IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Enabling the Future - Developing the Space Workforce (5)

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NASA'S DIVERSE AND INNOVATIVE APPROACHES TO BUILDING CAPACITY IN THE FUTURE STEM WORKFORCE

Abstract

NASA's Applied Sciences' Capacity Building Program engages decision makers to enhance skill development and build the capability to access NASA Earth science data and apply it to decision making in the United States and developing countries. The program builds capacity within individuals and institutions through training activities, partnering with decision makers through collaborative projects, and workforce development. The program does this through three element activities – Applied Remote Sensing Training (ARSET), SERVIR, and DEVELOP – each of which follows a unique model for capacity building.

DEVELOP is a dual capacity building program wherein individual project participants gain skills to use Earth observations themselves while participating partner organizations increase their institutional knowledge of Earth observation products and tools. DEVELOP participants (e.g., college students, recent graduates, and transitioning career professionals) work on 10-week projects under the guidance of science advisors, rapidly building their technical knowledge of NASA Earth science concepts, Earth-observation datasets, general remote sensing techniques, and geographic information systems (GIS). Skill development is fostered throughout the process with a focus on technical writing, data visualization, science communication, and team development. DEVELOP project partners (e.g., local, state, and federal government agencies, non-profits, private sector, and academia) are central to the creation of a project. Project activities begin with a needs assessment focused on the environmental concern at-hand and the partner's related decision-making process, and projects culminate with a transfer of the project's methodologies and end products to the partners. This immersive, hands-on approach to applications provides experiential learning that builds on participants' educational experiences. The approach utilizes and improves interdisciplinary skills that contribute to effective decision making. With the competitive nature and growing societal role of science and technology in today's global workplace, DEVELOP is fostering an adept corps of tomorrow's applied scientists and leaders.

Annually, DEVELOP conducts approximately 60-70 projects, partnering with over 100 end-user groups, and involving over 200 participants. In 2018, DEVELOP recognized its 20th anniversary – engaging more than 4,500 participants and conducting nearly 950 applied NASA Earth science projects for societal benefit. The program's contributions made to the geospatial workforce and environmental decision-making outcomes demonstrate the increasing value of DEVELOP's unique approach to capacity building.