



# RAND





ANNUAL REPORT 2013



**Research and Analysis** 



2013 by the Numbers



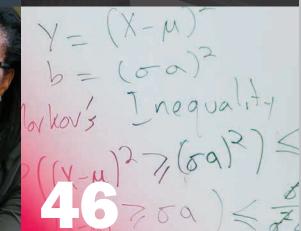
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NONPROFIT NONPARTISAN COMMITTED TO THE PUBLIC INTEREST RAND DEVELOPS SOLUTIONS TO PUBLIC POLICY CHALLENGES TO HELP MAKE COMMUNITIES THROUGHOUT THE WORLD SAFER AND MORE SECURE, HEALTHIER AND MORE PROSPEROUS.



RAND tackles critical issues in security, health, education, sustainability, growth, and development-helping people and organizations throughout the world devise solutions to the most vital public policy matters.

In 2013, with most of the provisions of the Affordable Care Act about to take full effect, RAND experts were at the forefront of some of the biggest questions, projecting the long-term benefits of Medicaid expansion and crafting plausible solutions to a projected shortage of physicians in the United States. When the U.S. Department of Defense faced budget cuts such as the ones mandated under sequestration, RAND experts were proposing alternative scenarios (and calculating projected savings) to accommodate such reductions—and presenting their recommendations to policymakers. In the Middle East, when the use of chemical weapons in Syria escalated a pervasive turmoil that has shown no signs of abating, RAND experts were evaluating the risks of using U.S. and allied airpower to intervene. And while U.S. lawmakers debated various measures intended to prevent military sexual assault, RAND was creating new ways to detect sexual misconduct and recommending how to improve survivors' access to physical and psychological care.

We are pleased to share with you these and many other highlights from the past year, each illustrating the ways RAND develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous.

Thank you for your continuing interest and support.

Karen Elliott House Chair, RAND Board of Trustees

vien Alecce Michael D. Rich

Michael D. Rich President and Chief Executive Officer



## **Service Members, Veterans, and Their Families**

The wars in Iraq and Afghanistan have presented ongoing challenges for those who serve, as well as their families and support networks. In 2013, RAND was at the forefront of research on the needs of caregivers; the effects of deployments on marriages; and the physical, psychological, and financial ramifications of sexual assault in the military.



Spouses, family members, and others who care for U.S. military members after they return home from conflict often toil long hours with little support, putting them at risk for physical, emotional, and financial harm, according to a 2013 RAND project commissioned by the Elizabeth Dole Foundation.

Researchers estimate that there are about 1 million men and women who are providing care or have provided care for military members or veterans who served in Iraq or Afghanistan. Caregivers include spouses, children, and parents of military members and veterans.

As part of this project, caregivers shared firsthand insights about the challenges they face. Many of the wounded veterans cared for by project participants had experienced a traumatic brain injury, the signature wound of the Iraq and Afghanistan conflicts. These service members and veterans often suffered from multiple health conditions, such as musculoskeletal problems, hearing loss, respiratory problems, and post-traumatic stress disorder. This means that caregivers must often navigate multiple systems of health care and benefit providers on behalf of their loved ones.

Many caregivers reported having insufficient time or energy to devote to parenting and feared those circumstances would have negative consequences for their children.

This research is part of an ongoing, larger body of RAND work that will provide a more comprehensive understanding of the needs of military caregivers and the gaps in services to support them. **66** Just as the nation's longest period of wartime has posed challenges for the military, the wars in Afghanistan and Iraq have created hardships on the family members and others who provide care to the wounded warriors once they return home. RAND has estimated the number of—and burdens faced by these caregivers and identified ways to better support them. **9** 



Terri Tanielian Senior Social Research Analys



#### Effects of Deployments on Military Marriages

The wars in Iraq and Afghanistan have been hard on U.S. military marriages, with the risk of divorce rising directly in relation to the length of time service members have been deployed to combat zones, according to RAND findings published in the *Journal of Population Economics*.

While researchers found that any deployment increases the risk of divorce among military members, the negative consequences were higher for those deployed to Afghanistan and Iraq.

The negative effects of deployment were also found to be largest among female military members, with women facing a greater chance of divorce than men. In addition, more cumulative months of deployment increased the risk of divorce among military couples, and the risk of divorce was higher for hostile deployments than for nonhostile deployments.

These and other findings about the effects of deployments on marriage shed light on how departments and agencies might better tailor resources to the specific needs of military families.

#### **Sexual Assault in the Military**

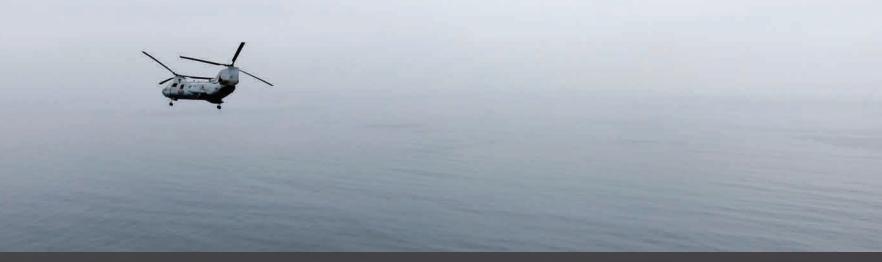
Awareness of sexual violence within the U.S. military has grown over the past decade. In 2012 alone, almost 3,400 service members—women *and* men—formally reported that they had been victims of a sexual assault.

According to RAND researchers, service members who have been sexually assaulted and develop a mental health condition encounter multiple barriers when trying to access psychological health care, such as long wait times, shortages of well-qualified mental health service providers, and a limited availability of care in rural regions. Active-duty personnel are often unable to take time off during standard work hours to seek care. And worries about confidentiality may prevent some from getting help. In addition, service members report concerns that they will appear weak to leadership and that seeking help will harm their careers. Concerns about the availability of mental health records to the chain of command may be particularly problematic for victims, given that the perpetrator is within the victim's chain of command in about a quarter of the cases.

Beyond the indisputable physical and mental devastation suffered by victims, RAND researchers found that military sexual assaults have real financial costs for individuals and for society, including medical and mental care, days missed from work, and other tangible and intangible financial costs.

#### **RAND IMPACT**

**DETECTING MISCONDUCT** After the conviction of 26 U.S. Air Force personnel for sexual misconduct, many questioned the Air Force's ability to ensure the safety and well-being of its personnel, particularly its vulnerable junior enlisted population. The Commander of Air Education and Training Command requested assistance from RAND Project AIR FORCE, which responded immediately with on-site expertise and advice. Over the next year, a larger RAND team worked closely with Air Force staff to design, test, and implement a set of survey tools to more effectively monitor the basic training environment and help Air Force leaders detect incidents of abuse, harassment, unprofessional relationships, and sexual assault. Since October 2013, the surveys have been administered to each class of Air Force basic military trainees-thousands, so far. At RAND's recommendation, respondents are able to complete the online surveys without using any identifying access cards or personalized information. Such a fully anonymous process has very rarely been used in a military setting and represents a significant breakthrough in eliciting the candid feedback necessary for revealing potential problems and facilitating intervention. Air Force leaders view these tools as a critical part of their strategy to detect and deter future misconduct in basic training. Moreover, the survey instruments and their rapid, innovative implementation are sparking wider interest within the U.S. Department of Defense.



## The Era of Austerity?

What are the strategic and financial alternatives that military forces should weigh as they strive to uphold high levels of security while cutting hundreds of billions of dollars from defense budgets over the next decade? As decisionmakers confront the budgetary realities of fiscal austerity, RAND is helping them understand the risks and trade-offs.



## NATO and U.S. Strategies

In 2013, the boiling points for defense budgets came after years of percolating pressures that have spanned the Atlantic Ocean. In the United States and throughout Europe, governments ran the risks of imposing deep cuts without applying deep thought to what should be cut and why. According to F. Stephen Larrabee, RAND's distinguished chair in European security, "If this uncoordinated process of reduction continues, NATO risks losing critical capabilities that could seriously erode the alliance's ability to meet the security challenges it will face in the coming decade."

A research team led by Larrabee proposed several measures to help the European members of the NATO alliance arrest the sharp downward spiral of their defense capabilities.

These measures, which all have their own limitations, include

- pooling and sharing resources
- "leapfrogging" to new capabilities by investing heavily in emerging technologies
- forming ad hoc coalitions to conduct missions beyond Europe's borders
- encouraging Britain and France to intensify their defense cooperation
- encouraging Britain and the southern alliance members (France, Italy, and Spain) to assume primary responsibility for managing crises in the Maghreb
- encouraging Germany to intensify its defense cooperation both with Poland to secure Eastern Europe and with Denmark and Sweden to secure the Baltic region.

For NATO to retain its political and military relevance, according to the research team, austerity cuts among the European allies must be closely coordinated in the short run and arrested in the long run. >> **66** The defense cuts have been driven by the need to reduce large budget deficits—not by a change in the nature of external threats. **99** 



F. Stephen Larrabee Distinguished Chair in European Security

**66** It is not surprising that a debate is under way as to the future role of America in the world, specifically regarding the size and characteristics of the U.S. overseas military presence. If U.S. defense leaders can agree on their highest global priorities, then the tough budgetary decisions will be easier to make, and the highest priorities will more likely be served.



Lynn E. Davis Senior Political Scientis

Meanwhile, the looming threat of a budgetary sequester in the United States portended steep across-the-board cuts in U.S. military expenditures, fueling a debate as to the future role of America in the world, specifically the size and characteristics of the U.S. overseas military presence. Whereas the Obama administration called for a strategic shift toward Asia and the Middle East while maintaining defense commitments to Europe, other voices called for bringing most U.S. military forces home.

