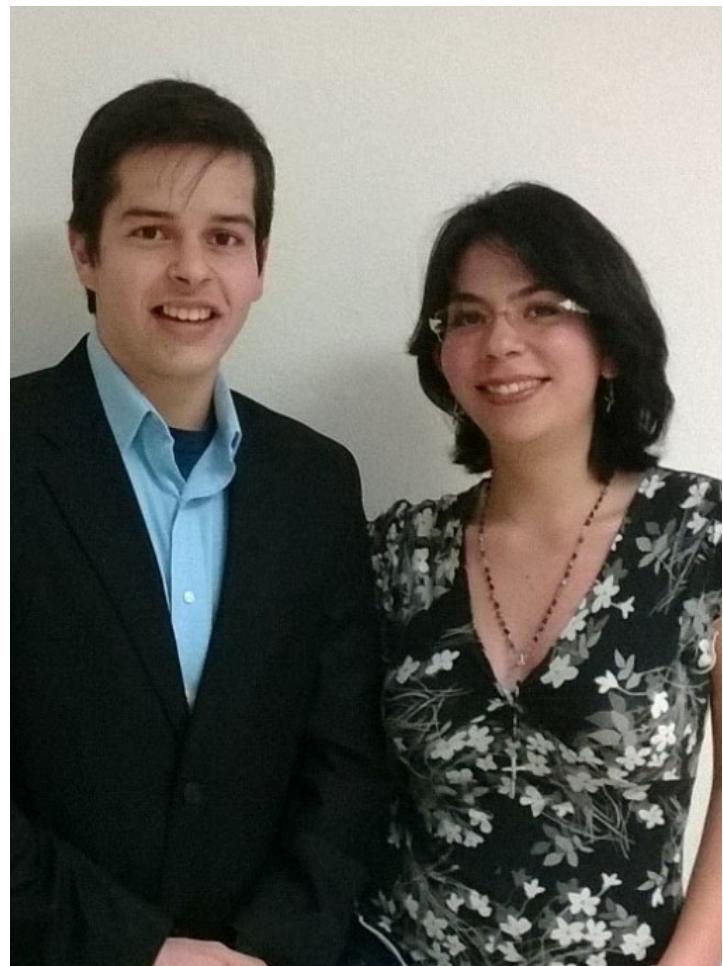


- ▲ African elephants (*Loxodonta africana*) in South Africa's *Kruger National Park*. The park is currently experiencing the loss of woodland habitat, so in a collaboration with the University of Georgia's *South Africa Ecological Forecasting Team*, NASA Earth observations were used to assess the potential causes. The team quantified land cover change in an area inhabited by African elephants from 1998–2013, in an attempt to better understand the relationship between elephant behavior and the landscape changes. Other possible agents of change were also investigated in this study.



## Wise County and City of Norton Clerk of Court's Office

- ▶ Established partnership with the *Department of Mines, Minerals and Engineering* who hosted a team meeting for three hours. The team met with the Deputy Chair of the department.
- ▶ Collaboration with *UVA Wise* and *Mountain Empire Community College*. The team delivered presentations and organized hiring events.
- ▶ A strong partnership was established with the *Ministry of Agriculture in Rwanda* (MINAGRI). MINAGRI is planning to train GIS users in crop monitoring techniques using satellite imagery.



## Tecnológico de Monterrey Campus Saltillo

- ▶ The DEVELOP Mexico team, located in Wise County, was given the opportunity to host the ***Monterrey Tech Saltillo Campus' Directors and Professors.***
- ▶ Team Project partner, ***The Centro Mario Molina***, was interviewed as part of the Earthzine video production.
- ▶ The Centro Mario Molina has chosen DEVELOP Mexico project scholars to collaborate with them in writing some parts of the ***Oaxaca, Mexico climate change report.***



