HIDDEN HEROES

A BIG-DATA APPROACH to text analysis

The uncertain future of THE ARCTIC

New Girl Scout CYBERSECURITY BADGES

THE CHANGING FACE OF AMERICA’S MILITARY CAREGIVERS PAGE 6
1. Complementary and Alternative Medicine (CAM) in the Military
RAND surveyed military treatment facilities to understand the availability of CAM, the conditions for which CAM is being used, and the types of CAM providers and the process of credentialing them.
MORE AT www.rand.org/t/RR1380

2. Hazing Prevention and Response
This instructor guide provides content from which instructors can draw when leading the Hazing Prevention and Response: Training for Military Leaders class.
MORE AT www.rand.org/t/TL240

3. Privatized Military Operations in Afghanistan?
Players in the private security industry have proposed that the Trump administration privatize military operations in Afghanistan to an unprecedented degree. Research indicates that replacing U.S. personnel with contractors won’t be a viable solution, says senior political scientist Molly Dunigan.
MORE AT www.rand.org/b170814privatize

4. Talking to Kids About Pot
With marijuana legal in some form in 26 states and the District of Columbia, the old script for talking to your children about pot is changing. Senior behavioral scientist Elizabeth D’Amico discusses what they need to know.
MORE AT www.rand.org/v170721

5. How al-Qa’ida Could Resurge
In testimony presented before the House Homeland Security Committee, Subcommittee on Counterterrorism and Intelligence in July 2017, Seth Jones, director of the International Security and Defense Policy Center at RAND, reexamines the state of al-Qa’ida and its threat to the U.S. homeland.
MORE AT www.rand.org/t/CT479
Hidden Heroes of Our Long Wars

Millions of military veterans and service members receive care at home, from family and friends who need support as well.

Parents are among the most common caregivers for post-9/11 service members and veterans. That raises questions about the future: In little more than a decade, RAND researchers estimated, significant numbers will be too old to carry on their duties. The research found that post-9/11 military caregivers face unique challenges, often with no support.
The Long Lives of Zero-Days

Computer hackers call them zero-days: cracks in code that are so hidden, and so vulnerable, that software developers have had exactly zero days to put up any defenses. They’re like golden keys into anything from personal computers to corporate networks to government servers.

RAND researchers obtained an unprecedented trove of data on more than 200 zero-day vulnerabilities, many of which had never been disclosed. The data provide a rare public glimpse into the nature of the problem—and the ease with which hackers exploit it.

Those zero-days survived for an average of nearly seven years, unpatched and undefended, after a hacker or other outsider first discovered it, the researchers found. The chance that one would last more than nine years: 25 percent.

Meanwhile, the time it took to write a piece of code to exploit one of those vulnerabilities—to turn the key—could be measured in days, the researchers found. Nearly three-quarters of the exploits in RAND’s study were developed in a month or less; nearly a third took less than a week.

Network defenders could—and should—do more to review their software before releasing it to the public, the researchers concluded. But they should also treat all of their code as potentially vulnerable, and build precautions into their systems to contain the impact of any eventual break-in.

At the same time, the low rate of discovery might encourage governments and other outside entities to retain zero-days, the researchers concluded. That could help them defend their own systems, or exploit vulnerabilities in others.

MORE AT www.rand.org/t/RR1751
Deadliest Toll

America’s addiction to heroin, fentanyl, and other opioids has helped make drug overdose a bigger killer than car crashes and gun violence. A recent RAND study identified three measures that could cut the death toll among addicts by nearly a third.

Researchers reviewed the medical records of more than 30,000 patients with an opioid-use disorder in the Veterans Affairs health care system. They found that one-year death rates dropped from around 6 percent to 4 percent when the care those patients received followed three key quality measures—potentially saving hundreds of lives.

Those measures included psychosocial treatment, such as individual or group therapy, and regular doctor visits. It also included a precaution that might seem like a no-brainer: Opioid addicts did much better when they did not use opioids or benzodiazepines, a class of anti-anxiety drugs.

Previous RAND research has shown, though, that people with opioid-use disorders often continue to receive prescriptions for opioids. That could be a sign of inappropriate prescribing, but it also reflects the difficulty of tracking opioid use and abuse with existing medical record systems. Doctors also have few other good options when treating some kinds of acute pain, such as after major surgery.