The U.S. military must first decide whether its allies in Europe and Northeast Asia are willing to assume primary responsibility for their own security, according to senior political scientist Lynn E. Davis. If so, the United States can reduce its overseas presence. If not, one option is to rely primarily on U.S.-based forces to respond to global crises. But if that is untenable, then the United States will be forced to choose between focusing on Asia or on the Middle East. America cannot do it all, says Davis.

In addition, a RAND team led by Stuart E. Johnson and Irv Blickstein offered three ways to cut roughly \$400 billion to \$500 billion more from U.S. defense programs over the next decade strategically, without crippling the force. One strategic direction would prepare for persistent land-based conflict (against violent extremists); another would cede more responsibility to allies and partners; the third would focus U.S. resources on Asia.

Each direction carries risks. But by tying budget decisions to a strategic direction, the risks are made explicit both to policymakers, so they can adjust their decisions accordingly, and to the body politic, to create realistic national expectations.



#### The Efficiency of DoD's Distribution Network

The U.S. Department of Defense (DoD) has been continually looking for supply chain and logistics efficiencies, a search further motivated by the current budget environment and the drive to cut costs. RAND's federally funded research and development centers have been supporting this effort. For the Office of the Secretary of Defense, the RAND National Defense Research Institute (NDRI) developed policy recommendations for better integrating the DoD supply chain. NDRI then worked with the Defense Logistics Agency (DLA) to devise a way to determine the number and location of stockage points for each item that would minimize total supply chain costs. For another project assisting DLA, RAND developed an integrated inventory, transportation, material handling, and procurement model of the DoD distribution network to quickly assess the total cost effects of changing the number of major distribution centers. This model incorporated input from previous research by RAND Arroyo Center and NDRI

Drawing on the distribution network model, the project team recommended a long-term strategic distribution network direction that was ultimately accepted by DoD and incorporated into its Strategic Network Optimization Initiative. In addition to changing plans for the number of major DoD distribution center hubs, this modeling work enabled DLA to implement and adopt related initiatives that will save DoD at least \$75 million and up to \$175 million per year.

#### **RAND IMPACT**

repair parts and other sustainment items have been accumulating in forward operating bases in Afghanistan, raising the possibility that they will be shipped back to the United States as unneeded excess, when they might instead be of use elsewhere in country. RAND Arroyo Center has worked with the Department of the Army (Logistics), the Army Materiel Command, and the Defense Logistics Agency to shift the mission of the DLA distribution center in Kandahar, Afghanistan, to focus on retaining and redirecting these items to points of potential use. Arroyo researchers developed algorithms for the Army that alert managers about changes in distribution costs, current on-hand inventory, and economic and readiness considerations at the item level. Currently some \$25 million in inventory is being drawn down each month, reducing the need for 90 containers of sustainment to be sent out of theater-only to be returned latersaving more than \$6 million per month, or \$70 million per year, in seconddestination transportation costs. This also reduces the time required for inventory recordkeeping and increases the potential for utilization.

**DISTRIBUTION EFFICIENCIES** | Some



## **Forces and Resources**

By evaluating existing and emerging technologies, alternative force structures, and workforce management policies, RAND helps maximize the efficiency and effectiveness of military operations for the United States and allied nations in an increasingly resource-constrained environment.



#### **Do Joint Fighters Save Money?**

In planning for future fighter aircraft, the U.S. Department of Defense (DoD) should avoid a joint acquisition approach, according to a 2013 RAND project. The prevailing thinking has been that savings can be achieved in life-cycle costs through economies of scale and elimination of duplicative efforts in R&D, production, and operations and support. However, RAND researchers found that historical joint aircraft programs have not saved money, have caused services to accept unwelcome design compromises, have contributed to the shrinking of the industrial base, and have increased strategic and operational risk.

In light of these findings, researchers recommend that unless the participating services have identical, stable requirements, DoD should avoid future joint fighter and other complex joint aircraft development programs.

Aside from cost considerations. policymakers should be mindful of the effects of joint aircraft programs on the combat aircraft industrial base and on operational risk. The pursuit of joint aircraft programs in recent decades has coincided with a reduction in the number of major fighter aircraft prime contractors from eight in 1985 to only three today. Such a situation reduces the potential for future competition, may discourage innovation, and makes costs more difficult to control. Having a variety of fighter aircraft platforms across the service inventories also provides a hedge against design flaws, maintenance problems, and safety hazards that could cause fleetwide stand-downs-and, moreover, increases the options available to meet unanticipated enemy capabilities.

#### **RAND IMPACT**

**FORCE MIX** As budget cuts force reductions in the size of the U.S. military, the Army must decide what mix of active and reserve component units is needed to meet a wide range of operational military demands.



Conventional wisdom for the past several decades has been that reserve forces

cost less. But there has been a lack of impartial, empirical analysis of the issue, and debate has been characterized mostly by politics and emotions. To help decisionmakers navigate a path forward, RAND developed a suite of innovative new modeling techniques and tools. Applying data from recent military operations, the team found that it was actually more expensive to maintain some types of reserve component units in the field than to staff the same unit types with fulltime, active soldiers. This convinced senior Department of Defense leaders to revise their recommendations for transferring these units to the reserves in the Strategic Choices and Management Review, the department's crucial 2013 internal study of its future budget options.



**6** The critical takeaway from this study is that a significant number of people working on the ground in conflict zones are suffering from these problems, and many of their deployment-related health needs are not being addressed.

Molly Dunigan Political Scientist

For the past decade, private contractors have been deployed extensively in conflict zones throughout the world, supporting U.S. and allied forces in Iraq and Afghanistan, as well as foreign governments, nongovernmental organizations, and private businesses. These contractors experience many of the same traumas of war faced by military forces combat stressors known to have negative physical and mental health implications for armed forces personnel. Unlike military service members, however, many contractors don't have access to mental health resources before, during, or after deployment.

To find out how they are coping with the after-effects of working in a war zone, RAND surveyed more than 650 contractors who had deployed on contract to a theater of conflict at least once between early 2011 and early 2013. Sixty-one percent of those responding to the RAND survey were U.S. citizens; 24 percent were from the United Kingdom; and the rest were citizens of Australia, South Africa, New Zealand, and other nations. RAND's is the first survey to examine a broad range of deployed contractors—not just those who provide security services.

Researchers found that among those surveyed, 25 percent met criteria for posttraumatic stress disorder (PTSD), 18 percent screened positive for depression, and half reported alcohol misuse. A number of contractors also reported physical health problems as a result of deployment, including traumatic brain injuries, respiratory issues, back pain, and hearing problems. Although most had health insurance, only 28 percent of those with probable PTSD and 34 percent of those screening positive for depression reported receiving mental health treatment in the previous 12 months.



#### Helping the Military Improve Retention and Manage Its Compensation System

A 2013 RAND project outlines advancements to a key modeling tool that will allow the U.S. military to better manage the size of the armed forces and its compensation system.

The Dynamic Retention Model is a state-ofthe art modeling tool developed at RAND that has been used by the U.S. military to support military compensation decisions to sustain the all-volunteer force in the United States. While valuable, the tool had been limited because it could only forecast the retention and cost effects of policy changes once fully phased in across the entire workforce.

But changes often are phased in, with existing service members "grandfathered" under the policies they signed up for, and new policies applied only to service members who join after a certain date.

The new research represents a major technical innovation that sets RAND apart in its ability to conduct analysis of potential changes to compensation and retirement, and to manage a force drawdown. For example, the researchers analyzed the effects of an important strategy that could provide additional flexibility to the military: Offer service members the option of either being "grandfathered" under the existing policies, or switch to the new compensation package. Accurately capturing the effects of options like these on the makeup of the force requires understanding and modeling service members' decisionmaking, one of the technical challenges overcome in the new model.

This research was made possible by RAND's Gene Gritton Award for Innovation in Defense and National Security. This funding enables researchers to pursue promising avenues of inquiry for which traditional client funding is unavailable but that has the potential to make substantial advances in policy and practice. The award honors Gene Gritton, former vice president of the RAND National Security Research Division. **66** Our model will allow the U.S. military to understand the workforce effects of permanent compensation and other workforce policies during a transition period; the effects of temporary policies, such as pay freezes; and the effects of alternative transition plans, such as grandfathering versus 'opt-in.'



Beth J. Asch Senior Economist

# **International Affairs**

RAND's research and analysis in international affairs cover a multitude of issues from regional security and stability, global economies and trade, and space and maritime security to diplomacy, nation-building, and more.



#### Preparing for the Possibility of a North Korean Collapse

North Korea is a failing state that has showed signs of instability for some time. A 2013 RAND report by senior defense analyst Bruce W. Bennett describes many of the possible consequences of a North Korean government collapse, including civil war in the North; the potential use and proliferation of the nation's chemical, biological, and nuclear weapons; and even war with China. Failure to establish stability in North Korea could disrupt the political and economic conditions in Northeast Asia and leave a serious power vacuum for a decade or longer.

The research also examines ways of controlling and mitigating the consequences of a North Korean government collapse, recognizing that South Korea and the United States almost certainly will need to militarily intervene in the North, even if only to secure the delivery of humanitarian aid and demobilize the North Korean military. South Korea and the United States also need to be prepared to deal with North Korean security services, including those operating the political prisons—as it will be necessary to liberate North Korea's estimated 120,000 or so political prisoners as soon as possible to prevent what is clearly a human rights disaster from deepening further.