## Mobile County Health Department

- ▶ New partnerships were forged with groups at the *Pascagoula River Audubon Center* and *The Nature Conservancy*. Meanwhile, existing partnerships with the *Mobile Area Water & Sewer System* (MAWSS) and the *Public Laboratory for Open Technology and Science* (PLOTS) were strengthened.
- ▶ MCHD and SSC collaborated to staff *DEVELOP's first ever recruiting event on a military installation*.
- ▶ MCHD DEVELOPers Walt Clark and Amber Jones gave presentations at the *Southeastern Coastal & Atmospheric Processes Symposium* and the *2014 State of the Coast Conference*.
- ▶ MCHD and SSC DEVELOPers *met with former NASA astronaut Kay Hire* and attended a *Mobile City Council meeting*, during which she presented the city with a “Happy Mardi Gras” flag that was flown aboard the Space Shuttle Endeavour and the International Space Station.



## International Research Institute for Climate and Society

- ▶ Joined the Goddard team to hold a *dual close-out*.
- ▶ Worked on the resurrection of the *DEVELOP podcast*.
- ▶ Attended the *My Community, Our Earth (MyCOE) SERVIR Global Fellowship Capstone event* down at NASA Headquarters.
- ▶ Attended a *team building meeting with former DEVELOPer Alex at Henry St. Pub.*



## USGS at Colorado State University

- ▶ *A record number of three teams* worked at Fort Collins this term.
- ▶ Presentation at *Front Range Student Ecology Symposium* (Fall 2013 Ecological Forecasting project).
- ▶ Presentations to *Xi Sigma Pi Natural Resource Honors Society* at Colorado State University (Summer 2013 Colorado Water project).
- ▶ Two-day training at the USGS Fort Collins Science Center on using the *Software for Assisted Habitat Modeling* (SAHM).



## University of Georgia

- ▶ Helped organize the *American Society for Photogrammetry and Remote Sensing (ASPRS) conference DEVELOP Special Session.*
- ▶ *Association of American Geographers* (AAG) conference attendance.
- ▶ *VPS Winners for Costa Rica Ecological Forecasting Project.*
- ▶ South Africa Ecological Forecasting participant conducted *field work at Kruger National Park* (Africa) and collaborated with project partners.
- ▶ Great Smoky Mountain team *visited partners at Great Smoky Mountains National Park.*
- ▶ Spring term *participants from Turkey, China, Brazil, and Indonesia.*



## NASA Goddard Space Flight Center

- ▶ Attended the *My Community, Our Earth / SERVIR close-out* at NASA Headquarters in DC, where the team was able to *meet Administrator Charles Bolden*.
- ▶ Organized *science cafés and potlucks with Drs. Bob Cabalan, Jim Irons, and Paul Torrens*.
- ▶ Held a *joint project close-out between GSFC and IRI*, and initiated *work with IRI on DEVELOP podcasts*.
- ▶ Chad Ecological Forecasting visited the *Smithsonian Conservation Biology Institute*, and met with Dr. Peter Leimgruber, as well as various endangered animals.



## NASA Ames Research Center

- ▶ The Sierra Nevada DSS Ecological Forecasting team *attended a meeting at the USDA Forest Service offices in Vallejo, California* to present their current project and to discuss new project directions on Tuesday, February 4th, 2014.
- ▶ The Ames DEVELOP team presented their Summer 2013 projects and their current Sierra Nevada DSS Ecological Forecasting project at the *Ames Earth Science Division's Wine and Cheese Poster Session* on Thursday, March 6th, 2014.
- ▶ The Sierra Nevada DSS Ecological Forecasting team hosted a meeting with three representatives from the *USDA Forest Service* in their offices at Ames to present their current project and to discuss new project directions on Tuesday, March 11th, 2014.
- ▶ Andrew Nguyen presented the Summer 2014 Sierra Nevada Water Resources poster and oral presentation at the *ASPRS meeting* in Louisville, KY on Wednesday, March 26th, 2014.



