

IMPACT

RESEARCH AT THE UNIVERSITY OF MARYLAND

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In this issue of Impact, we look at a new scientific approach in confronting the threat of terrorism: an interdisciplinary group of researchers in the social and behavioral sciences who are studying the origins and dynamics of terrorism, as well as its social and psychological impact.

This groundbreaking research is the latest in a series of homeland security-related projects at the University of Maryland. For a comprehensive listing of the university's homeland security and defense-related resources, go to the Division of Research Web site at www.umresearch.umd.edu and access the Homeland Security link.

For an overview of how Maryland researchers in the social and behavioral sciences are examining the *human* aspects of terrorism, take a look inside ...



researchPROFILES

To access these profiles, go to www.umresearch.umd.edu.



**JONATHAN WILKENFELD
AND V.S. SUBRAHMANIAN**

These researchers, a professor of government and politics and a professor of computer science, are coming up with rules for how potential terrorists might behave.



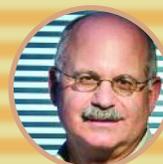
CATHERINE FENSELAU

This professor of chemistry and biochemistry is developing automated ways to identify pathogens and toxins in public spaces and battlefields.



**RAMA CHELLAPPA
AND LARRY DAVIS**

These longtime collaborators, one a professor of electrical and computer engineering and the other professor and chair of computer science, are working on pattern recognition in video.



researchTRENDS

As one of the nation's top public research universities, we are continuously promoting research and outreach efforts that have a positive impact on our lives. Here are but a few of the recently funded research projects we are involved with:

Maryland is part of an international, multi-institutional research team awarded a \$1 million grant by The Andrew W. Mellon Foundation for a humanities text-mining project called Metadata Offer New Knowledge, or MONK. The project involves collaboration between the Maryland Institute for Technology in the Humanities, the Human Computer Interaction Lab, and others.

Amanda Woodward, professor of psychology, received almost \$900,000 from NIH to study how infants under 12 months begin to understand the link between actions and intentions. Woodward's research in the Maryland Infant Studies Laboratory investigates babies' understanding of the social world—in particular, how babies make sense of other people's actions.

Richard Kohn, professor of animal and avian sciences, received almost \$800,000 from the National Fish and Wildlife Foundation and \$200,000 from the Chesapeake Bay Trust to study ways to reduce nitrogen and phosphorous losses from dairy farms. Using innovative, precise feed and waste management strategies, the project hopes to ultimately reduce nutrient losses to water resources by as much as 30 to 40 percent.



(From left) Arie Kruglanski, Gary LaFree and Jonathan Wilkenfeld are Principal Investigators in START, a consortium of researchers in the social and behavioral sciences who are exploring the human dimension of terrorism.

New Ideas to Confront Terrorism

The START consortium produces cutting-edge research related to three questions:

What can be done to slow formation and recruitment of terrorist groups?

What can be done to anticipate terrorist behavior and actions as well as undermine sympathy for terrorists?

What can be done to encourage resilience before and recovery after attacks?

In light of the terrorist attacks of Sept. 11, 2001, there has been a significant effort by the federal government to stimulate new ideas and new technologies to protect American lives, both at home and abroad. Today, federal research labs—as well as academic institutions working under federal research grants—are intensely examining important topics like the dangers of improvised explosive devices or the threat of chemical and biological weapons.

There is also an entirely different approach, based on interdisciplinary research in the behavioral and social sciences, which provides yet another important resource to confront terrorism.

“We look at the broader questions of *why* people choose to join terrorist organizations, why they stay with them, and what causes certain terrorist groups to grow while others fade away over time,” says Gary LaFree, a professor of criminology and director of the National Consortium for the Study of Terrorism and Responses to Terrorism, known as START.