**66** How these huge issues are resolved will depend largely on how invested the North Korean people are in becoming one with the South. In the divided Germany of the late 1980s. virtually all Germans thought they would be better off if unification occurred. South Korea should be working toward creating this same kind of feeling of solidarity between its people and those of North Korea. 🍤



Bruce W. Bennett Senior Defense Analys



**U.S. and World Markets** 

**6** China's market share of the global production of critical materials has grown dramatically over the past two decades from a strong position to an overwhelmingly dominant one.

Richard Silberglitt Senior Physical Scientist

The U.S. economy, and especially its manufacturing sector, is dependent on the supply of raw and semi-finished materials used to make products. While the United States has extensive mineral resources and is a leading global materials producer, many materials critical to U.S. manufacturing are imported, sometimes from a country that has the dominant share of a material's global production and export. In 2013, RAND researchers identified 14 critical materials for which production is concentrated in countries with weak governance, as indicated by the World Governance Indicators published by the World Bank.

China is the controlling producer of 11 raw materials critical to U.S. manufacturing, nine of which have been identified as having high economic importance and high supply risk. As China's market share and domestic consumption of critical materials has grown, it has instituted production controls, export restrictions, mine closings, and company consolidations that have led to two-tier pricing—which creates pressure to move U.S. manufacturing operations to China and contributes to strong price increases for these materials on the world market.

To mitigate the impact of these market distortions on the global manufacturing sector, researchers suggest the need for actions that (1) increase resiliency to supply disruptions or market distortions and (2) provide early warning of developing problems regarding the concentration of production.

This research is of significance not only to a broad spectrum of organizations in the materials and manufacturing sectors but also to government, private-sector, and nonprofit organizations involved with or concerned about those sectors.

# The Western Pacific

China views nearby U.S. sea power as a threat to itself, its regional aspirations, and its access to the world's oceans, resources, and markets. So China is expanding its sea power in East Asian waters, deploying advanced antiship missiles, submarines, cyberweapons, and other capabilities that threaten the U.S. fleet. The United States, however, will not relinquish its sea power, which it sees as needed to maintain its influence and stability in this vital region.

Defending U.S. ships will prove difficult, expensive, and probably futile in the face of China's accelerating and well-funded buildup, according to a 2013 RAND analysis. The United States can exploit technology more boldly than it previously has and make its sea power less vulnerable by relying more on submarines; drones; and smaller, elusive, widely distributed strike platforms. But the U.S. fleet would even then be vulnerable to cyberattack. Therefore, the analysis suggests, in parallel with making its sea power more survivable, the United States should propose an alternative to confrontation at sea: East Asian multilateral maritime-security cooperation, with China invited to join. While China might be wary that such a regional arrangement would be designed to contain and constrain it, the alternative of exclusion and isolation could prompt China to join.

## **Turkish–Iranian Relations**

As the political, social, and economic landscape in the Middle East continues to shift, the intensification of Turkish-Iranian cooperation—driven largely by Turkish energy needs and Iran's vast oil and natural gas resources—has attracted the attention of leaders throughout the world. A 2013 RAND analysis posed several critical questions: How are Turkish-Iranian relations likely to evolve in the coming decade? To what extent are Turkish-Iranian security interests convergent, and to what extent are they divergent? And when they diverge, what are the implications for security in the Middle East and for U.S. and Turkish interests?

Researchers found that although economic cooperation between the two countries has increased over the past decade, they remain strategic rivals because they have fundamentally different political identities and ideologies. While the two states may share certain economic and security interests, especially opposition to the emergence of an independent Kurdish state, their interests are at odds in many areas across the Middle East. In particular, Turkey's main fear is that Iran's acquisition of nuclear arms could lead to an arms race in the Middle East. This, in turn, could increase pressure on the Turkish government to consider developing its own nuclear weapon capability.

This work was conducted within the National Defense Research Institute, a federally funded research and development center at RAND. The institute provides research on complex policy and strategy problems—such as international economic relations, risk assessment, and emerging challenges—to help inform the public discourse and improve the security and well-being of people throughout the world. Shortly after reports emerged that the Syrian government had used chemical weapons against opposition forces, RAND evaluated five options for using U.S. and allied airpower to intervene in the Syrian civil war.

Researchers concluded that destroying or grounding the Syrian air force is operationally feasible but would have only marginal benefits for protecting civilians, while protecting safe areas would amount to joining the war on the side of the opposition. They also warned that any airpower intervention would involve substantial risks of escalating to greater U.S. military involvement in Syria.

The work was supported through philanthropic contributions and conducted within the RAND Center for Middle East Public Policy, which brings together analytic excellence and regional expertise from across RAND to address the most critical political, social, and economic challenges facing the Middle East today.

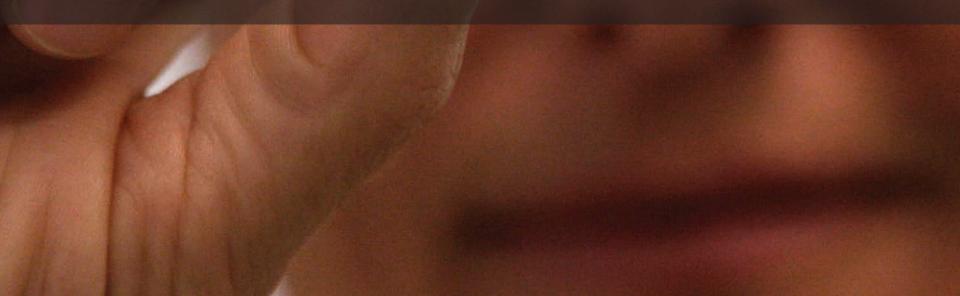
#### **RAND IMPACT**

AFGHANISTAN | In 2013, RAND supported U.S. Special Operations Forces (SOF) by deploying analysts to Afghanistan and conducting research back in the United States. RAND research explored policies necessary to achieve unity across U.S. and other NATO SOF; analyzed key challenges facing Afghan National Security Forces; developed tools that SOF could use for supporting the coordination, integration, and sustainability of Afghan SOF; and assessed the effectiveness of SOF targeting of insurgents.

This research was used by U.S. and other NATO leaders in their efforts to improve SOF effectiveness, contributed directly to the priorities and plans of SOF commanders, and was influential in identifying and examining emerging issues. In addition, RAND conducted research for U.S. Special Operations Command on prospects for the resurgence of al Qaeda and other militant groups in Afghanistan after 2014: this research was briefed at the White House, at the departments of State and Defense, throughout the U.S. Intelligence Community, and to members of Congress. The work was used as input into several National Security Council Principals Committee meetings that discussed U.S. options in Afghanistan after 2014, including troop levels, the possibility of civil war, and prospects for economic growth. These efforts were just part of RAND's program of analysis for the leadership of U.S. Special Operations Command. A significant body of additional research informed the development of the first U.S. Global SOF Campaign Plan, among other contributions.

## **Health and Health Care**

A substantial body of RAND research has focused on examining the cost implications of healthy and unhealthy behaviors, with an eye toward promoting health and preventing disease; evaluating existing and potential policies to lower health care costs; and improving health system value, reducing waste, and improving the quality of care.





The global fight against HIV/AIDS is far from over. Worldwide, there are more than 2 million new infections each year. This "big picture" hides some fundamental differences in how the infection, its treatment, and its prevention are understood at the community and country level. The Mapping Pathways consortium comprising RAND Europe, AIDS Foundation of Chicago, Desmond Tutu HIV Foundation, NAZ India, AIDS United, and Bairds CMC—studied the use of antiretroviral drugs in HIV/AIDS prevention strategies. The consortium found that the scientific evidence on the drugs' effectiveness is interpreted, prioritized, and used differently in various local contexts.

Research was conducted in South Africa, India, and the United States, collecting the views of stakeholders from community advocates to policymakers, and bringing these together with those of multidisciplinary experts and findings from the latest scientific literature.

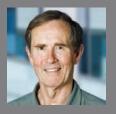
With a foreword by Archbishop Desmond Tutu, the 2013 publication Mapping Pathways: Developing Evidence-Based, People-Centred Strategies for the Use of Antiretrovirals as Prevention explains that antiretroviral prevention strategies need to be crafted for success at the local level before they can have a global impact on eradicating the disease. Throughout 2013, workshops in San Francisco, Washington, D.C., and Atlanta have taken the report's insights forward in discussions with policymakers and practitioners, mapping out future scenarios grounded in local contexts

**6** Just because we know that antiretroviral drugs can prevent HIV infection does not mean that we will, in practice, successfully implement their use in communities that need them. It is important to make decisions on prevention programming that make sense locally, for communities to map out their own, unique pathways.



Molly Morgan Jones Senior Policy Researcher

6 The economic burden of caring for people in the United States with dementia is large and growing larger. But people with dementia do not get significantly more health care services than other people. The real drivers of the cost are for nonmedical care. 9



Michael D. Hurd Director, RAND Center for the Study of Aging



**Dementia's Mounting Toll on the U.S. Economy** 

The monetary cost of dementia in the United States ranges from \$159 billion to \$215 billion annually, making the disease more costly to the nation than either heart disease or cancer, according to a 2013 RAND study published in the *New England Journal of Medicine*. But the greatest costs are associated with providing institutional and home-based long-term care rather than medical services.

The study, funded by the National Institute on Aging, is the most-detailed examination done in recent decades on the costs of dementia.

