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About Face

Computers that can read a human face were once the stuff of science fiction. Now they allow smartphone users to unlock their home screens with a selfie. But the technology may be racing ahead of efforts to protect privacy and prevent bias, a recent RAND study concluded.

Researchers found only a patchwork of laws and regulations governing the use of face recognition technology. At the same time, they found that the technology is becoming much more sophisticated and expanding into more areas of public life.

At its simplest, face recognition technology can match a person’s face to a photograph. That’s how smartphones verify a user’s identity, and how the U.S. Department of Homeland Security matches people to their passports at border entries.

Things get much more complicated when a computer tries to scan through many possible identities to find a match for an unknown face. That kind of technology could be used to identify people on a terrorist watch list, for example, or to monitor who goes in and out of a school building. But it also raises the risk of public harm.

Studies have shown that face recognition technologies consistently misidentify faces that are female, black, or young. Law enforcement systems also tend to rely on databases that overrepresent people of color, leading to biased threat assessments.

Face recognition technologies can improve public safety and services, the researchers concluded—but they need stronger guardrails to protect the public. They also require closer attention to issues of privacy and consent. And any system that matches identities by algorithm should have a human in the loop, making the final call.

That’s partly because of one other risk that still needs to be resolved. Like any technology, face recognition computers can be hacked. And that might require nothing more than a fake beard and glasses.

This research was conducted using funding generated from operations of the RAND Homeland Security Research Division (HSRD) and within the HSRD Acquisition and Development Program.
Gun Policy in the United States

For all the certainty on both sides of the gun-policy debate in America, the evidence base for most proposals, pro or con, is surprisingly thin.

RAND has made it a research priority to gather and assess that evidence in an effort to foster more-effective gun policies. Its latest report reviewed more than 120 studies that met high standards of scientific evidence.

Researchers found what they described as supportive evidence linking stand-your-ground laws to increases in firearm homicides. They found moderate evidence that background checks reduce firearm homicides; that waiting periods reduce firearm suicides and total homicides; and that preventing people under domestic violence restraining orders from having a gun reduces intimate-partner homicides.

The researchers also found supportive evidence that child-access laws can prevent firearm injuries or deaths among children. But, echoing a theme throughout their report, they didn’t find sufficient research to understand the effects of such laws on other outcomes, such as defensive gun use.

For most common gun-policy proposals, in fact—from assault-weapon bans to gun-free zones to concealed-carry laws—researchers could not draw reliable conclusions. That wasn’t always because studies had found mixed or uncertain effects of those laws; in most cases, it was that reliable studies had never been done. For years, congressional limits on federal funding for research that could be used to advocate for gun control has amounted to an outright ban on such research.

RAND’s first report on gun policy in America, issued in 2018, drew attention to the need for more research—with federal funding—to inform effective policy. Congress responded late last year with $25 million to jump-start gun-policy research. RAND’s latest report, with an expanded scope and time frame, identified nearly twice as many rigorous studies as the 2018 report had.

The United States has somewhere between 265 million and 393 million privately owned firearms in circulation right now. Given those numbers, the effect of any new policy is likely to be statistically small and hard to detect—but could still be critically important. A 1 percent reduction in firearm homicides, for example, would save 1,500 lives over a decade.

MORE AT www.rand.org/t/RR2088-1
Funding for the Gun Policy in America initiative was originally provided by unrestricted philanthropic contributions to RAND and income from operations. Since June 2018, this initiative has been supported by a grant from Arnold Ventures.

Women and Work in Egypt

Egypt has an opportunity to expand and modernize its economy, researchers concluded in a recent study—not with trade deals or new industries, but with better working conditions for its women.

Only around 20 percent of working-age women in Egypt participate in the labor force. Even those that do face high unemployment rates, harassment, and weak enforcement of labor laws meant to ensure they get fair pay and treatment. As a result, the most populous country in the Arab world is leaving behind a significant part of its potential workforce.

That’s despite growing numbers of Egyptian women with college degrees. They tend to study education, health, and public administration—preparing for government jobs where they can expect more protections and better working conditions. But those jobs have become much harder to come by, and the private sector has not made up the difference.

Women also are expected to handle childcare and most household chores, a “second shift” that adds up to an average of 31 hours of extra work a week. Married women face restrictions on obtaining a passport or traveling outside of the home.

