Applied Sciences’ Capacity Building

DEVELOP

Program Background & Project Applications

Georgia Planning Association – 2019 Fall Conference

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NASA Earth Science

Advancing understanding of the Earth and developing technologies to improve the quality of life on our home planet.

Earth is a complex, dynamic system we do not yet fully understand. The purpose of NASA's Earth science program is to develop a scientific understanding of Earth's system and its response to natural and human-induced changes, and to improve prediction of climate, weather, and natural hazards.
NASA Earth Observations

NASA Earth observations include a coordinated series of 17 polar-orbiting and low inclination satellites and 6 instruments on the ISS for long-term global observations.
Partner with public and private organizations

Discover innovative NASA Earth science applications

Support environmental decision-making activities

Demonstrate practical benefits of NASA Earth science

Help improve the quality of life and strengthen the economy
What is DEVELOP?

DEVELOP bridges the gap between NASA Earth Science and society, building capacity in both its participants and end-user organizations to better prepare them to handle the environmental challenges that face society.

DEVELOP is a dual-capacity building program: Partners & Participants
Who Participates in DEVELOP?

Participants
- Recent Graduates
- Military Personnel
- Students
- Transitioning Professionals

Advisors
- NASA Researchers
- Partner Organizations

Decision Makers
- State & Local Gvt.
- Federal Agencies
- NGOs
- International
Participant Opportunities

**Common Majors**
- Geography
- Environmental Science
- Computer Science
- Remote Sensing
- GIS
- Biology
- Engineering
- Chemistry

**Common Software and Programming Languages**
- Meteorology
- Physics
- Accounting
- Economics
- Mathematics
- Public Policy
- Communications
- Planning
- ESRI ArcGIS
- ERDAS IMAGINE
- ENVI/IDL
- Python
- MATLAB
- R
- Microsoft Office Suite
- Google Earth Engine

Note: open to all majors!

Pay level is determined by education level and DEVELOP location.

Note: no previous experience with these programs is required, but an eagerness and ability to learn quickly is a necessity.
Where is DEVELOP?

**Locations**

1. Alabama – Marshall (Huntsville, AL)
2. Arizona – Tempe (Tempe, AZ)
3. California – Ames (Moffett Field, CA)
4. California – JPL (Pasadena, CA)
5. Colorado – Fort Collins (Fort Collins, CO)
6. Georgia – Athens (Athens, GA)
7. Idaho – Pocatello (Pocatello, ID)
8. Maryland – Goddard (Greenbelt, MD)
9. Massachusetts – Boston (Boston, MA)
11. Virginia – Langley (Hampton, VA)
2019 Fall Portfolio

72 Participants
18 Projects

18 States & 11 Countries Impacted

61% Domestic
39% International

Application Areas Addressed

Food Sec. & Ag.: 22%
Disasters: 11%
Eco: 22%
Energy: 11%
Health & AQ: 22%
Urban Dev: 6%
Water: 6%

Partner Total by Type

Consortium: 2
Academia: 4
International: 7
Non-Profit: 5
For-Profit: 0
Federal: 10
Local Govt: 2
State Govt: 3

33 Partners

*Impacts and partners are tentative
55-65 projects take place each year – at their core they share these characteristics:

- Highlight the applications and capabilities of NASA Earth observations
- Address community concerns relating to decision-making for real-world environmental issues
- Partner with organizations who can benefit from using NASA Earth observations to enhance decision-making by providing decision support tools
- Align with at least one of the eight NASA Applied Sciences Program’s thematic Application Areas
- Research is conducted by interdisciplinary teams under the scientific guidance of DEVELOP Science Advisors and Mentors from NASA and partner organizations
- Create a comprehensive set of deliverables
DEVELOP Project Deliverables

**Project Deliverables:**
Created by all DEVELOP teams.
- Poster
- Presentation
- Technical Report
- Shapefiles

**Additional products:**
Created by some teams based on specific partner needs and identified ahead of time with team.
- Tutorial
- Code
- Brochure
- Project Video
Hampton Roads

Helping the local government of Hampton, VA understand impacts of coastal erosion and sea level rise. And creating maps to identify highest areas of risk.
Lawrence

Working with the City of Lawrence in Kansas to map out the potential for residential and commercial rooftop solar using POWER tools.
Ohio River Valley

Helping local management agencies assess flood risk to maximize efficient evacuation plans.
Working with the City of Atlanta and the Nature Conservancy to understand stormwater runoff and what that means for its surrounding communities, and how green infrastructure can aid in mitigating runoff.

Minimizing Untreated Stormwater Flow From Impervious Surfaces

Protecting Existing Green Infrastructure and Identify Reforestation Opportunities

Identifying Managed Lands with a High Potential to Impact Local Water Quality
Helping vulnerable neighborhoods detect extreme heat for implementing bus stop modifications to shield riders from extreme conditions.
Applying NASA’s Earth observations to identify susceptibility for landslides in the Dominican Republic, in hopes to better prepare communities that are at risk.
North Dakota & Georgia

Helping agencies like the USDA enhance crop classification methods by incorporating radar.
Honduras

Helping resources managers with millions of acres of forests identify key areas of forest loss due to deforestation.
Become a DEVELOP Project Partner!

Why?
• Work with motivated aspiring Earth scientists
• Obtain real world results in 10 weeks
• Learn the power of freely available NASA data

How?
• Email – SHELBY.INGRAM@SSAIHQ.COM
• Submit a project idea form through our website

We would love to tap into the planning efforts in GA!
Find DEVELOP on Social Media!

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Email us at: NASA-DL-DEVELOP@MAIL.NASA.GOV OR SHELBY.INGRAM@SSAIHQ.COM