The RAND study was one of the first to test quality measures for hospitals treating patients with opioid-use disorders. But the Veterans Affairs patients it looked at differ in some fundamental ways from patients in private care: They tend to be male, for example, and older. More research is needed to test whether the quality measures work as well in other treatment settings.

More broadly, though, RAND’s findings follow a well-established body of research underscoring the desperate need for treatment to combat America’s opioid crisis. “Without funding for treatment people are not going to get it and that’s going to lead to all the negative consequences of opioid addiction, like increased crime, family destruction, overdoses, and (rising) health care costs,” study lead author Katherine Watkins, a senior physician policy researcher at RAND, told the Huffington Post.

“People are going to die without treatment.”

At Your Service

The U.S. military has an historic opportunity to bring more women into the ranks, but RAND focus groups suggest it still has some obstacles to clear first.

The opening of combat positions to women could usher in a “new era of equality,” researchers wrote. Women make up around 17 percent of the armed forces, and every one of the service branches has made it a priority to raise that number.

RAND hosted a series of focus groups with male and female recruits to find out what that might take. They found overwhelming support for women in combat positions, as long as they could meet the same standards as men. At least one or two women in almost every group volunteered that they want to go into a combat job.

But one other theme emerged in most of the female focus groups: the need for more female recruiters, and for recruitment strategies better tailored to both genders. Female role models—in advertisements and in recruitment booths—could counter the stereotypes about the military depicted by Hollywood films. As one recruit noted: “All the posters have males in them, and they’re always talking about brotherhood.”

Women also raised concerns about sexual harassment and assault in the military. Many said it wasn’t a factor in their decision to join—but it was something their parents, friends, or other family members worried about. Some male recruiters also told the researchers they had a hard time recruiting women, in part because of concerns that their actions could be misconstrued as harassment.

The military is already taking steps to appeal to more women, the researchers found—making female recruiters more visible, for example, and creating ads that show women in action. But it still faces a challenge once it gets them in the recruiting office door: Women recruits were loud and clear in their frustration with the red tape and paperwork of enlisting—and in that, they were exactly the same as their male counterparts.
“One thing [the Arctic nations] have done right is establish frameworks that help them get ahead of problems.”

Abbie Tingstad

Policy Challenges of a Changing Arctic

Q: What did you find when you modeled climate change in the Arctic?

A: The most interesting thing, when it comes to strategic planning, is that there is a lot more access along Russia’s coastline. If we’re talking about strategic and economic routes through the Arctic, there’s greater opportunity there. But you can look at this both ways. Yes, that gives Russia a potential advantage. But there’s also a flip side, which is that they previously had a lot of sea ice to protect that long northern border, and now suddenly that is opening up.

Russia has been building up its military there. Is that cause for concern?

Russia can kind of be a strongman in the Arctic without actually causing any conflict,
Abbie Tingstad studies the Arctic as a physical scientist at RAND. In other words: climate change, economics, politics, emergency planning, U.S.-Russian relations, and search-and-rescue logistics in one of the most unforgiving places on earth. Her most recent research, with political scientist Stephanie Pezard, looked at how the opening of the Arctic by climate change could strain relationships among Arctic nations.

PHOTO: CREW AND OFFICERS OF NOAA SHIP FAIRWEATHER; MAP: FREETRANSFORM/GETTY IMAGES

because nobody wants conflict in the Arctic. It plays well with their domestic audiences. But from our analysis, it frankly looks like a lot of bluster, with not a lot of willingness to truly tip the balance of cooperation. That doesn’t mean Russia is always the first to the cooperation table, but they at least appear willing to sit at it. Given how hard it is to operate in the Arctic, any real conflict there would probably quash economic potential.

Speaking of that, do you anticipate a “gold rush” for natural resources?
The example that gets a lot of attention is the seabed in and around the North Pole. That is an area that Russia, Canada, and Denmark make claims to, but even that region is a relatively small area. It has a lot of symbolic value, but its economic value is questionable because it is so hard to extract from that area right now. You would have to have quite a bit of climate change and a real increase in the ability to do deep-sea ocean drilling to make that really profitable.

What should Arctic nations be doing to prepare for these changes?
One thing they have done right is establish frameworks that help them get ahead of problems. They just finished an agreement on fishing—no fishermen in boats are going to show up in the central Arctic Ocean any time soon, but they got out in front of that problem.