Based at the University of Maryland, the START consortium was established in 2005 with a \$12 million Center of Excellence grant from the Department of Homeland Security. It involves more than 60 researchers from 27 academic institutions worldwide that represent a full range of disciplines within the social and behavioral sciences. START includes faculty from sociology, criminology, political science, psychology, communication, geography, economics and anthropology. These social scientists regularly collaborate with other faculty in public policy, history, public health, foreign languages and engineering.

“This interdisciplinary group of researchers knows a lot more about violence, group psychology and international conflict than has been brought to bear on this problem thus far,” says LaFree, who notes that although START works closely with many federal agencies, none of the research in START involves classified material.

Far from being just an academic think-tank, research in START is driven by the goal of providing homeland security professionals with relevant and reliable analyses that can help disrupt terrorist organizations. “We look at this as the social science equivalent of the Manhattan Project,” explains LaFree, referring to the code name given to the cadre of scientists who secretly developed the atomic bomb during World War II.

Currently, there are 37 major ongoing research projects at START, with researchers just beginning to see the results of some of the earliest projects. The consortium is publishing much of these research findings on their Web site, in academic journals, as well as in short research briefs sent to government policy-makers and first responders.

Data-Driven Research

The majority of research in START is divided into three main working groups: One group—headed by Arie Kruglanski, Distinguished Professor of Psychology at Maryland—is studying how terrorist organizations form and recruit new members. It focuses on what motivates individuals, small groups and social movements to undertake terrorism as a strategy.

Kruglanski is one of three faculty

(cont. on back)

from the university's College of Behavioral and Social Sciences who are Principal Investigators in START. (The others are director Gary LaFree and Jonathan Wilkenfeld, professor of government and politics, whose research is featured in an *Impact* Profile.)

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A second working group in START is researching the dynamics of terrorist organizations. One of its projects is looking at how terrorist groups have exploited the 9–11 attacks, for example, to expand their base of popular support.

As with most scientific inquiries in the behavioral and social sciences, START requires a tremendous amount of data for its research. “All of our projects are intensely data-driven,” says LaFree. To that end, START has in its possession the world’s largest database of documented incidents of terrorism.

The Global Terrorism Database, or GTD, contains almost 80,000 documented incidents going back to

1970. Using this data, LaFree and his colleagues employ a method called trajectory analysis—widely used in criminology research—to forecast if certain terrorist groups may simply dissolve over a period of time, or grow stronger and more dangerous. The GTD is also used for other projects, and new collaborative efforts with computer science experts at the University of Maryland allow data to be entered into the GTD at a much faster rate, making the information more accessible and relevant for the ever-changing threats posed by terrorists.

A third working group within START is examining how U.S. citizens and institutions respond to terrorist threats. This group includes risk communications specialists at Maryland who study how the public reacts to an extreme event like a terrorist attack. This working group also does analysis on topics that are extremely useful to first responders. “How do you evacuate cities or buildings to save people’s lives if there is a major catastrophe?” asks LaFree. “You need to bring in the relative data to find out what human beings do in certain situations, and START is doing quite a bit of work in that area.”

—Tom Ventsias

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Your comments and feedback are welcome; please email your comments to impact@umd.edu or fax them to Anne Geronimo, executive editor, at 301.314.9569.

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researchSPOTLIGHT



Consistent with the Department of Homeland Security’s goals for its Centers of Excellence, START is dedicated to training and mentoring a next generation of scholars. Starting in fall of 2007, START will offer an undergraduate minor in terrorism studies. Already, more than 125 students (the majority of them at the University of Maryland) have been actively involved with START’s research. Many of these students—both at the undergraduate and graduate level—benefit immensely from the experience of working side-by-side with some of the

top terrorism experts in the world. “The students are true partners in this research, collecting data about terrorist groups and events, analyzing these data, and helping to present findings to government agencies as well as academic audiences. It’s a unique and invaluable experience for them,” says Kathleen Smarick, the executive director for START who helped implement the consortium’s educational component. For more information on all of the ongoing research and educational resources at START, go to www.start.umd.edu.



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