Those limits on women in the workforce are likely to seriously impede Egypt’s progress, the researchers concluded. The country needs to better enforce labor laws, crack down on workplace harassment, and address a persistent wage gap. It should also look for ways to improve its overall business environment, to create more opportunities in the private sector.

The researchers also recommended a series of public-service announcements to promote equal opportunity and advocate for women in the workplace. It’s not women who need to hear those messages, though; it’s the men they’d be working with.

MORE AT www.rand.org/t/RR2868
Funding for this research was provided by the generous contributions of the RAND Center for Middle East Public Policy Advisory Board.
Jonathan Welburn has spent years studying how economic shocks ripple outward, from one company to another, like a contagion moving through the economy. As COVID-19 infections surged, jobs vanished, and companies shut down, his research helped underscore the economic costs of the crisis, and the grim choices facing policymakers.

He and a team of researchers from across RAND developed an online tool that shows what the future might look like under different physical-distancing scenarios. The tool provides a state-by-state look at how COVID-19 caseloads, fatalities, and hospital demand on one hand, and state gross income on the other, change over time as policymakers relax or stiffen the rules. It shows how deeply the crisis is cutting into state economies—but also the deadly cost of reopening too early.

Welburn, an operations researcher at RAND, has been working to model and manage economic risk since the last big economic shock, the Great Recession. The online tool can give policymakers a starting point, he said, as they confront challenges with no real precedent.

“Putting physical-distancing policies in place was the easy decision,” he said. “Taking them off is not.”
How do you hope policymakers use the COVID-19 Decision Support Tool?

The tool can help them navigate how they should be dialing up and dialing down physical-distancing policies and managing the trade-offs. It runs those policies through an epidemiological model to show how the spread of disease changes as a function of time and of what policies are in place. Then it uses an economic model that says, Here are the economic losses associated with those policies. We wanted to put those trade-offs in one place. As you put in place measures that are more strict, that obviously pulls down the case count, but the tool also lets you understand the economic costs.

What’s the main takeaway?

We have a health crisis, we have an economic crisis, and together they’re creating a national well-being crisis. Flattening the curve and not overwhelming the health system is something we’ve all really accepted, and this tool sheds light on different policies to do that. But we also have to try not to overwhelm the economic system. We’re trying to balance these two absolutely catastrophic and simultaneous crises. The idea here is to help policymakers loosen physical-distancing measures as the crisis evolves, but also to help them reinstate such measures should cases tick up.

Were there any surprises when you started running the numbers?

The variance in state losses is really stark. Some of the Midwestern states, just by the nature of their economies, have some of the largest economic losses due to physical-distancing policies. Indiana, Iowa, and Wisconsin especially had really significant losses. They produce a lot of final goods—finished products from, say, an assembly line—and the physical-distancing policies directly reduce demand for those.

You’ve done a lot of work on systemic risk in the economy. How did that factor into this crisis?

Before the crisis, we had come up with a way to model the economy at the level of individual firms. Once we did that, we were better able to see how truly and heavily interconnected the economy is.

In other words, some businesses are so central that when they get hit, the losses ripple through supply chains and spread through the economy. Since 2008, everybody has been looking at the financial sector, worried that a crisis there could spread and take down the world economy again. But we found that tech and telecom companies have become increasingly central to the economy. So have some manufacturing companies and insurance companies. We used to say that some banks are too big to fail, but it’s become clear that there are many firms that are now too interconnected to fail.

That is to some extent what’s going on in 2020. But it’s not just a hit on one especially important firm; it’s a hit on all firms. It’s a perfect storm, where you have a lot of systemically important firms getting hit all at once, so the losses are spreading all at once.

What does that tell you about recovering from this crisis?

I’m mostly concerned about whether or not some of those firms that are too interconnected to fail, fail. But moving forward, there could be an upside that might play a role in the recovery as well. Some of these companies that are really central to the economy are the ones people are relying on to get through this. Many of the digital services we’re using—from Zoom to Slack to Netflix—rely on Amazon Web Services. Certainly, there are systemic risks associated with firms like Amazon that are so central to economic activity. But in this unique crisis, they may also bring benefits in lifting up all of the firms that touch them.

What are you working on now?

