



Illustration by Shonagh Rae

INTERVIEW

“You Have to Begin by Imagining the Worst”

Discussing the pandemic, cybersecurity, and the role
of public universities with Janet Napolitano.

Janet Napolitano has held many distinguished leadership positions, most recently as the president of the University of California and before that as secretary of the Department of Homeland Security (DHS) and as two-term governor of Arizona. In a conversation just days before reports of a massive cyberattack on the Pentagon, intelligence agencies, national nuclear laboratories, and Fortune 500 companies, *Issues in Science and Technology* editor William Kearney asked Napolitano about the pandemic and how threats to the homeland have evolved in the 20 years since 9/11.

You were probably better prepared than most university presidents to manage a crisis on the scale of a pandemic given your experience leading DHS, but can you describe the shock to the system at the University of California when COVID-19 hit?

Napolitano: It really affected us in two major ways. First, we are a large health care provider as well as health care research enterprise, so we had to transform our hospitals to be basically COVID hospitals, not knowing how many patients we would be getting. We postponed a number of procedures in order to do that, and like all health care providers in the country, we were in a scramble for masks and PPE [personal protective equipment] and other things necessary to safely care for COVID patients. Our research laboratories also all basically converted to being COVID labs. We took quite a financial hit to our hospitals, and it's going to take a while to catch up.

The second major impact was on the academic side where we had to turn on a dime and depopulate the campuses and convert to online remote learning. Faculty at all our campuses did a terrific job at that, so students could continue taking classes, making progress toward their degrees. Again, there was a financial implication in that we had to immediately refund more than \$300 million in housing and dining fees, which was the right thing to do, but nonetheless that's money out the door. I served as president until August 1, and throughout the summer we were working through various iterations to determine whether we could open the campuses in the fall. Could we return to in-person instruction? Could we put students back in the dorms? What kind of testing regimen would we need? How would we pay for that? But as time went on, it became more and more clear that returning to in-person instruction was just not a viable option for the fall—and it looks like it won't be in the spring either given that California just went back

into shelter-in-place restrictions. So campuses have all adjusted, and classes continue to be taught, and students continue to make progress toward their degrees.

How can public research universities persevere through, and eventually recover from, the pandemic given the financial stress they were already under?

Napolitano: Well, first, I think the pandemic has illustrated to the American populace the value of science, most clearly through the rapid development of vaccines using mRNA technology, which is a relatively new technology. And it won't surprise you to learn the number one thing we can do is provide more resources to public research universities. I think public research universities are part of the secret sauce of America. There are whole swaths of the American economy that derive from basic research that originated at these universities. Plus we're training and educating the next generation of scientists. President-elect Biden is already indicating that he wants to put some serious money back into basic research, and I think a large part of that will go to public research universities, and that will be to everyone's advantage.

In your 2019 book, How Safe Are We? Homeland Security Since 9/11, you emphasized the need for the United States to confront our real risks, not perceived ones. Pandemics were on your real list. You warned that the magnitude of a pandemic could be immense and that we remained ill prepared, which has tragically proven true. You also wrote that learning from mistakes is all too rare in government. So when it comes to lessons learned, where would you start?

Napolitano: I would start with evaluating how previous pandemics were handled; what went well, and what didn't. At the beginning of the Obama administration, we had the H1N1 virus. We were lucky it turned out that it didn't have a particularly high mortality rate. We were also lucky that it was a form of flu, not a new coronavirus, and therefore development of a vaccine went that much more quickly—although it still took a while to get the vaccine manufactured and begin mass distribution, which focused on children ages one to five, who were most susceptible. It became apparent then how much of the process for flu vaccine had been offshored. So recognizing that led to a lesson learned—the need to retain domestic research and production capacity for vaccines. I think when we go back and unpack what has happened with COVID, there will be volumes written

**Public research universities
are part of the secret sauce of
America. There are whole swathes
of the American economy that
derive from basic research that
originated at these universities.**

about the US response, the very obvious mistakes that were made, and the deficiencies in our response. One can only hope that we get enough of the American population vaccinated in 2021 so that we can return to something approaching normal, but boy, we lost a lot of time and many, many lives unnecessarily.

How could the federal role in a pandemic be improved?

Napolitano: The federal government has a role in leading a national response and coordinating amongst federal agencies, obviously, but also with states and cities as well as with the private sector. It's both a leadership role and a coordination role. Take, for example, the unseemly scramble for masks and other PPE—that should have been coordinated by the federal government. There should have been clear direction on how to obtain material from the Strategic National Stockpile. The federal government should have served basically as the lead procurement agency for the country. There should have been clear execution of a plan for how hospitals gained access to those materials. The Defense Production Act should have been used earlier and much more vigorously. There are things the federal government can do that states simply don't have the wherewithal to do, and those capabilities in the federal government were never fully utilized in COVID.

Beyond pandemics, what are the other real threat priorities?

Napolitano: I think climate change is probably our number one national security risk. It affects us and affects the world in terms of persistent weather changes, increased extreme weather events, sea-level rise. From a national defense perspective, for example, there are more than a dozen military installations located on the coasts of the United States that are at immediate risk of sea-level rise, in places such as Norfolk, the site of our largest naval installation. And this is all related to the warming of the planet. We can anticipate effects on our forests, effects on our agriculture and food security. We can anticipate

the relationship between climate change and the development of new disease vectors. There are any number of domino effects that come from the warming of the planet. I think we need to look at it in two ways. One is how do we mitigate the warming? How do we stop the pace of global warming? And the second is how do we adapt, including in the near term? Adaptation is probably the top feature where DHS is concerned.