I’d like to see them do that more with security. I think the biggest risk to Arctic security is miscalculation. Someone’s conducting an exercise, and someone else thinks, ‘Oh, wow, they’re sending war planes my way, I’d better go intercept them.’ The security forces need to communicate to keep heads cool and make sure nothing kicks off unintentionally.

What about the people who live there?
There are many areas that rely on ice roads to take trucks and bring in resources during the winter months, and those are going away. Coastal areas are going to face rising sea levels and erosion; there are already plans to relocate some of the coastal Arctic communities. Unfortunately, those indigenous communities don’t always have the loudest loudspeaker. That’s why in RAND’s research we try to make sure we incorporate that indigenous perspective. Those are the people who are going to be impacted most directly by these changes, and we want to make sure their perspective is not lost.

How has donor funding supported your research?
With philanthropic support, we recently were able to convene participants from several Arctic countries and conduct a tabletop gaming exercise in Oslo, Norway. We aimed to test Arctic cooperation to the limit. One of our scenarios was a near-collision between a Russian ship and a ship carrying U.S. Coast Guard members. Our participants overwhelmingly felt that cooperation was so much in everyone’s interest—and conflict is so hard to conduct in that region—that it would take a lot more to push countries over the edge.
Hidden Heroes of Our Long Wars

By Doug Irving, Staff Writer

They are wives, husbands, mothers and fathers, a good neighbor checking in, a best friend helping out. They sacrifice their time, their jobs, even their health to provide a service worth billions of dollars to the United States, often with no recognition whatsoever.

They are caregivers to active or retired military service members—not paid professionals, but loved ones thrown into battle against panic attacks, traumatic brain injuries, or just the everyday bureaucracies of American health care.

RAND research has helped bring their stories to light in recent years—who they are, what they do, and above all, what they need to succeed. That research has revealed the enormous sacrifices that millions of military caregivers make every day, as well as the gaps in support programs meant to help them.

It has helped define military caregivers as public servants in their own right, America’s “hidden heroes.”
A story of profound need

“At one point, I was ready to (leave my husband)…. The doctor said, ‘You realize if you leave, he’s not going to make it.’”

—FROM A RAND FOCUS GROUP OF CAREGIVERS

Elizabeth Dole spent most of 2010 at the hospital bedside of her husband, Bob, as he recovered from a long illness at Walter Reed National Military Medical Center. As she walked the halls, the former senator came to realize that a “quiet, untold story of profound need” was playing out behind every door—a caregiving crisis that had gone almost entirely unnoticed.

She asked RAND to investigate. By then, the United States had been fighting wars in Iraq and Afghanistan for the better part of a decade. Yet few studies had looked at the people caring for service members when they came home. The best data RAND could find suggested there might be 275,000 of them—or there could be well more than a million.

Nearly 40 percent of the caregivers met the clinical criteria for major depression.

That was the starting point for what became the most comprehensive study of military caregivers ever undertaken. RAND researchers surveyed thousands of military households and interviewed dozens of individual caregivers in face-to-face focus groups. They worked through resource guides, websites, and word of mouth to identify every known support program available to caregivers and their care recipients.

They concluded that 1.1 million people were providing support to veterans of the post–9/11 wars in Iraq and Afghanistan. Another 4.4 million people were caring for veterans of earlier eras. The value of that, if they were all professional caregivers, would approach $14 billion a year.

Those caring for older veterans looked in many ways like other caregivers in the civilian world. They were most likely to be older adult children helping a parent with the physical disabilities of age or illness, with well-established networks of support to help them.

The post–9/11 caregivers were much different.

‘I still get overwhelmed’

Jessica Allen was standing recently in a crowd of parental frustration, after a flight change threw off the plans of their traveling children. A father turned to her: Why are you so calm?

She shrugged. “My husband survived a 40-pound bomb,” she told him. “This is nothing.”

Her husband, Chaz, a soldier with the 101st Airborne, came home from Afghanistan with no legs and his right arm fused at the elbow. His recovery would keep him for months at Walter Reed National Military Medical Center near Washington, D.C.; Jessica and their two daughters were living in Tennessee.

Every other week, she would leave the girls with family, fly to Washington, spend a week with him, and then fly back home in time to pick them up from school. Their youngest daughter was 5 at the time; even now, she divides her memory between when her dad had legs, and when he didn’t.