The potential debt crisis. Many firms were highly indebted coming into this crisis—retail, oil and gas companies—and some of them are also very central to the economy, very interconnected. Those are pockets of very high risk. Corporate debt levels are very high; municipal debt levels are very high; federal levels are very high—not just in this country, but across the whole world. It will be a struggle for policymakers to figure out how we de-leverage moving forward. That could be a real constraint on growth. We need to find novel solutions, to figure out how to fix the problem in a nonchaotic and equitable way. That’s the next project I’m working on.

Philanthropy in Action


Systemic Risk in the Broad Economy: Interfirm Networks and Shocks in the U.S. Economy is available for free download at www.rand.org/t/RR4185.

Funding for these projects was provided by gifts from RAND supporters and income from operations.
State Police Powers

A Less-Than-Optimal Remedy for the Pandemic

By Douglas C. Ligor

Douglas C. Ligor is a senior behavioral/social scientist at RAND. Formerly, he served as deputy chief of the Northeast Law Division for the Office of the Chief Counsel, U.S. Citizenship and Immigration Services, Department of Homeland Security. He has also served as a trial attorney for Immigration and Customs Enforcement and the Department of Justice, Immigration and Naturalization Service.


Commentary gives RAND researchers a platform to convey insights based on their professional expertise and often on their peer-reviewed research and analysis.

Credit: CARLOS BARRIA/REUTERS

Police officers patrol the beach after the closing of all the beaches in Miami-Dade County due to COVID-19, in Miami Beach, Fla., March 2020.
A s the country grappled with the COVID-19 pan-
demic, Americans experienced—for the first time in the nation’s history—an extraordinary and unprecedented exercise of government power affecting over 90 percent of the population: quarantines, stay-at-home orders, and prohibitions on many businesses and most gatherings.

These restrictions infringe on fundamental constitutional rights and liberties, such as those associated with freedom of movement, association, worship, and economic activity. And yet, these government powers, referred to generally as state police powers, are inherent in our legal system and are as constitutionally valid as the Bill of Rights.

Police powers are the powers of a state government to make and enforce all laws necessary to preserve public health, safety, and general welfare. They originate from the English common law system that colonists brought with them to America. When the Constitution was ratified in 1788, the states did not surrender their powers as a condition of entering into the union.

The Constitution only limits police powers when states exercise them in a manner that is unreasonable, arbitrary, or oppressive to rights and liberties protected by the Constitution itself. For example, a state may not authorize its law enforcement officers to go door to door to search homes or persons within the state without a warrant simply because it wishes to reduce crime rates. Nor may a state pass a law banning nighttime driving simply to reduce crash-related deaths or injuries.

However, courts have consistently upheld the constitutionality of states’ powers to quarantine and vaccinate individuals against their will for public health purposes, enforce curfews or other lockdown measures during emergencies, seize property without a warrant if exigent circumstances exist, and even declare martial law if necessary to maintain public order.

Aside from a series of isolated protests, few Americans question the need to continue to enforce coronavirus-related restrictions where the science doesn’t support an easing. The risk to public health, and particularly this risk to elderly and minority populations, is too great. Nonetheless, however legal and necessary they are, given the threat of the coronavirus, it has also become clear to Americans that the exercise of police powers en masse is both a blunt and draconian mechanism for dealing with national-level threats.

In this case, using the mechanism may have changed lives permanently in many ways. Aside from the cost to individual rights and liberties, the economic cost of such measures has been staggering thus far: as of May 2020, an increase in the deficit of about $2.6 trillion and a real unemployment rate of just over 20 percent. Perhaps even more concerning, these economic costs tend to impact marginalized and disadvantaged groups and populations who are the least likely to be able to absorb and withstand their ill effects.

Such disparate impact by age, race, nationality, or class is another direct threat to constitutional values, as well as the health and stability of the democracy. This begs a number of critical questions: How can the United States face what may be a growing threat of pandemics, or other national threats, without having to exercise powers so extraordinary that they not only restrict fundamental rights and liberties, but also damage or jeopardize the economic livelihood of so many?

Can the United States afford to employ the same scope of police powers to fight future pandemics given their extraordinary costs? Are there less restrictive and cheaper approaches that don’t have such crushing effects on society? In the case of public health and pandemics, one approach to mitigate against the future need to exercise police powers nationally may be to make substantial investments in health care and biotechnology infrastructure.