You said that by the time you left office at DHS, you were spending 40% of your time dealing with cybersecurity.

Napolitano: That's right. In the world of cybersecurity you have lots of potential bad actors—nation states, including Russia, Iran, and China; groups that may or may not be affiliated with nation states; and individual malefactors. So the threat environment is very large and quite complicated. Attribution is always a problem in cybersecurity events. I think we're really just at the beginning of dealing with cybersecurity as a threat and having a real national cybersecurity strategy. Again, I think it takes leadership from the White House and a unity of effort amongst all the federal agencies that have a role to play here; it's DHS, the Department of Defense, FBI, the Department of Commerce, and others. One of the things I found when I was secretary was that we needed a clarification of roles—who has responsibility for what in cybersecurity?

Understanding risks such as climate change and cybersecurity of course means understanding advances in science and technology. How does S&T fit into DHS?

Napolitano: There are two areas of DHS where science and technology are particularly relevant. One, we have a Science and Technology Directorate, led by an undersecretary. I think that has been an underutilized aspect of DHS, and I hope that in the next administration some attention is paid to that. A second area is what was formerly known as the National Protection and Programs Directorate, and is now the Cybersecurity and Infrastructure Security Agency, which does a lot of collaboration with the private sector that owns and operates much of our critical infrastructure.

**We're just at the beginning
of dealing with cybersecurity
as a threat and having a real
national cybersecurity strategy.**

You refer to the other major threat we face as Terrorism 3.0. What do you mean by that?

Napolitano: Terrorism 1.0 was al-Qaeda as evidenced by the attack of 9/11, which was the precipitant for the creation of DHS. Terrorism 2.0 is all of the other terrorist groups like AQAP [al-Qaeda in the Arabian Peninsula] and al-Shabab that have similar beliefs to al-Qaeda. When I was secretary, we continued to get threats against aviation. In a way, I think aviation was viewed as the gold standard for terrorism given the success of the attacks on 9/11. But slowly but surely, I think the United States got control over that situation.

Terrorism 3.0 is domestic. It's the rise of domestic militia groups. It's the rise of the so-called lone wolf. It's primarily on the far right, if you use that kind of political spectrum, but there's some on the far left as well. And here, you have a complication, because as you know the Constitution governs and limits what you can do as a law enforcement agency, and you can have real difficulties tracking a lone wolf, the individual who gets radicalized and decides to commit an act of violence. That's almost impossible to prevent. We certainly don't have good predictors for that. And we really don't have good prevention methodologies.

At DHS you tried to proactively anticipate scenarios and said it's important to have a good imagination, even a dark one. Why?

Napolitano: A key critique in the 9/11 Commission's report was that we suffered from a failure of imagination. All the data were there, but we simply couldn't imagine a complicated plot to take over aircraft and fly them into places like the World Trade Center. We couldn't imagine how that could occur. That's a challenge to leaders. When I say scenario-planning or scenario-thinking, it's the *what if* questions: What if the mortality rate for COVID was even higher? What if extreme weather events take out Miami, take out all of our energy production facilities in the Gulf Coast? What if a malefactor is able to infiltrate the cyber systems of 10 major American cities at the same time, and threatens to shut down their 911 systems, unless a huge ransom were paid? And so once you say those kinds of problems, you can begin reverse engineering them. How would the federal government respond? How would you advise the White House? You have to begin by imagining the worst and then thinking, "Okay, what would you do?"

Given your experience in the realms of both national security and academia, how do you believe we can balance the security risks, particularly with China, versus the need for international scientific openness and the need for researchers to collaborate across borders to solve global challenges such as the pandemic and climate change?

Napolitano: Well, I don't necessarily see a tension between the global research enterprise and national security. The fact that science advances by the sharing of information means that the more we share, the more we advance. For example, China last winter was sharing the genetic code for the coronavirus that enabled our scientists to get to work on vaccines and therapeutics. That kind of sharing of information is beneficial to everyone. Where we have tensions is in the intellectual property area. I think universities should have processes and policies in place that hold their scientists accountable so as not to allow the inappropriate appropriation of their research.

You wrote that "we must restore our sense of common purpose" so the nation can unite as it did in the aftermath of 9/11. How can leaders help us do that?

Napolitano: Well, it helps when the effort to reach across the aisle starts at the White House, and there's a search for some common ground. I hope, for example, in the Biden-Harris administration, as they get started, that not only do we find some common ground in terms of the economic recovery that we need, but also in something like an infrastructure package, which would create jobs—and which is sorely needed. People from both sides of the aisle have spoken about the need for infrastructure, and I think undertaking some work that is successful might create a pathway to dealing with more difficult questions.

Any other advice for the new Biden administration?

Napolitano: Far be it from me to give Joe Biden advice; that would be quite presumptuous. He's been around the block a few times. But one thing I hope he says, and says often, is that *science is back!*

Janet Napolitano served as governor of Arizona from 2003 to 2009, the US secretary of homeland security from 2009 to 2013, and president of the University of California system from 2013 to 2020. She is currently a professor of public policy at the University of California, Berkeley's Goldman School of Public Policy.