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Carnegie Mellon's Sean Green Uses Combination of Computer Tools And Artificial Intelligence To Predict Diarrheal Illness Globally

PITTSBURGH—Carnegie Mellon University's Sean Green is using a series of computer modeling tools to identify the best way to curb the spread of diarrheal illness in more than 192 countries worldwide.

In an April 2009 article in the prestigious journal Environmental Science and Technology, Green estimated that improving rural sanitation by 65 percent worldwide would save the equivalent of 1.2 million lives.

"We want to show where the money can be best spent in these communities where diarrheal illness kills more than two million people a year, and remains the third-leading cause of child mortality," said Green, a fourth year Ph.D. student in Carnegie Mellon's Engineering and Public Policy Department.

In research supported by the National Science Foundation, the Steinbrenner Institute for Environmental Education and Research and the Heinz Foundation, Green along with Carnegie Mellon professors Mitchell J. Small and Elizabeth A. Casman developed a pattern matching computer tool that uses a set of variables describing information about a country to try to pinpoint which policies are most effective at preventing disease outbreaks.

The Carnegie Mellon researchers report that the most important variable for reducing deadly diarrheal outbreaks among the factors that they considered is improved sanitation in rural areas.

"We also found that a country's overall literacy rate and economic well-being contributed to the frequency of outbreaks," Green said.

The 33-year-old former computer technician will travel to Bangalore, India, this summer to continue studying the cause and impacts of diarrheal illness.

"I had a nice job in Silicon Valley, but I really want to make a difference in the world," said Green, who will spend three months this summer at the Center for the Study of Science and Technology Policy in southern India.

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Small and Casman, professors of engineering and public policy, praise Green for his tenacity and innovation in research focused on a health menace often underplayed.

Green will use a travel grant from the National Science Foundation to fund his trip to India, where he plans to develop a series of surveys to help urban slum communities near cities and non-government agencies develop the best public policies for curbing deadly diarrheal outbreaks.

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About Carnegie Mellon: Carnegie Mellon is a private research university with a distinctive mix of programs in engineering, computer science, robotics, business, public policy, science and social science, fine arts and the humanities. More than 11,000 undergraduate and graduate students receive an education characterized by its focus on creating and implementing solutions for real problems, interdisciplinary collaboration, and innovation. A small student-to-faculty ratio provides an opportunity for close interaction between students and professors. While technology is pervasive on its 145-acre Pittsburgh campus, Carnegie Mellon is also distinctive among leading research universities for the world-renowned programs in its College of Fine Arts. A global university, Carnegie Mellon has campuses in California's Silicon Valley and Qatar, and programs in Asia, Australia and Europe. For more, see www.cmu.edu.