## NASA Jet Propulsion Laboratory

- ▶ JPL DEVELOPers *created and participated in an exchange day*, during which members of both teams gave short presentations showcasing their individual and/or team strengths. Scott Barron presented on *how to utilize Reddit and Github effectively*, Elise Lorenzana presented on *how to calculate correlations within datasets using Access*, Lorena Lopez presented on *basic Matlab programming*, and the Disasters team, (Sara LaFia, Judy Cheng and Rodell Zorilla) presented on *the power of Google Earth Engine*.
- ▶ The main DEVELOP office and adjoining part-time DEVELOP office were *completely renovated courtesy of JPL*.
- ▶ The Global Disasters team participated in a *telecon with the Google Crisis team*, during which their work was discussed with the team by their science advisor, Dr. Sang-ho Yun.
- ▶ Rodell Zorilla, Global Disasters team lead, prepared and delivered a presentation on DEVELOP and the Disasters project at the *Los Angeles Geospatial Summit* on February 21, 2014.



## NASA Langley Research Center

- ▶ Spring closeout was held April 1st and teams *presented to Dave Young of the Science Directorate and other members of management in the NASA Langley Science Directorate* (March 31st).
- ▶ Jeffry Ely and Dr. Ross attended *ASPRS* in Louisville, Kentucky (March).
- ▶ *GPM Launch Party* (February 27th).
- ▶ Jon Hicks, Amberle Keith, and Merna Saad *participated in the Day of Education* by talking about NASA and DEVELOP to elementary and middle school classes.



## NASA Stennis Space Center

- ▶ SSC DEVELOPers met and participated in an informal lunch Q&A session with ***NASA Chief Scientist Dr. Ellen Stofan and Deputy Chief Scientist Dr. Gale Allen.***
- ▶ SSC Center Lead Ross Reahard attended ***NASA Day at the Capitol in Jackson, Mississippi*** where he met Mississippi legislators and former astronaut Rick Heib.
- ▶ SSC DEVELOPer and Project Lead Shelby Barrett attended the ***ASPRS 2014 Annual Meeting*** in Louisville, Kentucky and gave a “lightning-talk” presentation on monitoring tropospheric ozone using NASA EOS.
- ▶ Ross Reahard and Amber Jones, Communications Young Professional, gave a ***presentation at the 2014 State of the Coast Conference*** in New Orleans, Louisiana.
- ▶ SSC DEVELOPers met and shared the DEVELOP Program with the ***NASA Associate Administrator for Legislative and Intergovernmental Affairs, L. Seth Statler, and seven Eisenhower Institute Fellows from Gettysburg College.***



▲ SSC DEVELOP and the Stennis community throw a farewell party for Jason Jones, who for nearly ten years labored to build-up the Stennis DEVELOP Program into what it is today.

We would like to take a moment to acknowledge Jason Jones. On Wednesday, March 5th, Jason received the ***NASA Langley Center Director's Award for outstanding contributions to NASA and the DEVELOP National Program.***

We wish him continued excellence as he pursues his aviation dreams with the Mississippi Air National Guard. Congratulations, Jason! ***You're cleared for takeoff!***





## NSSTC at NASA Marshall Space Flight Center

- ▶ MSFC *participated in Huntsville Map-a-thon* to create 3D models of Huntsville's downtown area.
- ▶ MSFC-DEVELOP toured the Marshall Space Flight Center and *saw the Huntsville Operations Support Center (HOSC) and Environmental Control and Life Support System (ECLSS)*.
- ▶ The Global Precipitation Mission (GPM) launch was *hosted by MSFC-DEVELOP for the National Space Science and Technology Center*.



## International Centre for Integrated Mountain Development

- ▶ *Areas in Bhutan and Nepal with water deficiency issues for agriculture identified.*
- ▶ Application of *hydrological GIS tools*.
- ▶ **Bridging the gap between Space to Village:** Application of NASA TRMM data and assessment of on-the-ground situation during fieldwork as well as creating the possibility to collect crowd-sourced feedback from farmers. ☺☺☺