The prevalence of dementia increases strongly with age and the analysis suggests that the costs of dementia could more than double by 2040 if the age-specific prevalence rate of the disease remains constant as the population continues to grow older. The study provides a clearer picture of the economic burden caused by the disease because it eliminates costs related to other illnesses suffered by dementia patients, accounts for variations in the severity of dementia, and uses a better estimate of the incidence of the illness.

In 2011, President Obama signed the National Alzheimer's Project Act, which calls for increased efforts to find new treatments, to provide improved care for those with dementia, and to track the financial costs of dementia. RAND's findings underscore the urgency of federal efforts to develop a coordinated plan to address the growing impact of dementia on American society.



**Eating Better for Less** 

**& &** RAND's findings offer good evidence that lowering the cost of nutritionally preferable foods can motivate people to significantly improve their diet.



Roland Sturm Senior Economist

Lowering the costs of healthy foods in supermarkets increases the amount of fruits, vegetables, and whole-grain foods that people eat, while also appearing to reduce consumption of nutritionally lessdesirable foods, according to a 2013 RAND study published in the American Journal of Health Behavior.

Researchers examined a program available to members of South Africa's largest private health insurance company that provides a rebate of 10 percent or 25 percent on purchases of healthy foods. The program, started in 2009, now has about 800 participating supermarkets and enrolls more than 260,000 households.

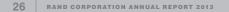
In the program, South African shoppers can get the rebate on a list of foods selected by a panel of nutritionists, physicians, and behavioral scientists. That list has more than 6,000 items that account for 20 percent of food spending at supermarkets. Eligible items are marked at supermarket shelves and include fruits and vegetables, whole grains, and nonfat dairy, but excludes most items with added sugars or salt.

The research team collected supermarket scanner data linked to 170,000 households and survey data about diet patterns from 350,000 individuals, including both those who participated in the rebate program and those who did not. Regardless of how the information was analyzed, lower prices for healthy foods were significantly associated with better self-reported diet.

#### **RAND IMPACT**

#### **HEALTH CARE FOR LOW-INCOME**

AMERICANS | One of 2013's most significant U.S. health care policy issues was whether states would accept Medicaid expansion or opt out. Using the RAND-developed COMPARE microsimulation tool, RAND researchers were able to model the likely effects of Medicaid expansion for specific statesa unique and highly valuable resource to governors and state legislators confronting this decision, and one made possible only by years of investment in COMPARE by RAND and our donors and through other commissioned analyses. Arkansas and Pennsylvania were two states initially unlikely to accept expansion. Stakeholder groups in each state asked RAND to analyze the potential effects on their local economies, jobs, and low-income populations. RAND's analyses forecast significant economic benefits to both Arkansas and Pennsylvania were they to implement the expansion, helping to create a more informed debate. Arkansas accepted expansion, with some modifications: as of early 2014, Pennsylvania was considering expansion, also with modifications





The Effect of Health Reform on Young Adults

The provision in the Affordable Care Act that allows young adults to remain on their parents' medical insurance up to age 26 has shielded them, their families, and hospitals from the full financial consequences of serious medical emergencies, according to a 2013 RAND study published in the New England Journal of Medicine.

Examining U.S. hospital emergency department use during the first year after the provision went into effect, researchers estimate that \$147 million in nondiscretionary medical care was newly covered by private insurance. Without the new regulation, those costs would have been paid by young people and their families, or been written off by hospitals as uncompensated care.

The study estimates that more than 22,000 nondiscretionary emergency room visits during 2011 involved young adults who were newly insured under the provision. The change increased health insurance rates by 3 percent among the young adults needing care in emergency departments nationwide during the period.

**66** The change allowing young people to remain on their parents' medical insurance is protecting young adults and their families from the significant financial risk posed by emergency medical care. Hospitals are benefitting, too, because they are treating fewer uninsured young people for emergency ailments. **99** 

Andrew W. Mulcahy Policy Researcher



#### **Solving the Anticipated U.S. Physician Shortage**

Forecasts suggest that as more Americans seek health services once they become newly insured under the Affordable Care Act, shortages of primary care physicians could worsen. But much of the shortage expected over the next decade could be eliminated through the use of new models of medical care, according to RAND findings published in *Health Affairs*.

Both patient-centered medical homes and nurse-managed health centers are models of primary care that use a mix of medical providers that is richer in nurse practitioners and physician assistants than today's predominant models of delivering medical care. Expansion of patient-centered medical homes and nurse-managed health centers could help eliminate 50 percent or more of the shortage.

Researchers say such expansion is plausible under the Affordable Care Act. The use of medical homes has been growing rapidly and the Affordable Care Act provides up to \$50 million to support nursemanaged health centers.

**6** The solution to the shortage may require changes in policy, such as laws to expand the scope of practice for nurse practitioners and physician assistants, and changes in acceptance, on the part of providers and patients, of new models of care that rely less on doctors.



David I. Auerbach Policy Analyst

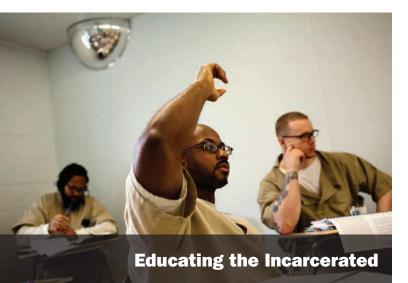
#### **RAND IMPACT**

**MEDICARE SAVINGS** As part of a broader set of efforts to enhance its fiscal sustainability, Medicare recently implemented a program to allow it to more easily collect from beneficiaries money it is owed but has traditionally been unable to collect. This secondary payer liability program requires companies that provide auto, homeowner's, and other types of insurance to report award payments made to Medicare beneficiaries to the U.S. Centers for Medicare and Medicaid Services. In theory, the reports would allow Medicare to identify when a beneficiary's injury treatment had already been paid for by Medicare, enabling Medicare to recoup its costs from the insurance award. But the program has experienced challenges amid a glut of data, and its promise of greater efficiency and financial benefit for Medicare has been challenged by those who claim it impedes attorneys from settling cases, delays payments to injury victims, and increases legal costs. In 2011, the RAND Institute for Civil Justice published a first-of-its-kind empirical study of the Medicare reporting program and demonstrated that exempting low-value claims from having to be reported could enable the system to operate more efficiently without sacrificing much revenue recovery for Medicare. Congressional sponsors cited RAND's analysis when they introduced new legislation establishing such a reporting floor, and that legislation was signed into law by President Obama in early 2013.

## **Public Safety and Security**

RAND helps improve policies related to public safety, including policing, law enforcement, and corrections; drug policy; and homeland security. Our experts use the best analytical tools and methods to develop objective policy solutions and help strengthen public policy.





Each year, thousands of incarcerated adults leave U.S. prisons and jails and return to their families and communities. While many successfully reintegrate into their communities, find jobs, and become productive members of society, many others will commit new crimes and end up being reincarcerated. Although a number of factors account for why some ex-prisoners succeed and some don't, a lack of education and skills is one key reason. This is why correctional education programs—whether academically or vocationally focused—are a vital service provided in correctional facilities across the United States.

But do such correctional education programs actually work? According to senior policy researcher Lois M. Davis, "The answer matters because we want ex-prisoners to successfully reenter communities and because we have a responsibility to use taxpayer dollars judiciously to support programs that are backed by evidence of their effectiveness—especially during difficult budgetary times."

So in 2013, RAND researchers examined the association between correctional education and reductions in recidivism, improvements in employment after release from prison, and learning in math and in reading.

Researchers found that participating in correctional education programs reduced the rate of reincarceration by 13 percentage points and may improve inmates' odds of obtaining employment after release. They also found that correctional education is cost-effective every dollar invested in these programs, on average, saves taxpayers as much as \$5 in incarceration costs. **& &** We found strong evidence that correctional education plays a role in reducing recidivism. Our findings are clear that providing inmates education programs and vocational training helps keep them from returning to prison and may improve their future job prospects. **9** 



Lois M. Davis Senior Policy Researcher

#### **RAND IMPACT**

#### EUROPEAN CYBERCRIME

In 2013, the European Cybercrime Centre (ECC) was established within Europol, the European Union's criminal intelligence agency, to be the focal point in the EU's fight against cybercrime. The design and operational approach of the ECC was based directly on recommendations from a RAND Europe study. RAND Europe researchers provided an assessment of the nature, extent, and effects of cybercrime in Europe, as well as the capabilities of 15 of the EU member states' computer crime units to combat it. They proposed and evaluated various options for a pan-European, coordinated cybercrime unit and helped EU decisionmakers better understand the operational and institutional costs of a coordinated unit. as well as location and governance considerations. The ECC is now operating consistent with RAND Europe's recommendations.



## **Measuring Marijuana Markets**

In 2013, two U.S. states—Washington and Colorado—moved ahead with unprecedented plans for legalizing marijuana, which would permit the commercial production, distribution, and possession of marijuana for nonmedical purposes. To prepare for regulating and taxing a new marijuana industry, Washington state needed baseline information about the amount of marijuana consumed there and turned to RAND for help. Researchers took to the task by supplementing existing household surveys with new data from a novel, webbased consumption survey they designed specifically to help respondents be more precise in describing their consumption. The result: a more accurate estimate of the state's marijuana market that was twice as large as state officials had previously projected. The analysis is helping the state's decisionmakers in numerous ways, including enabling them to make more informed decisions about the number of licenses to distribute and to more accurately project tax revenue. The project team also was asked by the White House to estimate the size of the national marijuana market. They briefed their results to the Office of National Drug Control Policy and the Drug Enforcement Administration, and the findings were made public in early 2014.