Research indicates that the effects of pandemics can be substantially reduced, and even isolated or localized to small areas, if governments invest in the required infrastructure. These investments could focus on equipment, personnel, and training that would enhance the following capacities: disease surveillance and detection; widespread availability of basic health care; contact tracing; rapid diagnostic testing for pathogen identification and treatment; and a robust, global risk communication system.

Additionally, the ability to quickly surge personnel, personal protective equipment, medical space, and intervention therapies could also help. All of the above would require a significant financial investment. However, such an investment may very well minimize, insure against, or even negate the need of states to exercise their police powers—which can be the most blunt, ham-fisted, and draconian of authorities—to preserve Americans’ health and safety at such a profound expense.

It may be an instance where, although billions are spent, it results in the savings of trillions, the preservation of our fundamental constitutional rights and liberties, and, most importantly, the saving of tens (or hundreds) of thousands of lives.
Critical Care in the Age of COVID-19

As the outbreak strains U.S. hospitals and health care systems, a team of RAND researchers is helping to develop strategies to create critical care surge capacity.
Mahshid Abir knew what a surge of infections would look like: People fighting for breath in her emergency room, paramedics rushing to offload new patients, a scramble to find more beds, more nurses, more ventilators. She had spent her career preparing for it.

Abir is an emergency physician at one of the biggest hospitals in America, Michigan Medicine. She’s also a senior physician policy researcher at RAND with a specific focus on improving emergency care, especially under crisis conditions. As COVID-19 exploded into a global pandemic, she raced to develop a tool to help hospitals prepare for the worst, and stretch their space, staff, and supplies when it comes.

“It’s just a matter of where it hits next,” she said. “New York was the epicenter in the spring; who knows where it will be in the fall and winter? All hospitals need to have surge-capacity plans in place and be ready, because it could be their city.”

Abir grew up in Iran and lived through the relentless brutality of the Iran–Iraq War—the constant bombing attacks, the deaths of people she knew. She remembers hearing about a birthday party hit in one of the strikes, the children killed not much younger than she was. She had resolved to become a doctor by the time she left for the U.S. when she was 18, leaving her family in Iran. Having seen the results of war, she thought she’d specialize in reconstructive surgery.

Instead, she fell in love with emergency medicine. “No one’s having a good day when they come into the ER,” she explained. “You only have one shot, one opportunity, to make a difference in their lives. I really cherish that opportunity to be there for people like that.”

She did her medical residency at Thomas Jefferson Hospital in Philadelphia—at the time, the big city with the highest murder rate in America. She was there one night when three victims of a gang shooting arrived, all of them beyond critical. Everything else seemed to stop as she fought to keep them alive, rushing from one to the next to get breathing tubes into them.

It had been a busy night already; the ER was operating at capacity, and the waiting room was full. What would happen, she remembers thinking, if the ambulances had just kept coming—if it wasn’t three critical patients, but dozens, or more? In time, as she moved to Michigan Medicine, opened the Acute Care Research Unit there, and joined RAND, she developed a model to help hospitals answer that question. Its purpose was to identify bottlenecks that would slow their response by taking them through a worst-case scenario, a mass-casualty fire.

Then came COVID-19.

In Abir’s emergency room, the crisis presented as an older woman coughing, crying, calling out for her husband, who had also shown symptoms of the virus and had died earlier that day of a heart attack. Or as the younger woman with chronic disease whose father, her caregiver, had died of the virus and who was now struggling to breathe herself. Or as the homeless man who had nowhere to go while he waited for test results that would show whether he, too, had it.

“These are the faces I won’t forget,” Abir said. “It’s just really hard. You want to be there for people, you want to support them, and there’s just this sense of, What can we do to get our community through this horror?”

She and a team at RAND began working on a tool to help hospitals prepare for a surge of patients. Like her worst-case fire model, it would identify any shortages or bottlenecks in the three S’s of surge capacity: staff, stuff, and space. They committed to finish it within 21 days.

Working with the American College of Emergency Physicians, they surveyed hundreds of front-line clinicians about the challenges they were facing: shortages of testing kits, protective masks, isolation rooms. Then they convened two conference-call roundtables with emergency doctors and preparedness experts to strategize how to create more critical care capacity in the nation’s hospitals.