## NASA DEVELOP's Young Professional Class

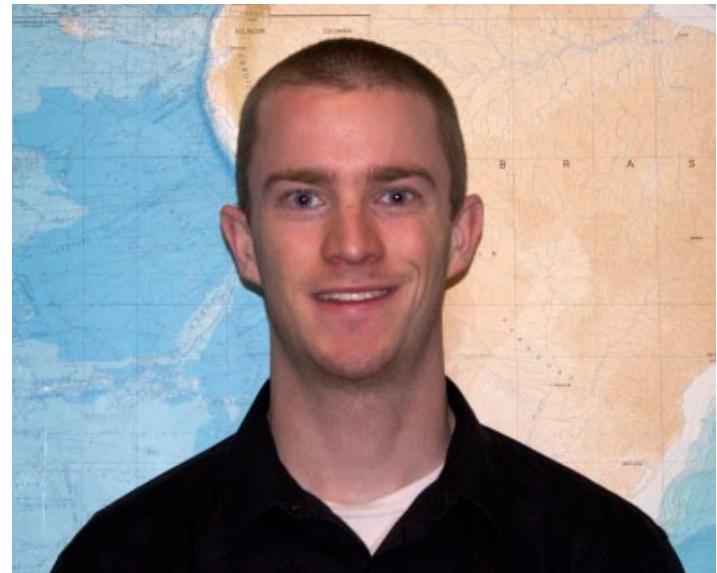
**DEVELOP would like to congratulate** all of its participants who have graduated this year and introduce a unique opportunity! DEVELOP's Young Professional (YP) Class enables DEVELOPers who are recent grads the opportunity to work with the Program on a whole new level. Members of DEVELOP's 2014 YP Class are eager to tell you more!



# Scott Barron

## Geoscience Programmer

“My experience as a YP in the DEVELOP Program has been immensely educational, beneficial, and fun. It's been really rewarding to develop GIS and remote sensing tutorials, and assist teams across the country with any problems they come across. I've learned so much being a part of this program, and I'm extremely appreciative of my time here.”



at Siddhartha

0847



# Andrew Nguyen

## Projects Coordinator

“My YP Project Coordinator / Assistant Center Lead position this past year has been marked by unbounded growth in the professional, leadership, and educational arenas. It's a lot of work and we have all 'burned the midnight oil' in many occasions, however, its worth the experience and strong connection that was developed for this program. Tiffani and I were advisors, editors, planners, and organizers who were able to see the big picture regarding project quality, location, and how it all fits into DEVELOP as a whole. We were able to understand different nodes and their personalities, thus has allowed me to confirm that DEVELOP is very diverse in regards to people, place, and values.”

# Tiffani Orne

*Projects Coordinator*

“I have really enjoyed my time as a YP so far. As a project coordinator, I am responsible for overseeing projects from the proposal phase through partner hand-off. Through this position, I have been able to see the bigger picture of the impact DEVELOP is having on participants and end-users, while building professional and leadership skills that I will be able to apply to my future career.”



# Amber Jones

*Communications Manager*

“Being a DEVELOP Young Professional has been challenging in the most rewarding way—and just plain fun too! The decision-making opportunities we are all given, regardless of the type of YP we are, allows us to influence the direction of the Program. All the YP positions have something to be desired. As far as communications management, it was most fun to be part of the visible, outreaching team who interacts with the public and alumni through a variety of creative means.”

# Merna Saad

*New Business Development*

“As a New Business Associate, I was able to experience the political side of projects and build strong relationships with different partners and collaborators. I was given the opportunity to interact with local, national, and international organizations and it has benefited my professional development by expanding on my network. I have also supported the National Program Office in various tasks. It was interesting to stand back and see the big picture of how the program functions.” ◀◀◀



