The Dual-use Dilemma in Life Science Research

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<http://www.serceb.org/dualuse/welcome.htm>

Concern about dual-use investigations in microbiology “plagues” (pun-intended) society – as the research, security, policy and ethics debates continue to raise critically important issues. One issue that was raised by The Fink Report (i.e., *Biotechnology Research in an Age of Terrorism*, 2004, National Academies Press, Washington, DC) speaks to the need for ethical considerations of dual-use research by those who conduct the research. The Policy, Ethics and Law Core of the Southeast Regional Center of Excellence for Emerging Infections and Biodefense (SERCEB) has recently released an online educational module designed to stimulate thoughtful self-assessment and group discussion on the topic (<http://www.serceb.org/dualuse/welcome.htm>).

The goal of the module is “to familiarize the reader

with the dual-use dilemma and provide the reader with the decision-making tools needed to make responsible choices regarding the conduct and communication of dual-use research of concern.”The module achieves this goal by taking the reader through a real-life case study. The various details of the case study are linked by module components such as (1) rules and guidance governing research, (2) an abbreviated history of biological weapons and the global response to their use, (3) the changing research environment after the 2001 anthrax attacks in the U.S., and (4) the subsequent policy and legislative changes governing microbiology research. The reader is introduced to the various debates surrounding dual-use research and offered links to references that are discussed by the scientists in the case study.

The case study is timely and interesting. Leading questions interspersed throughout the module tie the actions of the scientists in the case study to references that assist the scientists in a thoughtful analysis of their predicament. The questions not only lead the reader to factual information, but pose legitimate security concerns that might be raised by principal investigators, science department leaders, funding agencies, and editors of journals. The real-life nature of the case study also integrates the researchers’ concerns about academic freedom, undue oversight, and timely completion of graduate training. The module also integrates other examples of dual-use research from the recent past and extends the learning outcomes beyond the case study. The module resolves the case study with some potential actions that readers can take (shown as actions for the case study scientists) and concludes with thought-provoking questions that life science professional should consider. A discussion guide is linked from the site and also uses case studies to addresses other points of debate.

The online module took about 30 minutes to review, without linking to all the reference material. The case study was engaging and the situation it posed, believable. I finished the module recognizing that the issue of dual-use research has been poorly addressed on academic campuses and that this module was an interesting and facile method to teach to the issues. It can be readily incorporated into undergraduate and graduate course work. I recommend it highly to all those who practice and teach life science.

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