**66** There is still a lot of uncertainty surrounding marijuana market estimates, but our work used new insights and novel data collection tools to improve upon previous efforts. **99** 



Beau Kilmer Codirector, RAND Drug Policy Research Center



#### **Policing in 21st-Century Israel**

In Israel, the public holds both positive and negative views of its national police force. Many Israelis, for instance, consider the police to be effective at fighting crime. At the same time, despite relatively low crime rates, a perception persists among many that the police do not always appear to behave in a professional way and do not adequately provide safety and security.

A RAND study of the Israel Police funded by the government of Israel, the Y&S Nazarian Family Foundation, and other U.S. philanthropists—is changing how the organization approaches community relations, deterrence, and performance measurement. The analysis included recommendations for gaining and sustaining public support and demonstrated how equipping officers with video cameras can be useful in providing feedback on their performance.

Following the reports of two working groups impaneled by the commissioner of Israel's national police force to focus on police professionalism and public accountability, implementation of RAND's recommendations is now under way.

#### **RAND IMPACT**

#### TERRORIST TRANSIT HUBS

Using social network analysis and drawing on sensitive classified information collected across the U.S. Intelligence Community, RAND has identified key global transit hubs used by violent extremist groups to move money, weapons, and personnel in support of their activities. RAND's assessment of each hub's vulnerabilities is helping U.S. national security agencies to dismantle them. RAND's findings have been briefed throughout the U.S. governmentincluding to the Office of the Secretary of Defense, the Joint Staff, several Unified Combatant Commands, the National Counterterrorism Center. and the National Security Council staff-and have influenced the planning and strategies of numerous security agencies.

## **Education**

Nations today have complicated education objectives—among them, nurturing productive citizens, closing achievement gaps, improving underperforming schools, and training and retaining highly skilled teachers. RAND provides state-of-the-art policy research and analysis to governments, private foundations, and philanthropists in the United States and around the world to help them meet such goals.

24



#### **Summer Learning**

Research shows low-income students suffer disproportionate learning loss over the summer—and because those losses accumulate over time, they contribute substantially to the achievement gap between low- and higher-income children. RAND researchers examined six school districts in Boston, Cincinnati, Dallas, Duval County (Florida), Pittsburgh, and Rochester, New York—districts that are among the few large urban districts offering voluntary, full-day programs for five to six weeks free of charge to large numbers of elementary students each summer. They then synthesized the key lessons learned about how to establish and sustain such programs.

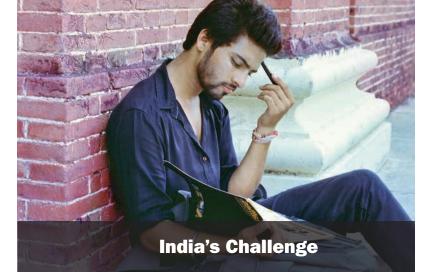
The most important steps school districts can take to implement an effective summer learning program are to begin planning at least six months in advance and to include both district and summer site leaders in the process. Because the costs of summer learning programs sometimes are a barrier to implementation, the researchers recommend school districts design programs with costs in mind. This includes hiring staff based on projected daily attendance rather than initial number of enrollees, and restricting the number of sites to control administrative expenses.

The study is the second in a series providing the most comprehensive research on summer learning to date, and is part of a five-year demonstration project funded by The Wallace Foundation to examine whether and how summer learning programs can stop summer learning loss and create achievement gains.

**66** Summer learning programs have the potential to close the achievement gap associated with the loss of educational skills during the summer months. But these programs are often an afterthought or not offered at all, particularly when education budgets are tight. This research provides districts with guidance on how to create summer learning programs that could offer real benefits to struggling students. **99** 



Catherine H. Augustine Senior Policy Researcher



India is seeking to improve the quality of its higher education systems by giving greater autonomy to and asking for greater accountability from lower levels of government (i.e., states and municipalities) and the higher education institutions themselves. India's key policy document for economic development through 2017—the 12th Five-Year Plan proposes a number of reforms to higher education to redirect the role of the national government from "command and control" to "steer and evaluate." One approach that has proven effective in other countries is explicitly linking funding to well-defined quality measures and quality assurance processes. While the 12th Five-Year Plan discusses the importance of linking quality improvement and funding, it does not discuss how quality improvement should be directed under a "steer and evaluate" approach to governance.

Although there are few direct national comparisons to India, RAND researchers analyzed evidence from several countries that have dealt with issues of scale (such as China and the United States), governance structure (Brazil and the United States), and quality (in Europe and the United States). The study revealed a connection between successful autonomous institutions and measures of quality that are aligned with national goals for higher education.

Taking into account these lessons as well as India's unique challenges, the research team developed a seven-point course of action to guide India's higher education system toward the "steer and evaluate" model proposed by the 12th Five-Year Plan.

**66** India's higher education system is in transition. Instituting policies that link funding to quality will help guide the country's newly autonomous institutions as they aim to improve overall education quality.



Rafiq Dossani Senior Economist

**TEACHING EFFECTIVENESS** How well American students do in school is influenced by many factors. When it comes to what schools can do to help, teaching effectiveness has the largest impact. As a result, policymakers think that teachers should be evaluated, in part, based on how much academic growth they produce in their students.

Over the past decade, RAND has conducted extensive research on the strengths and weaknesses of various methods of measuring teaching effectiveness, including those that rely primarily on student achievement growth as measured by tests and those that are based on direct measures of instruction using structured observations. An important recommendation from this work is for states and school districts to use multiple measures when assessing teaching effectiveness that combine information about achievement and practice along with other validated sources of evidence, instead of relying exclusively on principal judgments, as has been the norm for years.

In the past year, this approach has been increasingly adopted. As of 2013, 40 U.S. states and the District of Columbia have passed new legislation requiring that objective measures based on student achievement be incorporated into teacher evaluation systems to complement administrator judgments.

RAND researchers are now working with key education leaders throughout the United States to implement evaluation systems that conform to legislated requirements and represent best practices from the research evidence. Through their various advisory roles with states, districts, and charter management organizations, they are helping to answer fundamental questions raised by the new policies, including how to provide effective feedback to teachers to drive instructional improvement, and when and how to use these measures in personnel decisions, such as tenure and dismissal.



### By the Numbers



Our people bring a diverse range of professional and educational experiences and cultural backgrounds to their project teams.



Many of our people are multilingual. Languages spoken include Arabic, Chinese, Japanese, Korean, French, German, Russian, and Spanish.

Engineering (8%)

International relations



471

**Countries** 

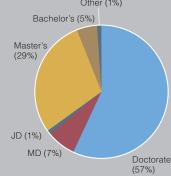
With locations in North America and

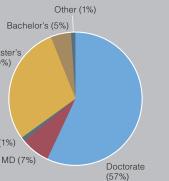
Europe, RAND attracts top talent from

almost four dozen nations.

### **Hold Doctorates**

Well over half our research staff of ~800





(7%)

Policy

Physical sciences (5%)

(6%)

Math, operations

research, statistics

Life sciences

(9%)

PEOPLE

### Other (1%) Behavioral sciences (9%) Social sciences (11%) Business & law (5%) Political sciences Computer sciences (5%) analysis (10%) Economics (12%)

(9%)



# **7.5**M Web Downloads



Through more than 1,700 projects (including almost 600 new ones), RAND provides research services, systematic analysis, and innovative thinking to a global clientele.





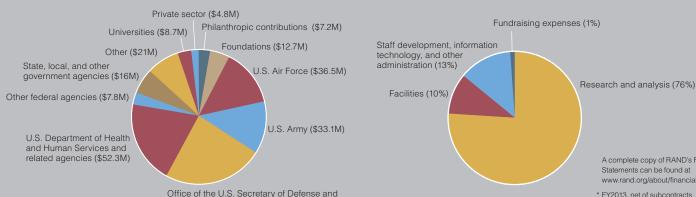
We performed work for more than 350 clients and grantors, including organizations, foundations, and others.

# **IDEAS**

350Reports

We added more than 350 publications and more than 625 journal articles to our growing library—13,000 and counting—of reports, podcasts, videos, tools, and commentary, all downloadable on www.rand.org.

**Expenses** 



### \$263.1M in Revenue\*

other national security agencies (\$63M)

A complete copy of RAND's Financial Statements can be found at www.rand.org/about/financial\_statements.

\* FY2013, net of subcontracts and RAND-initiated research.

### News

At the 65th annual meeting of the board of trustees in April 2013, Karen Elliott House and Richard J. Danzig were elected chair and vice chair, respectively.

### Karen Elliott House



House is the former publisher of *The Wall* Street Journal and former senior vice president at Dow Jones & Company, Inc., where she

was responsible for the business and editorial staffs of all Dow Jones overseas publications and services. She also wrote about foreign affairs for WSJ, and she received the 1984 Pulitzer Prize in International Reporting for her coverage of the Middle East. Her book On Saudi Arabia: Its People, Past, Religion, Fault Lines—and Future was published in 2012. House has more than ten years of service on the RAND Board of Trustees, including a term as vice chair. She is a former director and a current member of the Council on Foreign Relations and a fellow of the American Academy of Arts and Sciences.