The tool went live on the 21st day. It looks like a spreadsheet; hospitals, health systems, even entire regions can input their own numbers—beds, doctors, ventilators, nurses—to see how many patients they can take. But the tool goes one step further. It allows them to model increasingly drastic changes they could make to accommodate more patients if they get hit with a surge.

They could, for example, convert operating rooms into intensive-care suites, or call in anesthesiologists to help with critical care. Under the most extreme scenarios, they could assign more patients to every nurse and doctor, or use one ventilator for multiple patients. As the assumptions change, the tool identifies any bottlenecks that form downstream.

“If you have all the staff in the world, but you’re limited in ventilators, then ventilators become...
“At any given time, not everywhere across the country is going to need these resources. Not everywhere is going to be an epicenter. That’s why we need to think regionally.”

MAHSID ABIR

…the limiting factor,” said Christopher Nelson, a senior political scientist at RAND who helped develop the tool. “If you have a lot of ventilators, but you don’t have the staff who are qualified to use them, then staff becomes the limiting factor. It takes two hands to clap. It doesn’t matter how good the one is if you don’t have the other.”

The tool and an accompanying report were downloaded from RAND’s website more than 3,000 times in their first few weeks, as the coronavirus case count soared. The American Hospital Association highlighted the tool in a resource roundup for its members.

At Michigan Medicine, the springtime surge never came. If anything, the emergency room was strangely quiet, except for the thumping of helicopters bringing patients from hard-hit Detroit. Abir is now working with medical examiners in Michigan to investigate whether people died at home instead of risking a trip to the emergency room amid the pandemic.

She’s not optimistic about what the next many months will look like. “Hospitals and health systems are going to need to think regionally,” she said. “There will be a shortage of ventilators. There will be a shortage of personal protective equipment. You can’t make those things fast enough; you can’t import them fast enough. But the truth is, at any given time, not everywhere across the country is going to need these resources. Not everywhere is going to be an epicenter. That’s why we need to think regionally.”

She doesn’t think a simple curve is going to define this pandemic, flattened or not. At some point, maybe when a vaccine has finally ended it, she thinks we’ll look back and see waves of sickness crashing into the health care system. “We can stick our heads in the sand and pretend that it’s gone,” she said. “But it’s not.” It’s not a question of if the virus will resurge, or when, she said; it’s a question of where.
### COVID-19

**The Three S’s of Surge Capacity**

**STAFF | STUFF | SPACE**

---

#### Staff
- Critical care doctors
- Critical care nurses
- Respiratory therapists

#### Stuff
- Ventilators

#### Space
- Beds

---

The COVID-19 pandemic is placing extraordinary strains on the U.S. medical system, most especially hospitals. Hospitals are searching for ways to increase surge capacity to provide critical care for the sickest COVID-19 patients. This tool allows decisionmakers at all levels—hospitals, health care systems, states, regions—to estimate current critical care capacity and rapidly explore strategies for increasing it. For more information about the tool or detailed descriptions of the strategies for increasing critical care surge capacity, see the related report.

### RAND Interactive Critical Care Surge Response Tool

1. Input data for the three S’s of intensive care: **Staff**, **Stuff**, **Space**
2. See which category sets the limit for the total number of patients who can be cared for at this hospital. In this example case, it’s the number of ventilators

---

**EXAMPLE**

<table>
<thead>
<tr>
<th>Current staff levels</th>
<th>STAFF</th>
<th>STUFF</th>
<th>SPACE</th>
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<tr>
<td>Starting number of personnel or resources</td>
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<td>Critical care nurses</td>
<td>Respiratory therapists</td>
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<td>Number borrowed from other departments</td>
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<td>0</td>
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<td>1</td>
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<td>52</td>
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<td>Patient-to-extender ratio</td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Number of patients who can be cared for by extenders</td>
<td>6</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Total number of patients who can be cared for</td>
<td>158</td>
<td>57</td>
<td>52</td>
</tr>
</tbody>
</table>

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**THE TOOL AND AN ACCOMPANYING REPORT WERE DOWNLOADED FROM RAND’S WEBSITE MORE THAN 3,000 TIMES IN THEIR FIRST FEW WEEKS, AS THE CORONAVIRUS CASE COUNT SOARED. THE AMERICAN HOSPITAL ASSOCIATION HIGHLIGHTED THE TOOL IN A RESOURCE ROUNDUP FOR ITS MEMBERS.**

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**Philanthropy in Action**

**RAND Critical Care Surge Response Tool:**
An Excel-Based Model for Helping Hospitals Respond to the COVID-19 Crisis is available for free download at www.rand.org/t/TLA164-1.