Through it all, Jessica, an accredited financial counselor, kept working; she just opened her own brick-and-mortar office. Chaz can now drive himself to his physical therapy appointments and takes their youngest daughter to school. He has a fancy riding mower so he can cut their 10 acres of grass.

“I still get overwhelmed all the time,” she says. “I’m human. You’ll have days when you’re just like, oh my gosh, one more thing and I’m just going to break. You have regular life, which is stressful, and then you have life as a parent, which is very stressful, and then you have a spouse who is heavily dependent on you, and so there’s another stressor.”

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The definition of love

Ask Brian Vines when he first realized the enormity of his role as a caregiver, and he’ll tell you about the afternoon he heard a clicking sound coming from his bedroom.

He and his wife, Natalie, were both in the Army—both serving in Mosul, Iraq, in 2009 when she suffered a head injury. He met her at the base hospital; when he and the doctors asked if she could remember the names of their two Boston terriers, Libby and Freda, she just shook her head.

She still has severe migraine headaches, a cognitive disorder, balance issues, and severe PTSD. Brian has learned to plan out every day the night before—mapping routes, laying out clothes—to avoid any surprises that might distress her. At restaurants, he knows to always ask for a table at the back, away from noise, with a clear view of the door so Natalie can see anybody coming in.

But it wasn’t until that afternoon when he heard the clicking sound that he really understood what he was up against as her caregiver. He rushed into the bedroom to find her on the floor, convulsing with a seizure. She had bit her tongue. The clicking sound was her watch hitting a bedroom mirror.

“I realized it may be like this for the rest of her life,” he says. “But you know, being a caregiver is not necessarily a big stretch from being a husband. I mean, if you love your spouse, you’re going to do those things for them. I never thought of it as a label—’you’re a caregiver.’

“It’s that you love someone so much that you put their needs before your own. If anything, that is the definition of love.”

They were most often spouses (33 percent), parents (25 percent), or unrelated friends and neighbors (23 percent); around 40 percent of them were men. More than one-third of them had not yet turned 31.

Most were employed, and they reported missing an average of 3.5 days of work every month because of their caregiving duties. Nearly half said they had no support network.

Nearly 40 percent met the clinical criteria for major depression.

The needs of their care recipients were different as well. Nearly two-thirds had some kind of mental-health disorder, such as post-traumatic stress disorder (PTSD), or were struggling with substance abuse. One of the most common tasks their caregivers performed was helping them cope with stressful situations or other triggers.

Yet all too often, the programs meant to help military caregivers had not adjusted to those new realities, the researchers found. Many were still focused on older veterans with physical illnesses such as dementia, not younger veterans of Iraq or Afghanistan haunted by depression or substance-use disorders. Other programs were only open to immediate family members of service members or veterans, not friends or neighbors.

Almost none of the programs provided financial support to caregivers, or helped connect them with health care, the researchers found. And only a handful provided respite care, to allow caregivers a much-needed break from their responsibilities.

The researchers saw even more cause for concern when they looked to the future. In little more than a decade, they estimated, significant numbers of caregiving parents will simply become too old to carry on their duties. Marriages will fail; friends and neighbors will move on.

And many of the support programs that could help are run by relatively young nonprofits, with no guarantee their funding will last as long as the need.
‘It’s like a switch flipped’

The phone call jolted Roxana Delgado awake. It was 4:30 in the morning. “Are you driving? Are you in a position to talk?” the caller asked. And then: “I regret to inform you….”

Her husband, Victor, had been riding in a convoy in Iraq when an explosive projectile hit his armored truck. He later said it felt like someone swung a baseball bat into the back of his head, and then sucked all the oxygen out of the air.

“It’s like a switch flipped,” Roxana says now. “Life just changed completely that day.”

Victor couldn’t talk without stuttering, couldn’t raise a fork to his mouth without shaking, couldn’t tie his own shoes. Roxana was working full-time as a health scientist and had just started a Ph.D. program. She would wake up early, take him to rehab, go to work, pick him up and get him home, go to class, come back home to get him in bed, and then study. “I didn’t tell you that my days were not 24 hours?” she says.

She was able to do it, she says, because of the extraordinary support she received: Colleagues who understood she had demands at home, professors who let her attend class by Skype. She also credits Victor, who gave her a card promising to make her fall in love with “the new me,” and then put in long hours of work at rehab to make good on it. He recently passed his driving test.