## *Mystery Location #5*

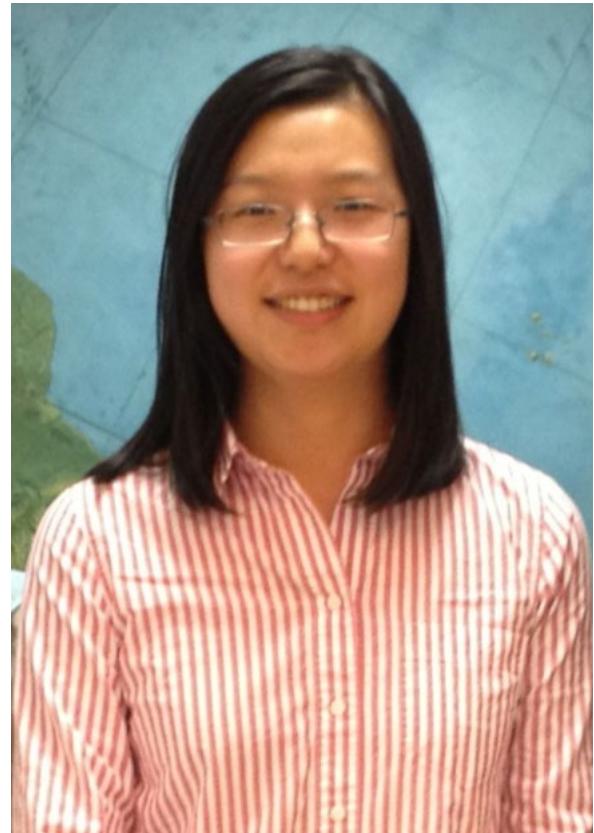


**Where on  
Earth!?**

*Answers on Page 49!*

# Spring 2014 **DEVELOPer** of the Term

## University of Georgia's **Jiaying He**



**Jiaying He has been with DEVELOP at UGA since its inception (Summer 2013).** As the team leader of a multi-term project, she has taken great initiative in collaborating with project partners. Additionally, she has grown into a strong leader with an unmatched work ethic. This term, she coordinated a field trip to the Great Smoky Mountains National Park so that her team could not only meet the project partners, but also see the dramatic Hemlock decline in their study area. This experience impacted the participants by bringing meaning to their work and showing them first-hand how their DEVELOP project will enhance the park's management decisions.



# DEVELOPer of the Term *Runners-up*

**Daria Blach**

WISE COUNTY AND CITY  
OF NORTON CLERK OF  
COURT'S OFFICE

**Kaylin Bugbee**

NSSTC AT NASA  
MARSHALL SPACE  
FLIGHT CENTER

**Emily Gotschalk**

NASA LANGLEY  
RESEARCH CENTER

**Emily "Chippie" Kislik**

NASA AMES  
RESEARCH CENTER

**Jerrod Lessel**

INTERNATIONAL RESEARCH  
INSTITUTE FOR CLIMATE  
AND SOCIETY

**Alec Nelson**

NASA GODDARD SPACE  
FLIGHT CENTER

**James Pickett**

MOBILE COUNTY  
HEALTH DEPARTMENT

**Emma Strong**

NASA STENNIS  
SPACE CENTER

**Binayak Tiwari**

INTERNATIONAL CENTRE  
FOR INTEGRATED  
MOUNTAIN DEVELOPMENT

**Amber Weimer**

USGS AT COLORADO  
STATE UNIVERSITY

**Rodell Zorilla**

NASA JET PROPULSION  
LABORATORY

*"If you want to go to the moon, you first have to go through Hancock County, Mississippi."*



# inside Stennis Space Center

CHOSEN AMONG SIX FINALIST SITES FOR ITS GEOGRAPHIC LOCATION between Kennedy Space Center and the NASA Michoud Assembly Facility, as well as for barge access along the Pearl River, the site originally known as the Mississippi Test Operations includes many historical national treasures.

Acquired by eminent domain with a guarantee to residents that domestic habitation would be perpetually prohibited, the 13,500-acre campus, or core “fee” site surrounded by nearly 200 square miles of acoustic buffer zone, was the second largest and most expensive construction project in the history of the United States when ground was broken in December 1961. Renamed in 1988 for Senator John C. Stennis (MS-D) who was a staunch proponent of the Space Program, Stennis Space Center is a unique federal city with its own zip code. The vast, largely undisturbed acoustical buffer zone surrounding Stennis is also rich in biodiversity and a valuable natural habitat for many species.

While Stennis Space Center has much in common with other NASA field installations, the most distinct difference is that it had no roots before the Apollo Era. Its development has been marked by fascinating milestones; we've selected just a few, here.

