GPM EDUCATION AND PUBLIC OUTREACH ACTIVITIES

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GPM Applications Scientist

JAXA

GLOBAL PRECIPITATION MEASUREMENT

GPM CORE OBSERVATORY - A REFERENCE STANDARD FOR PRECIPITATION MEASUREMENT FROM SPACE

NASA

GPM E/PO Team

Team Member	Title	Responsibilities
Dalia Kirschbaum	GPM Applications Scientist and E/PO Coordinator	Coordinate and oversee all E/PO activities and work with team to assign tasks, provide science input, and maintain deadlines
Dorian Janney	Education Specialist	Serve as lead developer of the E/PO plan, with a focus in developing the formal education projects, activities, and content.
Hilarie Davis	External Evaluator	Develop evaluation metrics for the E/PO plan and conduct the evaluation for each of the projects defined in the E/PO plan.
Jacob Reed	Web Developer	Maintain the GPM website, maintain/add content to GPM's social media activities, work to develop the GPM Education Portal
Ellen Gray	Science Writer	Review web content and write/review stories for the GPM website that may also be used for E/PO activities and programs.
Aries Keck	Science Writer	Help with social media activities, develop/write story ideas for the GPM website and other vehicles
Ryan Fitzgibbons	Producer	Oversee and develop GPM video activities including coordinating/editing core content (animations, visualizations) and shooting/editing interviews, and GPM Core observatory testing

GPM E/PO Themes

Overarching theme

Civilization and animal species live and die by the availability of water. Knowing when, where, and how much it rains or snows is vital to understanding how weather and climate impact our environment and the Earth's entire water and energy cycle, including effects on agriculture, fresh water availability, and responses to natural disasters.

Key Topics:

