World view

How scientists can inform policy decisions

By Dewey Murdick

You might know what policymakers should know. That doesn't mean you know how to help them to use that information.

Imagine you are an artificial intelligence (AI) researcher (or a microbiologist). You see looming danger from a future autonomous system (or health-care protocol), threatening the people whom it's meant to serve. To avert disaster, you want to warn policymakers. Almost inevitably, they won't heed your warning unless you first step back.

When engaging with decision makers, experts must learn how policy is made and cultivate their trust. Academics, funders and institutions rarely incentivize effective, sustained policy engagement. Researchers who invest time and travel funds to gain policy experience often face career penalties. Colleagues might assume that their policy work means they pay less attention to their academic work.

The solution is to create respected career paths for researchers in policy analysis, and to find ways for academics to work closely with them. I co-founded the Center for Security and Emerging Technology (CSET) at Georgetown University in Washington DC to deliver technically sound policy insight that decision makers can use to improve global and national security. Over three years, we've trained dozens of staff members and students who can translate technical insights into actionable policy.

I've seen what researchers trained as policy analysts can contribute. Consider the US CHIPS and Science Act, signed this August, which will infuse billions of dollars into semiconductor research and manufacturing. Vulnerabilities in the technology and supply chain in this industry were uncovered decades ago. It took connecting the issue with national and economic security to spark action. A few policy analysts at CSET contributed to this perspective shift with a series of actionable reports (see go.nature.com/3o9u8) and the willingness to do the work to implement them.

Technical experts often expect to talk to the most senior policymakers, without understanding how relevant decisions are made, or by whom. For example, a scientist might not know that boosting the number of non-citizen technical experts who can study and work in the United States would require congressional — not presidential — action. Researchers might focus on national governments or international bodies while neglecting local policy issues, which can yield more results.

Experts who gain an audience are tempted to launch into their latest results, rather than focusing on the 'so what' — why should policymakers care — and why this issue is more important than other priorities. A researcher might have discovered an AI bias that creates a vulnerability for, say,

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US Immigration and Customs Enforcement. But this result must be accompanied by actionable plans for managing the risks and liabilities. And experts must learn to let others take the praise so that a long-fought policy battle can progress, rather than expecting personal credit for their insights.

To address these problems, CSET trains policy analysts who can recognize, communicate and support decisions at the intersection of technology and policy. These skills take years to learn, and we give our employees robust support: access to writing coaches, editors and fact-checkers, exposure to decision makers and lots of on-the-job training. We almost entirely undo their academic-writing training as they learn to communicate actionable findings. We encourage them to celebrate when decision makers plagiarize their work.

We also brief policymakers, meet with their staff, listen to their questions and follow up with answers. We strive to hire only good listeners who are respectful and kind — no matter the other skills that they bring.

Some employees continue to help shape policy after they leave CSET by going on to work for the US government, for example in the Office of Science and Technology Policy, the National Security Council or the Department of Defense.

CSET isn't the only group producing contextually aware, actionable communication. The Kigali Amendment to the Montreal Protocol — an international treaty to phase out hydrofluorocarbons, the greenhouse gases used in most refrigerators and air conditioners — was ratified by the US Senate in September. Many politicians were unmoved by arguments about curbing climate change, but were persuaded to support the bill on the basis of evidence that it would keep US businesses globally competitive.

In short, what made these technology policies happen was not a technical insight itself, but a deep understanding of how to connect that insight to policymakers' goals.

Valuable policy work is difficult. Building the necessary insight and relationships requires time, travel, money and resources that academics can find hard to justify. For academics in marginalized groups, it might be even harder to raise these funds — effectively muting their policy impact. More efforts like CSET are needed. From AI safety to countering misinformation, nurturing a strong science workforce or sustainability, there is much that experts can accomplish when working with analysts who have a robust understanding of policy and enough scientific technical expertise to grasp the core issues.

If useful insights are tucked away in a laboratory, they do not transform into practical policy with a snap of the fingers. Only with hard work and collaboration can such policy emerge. Whatever the topic, relevant subject-matter experts tend to be plentiful — those who can serve up actionable policy, much less so.

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