**Critical Care Surge Capacity in U.S. Hospitals: Strategies for Responding to the COVID-19 Pandemic** is available for free download at www.rand.org/t/RBA164-1.

Funding for these projects was provided by gifts from RAND supporters and income from operations.
Community Stress

Understanding how stress, trauma, and adverse experiences affect individual and community health, and how to strengthen resilience

By Doug Irving, Staff Writer
There had been a police shooting, another unarmed black man killed. Andrea Ducas saw the protests on the news, another community in turmoil, and thought of a term from public health: allostatic load. It's the physical cost of too much stress, the toll it takes on body and mind. She wondered: Could we apply that same idea to communities? Could a better understanding of how stress builds in communities, the burden it puts on them, lead to more effective policies to confront it?

Ducas, a senior program officer at the Robert Wood Johnson Foundation, had worked for years with RAND researchers on issues of community health and resilience. She picked up the phone. The result was a new way of thinking about how racism, poverty, injustice, and other societal traumas can cut to the very core of a community.

“The intent here was to create a framework that is informed by a community’s past but is also forward-looking, that goes beyond just describing the community,” Ducas said. “Once you crack that code, you can start to say, ‘Ok, what do we do about it? What are some indicators that community stress levels are rising? What are some interventions that might help?’”
Researchers at RAND realized Ducas was right: toxic stress, or “allostatic load,” could be a useful way to think about what happens in marginalized communities as well. They began pulling together strands of research on community trauma, resilience, health, and vulnerability. They developed a model for how stress can accumulate in a community, generation after generation, an accretion of despair, disinvestment, discrimination, and disparity. Any new crisis—a police shooting, a natural disaster, a global pandemic—becomes a potential tipping point.

“When you look at the histories that communities have, the traumas they carry, you start to get a better understanding of what they’re really dealing with,” said Anita Chandra, a vice president at RAND and director of RAND Social and Emotional Well-Being. 

In Duck Hill, you might start with the roads that flooded during every

*Generations of neglect*

The sign outside Duck Hill, Miss., describes it simply as “a place called home.” It has one hardware store, one convenience store, a handful of small shops, and 15 churches. It also has a dividing line, Binford Avenue, that separates the black side of town from the white side. In 1937, Duck Hill was the site of a notorious lynching that drew a crowd of 200 spectators.

“That was during my ancestors’ time,” said Shernell Everett, who has lived on the black side of town for all of her 61 years. “But we were told about it growing up. It really had the black people very fearful of stepping up, trying to do anything.”

Psychologists and biologists have known for years that prolonged stress like that is toxic to the human body. It alters hormone levels, weakens the body’s defenses, and wears a person down even at the cellular level. It’s a known risk factor for six of the leading causes of death in America; it also might help explain why people of color die at much higher rates of COVID-19.
That kind of chronic stress is not just a corrosive force in communities like Duck Hill, RAND’s model suggests. It’s also something that can be measured in real time.

The road to well-being

That kind of chronic stress is not just a corrosive force in communities like Duck Hill, RAND’s model suggests. It’s also something that can be measured in real time. But it takes more than the usual data points, like unemployment rates or crime statistics. To really understand stress levels in a community, you have to get out and ask residents about their perceptions, their experiences, the stories they tell about the community and the trust they have in it. It requires a deeper appreciation for a community’s history, its institutions, its policies and practices.

But it can lead to new insights about what a community needs when it reaches a tipping point. When the researchers looked at case studies of high-stress communities in crisis, they found that some were able to pull together while others pulled apart. That was true even when the researchers compared communities that looked similar on paper. In every case, the one that had stronger social ties, a more-inclusive and responsive government, a community narrative of facing challenges and overcoming them, was the one that responded well and recovered.

“That are things you can work on,” Chandra said. “They don’t automatically eradicate the realities of poverty, for example, but they start to uproot some of the issues when systems feel different for disenfranchised populations. You can actually get in there and build capabilities, versus just mapping vulnerabilities.”

