NASA Applied Sciences' DEVELOP National Program: Training the Next Generation of Remote Sensing Scientists

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Since its inception over a decade ago, the DEVELOP National Program has provided students with experience in utilizing and integrating satellite remote sensing data into real world-applications. In 1998, DEVELOP began with three students and has evolved into a nationwide internship program with over 200 students participating each year. DEVELOP is a NASA Applied Sciences' training and development program extending NASA Earth science research and technology to society. Part of the NASA Science Mission Directorate's Earth Science Division, the Applied Sciences Program focuses on bridging the gap between NASA technology and the public by conducting projects that innovatively use NASA Earth science resources to research environmental issues. Project outcomes focus on assisting communities to better understand environmental change over time. This is accomplished through research with global, national, and regional partners to identify the widest array of practical uses of NASA data. DEVELOP students conduct research in areas that examine how NASA science can better serve society. Projects focus on practical applications of NASA's Earth science research results. Each project is designed to address at least one of the Applied Sciences focus areas, use NASA's Earth observation sources and meet partners' needs. DEVELOP research teams partner with end-users and organizations who use project results for policy analysis and decision support, thereby extending the benefits of NASA science and technology to the public.

DEVELOP was established under the Digital Earth Initiative, a federal interagency project dedicated to creating a virtual representation of the Earth, which piloted an effort to increase public access to federal information about the Earth and the environment. A proposal that combined NASA's Digital Earth Initiative and a white paper written by three students advocating for a student program resulted in DEVELOP's official formation in 1999. Since then the DEVELOP Program has focused on student training and development, scientific research, and stakeholder interaction. The program fosters a high-quality corps of early career researchers possessing advanced skills in NASA Earth science research applications and partner agencies' decision support tools, as well as experience delivering results to officials in government, academia, and industry. Projects are developed in response to community demand, with each project demonstrating how NASA science can address local environmental and policy concerns. DEVELOP expands the network of organizations and individuals contributing to, and benefiting from, the Applied Sciences Program by forming partnerships and demonstrating project results.

DEVELOP is unique in that projects are led by students, with science advisors and mentors from NASA and partner organizations providing guidance and support. This allows students to gain valuable management and leadership experience, in addition to developing and applying research skills. Activities are conducted year-round during a ten-week term in the spring, summer, and fall. Students are given the opportunity to present their research each term to a variety of audiences. Students have presented at various government organizations, live on television, and at national science and policy conferences such as the American Geophysical Union, American Meteorological Society, Southern Growth Policies Board,