# May 17, 1963

The first tree is ceremoniously removed to symbolize the beginning of construction following two years of negotiation with and relocation of about 660 families. All that remains today of five native communities are a few street signposts, 19th century cemeteries, and a few buildings.



# April 23, 1966

The first engine test was performed on the historic A-2 Test Stand for the very rocket booster that powered the Apollo 11 mission landing Astronauts Neil Armstrong and Buzz Aldrin on the moon on July 29, 1969.



# May 28, 1976

A flag-raising ceremony marked the arrival of the site's first non-NASA tenant, the Naval Oceanographic Program. Today, Stennis is also home to the U.S. Navy's special boat team twenty-two unit, along with other divisions of Federal and State governments, academic institutions, and major commercial companies such as Rolls Royce and Lockheed Martin.



# 2003

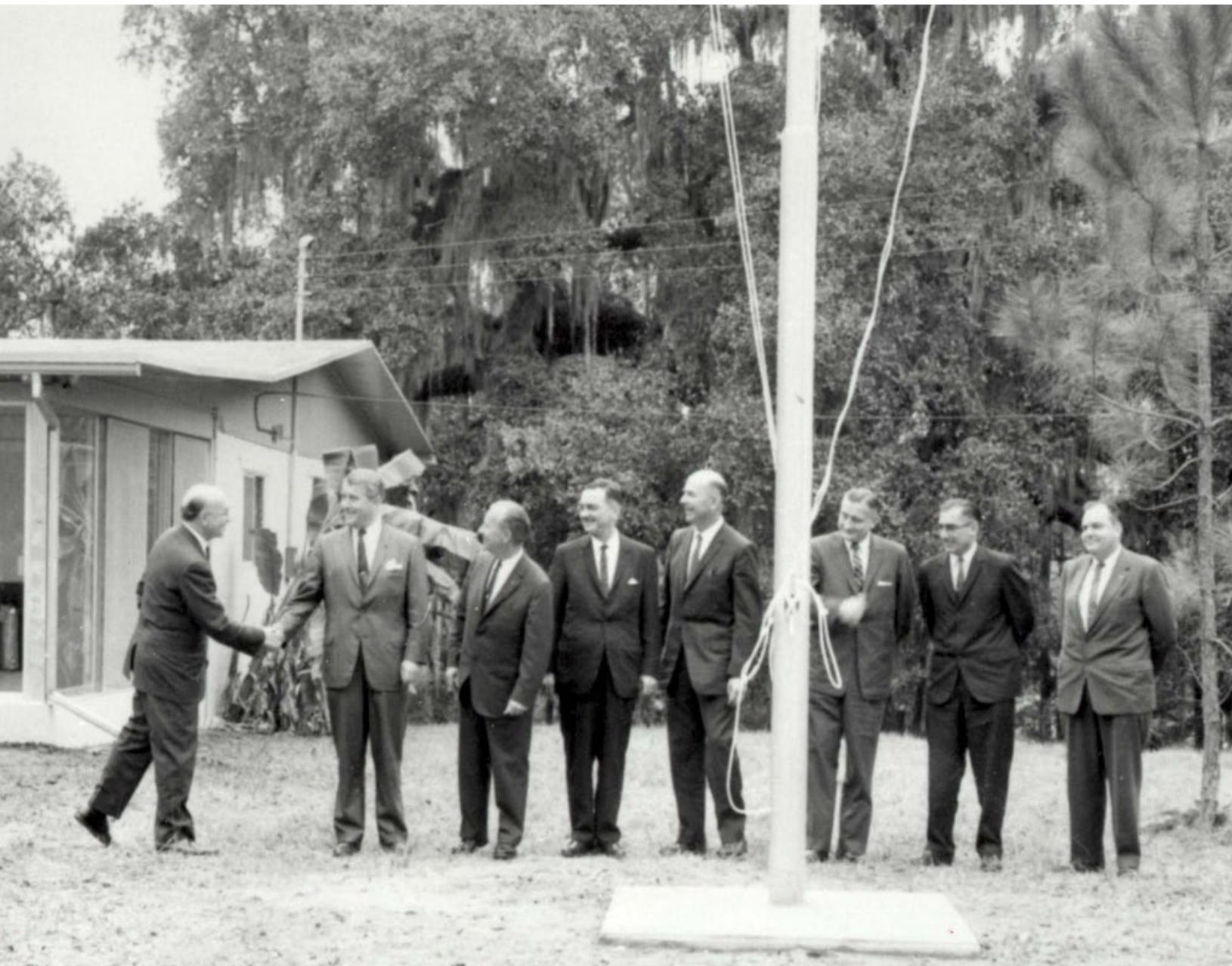
In 2003, DEVELOP arrives at the Stennis Space Center.