Technology and Instruments

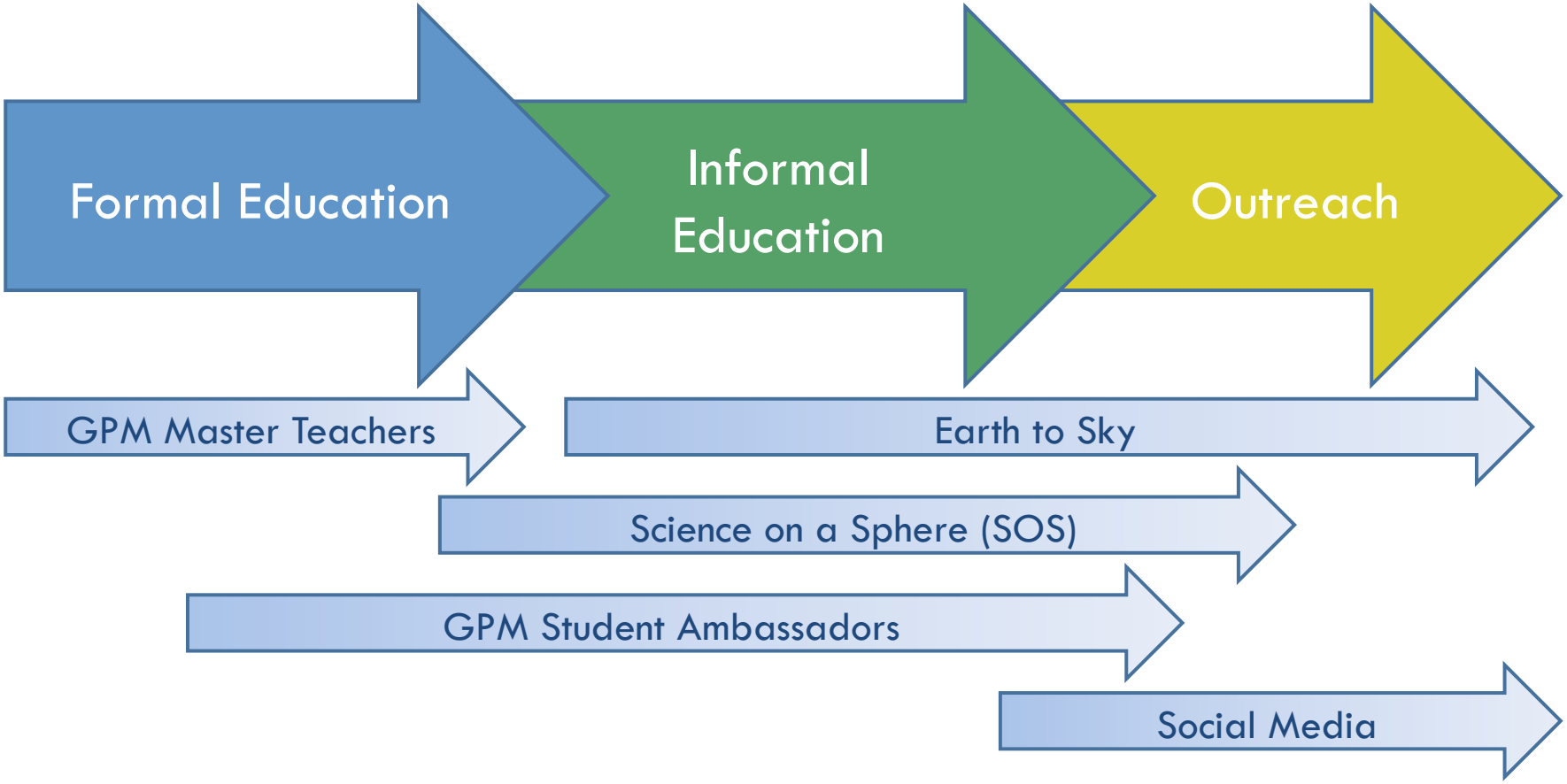
Weather and Climate

Water Cycle

Applications

GPM'S E/PO Strategy

Diversified Portfolio of E/PO Initiatives

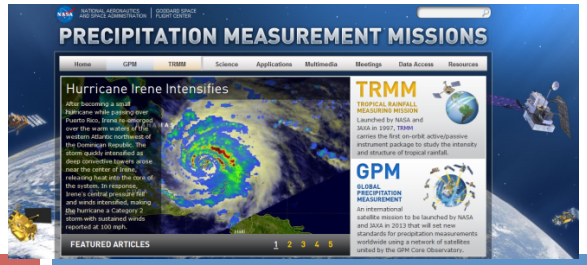


Science on a Sphere (SOS) Presentation

Science on a Sphere is a large visualization system that uses computer and video projectors to display animated data onto the outside of a sphere.

Tentative Theme: Story of how civilizations have measured rainfall throughout time and what water means to different cultures around the world, emphasizing concepts of the water cycle, hydrometeorological hazards, societal impacts and TRMM/GPM activities.

Timeline: Develop SOS in 2012
Current status: Working to flesh out story outline and science concepts
Science Team Input: Seeking participation in the storyboarding process, contribution of science ideas, review scientific material of SOS presentation



GPM Integrated Science and E/PO Website

The E/PO Website will host all GPM content, including activities, lesson plans, Citizen Science activities, videos, podcasts, career information, "Faces of GPM" activities, etc. to engage teachers, students and the general public in GPM activities and science themes. We will also feature our Social Media activities here.

Timeline: The PMM Website was launched in July, 2011. The E/PO website construction will begin in Spring, 2012.

Activities: Post TRMM and GPM mission updates, feature stories, I&T videos, and other multi-media activities such as the "The Faces of GPM" campaign. The website currently averages ~100 hits per day and we have over 10,000 visits since the website launch

Science Team Input: Seeking participation in the "Faces of GPM" campaign, new ideas and features for the webpage, and contribution of other E/PO Content ideas.

"Faces of GPM" Campaign

- This campaign will consist of an ongoing series of brief interviews about GPM science team members, engineers, and project management that will be featured on the GPM website and advertised through social media outlets.
- **Thank you to all that participated in the interviews at the PMM meeting!** We conducted 21 interviews with PMM Science Team members.
- If you did not participate and are very interested in interviewing, please let us know and we will try to either contact you for a print article or interview you separately (preferably if you are in the NASA Goddard area

PMM Social Media Activities

161 “Likes” on Facebook

263 Followers on Twitter

GPM Student Ambassadors

Choose a group of college students to be GPM Student Ambassadors that will take the messages of NASA Earth Science, GPM themes and activities and general science career information back to middle and high school audiences to encourage student participation in STEM topics.

Activity: This activity will first develop a partnership with Capitol College in MD and will work with students to host a seminar series. Through semester-long internships, the GPM Student Ambassadors will develop a collection of educational games, including web-based interactive games and hands-on activities to be used by future GPM Student Ambassadors for use in visited classrooms and on the GPM Webpage.

Timeline: Spring 2012 – Spring 2013: Begin beta testing concept of Student Ambassadors with a select group of people and also begin GPM Seminar Series. 2013 – expand to other schools/areas.