You can, in the words of Andrea Ducas at the Robert Wood Johnson Foundation, start to “de-charge the conversation”—to look at where communities are hurting, and what it will really take to build and strengthen them moving forward.

The residents of Duck Hill might not have expected to have that conversation a few years ago, as they filed into a community meeting room to talk about the sorry state of their roads. But as they went around the room, sharing their hopes for the town’s future, the poison of its past kept coming up. It wasn’t a pleasant conversation, Shernell Everett said, and not everyone was ready to listen. But it started to bring together the two sides of town, black and white, to talk about where Duck Hill is going, and where it has been.

The town competed for, and won, a $300,000 grant to mitigate flooding and begin working toward a more sustainable future. It created a program to involve and empower its youth, the Creek Rangers. When COVID-19 hit, residents started a phone bank to call and check on each other.

They’re working now to renovate and reopen the old high school as a community center. Early plans call for it to house a small farmer’s market, so residents don’t have to drive miles outside of town for fresh fruit and vegetables. It will also have space for a museum, to ensure the community narrative provides a full account of its past.

“It’s a process,” Everett said. “I’m not going to say our community is perfect. But we’re striving, and we’re not going to stop. It can’t be a black thing, or a white thing. It has to be our thing.”

She’s become the driving force of that change, as the newest member of Duck Hill’s board of aldermen.
The Longest Summer

A FOCUS ON THE RESEARCH OF

By Doug Irving, Staff Writer
Research suggests that summer breaks contribute to income-based achievement and opportunity gaps for youth. How can we use what we know about summer learning to help kids in the age of COVID-19?
Educators have been trying to figure out just how much students lose after a long break from school for more than a century. One 1919 study, for example, helped set the tone by showing a clear decline in math performance over the summer. (It noted that children who spent their summers working did somewhat better.)

More recent studies have confirmed that academic progress slows during the summer for all children. But it slows more for lower-income students. They tend to learn less during the summer than their higher-income classmates. They also are less likely than their higher-income classmates to spend their summers in art or music classes, to travel, or to visit a museum or library.

The result is a learning gap that opens every summer, and that may help explain the college attainment gap between low-income and high-income students. More than three-quarters of high-income students have a four-year college degree by the time they turn 25; only around 10 percent of low-income students do.

The consequences can last a lifetime. One study found that the school time that German and Austrian students lost during World War II explained income disparities that were still apparent more than 40 years later.

“<span class="e23f0b0d" style="background-color: #e23f0b0d; color: #fff">The story when schools reopen is really going to be one of inequity in the opportunities that students had during the long break and in how far disadvantaged students have fallen behind,”</span> senior policy researcher Catherine Augustine said. “There’s a lot of reason for concern. We see negative outcomes after just three months—what are we going to see after six?”

A typical nine-month school year won’t be enough to address the slide, Augustine said. School districts will have to find ways to keep more kids learning through next summer. She and McCombs have some guidance for school leaders as they weigh their options, drawn from the longest and most-comprehensive study of summer learning programs ever conducted.

Their team tracked more than 5,000 children in five large school districts who were about to become fourth-graders in the summer of 2013. Almost all of them were eligible for the national school lunch program, an indicator of low family income. More than 3,000 of the children were invited to attend free, high-quality summer day camps that mixed academic seat time with fun activities like swimming or art.

The following fall, those children did better on their math tests, compared with the control group, with an average gain equal to around 15 percent of a typical school year. After two summers of programming, children who attended at least 20 days of the program performed better in mathematics, reading, and social and emotional outcomes. Those results persisted through the school year.
The study, funded by The Wallace Foundation, concluded that the evidence of a benefit was strong enough that the programs would qualify for federal funding. “The change you see in the kids is quite evident,” said Chris Smith, the executive director of Boston After School & Beyond, which supports summer programming for more than 20,000 children and partnered with RAND on the study. “We knew that these programs were important in their own right, in the form of positive relationships and skills. Now we know these programs, when structured well, pay off in academic performance as well.”

More than three-quarters of the school principals in a recent RAND survey said they expect student achievement to be somewhat or much lower this fall than it was last fall. More than 40 percent of them were already planning to provide summer learning programs.

The most effective programs, RAND’s study suggests, will recruit top teachers, with grade-level experience, and equip them with rigorous academic curriculums. They will operate for five or six weeks of the summer, with three or four hours of academics every day, as well as time for enrichment activities. They will establish a clear attendance policy—as in, try to be there every day.