“When you have a community that supports caregivers and is able to accommodate their needs, we can be extremely successful,” she says. “I’m an example of that. Today, eight years later, our life couldn’t be better.”

She wrote her dissertation on the experiences of service members with brain injuries. Her research focus now is on caregivers: their health, well-being, and what they need to succeed.

Shining a light

“The only ‘me time’ I get is late at night when I can sit on my computer to talk to other caregivers online.” — RAND focus group participant

RAND published its major findings in 2014. The impact was immediate.

Former Senator Dole described the report as a “clarion call.” At a White House press conference, she introduced a coalition of nonprofit groups, political leaders, and others who had committed to support and empower military caregivers.

The Elizabeth Dole Foundation has since partnered with Public Counsel and other legal groups to provide free legal and financial services to caregivers planning for the future. It has worked with the U.S. Chamber of Commerce Foundation to expand employment and workplace services for caregivers. And it has rallied hundreds of caregivers to lobby Congress and the states for greater access to support programs.

RAND’s research has “been critical in shining a light on the number and characteristics of military and veteran caregivers,” senior behavioral scientist Terri Tanielian told the U.S. Senate’s Special Committee on Aging earlier this year. But much more work remains.

Tanielian, the leader of RAND’s “Hidden Heroes” research and, as the daughter of a veteran, a former caregiver herself, recently released a ten-point blueprint to further help military caregivers. It calls for more research into how well support programs are working, whether the demands of caregiving affect different people—such as children—differently, and how caregiving needs change over time.

She was a featured speaker at last year’s Invictus Games, the international Olympics for wounded military and veteran athletes. She attended the opening ceremonies alongside a woman who was helping her husband, a triple amputee.

“Watching her make sure he was OK, just seeing their spirit, was inspiring,” she says. “You see these caregivers, you meet them, and they’re not a data point, not a statistic.

“I continue to be inspired by what they do on a day-to-day basis, the sacrifices they’ve made. And I continue to hear about the challenges they face. We can make their lives easier if we focus on improving programs and policies based on sound research.”

Improving Support for America’s Hidden Heroes: A Military Caregiver Research Blueprint is available for free download at www.rand.org/t/RB9950
‘They just can’t do it alone’

Emery Popoloski knew her husband, Charlie, had survived a mortar blast during his two deployments to Iraq with the Army. But he seemed unharmed as he stepped off the plane in 2012, ready for home.

It was only later that she started noticing changes. He was anxious and angry, and sometimes had trouble remembering things. One evening, he collapsed in the living room, and she had to get a neighbor to help. He was diagnosed with a traumatic brain injury, PTSD, and a seizure disorder that temporarily cost him his driver’s license.

Emery became his unofficial case manager, shuttling him to medical appointments, setting up life insurance and long-term financial plans, and all too often arguing with some insurance call-taker about coverage details. At the time, she was also working as a criminal-law paralegal and raising two young children. She hadn’t even turned 30.

Her ideas about the future had to change to accommodate her new reality. She calls it the “ambiguous loss” of caring for a wounded loved one: “It’s the hopes and plans you lost,” she says. “It’s the loss of what you had expected.”

She and Charlie have adapted since then to what she describes as her new life. They moved closer to his mother so she could help. Emery has since worked with the Elizabeth Dole Foundation to coordinate a fellows program that brings together military caregivers to advocate, advise, and represent the foundation. She’s pursuing her master’s degree in public administration.

“We’ve had an insane amount of support,” she says. “I’ve seen other caregivers with no support, and they just crash and burn. They just can’t do it alone.”

Post-9/11 caregivers are much different than those who care for older veterans.

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<td>11% AGE 30 OR YOUNGERS</td>
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POST-9/11 CAREGIVERS MISS AN AVERAGE OF 3.5 days OF WORK EVERY MONTH
A FOCUS ON THE RESEARCH OF
William Marcellino and Zev Winkelman
Researchers at RAND made a surprising discovery as they sifted through millions of Arabic tweets. For all its vaunted social-media savvy, the Islamic State was losing the war of words on Twitter. Its opponents outnumbered its supporters six to one. They were calling the group and its fighters the “dogs of fire.”

The report last year received widespread attention. What got less notice was how the researchers did it. A team at RAND had built a computer program that could scan millions of lines of text and identify what people were talking about, how they fit into communities, and how they saw the world.

