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Kathleen M. Vogel and Christine Knight. "Analytic Outreach for Intelligence: Insights from a Workshop on Emerging Biotechnology Threats." ***Intelligence and National Security*** **30:5 (2015): 686-703. DOI: 10.1080/02684527.2014.887633.**
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What are preferred ways for members of the academic community to undertake analytic outreach with their counterparts in the intelligence community on important issues, such as emerging biotechnology threats? What are the impediments and opportunities most likely to shape a productive engagement between academic scholars and intelligence analysts on the topics of assessing biotechnology trends and bioweapon threats to U.S. national security?

The thoughtful journal article by Kathleen M. Vogel and Christine Knight offers useful insights regarding such questions. Their observations and recommendations have been informed by discussions at the U.S.-UK Joint Workshop on Improving Intelligence Analysis for Emerging Biotechnology Threats, which was held in September 2012 in London. Building on the workshop discussions, as well as their own experience and expertise in this field, the authors frame with their article the issue of how best to explore enhanced analytic outreach between the academic and intelligence communities. The main focus is on ways to increase the level of engagement between intelligence analysts and those academics with social-science expertise in biotechnology issues.

The coauthors appropriately recognize that assessments of emerging biotechnology and bioweapons threats are challenging for scholars and intelligence analysts alike. Vogel and Knight acknowledge that there is much uncertainty concerning the fundamental drivers of biotechnology, which complicates efforts to predict how innovations in life sciences will be used productively by legitimate actors and may be misused by threat actors. They argue that failing to address these fundamental knowledge issues means that "intelligence analysts will face blind spots in their bioweapon assessments" (688). This undesirable condition may contribute to future intelligence failures and poor policymaking at the national and international security levels.

A major impediment to strengthening how academic scholars and intelligence analysts engage arises from the two competing models that exist for explaining the nature of innovation in biotechnology and the life sciences field. Vogel and Knight suggest that security analysts are more accepting of a "biotech revolution model" to assess potential threats (692). They contend that proponents of this model view biotechnologies as becoming broadly available, particularly given the growing diffusion of biotech knowledge and capabilities, which erode technical barriers, undermine existing control regimes, and create vulnerabilities that states and groups seeking bioweapons can exploit.

Vogel and Knight conclude that academics are more inclined to favor a "biotech evolution model," which they mainly credit to the scholarly work of Dr. Paul Martin.[1] This alternative evolutionary model is consistent with the academic community's perspective of how biotechnology largely develops in a slower and non-linear pattern of innovation compared with the expectations of the biotech revolution model (692).

The coauthors note that scholarly case studies suggest a different view of the innovation and diffusion processes involving biotechnology. One example discussed in the article is the scholarly work of Dr. Sonia Ben Ouagrham-Gormley in assessing various state and terrorist bioweapon programs and efforts. Her works include a 2012 article in *International Security*, as well as her subsequent book, *Barriers to Bioweapons: The Challenges of Expertise and Organization for Weapons Development* (2014).[2]

Vogel and Knight discuss in detail how Ben Ouagrham-Gormley's assessments have identified the crucial role played by intangible factors, often going beyond the technical issues, in determining whether the actor will succeed in acquiring bioweapons (693). Key non-technical factors include the work organization, program management, structural organization, and broader social environment. In particular, Ben Ouagrham-Gormley's assessments highlight the importance of conveying tacit knowledge (or hands-on scientific know-how) and learning to achieve biotechnology program success. She concludes that the prospect for success therefore is greater when a biotechnology program involves "multiple knowledge transmission belts," rather than when the flow of communal knowledge within an organization is impeded by compartmentalization or internal competition (694).

The coauthors have raised an important concern about how academic experts and intelligence analysts are inclined to use different mental models in assessing the way that biotechnology and life sciences develop,

[1] In particular, see Paul Nightingale and Paul Martin, "The Myth of the Biotech Revolution," *Trends in Biotechnology*, vol. 22, no. 11 (November 2004), 564-569.