### Richard J. Danzig



Danzig served as the 71st secretary of the Navy from November 1998 to January 2001, and as under secretary of the

Navy from November 1993 to May 1997. From 1981 to 1993, he was a Washington, D.C., partner of the national law firm Latham & Watkins. Prior to that, he served as deputy assistant secretary and then as the principal deputy assistant secretary of defense for manpower, reserve affairs, and logistics. He received the Defense Public Service Award in 1981. A former summer associate at RAND, Danzig is a coauthor of National Service: What Would It Mean? The book contributed to the development of America's current civilian national service system. He is a member of the Defense Policy Board and a director of the Partnership for Public Service.



### Kenneth R. Feinberg

Kenneth R. Feinberg was also elected to the board. Feinberg, founder and managing partner of Feinberg Rozen, LLP, is a lawyer and one of the nation's leading experts in mediation and alternative dispute resolution. He has served as the administrator of the BP Deepwater Horizon Disaster Victim Compensation Fund, special master for the Troubled Asset Relief Program (TARP) executive compensation, special master of the September 11th Victim Compensation Fund, and special master of the Agent Orange Victim Compensation Program. Feinberg was designated Lawyer of the Year by the National Law Journal in 2004. He is a member and former chair of the RAND Institute for Civil Justice Board of Overseers, and is also the founding chair of RAND's new Center for Catastrophic Risk Management and Compensation (see page 40).



### Philip Lader

The April board meeting also marked the return of Ambassador Philip Lader. He previously served as a RAND trustee from 2001 to 2011—and for a portion of that time as the board's vice chair. His volunteer leadership with RAND also extends to our international operations, where he currently serves on the RAND Europe Council of Advisors. Lader was a member of President Clinton's Cabinet and has served as White House deputy chief of staff, deputy director of the Office of Management and Budget, and administrator of the U.S. Small Business Administration. He was U.S. ambassador to the Court of St. James's from 1997 to 2001. He is currently chairman of WPP plc, the global advertising/ communications services firm that includes J. Walter Thompson, Ogilvy & Mather, and Young & Rubicam, among other companies in 110 countries.

### Sheila C. Bair

RAND's newest trustee, Sheila C. Bair, a finance and banking expert with a long history of public service, joined the board in April 2014. Bair chaired the Federal Deposit Insurance Corporation from 2006 to 2011 and remained as a director through 2013. Among her other public service, she served as assistant secretary for financial institutions at the U.S. Treasury Department, acting chairman of the U.S. Commodity Futures Trading Commission, and research director and counsel to former Senate Majority Leader Robert Dole. She has received numerous awards for her public service, including the Kennedy Library's Profiles in Courage Award and the National Academy of Public Administration's Elliot Richardson Award. Bair currently chairs the Systemic Risk Council, a public interest group of prominent former government officials and financial experts who monitor the adoption of financial reforms in the United States, and serves as a senior advisor to the Pew Charitable Trusts





### Lloyd Dixon

In 2013, RAND established the Center for Catastrophic Risk Management and Compensation. The center, led by senior economist Lloyd Dixon, seeks to identify and promote laws, programs, and institutions that reduce the adverse financial effects of natural and man-made catastrophes. Researchers are focusing on three broad areas: compensation for losses following catastrophic events; performance of insurance markets for catastrophic risk; and identifying and preparing for the financial impacts of catastrophic risks. The center's advisory board, chaired by RAND trustee Kenneth Feinberg, consists of thoughtleaders who represent major corporations, the judiciary, academia, government, and the legal profession. The center will be funded through a combination of philanthropic contributions from advisory board members, projectspecific contributions, and traditional grants and contracts.



### Gery Ryan

Gery Ryan is the Pardee RAND Graduate School's new assistant dean. Trained as a medical anthropologist, Ryan has conducted research on decisionmaking processes, ethnographies of health care and education systems, and the integration of qualitative and quantitative methodologies. His diverse research portfolio covers areas that are central to the types of policy problems that many students will address while at RAND and in their subsequent careers, including HIV/AIDS, mental health, obesity/ nutrition, end-of-life care, patient safety, homelessness, domestic violence, health care cost and efficiency, medical manpower, and social networks. In addition to a large body of work in the United States, he has worked extensively in Africa, Latin America, and the Middle East.

### Martin Roland

In 2013, the Professorship of Health Services Research, a position held by Martin Roland CBE at the University of Cambridge, was retitled the RAND Professorship of Health Services Research in recognition of the successful collaboration between the University of Cambridge and RAND Europe to develop a center of excellence and innovation in health services research. The Cambridge Centre for Health Services Research was established in 2009 and is codirected by Roland and Ellen Nolte, director of the health and health care program at RAND Europe. As the RAND Professor of Health Services Research, Roland provides research leadership in evaluation of health service organization and delivery, with particular attention to primary care, the interface between primary and secondary care, and patients' experiences of health care. Roland also serves as special advisor to the president of RAND Europe. In 2003, Roland was recognized with a CBE—or Commander of the Most Excellent Order of the British Empire—for services to medicine.



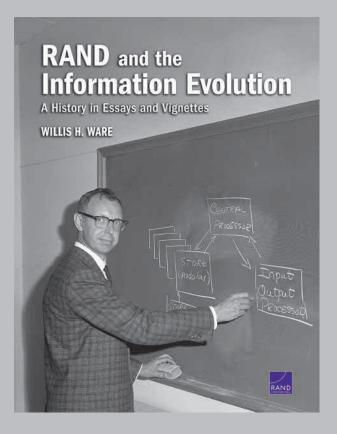
**WILLIS WARE**, a pioneer at RAND, passed away in 2013 at the age of 93. Ware was an electrical engineer who in the 1960s predicted the ubiquity of the personal computer, the ways it would propel people into lives of perpetual change, and the perils it would pose for personal privacy. Much of Ware's research focused on the use of computer technology by both the military and society at large. In 1966 he wrote: "The computer will touch men everywhere and in every way, almost on a minute-to-minute basis. Every man will communicate through a computer whatever he does. It will change and reshape his life, modify his career, and force him to accept a life of continuous change."

Decades before it became a popular concern, Ware predicted that increased reliance on computers would present serious privacy issues. He led several committees aimed at safeguarding computer user privacy rights, including the Privacy Protection Commission created by President Ford, which led to the creation of the Federal Privacy Act of 1974.

Ware was among the crew during the late 1940s that built the IAS computer at Princeton University, which was one of the first electronic computers. The IAS computer is among a handful of projects credited with the dawn of the computer age and the design of the IAS computer was widely copied.

Ware came to RAND in 1952 to help build the Johnniac computer, a clone of the IAS machine that helped propel the use of computers forward. The Johnniac was retired in 1966 and currently resides at the Computer History Museum in Mountain View, California. Ware worked at RAND for more than 55 years and was one of the organization's longest-serving employees.

Ware was a member of the National Academy of Engineering, a fellow of the Institute of Electronic and Electrical Engineers, a fellow of the American Association for Advancement of Science, and a fellow of the Association for Computing Machinery. He was the recipient of numerous honors, including the Computer Pioneer Award from the IEEE Computer Society, a lifetime achievement award from the Electronic Privacy Information Center, and a Pioneer Award from the Electronic Frontier Foundation. In 2013, he was inducted into the National Cyber Security Hall of Fame.



### Outreach

The scholarly objectives of expanding knowledge, illuminating issues, and developing new ideas are only a first step in RAND's mission to help improve policy and decisionmaking through research and analysis. We also strive to reach key decisionmakers and the broader public to enrich the quality of public debate.

### THERANDBLOG



#### Most Shared



The Terrorist Threat to



Gen. Amos Discusses t USMC at RAND

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"To identify the polici a big fat dent in obesi need an accurate diag are overweight and of they are inundated wi



### **RAND REVIEW**

RAND's flagship magazine, RAND Review, helps readers stay ahead of the curve on the issues that matter most. Issues in 2013 featured RAND insights on military sexual assault, comprehensive immigration reform, cyberwar and cybersecurity challenges,

and the ramifications of health reform. RAND *Review* is available online at www.randreview.org, where you can also subscribe to the digital edition.

### CONGRESSIONAL BRIEFINGS

PAND

RAND's Office of Congressional Relations arranges for experts from RAND to visit Capitol Hill to inform policymakers about research and analysis that is relevant to current legislative debates. Video and audio recordings of briefings are available at www.rand.org/congress.

### **CONGRESSIONAL TESTIMONY**

On more than 20 occasions in 2013, experts from RAND testified before members of Congress. Testimonies are available at www.rand.org/testimony; highlights include the following:

### Efforts to Reform Physician Payment: Tying Payment to Performance

Cheryl L. Damberg | presented before the House Energy and Commerce Committee, Subcommittee on Health | February 14, 2013

### Managing September 12th in Cyberspace

Martin Libicki | presented before the House Foreign Affairs Committee, Subcommittee on Europe, Eurasia, and Emerging Threats | March 21, 2013



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RAND findings and analysis are available through published reports and commentary by RAND researchers; through The RAND Blog, our weekly Policy Currents e-newsletter, and our topical e-newsletters for legislative audiences; through coverage by media outlets around the world; through social media outlets such as Facebook, Twitter, and YouTube; and via our new and improved website.