The program, known as RAND-Lex, has since shed light on how al-Qa’ida affiliates communicate, how Russian internet trolls operate, and how the American public thinks about health. It has helped carry an old lesson of linguistics into the digital age: How people speak speaks volumes about them—even when it’s 140 characters at a time.
A holistic approach

Bill Marcellino once spent six months with a company of Marines, slogging through obstacle courses and gutting out 15-mile hikes, just to understand how they talk. He came to RAND in 2010 as a social and behavioral scientist, where he found himself sharing an office with a computer scientist named Zev Winkelman. Winkelman had left a job in the financial industry after the Sept. 11 terrorist attacks to work on big-data approaches to national security.

They soon realized they were working on the same kinds of puzzles, just from different perspectives. Marcellino was using what he knew about the big picture of language to understand what was unique or telling about individual pieces of text. Winkelman was looking at text, too—but he was using computers to identify the distinct pieces first, and then work back to the bigger picture.

“We realized we could bring together social science and computer science to make meaning out of huge data sets of text,” Winkelman says. “We could build something more holistic, something that people could use, a center of gravity for text analytics.”

Exposing the nuance

Marcellino and Winkelman started coming in early and staying late to turn their ideas into computer code. Their first version, RAND-Lex 1.0, could scroll through millions of lines of text and compare them against a linguistic baseline. It was looking for surprises—words or phrases that appeared more often than expected, statistical outliers. It might flag the words “single-payer,” “pre-existing,” and “Obamacare” in a transcript for a health-care debate, for example—not necessarily the most frequent words, but the most distinct.

That’s how researchers at RAND were able to get an unprecedented look at the online messaging battle between ISIS supporters and opponents. They found that supporters almost always referred to the group by its full name, the Islamic State. Opponents preferred to belittle the group by abbreviating its name in Arabic to Daesh.

But when the researchers fed only those Daesh tweets into RAND-Lex, they found that, for all their numbers, opponents often were speaking past each other. Gulf State Shia blamed Saudi Arabia for the rise of ISIS; Saudi Arabia and its Sunni neighbors blamed Shia Iran. And none of them matched up with the Syrian mujahideen, who sometimes applauded ISIS fighters even while denouncing the group’s brutality.

The study revealed fierce opposition to ISIS across communities on Arabic Twitter. But it also showed that a one-size-fits-all approach to countering ISIS’s online message would fall flat.

Linguistic fingerprints

The RAND-Lex team narrowed its focus to Egypt in another study. The researchers wanted to see if they could measure how well ISIS’s message resonated with people far outside its home turf of Iraq and Syria.

To do that, they ran ISIS speeches, proclamations, and articles through RAND-Lex, looking for distinct words—the group’s linguistic fingerprints. Then they looked for those same words in more than 6 million Egyptian tweets, to see whether people were starting to talk like ISIS.

They found that only around 1 or 2 percent of the population was borrowing words from ISIS. They were much more likely to describe the world in terms taken from the Muslim Brotherhood. But the number of ISIS-imitating accounts grew in the months the researchers followed, especially in poorer places like the Sinai, a sign that its message was starting to stick with some Egyptians.

The next update to RAND-Lex helped researchers understand why. It was able to not just pull out distinct words and phrases, but also
They ran ISIS speeches, proclamations, and articles through RAND-Lex, looking for distinct words—the group’s linguistic fingerprints.

found a running online battle between Russian propagandists and Ukrainian activists. Marcellino ran hundreds of blog items through RAND-Lex to see how Americans were talking about privilege; most addressed “white privilege” or “male privilege,” he found, but almost none mentioned class privilege.

The computer program he and Winkelman built by hand, with help and support from across RAND, has expanded beyond keyword testing and value comparisons. It can search through volumes of text and pull out the major themes; it can learn from small samples of text how to classify much larger collections. It can tease out the overall stance of a text in English or Arabic, with Russian in the works. RAND recently made it available to outside researchers as a subscription service.

“We live in a world where the amount of data is increasing all the time,” Marcellino said. “It’s not just that the haystacks are getting bigger and bigger. The number of haystacks is increasing exponentially. We need new ways to find the needles.

“We’ve realized that if you leverage what machines are good at and what humans are good at, you can do really, really important work, at massive scales.”