[2] Sonia Ben Ouagrham-Gormley, *Barriers to Bioweapons: The Challenges of Expertise and Organizations for Weapons Development* (Cornell University Press, 2014).

which also shape how they view the risk of bioweapon diffusion. However, this issue may be largely a case of different levels of analysis and knowledge conditions rather than a fundamental disagreement concerning alternate ways that the academic and intelligence communities tend to approach the assessment of biotechnology issues.

For example, the academic social scientists have much to contribute through their deep analysis and analytic rigor. Some academics have developed expertise concerning how biotechnology generally, and bioweapon programs specifically, tend to develop (or fail to develop in some cases). However, given the relative scarcity of detailed information on most bioweapon programs (699), particularly those of terrorist groups, the academic case studies largely tend to be forensic in nature as they retrospectively assess bioweapon efforts in some detail.

Academic social scientists often build on what is publicly known about international bioweapon programs. Along with reviewing the available historical documentation that has subsequently become available, the social scientists may conduct interviews and workshop activities with international experts on biotechnology and bioweapon developments. They can obtain invaluable insights from their discussions and interviews with U.S. and foreign individuals who were involved in specific bioweapon programs. Thus, academic social scientists may provide unique perspectives on how particular countries or terrorist groups have chosen to pursue bioweapon development, as well as how these efforts succeeded or failed to achieve the desired results.

In comparison, the intelligence community often has unique sources of data and information available to assist them in addressing their role of informing decision-makers and others about the current and anticipated development of foreign bioweapon programs and activities. However, as Vogel and Knight note, the work culture for intelligence analysts is often dominated by a focus on addressing current intelligence requirements (698). This organizational imperative may limit the ability of intelligence analysts to consider a broader range of countervailing issues that could inhibit the ability of countries and terrorist groups to take full advantage of biotechnology developments for advancing their bioweapon programs.

The coauthors observe that the U.S.-U.K. workshop discussions between representatives of the academic and intelligence communities on the problem of intelligence analysis for emerging bioweapon threats suggested that academic scholars could make important contributions. One way of doing so is by providing an outside perspective that helps to identify "blind spots and disconnects" in the intelligence community's analysis of bioweapon threat activities (701). In particular, Vogel and Knight argue that outside social scientists possessing expertise in biotechnology and bioweapons may provide significant benefits for the intelligence community by offering another way to frame these problems. This creates the opportunity to draw attention to alternative analytic paths in a way that encourages intelligence practitioners to recognize analytic gaps and to reconsider or reshape their threat assessments.

The coauthors conclude their article by identifying several initiatives that the United States and United Kingdom could adopt to enable their intelligence communities to benefit more from engaging with academic scholars with expertise concerning bioweapon threats (702). These initiatives range from improving the engagement opportunities with additional management support and resources to reducing the existing impediments to achieving an enhanced level of interaction between intelligence analysts and their counterparts among the social science experts in the academic community.

Given the potential consequences of underestimating (or even overestimating) the status of bioweapon programs of adversary countries and terrorist groups, the arguments and recommendations that Vogel and

Knight highlight in their article offer both practical and compelling steps for improving how we think about the crucial international security issues of anticipating, assessing, and responding to bioweapon threats.

John C. Baker is currently a Senior Analyst with the consulting firm, Innovative Analytics and Training (IAT). He has undertaken analytic work on international security issues for over three decades, with a focus on national security, arms control and nonproliferation issues, homeland security, and satellite imaging issues. Prior to joining IAT, he was a researcher at U.S. and international research centers, including the Homeland Security Studies and Analysis Institute (HSSAI) and the RAND Corporation, where he led teams that produced analytic reports. Earlier, Mr. Baker was a staff member at the International Institute for Strategic Studies (IISS), the Space Policy Institute at the George Washington University, and the Brookings Institution. He also worked on arms control and intelligence issues at the Pacific-Sierra Research Corporation. Mr. Baker has a B.A. degree from the School of International Service at the American University and a M.Phil. degree in Political Science from Columbia University, both focusing on international security issues.