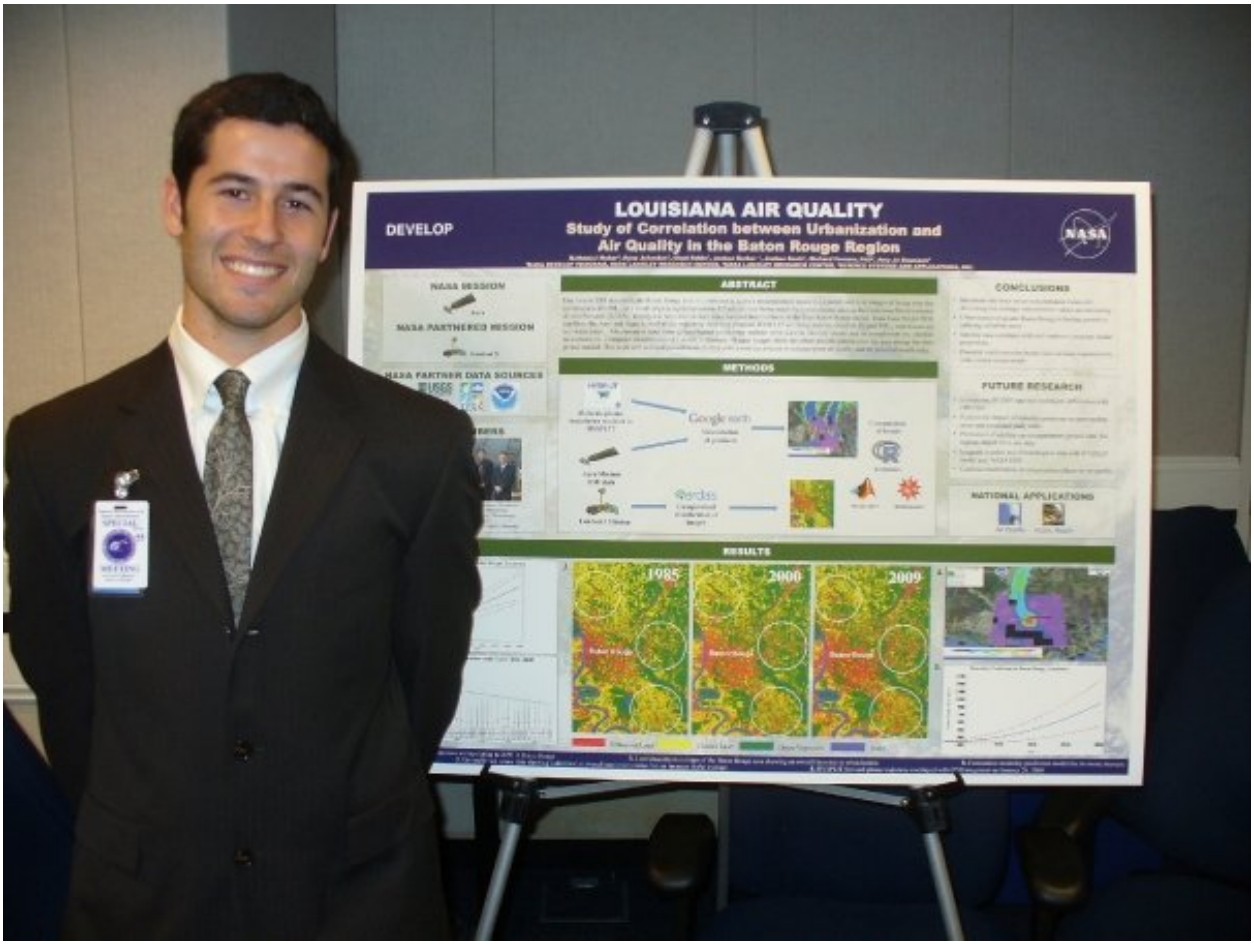
and Council of State Governments annual conferences and meetings. Conference posters, papers, and presentations are important for the program and students. These activities foster contact with potential partners, extend NASA science and technology to a wider audience, generate project ideas, and aide in new student recruitment. Equally important, conferences give students experience in presenting their work and interacting with the international science community and policy makers.

Admission to the program is based upon a competitive application process, with applications available online at the DEVELOP website (*http://develop.larc.nasa.gov/*). Eligible applicants are currently enrolled in high school through graduate school levels, and have at least a 3.0 grade point average. In particular, students with a strong interest in environmental, atmospheric, and the Earth sciences, computer science, Geographic Information Systems (GIS), and/or remote sensing are encouraged to submit an application. "Students not only receive relevant hands-on experience with NASA science data products, remote sensing and GIS, but they also learn the importance of team work, business development, and invaluable presentation and leadership skills," says **Brandie Mitchell** [Stennis Space Center - DEVELOP Center Lead].

DEVELOP teams are located across the United States, six in association with NASA centers—Ames Research Center, Goddard Space Flight Center, Jet Propulsion Laboratory, Langley Research Center, Marshall Space Flight Center, and Stennis Space Center—and three regional offices—Mobile County Health Department (AL), Wise County Clerk of Court's Office (VA), and the Great Lakes and St. Lawrence Cities Initiative (IL). Each team location varies in size and engages students of differing educational backgrounds. Summer terms typically host the largest number of participants, while the students participating in the spring and fall work flexible hours around their school schedules. The program actively recruits students from high schools and universities throughout the country, with student center leads and team members at each location leading recruiting efforts. Students are sought who demonstrate academic excellence, community service commitment, passion, and enthusiasm for applied science research. These qualities have contributed to the considerable growth and success of the program during the last decade.

The DEVELOP Program is mentoring today's students in preparation for careers as tomorrow's scientists and leaders. Challenged to think outside the box, take initiative, and employ innovative ideas, students who participate in the DEVELOP Program are better prepared to handle the challenges that face our society and future generations. DEVELOP students explore the frontiers of science and remote sensing to prepare the future American workforce, all while extending the benefits of NASA Earth science research results for societal benefit. The DEVELOP National Program has provided over 1,800 internships giving students the opportunity to perform applied science research and interact with industry, non-profit, and local government sectors. The DEVELOP National Program strives to be innovative and forward thinking, which is made possible by NASA's investment in students dedicated to learning.

More information is available about the Applied Sciences Program at *nasascience.nasa.gov/earth-science/applied-sciences*, and the DEVELOP National Program at *develop.larc.nasa.gov/*. Watch future issues of *The Earth Observer* for DEVELOP project and team highlights.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