It is, if anything, a growth industry. In the time it takes you to finish this sentence, 6,000 new messages will have whistled across Twitter alone.
My association with the Girl Scouts has spanned decades—as a scout, camp counselor, steadfast cookie connoisseur, and now donor. It is an experience strongly associated with the great outdoors. Cook meals on a campfire? Check. Hike long distances wearing a heavy backpack? Check. Lead two dozen 5-year-olds for a week in a woodland camp? Check. In adulthood, all of those experiences stayed with me, and I put them to use in the wilderness and in my work as a cybersecurity researcher for the RAND Corporation.

Scouting has always given girls opportunities that challenge them and allow their leadership skills to develop. But the modern world—with its headlines about Russians hacking our elections and disruptive prank email impersonations of White House staffers—can seem far removed from a Girl Scout camp. So imagine my delight when the Girl Scouts announced they would be offering 18 cybersecurity badges to expose girls to information-age concepts and challenges.

This heartening development is more than just an indication of changing times, more than just updating badge programs to replace the outmoded with the modern. This is a way for more girls to obtain valuable hands-on experience with the concepts that are shaping the modern world. The service ethos Girl Scouts have always embodied and championed can now “go viral,” as up to 1.8 million girls are given the chance to learn to protect themselves and their community in cyberspace.

Just by offering these cybersecurity badges, the Girl Scouts are break-
It’s no secret that women are underrepresented in career fields like information technology, computer science, and cybersecurity. Every year since 1982, more women than men have earned college degrees. But women are less likely than men to pursue degrees in the technical disciplines that often lead to cyber careers—think information technology, information security, computer science, mathematics, or electrical and computer engineering.

If the Girl Scouts employ their typical philosophy that emphasizes learning by doing—and cultivating leadership skills to detect and solve problems—girls will be able to identify with cyberspace as a place they, their families, and the greater world spend so much time. Girl Scouts will undoubtably recognize and grapple with the fundamental tensions between privacy and security, the societal inequities in access to information, and the cat-and-mouse game between those who will misuse cyberspace and those who try to defend it.

But it’s not just about exposing them to cyber concepts like strong encryption and probing networks to find security flaws. Girls and young women need to be able to see themselves in the role of white-hat hackers to truly even the virtual playing field.

While preparing to give a seminar to encourage girls to pursue cybersecurity or other careers in science, technology, engineering, and math (STEM), I stumbled upon some eye-opening artwork by seventh-graders on the website of the Fermi National Accelerator Laboratory near Chicago. The students had been asked to draw a picture of a scientist before meeting with the laboratory’s scientists (particle physicists, no less). The drawings embodied the classic cliché and were mainly of white men wearing white lab coats, mixing potions in beakers, sometimes with wild hair and a crazed look in their eyes.

After the field trip, the students were once again asked to draw a picture of a scientist. This time, having experienced science firsthand, their pictures represented a more realistic and fully formed version of who can be a scientist. Their drawings of men—and yes, women—showed them wearing “lab chic” street clothes, holding fewer beakers, and, for the most part, looking pretty sane.

What sort of a picture would a seventh-grade girl draw of a cybersecurity professional? With the help of the Girl Scouts’ cyber initiative, many more girls might depict a future version of themselves in the part.
The Military Health System (MHS) plays a critical role in maintaining a physically and psychologically healthy force. Ensuring the quality and availability of programs and services targeting two of the most common mental health conditions diagnosed and treated in the MHS—post-traumatic stress disorder (PTSD) and depression—is a key contributor to this goal. This brief provides data on various aspects of the MHS capacity to treat PTSD and depression.

Most providers screen new patients for PTSD or depression, but they are less likely to assess symptoms over time to inform treatment.

Screening and monitoring allow providers to accurately identify symptoms and help ensure that service members receive the appropriate course of treatment for their condition. The best screening instruments are evidence-based: They have been empirically evaluated for their reliability and validity.
The vast majority of prescribers treat patients with PTSD or depression with medications that are strongly recommended for these conditions, such as specific types of antidepressant medication. However, 11% of these providers prescribed a medication that was potentially harmful to their most recent patient with PTSD (e.g., a benzodiazepine).

Providers often face barriers to receiving training to improve their clinical skills, such as travel limitations or lack of dedicated time in their schedule to attend workshops and seminars. Their schedules—or their patients’ military duties—also prevent them from seeing patients as often as they would like. These are some providers’ perspectives on barriers to training and providing recommended care.