### RAND IS COMMITTED TO MAKING OUR RESEARCH ACCESSIBLE TO PEOPLE THROUGHOUT THE WORLD.

#### The Monetary Costs of Dementia in the United States

Michael D. Hurd | presented before the Senate Special Committee on Aging | April 24, 2013

### Lashkar-e Taiba and the Threat to the United States of a Mumbai-Style Attack

Jonah Blank | presented before the House Homeland Security Committee, Subcommittee on Counterterrorism and Intelligence | June 12, 2013

### Nuclear Waste Administration Act of 2013 (Written Testimony on S. 1240)

Lynn E. Davis and Debra Knopman | submitted at the request of the Senate Energy and Natural Resources Committee on August 14, 2013, as part of the record for a hearing held on July 30, 2013

### The Terrorist Threat from AI Shabaab

Seth G. Jones | presented before the House Foreign Affairs Committee | October 3, 2013

### The Challenge of North Korean Biological Weapons

Bruce W. Bennett | presented before the House Armed Services Subcommittee on Intelligence, Emerging Threats, and Capabilities | October 11, 2013

### The Role of Terrorism and Terror in Syria's Civil War

Brian Michael Jenkins | presented before the House Foreign Affairs Committee, Subcommittee on Terrorism, Nonproliferation, and Trade | November 20, 2013



### **Events**

RAND events inform and inspire debate on timely policy issues, offering a unique opportunity for intellectual fellowship, community engagement, and high-level deliberation of important policy matters.



(Above) RAND's president and CEO, Michael
D. Rich, welcomed Belgium's King Philippe
and members of the Belgian Economic Mission
to RAND's headquarters campus in Santa
Monica; (left) senior sociologist Chloe Bird led
a discussion on women's health with Amanda
Daniels, a heart coach and advocate, and Karol
Watson, an associate professor of medicine at
UCLA; (below) Charles Ries, vice president,
International, spoke on the U.S. withdrawal from
Afghanistan at a joint Wilson Center–RAND event
in Washington, D.C., with MG Jeffrey Buchanan,
U.S. Army, and Wilson's Ken Pollack.







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(Clockwise from left) Author and radio and talk show host **Tavis Smiley** presented at the Pardee RAND Graduate School's inaugural Summer Faculty Workshop in Policy Research and Analysis; **Roberta Wilson** attended the dedication of the James Q. Wilson Collection, which recognizes the life and legacy of her late husband, longtime Pardee RAND board member and RAND trustee James Q. Wilson; **Naveena Ponnusamy**, executive director of development, hosted a donor appreciation event in Santa Monica; senior political scientist **Peter Chalk** (shown with **Tasha C. Enemark**), spoke about maritime piracy after a special advance screening of *Captain Phillips* at Sony Pictures Studios for RAND supporters; the RAND Center for Middle East Public Policy hosted a visit by **Admiral Amichay Ayalon**, former director of the Israel Security Agency, shown in discussion with **Brian Michael Jenkins**, a terrorism expert and senior advisor to the RAND president

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Amichay Ayala

www.rand ora

Brian Michael Jenk



RAND CORPORATION ANNUAL REPORT 2013 45

### Pardee RAND Graduate School

Founded in 1970 as one of eight graduate programs created to train future leaders in public policy, the Pardee RAND Graduate School is the only program specializing exclusively in the Ph.D., and the only one based at a public policy student body represents diversity in work experience; academic training; country of origin; and race, gender, and ethnicity. For both RAND and the Pardee RAND Graduate promotes creativity, deepens understanding of the practical effects of policy, and ensures multiple viewpoints and perspectives are heard in the classroom and beyond.

Almost 40 percent of the incoming class hails from outside the United States, including for the first time students from Azerbaijan, Chile, and Trinidad and Tobago.



## PARDEE RAND GRADUATE SCHOO





Michael D. Rich President and CEO, RAND Corporation

I have long believed that RAND's collection of activities—commissioned client research projects, public outreach and engagement, and graduate education—has colossal power that we can leverage even more effectively to benefit the public good. No other organization does all three things at the level we do.



THE PARDEE RAND GRADUATE SCHOOL IS PRODUCING THE NEXT GENERATION OF POLICY LEADERS WHO WILL HELP KEEP RAND AT THE FOREFRONT OF INNOVATION.



### **Pardee Initiative for Global Human Progress**

Frederick S. Pardee contributed \$3.6 million to create the Pardee Initiative for Global Human Progress and to support the graduate school's endowment. The initiative draws on the talent and innovation of Ph.D. candidates and RAND research staff while advancing RAND's work in international development.

"I care about future generations—making sure that individuals live, with dignity, in a safe, sustainable, and secure world," says Pardee. "I'm particularly interested in what's in store for humankind over the next 35 to 200 years. We must create innovative, multiregional solutions for a range of social and economic challenges. The Pardee RAND Graduate School trains the best and brightest students from throughout the world to confront the big issues." According to Dean Susan L. Marquis, "Fred Pardee's generous gift will seed projects that help those in developing countries—many from which our students originate—and also help researchers develop new approaches to problem-solving. Our students are interested in doing fieldwork in Africa and Asia, on topics such as food security; higher education; and how to shape cities as engines of innovation, growth, and development."

**Fred Pardee** worked as an economic analyst at RAND from 1957 to 1971. After leaving RAND, he founded a privately held investment firm that owns and operates apartment complexes in and around Los Angeles. In 2001, he donated \$5 million to RAND to create the RAND Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition. Later, in 2003, he donated \$10 million to support the RAND Graduate School's endowment for core student support. The gift allowed the graduate school to expand, and today more than 100 students are pursuing their Ph.D.'s in policy analysis. The school was renamed in Fred Pardee's honor in 2003.



### James R. Burgdori

The Pardee RAND Graduate School awarded its 300th Ph.D. in policy analysis to James R. Burgdorf in September 2013. Burgdorf is now working as a staff researcher in family and preventive medicine at the University of California, San Diego. His dissertation, "Labor Market Outcomes of Health Shocks and Dependent Coverage Expansion," disentangles the effects of employer-provided health insurance on labor market outcomes.



Members of the faculty drive the improvement of Pardee RAND's curriculum. Drawing on their own substantive interests and technical expertise, they regularly propose new courses to ensure that students become acquainted with cutting-edge methods and policy perspectives.

This year, Pardee RAND offered four new electives:

**Food Policy**. This course addressed how governments design and implement policies and programs to foster social goals, such as ensuring a sufficient, safe, affordable, and sustainable food supply.

#### Taking a Systems Approach to Policy Analysis.

This course examined approaches to public policy that work directly with the client and additional stakeholders to design and improve government processes across a large number of complex issues. **Survey Sampling I & II**. These two courses on sampling design and survey data analysis covered basic and complex designs as well as issues related to nonresponse.

**Behavioral Economics**. This course examined how the robust anomalies in the behavior of individuals and consumers can affect policy and policy analysis.



### **BE THE ANSWER**

For the graduate school to continue to offer students a worldclass education—and to extend the impact of its graduates on communities throughout the world—it relies on philanthropic support. Donald B. Rice, former president of RAND and a current trustee and member of the school's board of governors, is leading Pardee RAND's Be the Answer fundraising campaign.

The campaign was kick-started in May 2011 with a generous gift from former RAND trustee and school board member James F. Rothenberg and his wife, Anne. By the end of 2013, a group of dedicated donors, board members, RAND trustees, and friends and alumni had contributed more than \$15 million, and their efforts continue.

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**66** When we see how successful the School has been at attracting top talent from around the world, and what a significant part scholarships play in that effort, we feel genuinely enthused about making these gifts. We know we're making a difference, in the lives of these students, in strengthening the School, and, over time, in the world at large. **9** 

Donald B. and Susan F. Rice

### Investing in People and Ideas

In 2013, gifts from donors enabled RAND to fund innovative research projects on critical issues in national security, health, education, sustainability, growth, and development. Here are highlights from three. WE RELY ON PHILANTHROPIC SUPPORT TO REACH BEYOND THE SCOPE OF CLIENT-SPONSORED WORK TO TACKLE QUESTIONS THAT MAY BE TOO BIG, TOO COMPLEX, OR TOO NEW FOR OUR CLIENTS TO ADDRESS.

# 

### CONNECTING THE DOTS: FOOD, ENERGY, AND WATER SECURITY

Governments and nongovernment organizations around the world follow trends in food, energy, and water security for a host of reasons. They use the information to decide how foreign assistance can most effectively be applied, to anticipate where humanitarian crises might occur, and to try to predict when global security might be affected by changes in these resources. And businesses use such trend information to inform their enterprise risk management efforts. However, indices that provide data on food, energy, and water do so in isolation, making it difficult for organizations to arrive at an integrated assessment that considers all three.

With support from donors, RAND was able to fill this gap by developing an integrated index of food, energy, and water security, showing how each are interconnected and describing how a change in one resource influences the security of others. The index will be used by an array of global stakeholders as they seek to mitigate the impacts of conflicts, disasters, and climate change.



### **RESCUED: PRESERVING DATA FROM THE FRONT**

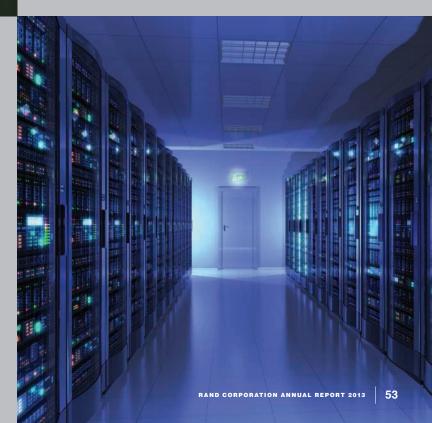
During Operations Enduring Freedom and Iraqi Freedom, U.S. Army personnel collected thousands of gigabytes of data, including mission-centric orders, process information, lessons learned, and information on missions beyond combat, such as reconstruction, rebuilding, and training. Some of these data were likely used to produce documents now in the official records of the Department of Defense (DoD), but the raw data were scheduled for deletion despite potential future value to military planners and other analysts.