“The pandemic is really going to shine a light on educational inequities,” Augustine said. “Call it a COVID slide or whatever word you want, some kids are just going to have a gap in their knowledge. And the research is clear that summer programs can really benefit them.”

The time is now to start thinking about what those students will need and how to provide it—not just this summer, but next. The most successful programs in RAND’s study spent months recruiting teachers and planning classes. That meant the commitments were made, the funding established, almost from the first fall bell of the new school year.
RAND has launched a philanthropic fund to support urgent research in a time of global pandemic and social upheaval.

The RAND Rapid Research Response Fund allows RAND experts to address issues of national and global importance when it matters most—now. It provides RAND a new level of agility to support effective policy amid a whirlwind of change and challenges.

“The greater the uncertainty, danger, and complexity of a crisis, the more I look to RAND for insight and clarity,” said Liz Ondaatje, a former researcher at RAND whose philanthropic support provided an early boost to the fund.

“During normal times, I regularly turn to RAND research to understand critical issues involving health, national security, education, and crisis management,” she added. “The COVID-19 crisis has involved all of these and more, exacerbated by lack of trustworthy information, conflicts among local, state, and federal policymakers, and limited discussion of long-term strategies. It gives me comfort to know that ongoing and new research will help address the unprecedented challenges we face.”

RAND created the Rapid Research Response Fund as COVID-19 emptied streets and filled hospital beds. Its immediate purpose was to help RAND researchers and students at the Pardee RAND Graduate School meet the unprecedented need for fact-based research and analysis during the pandemic. The fund will continue to support quick-turn research through the recovery, into the “next normal,” and during unforeseen future emergencies.

Philanthropic support has already funded more than a dozen RAND-initiated research projects to better understand—and mitigate—the impact of COVID-19.

Researchers are conducting rapid-response surveys to track the pandemic’s social and economic fallout at the level of individual households. They also have created tools to help hospitals better allocate scarce intensive-care resources, and to help policymakers weigh the trade-offs as they relax physical-distancing guidelines. One project is exploring the technological challenges and legal implications of using cell phones to track the spread of infections.

Michael “Mike” McGivern donated to the fund after losing a friend, Kevin McAdoo, a commercial pilot and Air Force veteran, to COVID-19. It was his first donation to RAND.

“RAND’s deep bench of experts can help our political leaders make better-informed, time-sensitive decisions to deal with situations like we currently face,” he said. “I hope that our family’s donation can assist one of those experts to explore just a tiny bit further than they would have been able to—and maybe that extra distance will make all the difference in the world.”

To see all of RAND’s research on COVID-19, as well as commentaries and Q&A’s from RAND experts, visit www.rand.org/COVID-19.

To support the RAND Rapid Research Response Fund, visit www.rand.org/respond.

Giving
What keeps researchers up at night? Fifty years ago, it might have been controlling gravity. Anticipating the risks and opportunities posed by all kinds of change is a RAND specialty. The most recent example is RAND’s Security 2040 initiative but one of its earliest attempts was in 1964. Using RAND’s now-famous Delphi method for reaching consensus among experts, 82 authorities in various fields pondered topics like medical advancements, outposts in space, artificial intelligence, and controlling the weather.

Many predictions came true. Today, artificial organs keep people alive, and oral contraception is readily available. We have automated language translators and grammar assistants, and robotics have eliminated some jobs. While a worldwide universal income hasn’t come to fruition, a few nations have experimented with basic incomes, and many are providing financial support during stay-at-home orders for COVID-19.

Some ideas seemed pretty out there—but were they? While we have yet to implant information directly into the human brain, Pentagon researchers have successfully done so with mice. One expert thought humans would breed superintelligent apes and cetaceans to perform “low-grade labor.” Animals aren’t doing our housework yet, but even in 1964 various militaries were training marine mammals for mine detection (and possibly combat).

Other forecasts clearly missed the mark. Their population calculations were off by about 80 years: 8 billion people by 2100 versus 7.8 billion today. One panelist predicted the ability to control gravity and lift enemy troops off the ground—causing the report’s authors to “register our surprise” that the other experts didn’t reject the prediction outright.

We also have yet to control the aging process. But fingers crossed!
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