Data on the number of active-duty military and government civilian providers are from the Defense Manpower Data Center’s Health Manpower Personnel Data System; information on contractor numbers was provided by the Army, Navy, Air Force, and Defense Health Agency. Data on treatment approaches, session frequency, and barriers are based on responses to a RAND survey of mental health providers who had treated patients at a military treatment facility for PTSD or depression in the 30 days prior to the survey, conducted February–April 2016.

“Our family feels that the new endowed chair will enable effective discussions on education and health care in order to help address China’s long-term growth needs.”

Cyrus Tang

A generous $3 million gift establishes the Tang Chair in China Policy Studies at RAND.

The RAND Corporation has received a $3 million gift from the Cyrus and Michael Tang Foundation to establish the Tang Chair in China Policy Studies at RAND.

The chair will support a senior scholar who will undertake research on the critical factors that will influence China’s future, particularly in education and health care.

“This significant gift will enable RAND to establish our first endowed chair with an international focus,” said RAND’s president and CEO, Michael D. Rich. “We are very grateful for the continued generosity of the Tang family and look forward to furthering RAND’s China-focused policy research and analysis capabilities.”

A previous gift to RAND from the Cyrus Chung Ying Tang Foundation helped to create the Tang Institute for U.S.–China Relations, which works to improve policy discussions that shape relations between the United States and China, and between China and its neighbors.

The Tang Institute, which will house the new chair, is part of the RAND Center for Asia Pacific Policy and has supported the RAND Chinese-language website, the development of new research initiatives, and joint projects with leading research institutions in China. Cyrus Tang served on the advisory board of the RAND Center for Asia Pacific Policy from 1999 to 2002, after which time Michael Tang joined the board. Michael is currently an active member.

“With this additional gift we will be able to significantly broaden our research on China and improve the impact of RAND’s policy expertise on China’s future growth,” said Rafiq Dossani, director of the center and a senior economist at RAND.

The holder of the chair will initiate and manage a research agenda on China’s policies for sustainable growth; build partnerships with research institutes in China to organize symposia, exchange programs, and joint research projects; and mentor China studies scholars at RAND.

“The Tang Institute has been successful in fostering dialogue and exchange between the United States and China on issues such as economic development, labor and trade, and direct foreign investment,” Cyrus Tang said. “Our family feels that the new endowed chair will enable effective discussions on education and health care in order to help address China’s long-term growth needs.”

Cyrus Tang is the CEO and chairman of Tang Industries, an international manufacturing and distribution company based in Las Vegas. Michael Tang is vice chairman of Tang Industries and CEO of National Material L.P. They are both longtime RAND supporters.

The RAND Center for Asia Pacific Policy is a multidisciplinary research center that provides decisionmakers and the public with rigorous and objective research on critical policy challenges facing Asia and U.S.–Asia relations.
A decade after the satirical Bland Corporation advised Dr. Strangelove on nuclear weaponry in Stanley Kubrick’s Cold War comedy, the real RAND Corporation flipped the script and applied its nuclear bona fides to health care delivery. At the time, Bruce Bennett—then a student at RAND’s graduate school—was developing computer software that could estimate the loss of life if a nuclear bomb were dropped. Though RAND already had a bomb damage computer, Bennett’s software analyzed the people who would be affected.

At the same time, medical schools were graduating more physicians, and the conventional wisdom was that these new doctors wouldn’t set up practice in small towns. Economists at RAND set out to prove that having more doctors overall would benefit both rural and urban areas.

According to Bennett, economist Al Williams connected the dots. “We know that if you drop a theoretical bomb into your software, you can calculate casualties within a given geographical area,” Bennett recalls Williams saying. “But I want to drop a doctor someplace, not a bomb! I can figure that anybody within a certain distance has access to medical care and anybody outside that distance doesn’t.” Bennett custom-built software for a “doctor drop,” and the researchers soon validated their theory.

The irony of applying weapons research to medicine wasn’t lost on the researchers. “From the beginning, Al was chuckling about this,” says Bennett, now a senior defense analyst at RAND.

So were RAND’s board members when briefed about the new application of an existing methodology. The first slide of that presentation was a cartoon of a doctor being pushed from a plane. But unlike the Dr. Strangelove character who rode a nuclear bomb to his death, the doctor in that briefing had a parachute.

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

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