GPM Education and Outreach Overview

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Informal Partnerships and Collaborations

- WRI
- MiCRO
- World Bank
- USDA
- Agvesto
- PDC

Workshops and conferences
Discussions
Data analysis of users

Visualizations and videos
Outreach materials
Stories
Trainings
Webinars

Engagement and User Outreach

Case studies
Data requirements and needs
Challenges and gaps
Capacity building- new avenues of research

Synthesizing Information from Community

Decision Making

Informal Partnerships and Collaborations

Visualizations and videos
Outreach materials
Stories
Trainings
Webinars

Case studies
Data requirements and needs
Challenges and gaps
Capacity building- new avenues of research
Applications Packages

gpm.nasa.gov/applications/

Agricultural Insurance
https://gpm.nasa.gov/applications/nasa-satellites-help-farmers

Disease Initiative
https://gpm.nasa.gov/applications/disease-initiative

Bridging the Gap: Connecting Ecologists to Earth Data

How NASA Builds Resilience with Climate Models
Highlight the many ways that GPM data are used for applications: Water resources, Ecology, Climate modeling

- Feature articles
- Feature videos
- StoryMaps
- Highlights
- One pagers
- Outreach presentations
  - Solar System Ambassadors
  - GLOBE
  - U of Texas
Climate Modeling Applications Package

Applications
- Ecology
- Water & Agriculture
- Energy
- Weather
- Extreme Weather News
- Health
- Disease Initiative
- Disasters
- Landslides

How NASA Builds Resilience with Climate Models

How NASA Builds Resilience with Climate Models

Tuesday, August 24, 2021

Climate change impacts all of us in various ways. Changes in soil moisture have a pronounced effect on agricultural production, which in turn impacts the food we grow to eat. Changes in precipitation patterns are leading to increases in drought in certain regions and causing flooding in others. All of these impacts are influenced by interactions among processes within the Earth system involving the atmosphere, ocean, land, ice, and life. These natural interactions, combined with human influences such as the release of greenhouse gases, serve to drive the climate system resulting in distinct regional variability of climates across the globe.


Click here to continue reading about climate modeling techniques and how precipitation data from the GPM mission is supports climate modeling activities.

Learn More About NASA Climate Modeling

Interactive Story Maps
- Teaching Resources related to Climate Change
- Using NASA Data to Build Climate Models

One Pagers
- Weather vs. Climate - Elementary School
- Weather vs. Climate
- Climate Models

Questions?
- STEM Interviews
  - STEM Interview with Greg Elsaesser
  - STEM Interview with Min-Jeong Kim

Get Involved
- Learn More About NASA Climate Modeling
- Interactive Story Maps
Several activities over 2021 highlighting freshwater on Earth; the science, technology, and applications behind GPM; and GPM’s most recent Applications Package resources

- NASA’s Solar System Ambassador (SSA)
- Museum Alliance programs

“Water for Wheaties?” Education/Outreach Resources
Dorian Janney, NASA/SSAF/GPM/ADNET

Abstract
Even wonder how to engage students and others in better understanding how and why NASA’s Earth-observing missions collect data on our home planet from space? The “Water for Wheaties?” resources were developed to help fill this need.

Introduction
AgricuLture in Pakistan is dependent on irrigation from the Indus River, but over the years, these freshwater resources have become scarce. Today, it is one of the world’s most deplorable battles. To tackle this, farmers are adopting new techniques to produce and track freshwater resources with the help of NASA’s missions and models.

AmeriGEO Week 2021
NASA at Your Table” Farm Fest in Colorado

NASC/GPM Mission

GPM’s (Global Precipitation Measurement) mission is an international collaboration to measure precipitation at 30 km resolution from space. This resolution has a spatial resolution of 30 km with a 30 km temporal resolution.

“Water for Wheaties?”
Participants work in small “expert groups” to explore growing wheat with a focus on the major wheat farming regions of the world, Pakistan and Kansas. They explore the differences in weather and climate in these two geographical locations, as well as gain an understanding about the scarcity of freshwater resources in Pakistan. Using this information, they get their “expert group” to analyze and interpret GPM data for their locations from the last twenty years and make recommendations for new features in Pakistan that could reduce their water usage. Finally, they consider ways they can reduce their use of freshwater resources in their own lives.

Additional Resources
- Lessons plans based on NASA for Elementary School (2nd and 3rd grades), Middle School (4th and 5th grades), and High School (10th grades)
- PowerPoint Presentations
- Universal Design for Learning
- Activity for Practice
- STEM Resources (written and video version)
- Impact Group readings
- Non-Impact Organization
- Natural Videos

COSI
GPM Outreach

https://arcg.is/19v01X

Precipitation Education website pageviews Jan. 1 – Oct. 1 2021: 992,165

GPM website pageviews Jan. 1 – Oct. 1 2021: 497,527

Total combined: 1,489,692
Presenter Resources
https://gpm.nasa.gov/education/current-activities/Presenter-Resources

GPM Activities with Early Childhood Groups (Grades K - 2nd)
Students in K-2nd grades are eager learners, and will love having a scientist come to visit their class! They can be a talkative bunch and often like to share their experiences and ideas. You might want to look over the suggestions in the document below to get a feel for Best Practices for giving presentations in Elementary Schools.

There are many ways in which the science behind the GPM mission is meaningful and engaging to children in these grade levels. Here are some of the Next Generation Science Standards that can be linked to:

GPM Activities with Middle School Students (Grades 6th – 8th)
Students in middle school are very interested in hearing about science from “real” scientists! Although they have a lot of background knowledge about natural phenomena, they will also have misconceptions as well. They are also at the age in which they will begin to consider their future career interests, and hearing from you about why you chose your career will be very interesting to them. They may be reticent at first to answer questions for fear of “sticking out” among their peers. Take a few minutes to read over the “Giving Presentations in Secondary Schools” get a feel for what secondary school classes are like and some pointers for presenting to kids in these grade levels.
Faisal Hossain, Professor of Civil and Environmental Engineering

Min-jeong Kim, NASA Climate Research Scientist

Sarah Davidson: DATA HERO

Iker Llabres, Micro-insurance Actuary

Click here for an interview with Sarah Davidson.

Sarah works with Movebank, connecting ecologists with NASA Earth data to track animal migration patterns.

I design insurance products that are linked to a climate index,