▲ DEVELOPers start work at Stennis Space Center for the Summer 2007 term.  
*From left, front row:* Deirdra Boley, Jason Jones, Lauren Childs, Craig Matthews and Denise Spindel;  
*back row:* Advisors Cheri Miller (NASA), Kenton Ross (Science Systems and Applications, Inc.), Andra Johnson (Southern University), and Roxzana Moore (SSAI).



The 55th anniversary of Stennis approaches! For further reading on the center's fascinating history, scan this QR code. ◀◀◀

*Interested in highlighting your DEVELOP node in future editions of the DEVELOPer Newsletter? Please contact the Communications Team.*



▲ The 1962 flag raising in front of the Rouchon House at the Mississippi Test Operations. This denotes NASA's presence in South Mississippi. **From left:** Bart Slattery (public affairs officer), Dr. Wernher von Braun (director), Capt. William Fortune (first site manager), Dr. George Constan (manager, Michoud Assembly Facility), Dr. Oswald Lange (chief, Saturn Program Office), Dr. Hermann Weidener (chief, Structures and Mechanics Laboratory), Dr. Karl Heimburg (director, Test Laboratory), and Dan Driscoll (Test Laboratory).



## Science Café

**Meet Dr. Dan Browning.** We fortuitously ran into him at a recent Science Café DEVELOP facilitated at William Carey University in Hattiesburg, MS. In the early 1970's, Dr. Browning began his professional career as a NASA engineer at Marshall Space Flight Center. Now he is a Professor of Religion and History at the University. He said when he heard an entity of NASA was coming on campus, out of a sense of loyalty, he had to show his support. Of the Science Café, he said "*it was a great combination of showing one's research and making it accessible to students and others—exactly the kind of thing a university like ours should be doing. A good job, indeed. I would also encourage more to avail themselves of such opportunities in order to see what our faculty are doing and build a sense of academic community.*" Science Café success!

## DPOD

**Coming Soon!** Be on the lookout for DPOD: the new DEVELOP podcast. We'll be discussing everything from monsoon floods, remote sensing, and disaster relief, to the stylishness of the new NASA space suits. Tune in! 



# Great Smoky Mountains Ecological Forecasting

*by Jiaying He (Project Lead)*

THE UNIVERSITY OF GEORGIA'S GREAT SMOKY MOUNTAINS ECOLOGICAL FORECASTING PROJECT is an example of the power of collaborative work, effective communication, and awesome support from science advisors. I came up with the project idea, but it was through the feedback and support of our advisors and the Center Lead (Caren Remillard) that turned the idea into a strong proposal. My teammates also helped advance the proposal into a project. One of them, Corbin Kling, suggested we visit the Great Smoky Mountains National Park during our spring break. Our project partners took the time to help us organize a day trip to the park. Not only did we meet with several National Park Service staff members, we also had the chance to go on a hike and see the devastating effects of the hemlock woolly adelgid. Our advisors helped defray the cost of the trip and assisted us with filming. One reason we had a successful term is due to the overwhelming support we had from our project partners and science advisors. ***We had an amazing team environment that fostered collaborative work.*** ▶▶

# The Red Cross / Red Crescent Climate Centre's Erin Coughlan

*In the spring of 2014, the East Africa Health and Air Quality team at the International Research Center for Climate and Society partnered with Erin Coughlan of the Red Cross/Red Crescent Climate Centre.*



THE RED CROSS / RED CRESCENT CLIMATE CENTRE supports the International Federation of Red Cross and Red Crescent Societies (IFRC) and its partners in reducing the impacts of climate change and extreme weather events on vulnerable people. The Centre serves as a “bridge between climate change and disaster risk reduction,” and serves to not only provide advice on humanitarian assistance, but improve disaster preparedness, and decrease risks to vulnerable communities before disaster occurs.