RAND collected 1.4 terabytes of information before it was wiped from servers and developed a plan to make the 900,000 unstructured, unmineable files accessible, organized, and searchable using Hermes, a RAND-developed application that processes and indexes heterogeneous file types, provides rapid document searching, and supplies extensive visualization capabilities. The result? An organized and searchable collection of valuable Army data and an innovative app that, with further development, will make other larger data collections—including those beyond the DoD—more accessible and useful.

#### SAVING BIG HEALTH CARE DOLLARS

Relentless growth in health care costs is perhaps America's most critical domestic policy challenge. For decades, gridlock has stalled some of the more-sweeping measures proposed to address health care cost growth, such as tort reform, pay-for-performance, and changes to Medicare or Medicaid eligibility.

What if health policy researchers tackled the health care cost problem by thinking small instead of large? Could it be that modest cost-saving policy changes will, in the aggregate, achieve significant savings? RAND researchers believe that they may. The RAND Blog featured a series of posts that describe new ideas about opportunities for modest cost savings, including eliminating copayments for higher-risk patients on cholesterol-lowering drugs; reducing Medicare Part D use of brand-name prescription drugs by diabetes patients; and giving emergency medical services more flexibility in transporting low-acuity patients. Each post offers a description of the policy change, an estimate of annual savings, and a projection of each idea's operational and political feasibility.



### **Supporting Talent**

Philanthropy supports distinguished chairs for outstanding researchers recognized as world-class among peers. Distinguished chairs—listed below—pursue bold, new ideas; help deliver RAND's findings and recommendations to influential audiences; and mentor junior policy analysts.

Air and Space Policy Natalie W. Crawford

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Education Policy V. Darleen Opfer

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**Policy Analysis** Susan L. Marquis

Samueli Institute Chair in Policy for Integrative Medicine lan D. Coulter

Statistics Marc N. Elliott

RAND also uses philanthropic support to engage individuals who have recently completed distinguished government or other policy analysis service as fellows who contribute to RAND research activities and the development of our research practices and talent.

### **Inspiring Ideas**





For more examples of work funded through RAND's Investment in People and Ideas program, scan the code with your smartphone.



### **Policy Circle**

Policy Circle members enjoy special events and access to leading RAND researchers, policymakers, and thoughtleaders from around the world. In 2013, Policy Circle programs addressed such issues as military and nonmilitary use of drones; privacy, security, and liberty; and women's heart health and potential effects of gender on health. Conference calls with RAND experts were convened in the wake of breaking developments, offering Policy Circle members an opportunity to go "behind the headlines" on issues such as North Korea, the Middle East and North Africa, immigration reform, U.S. space policy, and future terrorist threats to the United States. Their gifts of \$1,000 or more support RAND's Investment in People and Ideas, and make possible innovative work on new and emerging policy challenges.



### **Gifts—Making a Difference**

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### **Additional Reading**

To find out more about the 2013 research and activities highlighted on pages 4–35, see the following or visit www.rand.org

### Service Members, Veterans, and Their Families

Military Caregivers: Cornerstones of Support for Our Nation's Wounded, III, and Injured Veterans, Terri Tanielian et al., RAND Corporation, 2013

"Gone to War: Have Deployments Increased Divorces?" Sebastian Negrusa et al., *Journal of Population Economics*, Vol. 27, published online September 1, 2013

Physical and Psychological Health Following Military Sexual Assault: Recommendations for Care, Research, and Policy, Coreen Farris et al., RAND Corporation, 2013

"Enemy Within: Military Sexual Assault Inflicts Physical, Psychological, Financial Pain," Coreen Farris et al., *RAND Review*, Vol. 37, No. 1, 2013

### **The Era of Austerity?**

"NATO Forces Approach Financial Day of Reckoning," F. Stephen Larrabee, *RAND Review*, Vol. 36, No. 3, 2013

"U.S. Forces Face Strategic Trade-Offs," Lynn E. Davis, *RAND Review*, Vol. 36, No. 3, 2013

"U.S. Defense Department Needs to Set Priorities, Weigh Risks," Stuart E. Johnson and Irv Blickstein, *RAND Review*, Vol. 36, No. 3, 2013

#### **Forces and Resources**

*Do Joint Fighter Programs Save Money?* Mark A. Lorell et al., RAND Corporation, 2013

Out of the Shadows: The Health and Well-Being of Private Contractors Working in Conflict Environments, Molly Dunigan et al., RAND Corporation, 2013 A New Tool for Assessing Workforce Management Policies Over Time: Extending the Dynamic Retention Model, Beth J. Asch et al., RAND Corporation, 2013

#### **International Affairs**

Preparing for the Possibility of a North Korean Collapse, Bruce W. Bennett, RAND Corporation, 2013

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#### AP IMAGES

Page 5 (upper left) — Army Staff Sgt. Nicholas Lanier at his home in Hinesville, GA. A combat veteran and father to four, he can't remain in the military because of a serious back injury, but he can't yet accept a civilian job because he doesn't know when the military will discharge him. (AP Photo/Stephen Morton)

Page 7 — Nichole Bowen, right, formerly of the U.S. Army, who identified herself as being a survivor of sexual assault during her time in military service, listens to a question as she meets with reporters in Seattle about the issue of sexual assault in the military. At left is U.S. Sen. Patty Murray, D-Wash., who has introduced the Combating Military Sexual Assault Act of 2013. (AP Photo/Ted S. Warren)

Page 8 — A U.S. Marine Corps CH-46 Sea Knight helicopter flies into the fog over the ocean off San Diego, CA. (AP IMAGES/Mike Blake)

Page 13 (left) and cover — Lt. Col. Benjamin Bishop, the 422nd Test and Evaluation Squadron director of operations, completes preflight checks before his first sortie in an F-35A Lightning II at Eglin Air Force Base, FL. (U.S. Air Force photo by Samuel King Jr./Rex Features via AP Images)

Page 16 and cover — North Korean soldiers salute during a military parade at Kim II Sung Square. (AP Photo/Kim Kwang Hyon)

Page 19 — Soldiers stand on guard on the Chinese aircraft carrier Liaoning heading for south China's Sanya city at a military port in Qingdao in east China's Shandong province. (Photo By Zhang Kai/Color China Photo/AP Images)

Page 20 — Turkish Prime Minister Recep Tayyip Erdogan, center left, is accompanied by Iran's First Vice President Eshagh Jahangiri during an official welcoming ceremony in Tehran, Iran, January 29, 2014. (AP Photo/Ebrahim Noroozi)

Page 22 and cover — Dr. Lisa Sterman prescribes Truvada off-label for about a dozen patients at high risk of developing AIDS. In June 2013, U.S. health officials said the drug is an option for preventing infection in people who inject illegal drugs. (AP Photo/Jeff Chiu)

Page 23 (left) and cover — Samastha, a USAID-funded organization, will provide HIV and AIDS prevention, care, and treatment programs and services to vulnerable and affected populations in 12 highly prevalent districts in India's southern states of Karnataka and Andhra Pradesh. (AP Photo/Aijaz Rahi) Page 30 (top) — A man pulls out a bag of marijuana to fill a pipe at the first day of Hempfest in Seattle, WA. (AP Photo/ Elaine Thompson)

Page 32 and contents — A child at work in a classroom. (Dominic Lipinski/Press Association via AP Images)

Page 33 (left) and cover — Allie Wilkes hammers a nail at the Rebuilding Hope summer camp in Henderson, NC. (AP Photo/The Daily Dispatch, Wes Hight)

#### ARMY.MIL

Page 4 and cover — Staff Sgt. Timothy Bailey of the North Dakota Army National Guard kisses his daughter as he is greeted by his family upon his return. (DoD photo by Senior Master Sgt. David H. Lipp)

Page 13 (right) - Soldier. (U.S. Army)

Page 15 (left) — 1st Cavalry conduct presence patrol around FOB Fenty. (Sgt. Margaret Taylor, 129th Mobile Public Affairs Detachment)

GETTY IMAGES Page 56 (James Lauritz/Photographer's Choice RF)

JOANNA ANTHONY Page 65

COURTESY SHEILA C. BAIR Page 39 (right)

#### DIANE BALDWIN

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WIN BOERCKEL Page 43; page 44 (bottom right)

DAVID GALEN Page 38 (right)

#### NATO

Page 9 and cover — Nation flags outside a summit meeting in Baden-Baden (NATO)

#### PRISONEDUCATION.COM

Page 29 (left) — Damian Thomas, Andre Pierce, and Jason Peters take part in an English class offered by Wesleyan University for inmates at Cheshire Correctional Institute in Cheshire, CT. Inmates interested in the course had to undergo a rigorous admissions process to get into the class. (Christopher Capozziello for The New York Times)

#### SPERTUS

Page 39 — Kenneth R. Feinberg

#### U.S. AIR FORCE

Page 11 — U.S. Air Force Master Sgt. Kelvin Miller, right, assigned to the 386th Expeditionary Logistics Readiness Squadron, reviews the contents of a mobility bag to check for accountability of all items at the 386th Expeditionary Theater Distribution Center at an undisclosed location in Southwest Asia. (U.S. Air Force photo by Senior Airman Courtney Richardson/Released)

#### CHARA WILLIAMS/FOTOLIA

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#### FOTOLIA

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### iSTOCK

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Page 21 — Smoke rises across Aleppo, Syria, in October 2012. (Ugurhan Betin/iStock)

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 310.393.0411 x7712

 Write
 RAND Corporation

 Margaret Schumacher, Executive Director (acting)
 Office of External Affairs

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