Science Team input: The goal of this activity is to work with interested Science Team members to eventually develop programs within their Universities. We are looking for science team members who would be interested in discussing this idea further

Formal/Informal Education Activities

GPM Master Teachers: Develop hands on STEM activities, lessons, and resources building off of earth science curriculum already required within the schools which will support the four cross-cutting themes; Technology and Instrumentation, Weather and Climate, The Water Cycle, and Applications.

Outdoor Education Program: Collaborate with the Outdoor and Environmental Education Programs (OEEP) staff in Montgomery County, MD to develop a learning module that will integrate outdoor hands-on learning lessons with GPM-related science content.

Anime Character Competition and Comic Book Adventures

***Phase 1*:** Hold a competition through the GPM website for students to come up with a GPM anime character focused on the GPM science themes.
***Phase 2*:** Once the Anime character is developed, hold a competition for students to create comic adventures based on the anime character participating in different water themed adventures.
GOAL: Web-based comic book series with GPM themes emphasized

Timeline: We will begin the anime competition in 2012 and this effort will continue through 2015

LEGO Model of Core Observatory

The NASA Independent Verification and Validation (IV&V) Educator Resource Center (ERC) and the Morgantown (WV) Area RoboticS (MARS) organization will develop a fairly simple Lego model of the GPM spacecraft. The goal is to engage and inspire students to pursue careers in STEM fields by having them actively build a replica of the GPM spacecraft. Once developed and, the LEGO models will be made available to order on the GPM E/PO Website.

Timeline: TBD

Multi-Media Activities: Current Work

- GPM Core Observatory Launch Sequence
- GPM Constellation visualization
- Feature stories: GPM Centrifuge Article
- I&T Filming: Centrifuge, High Gain Antenna, GMI, solar array testing
- Begin "Faces of GPM" Campaign, we conducted 22 interviews while at the PMM Meeting
- GPM Logo and Decal Development
- Begin developing a series of GPM-focused Applications videos

Applications Activities and Potential Video Topics

Public Health	User location
NASA DEVELOP project with Mobile County Health Department examining specific parameters that West Nile/Encephalitis vectors and their larvae require. Interested in rainfall amount.	Alabama
Work on malaria mosquitoes in Asia. Interested in daily accumulated rainfall (3B42-V6).	Belgium
Monitoring weather in NE Kenya for disease outbreaks; comparing rain gauge data and TRMM. Interested in 3B42-V6.	Kenya
Work on possible implications of climate change on enhancement of schistosoma mansoni transmission in humans in the Dhofar region of Sultanate of Oman. Interested in monthly rainfall.	France
Disaster, Flood-related	
Hydrological studies of damaged bridges in Pakistan during floods of July-September 2010.	Pakistan
Creating maps and information graphics in response to complex emergencies and natural disasters. Interested in identifying a good rainfall anomaly data set (monthly and annually).	Central Africa
Using TRMM data for Early Warning System for floods in near real time. Interested in 3B42RT.	Italy

Agriculture	
Using combination of monthly Willmot and Matsuura data, monthly TRMM (3B43 V6), and daily global rainfall (3B42RT) for historical analog analysis for crop yield forecasting in PR China.	China
Human geography	
Analyzing how rainfall affects investments in childrens' education in Uganda. Interested in monthly rainfall data.	Italy
World Bank project on welfare dynamics and risk in Nicaragua. Using TOVAS (3A25V6) to complement "household survey data."	Nicaragua
Studying impact of urbanization on land surface temperature and heat fluxes. Interested in TRMM VIRS data.	India
Interested in daily rainfall patterns and how they affect price of latex.	Georgia
Working with rainwater harvesting systems; gauge data are hard to come by, so trying to access TRMM satellite data.	Uganda
Miscellaneous	
Gathering data for an ecological reserve located just outside Chico, CA.	California
Some study for UNESCO-IHE. Interested in daily TRMM (3B42 V6 derived) data.	China
Studying possible effects of Galactic Cosmic Rays on tropical and overall climate, precipitation amount, and cloud cover.	India
Gathering information on the different types of applications of satellite precipitation estimates.	France

Upcoming work

- GCPEx activities and Feature story
- TRMM Milestones Feature story
- PMM Science Team Meeting Summary
- Mission website: www.nasa.gov/gpm and App available for download soon
- GPM Powerpoint Template and graphics

Science Team Input:

- We are always looking for interesting story ideas for features that highlight TRMM/GPM science and engineering.
- We would like to hear your comments and suggestions with respect to our existing content and potential future activities

For more information on GPM E/PO Activities:

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