Erin Coughlan is a Senior Climate Specialist with the Climate Centre and liaison to the International Research Institute (IRI) at Columbia University’s Lamont Campus in Palisades, New York. Erin supports Climate Centre programs to build awareness and capacity for climate risk management; her research focuses on the use of climate information to trigger humanitarian action in advance of a potential disaster.

The Climate Centre has been involved with numerous projects in recent years, including efforts in Zambia, Uganda, and Togo. In 2013, they worked with the Zambian Red Cross and Emerson College’s Engagement Game Lab to create game-based flood prevention systems in Zambia. The game, called *Upriver*, not only teaches players the science behind flooding, but also encourages people to participate in early-warning flood communications.



Another innovative effort for Climate Change Adaptation (CCA) seeks to disburse funding for humanitarian action prior to a disaster, allowing communities to prepare for the oncoming forces of events such as floods or droughts, rather than simply react once the damage has been done. As Dr. Maarten van Aalst, Director of the Climate Centre, states, this innovative way of looking at disaster relief is "**'Early Warning, Early Action' in the truest sense.**"

DEVELOP has found a dynamic and forward-thinking partner in the Red Cross/Red Crescent Climate Centre, and the invaluable engagement of Erin Coughlan. Keep on the lookout for more fascinating collaborations in the future! 

*More information on the Red Cross/Red Crescent Climate Centre may be found at <http://www.climatecentre.org/>, and results from this Spring term partnership can be found at [Earthzine.org](http://Earthzine.org), “**Validations of Precipitation Inundation Aberrations for African Nations.**”*

# Upcoming Events

**June 2** DEVELOP Summer Term begins

**June 9** Fall 2014 DEVELOP applications open

**June 18-20** Great Lakes & St. Lawrence Cities Initiative Annual Meeting & Conference

**July** OCO-2 launch

**August** ISS-RapidScat launch

**August 5** Annual Earth Science Applications Showcase at NASA Headquarters

## Where on *Earth!*? *Answer Guide*



- ▶ **Mystery Location #1 (p.3)**  
Bombetoka Bay, Madagascar



- ▶ **Mystery Location #2 (p.11)**  
Mississippi River, United States



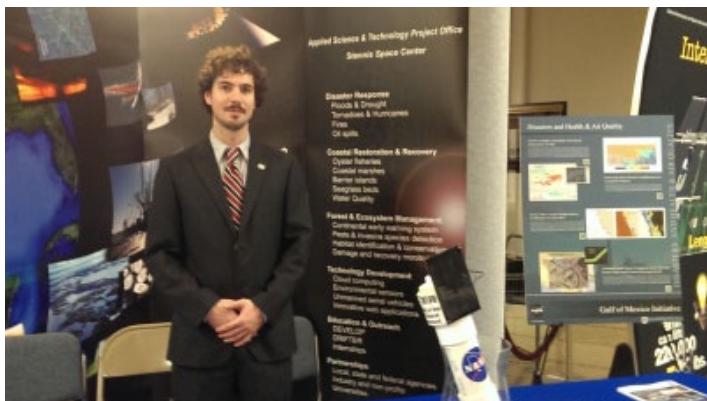
- ▶ **Mystery Location #3 (p.15)**  
Byrd Glacier, Antarctica



- ▶ **Mystery Location #4 (p.18)**  
Carnegie Lake, Australia



- ▶ **Mystery Location #5 (p.37)**  
Kalahari Desert, Southern Africa



**DEVELOP  
National Program**

National Aeronautics and  
Space Administration

<http://develop.larc.nasa.gov>

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