

## Graduate Research Program Targets Water Resources in Areas of Critical National Need

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**U.Va. student Justin Henriques (bottom, third from left) in Indonesia.**

July 1, 2008 — Julia Reis, a University of Virginia civil engineering graduate student, is headed to Ethiopia this summer to continue researching ways to reduce malaria near a large multi-purpose reservoir — hoping to emulate the success of methods pioneered by the Tennessee Valley Authority that are credited with eradicating malaria in the southern United States.

Reis is one of five graduate students in U.Va.'s Department of Civil and Environmental Engineering who are participating as fellows in a program called [Graduate Assistance in Areas of National Need](#). Begun in 2003, U.Va.'s GAANN program in water resources and contaminant hydrogeology was developed and proposed by the faculty in the Program for Research in Contaminant Hydrogeology, which facilitates interaction between U.Va.'s School of Engineering and Applied Science and the Department of Environmental Science. The GAANN graduate traineeship is directed by associate professor Teresa Culver, and the program is supported financially by the U.S. Department of Education and U.Va.

The stipend support, as well as funds that fellows can use at their discretion toward their research and professional development, facilitate excellent research opportunities.

"The fellows have had greater freedom to define important projects that really excite them, and the program's flexibility has allowed us to recruit exceptional students," Culver said. "Some students have used fellowship funds to travel to field sites and collaborate with researchers all over the world, including Ethiopia, Germany, Guatemala and Indonesia. Others have purchased equipment and supplies to study sensitive ecosystems, such as

coastal wetlands and streams. One can see that the knowledge base that they are helping to build is moving us toward a more sustainable society."

Justin Henriques, a graduate student in U.Va.'s Department of Systems and Information Engineering, conducted a case study in Cimahi, Indonesia, where he worked with community leaders and government officials to assist in the assessment and planning of drinking water supply and grey water reuse for several communities within Cimahi. His research is focused on "capacity factor analysis," a system to help developing communities select appropriate technologies for municipal sanitation services. Once completed, the model will allow communities to select drinking water supply and grey water reuse systems that are safe, affordable, able to be built and managed by the community using local resources, and expandable as the community's management capacity increases. Henriques work landed him a graduate research fellowship from the National Science Foundation.

The GAANN program's goal is to increase the number of students prepared to seek academic positions in contaminant hydrogeology and water resources, and to train a new generation of interdisciplinary scientists and engineers. One of the previous fellows is already applying these skills as an assistant professor. Current fellows include 12 graduate students in three departments in the University: five in civil and environmental engineering, one in systems and information engineering, and six in environmental sciences. By focusing on increasingly threatened water resources, the GAANN fellows will be prepared for careers that will make a difference for the nation and the world.

— By Steve Griffin