

ABATS Delivers More Samples at Reduced Cost and Reduced Human Risk

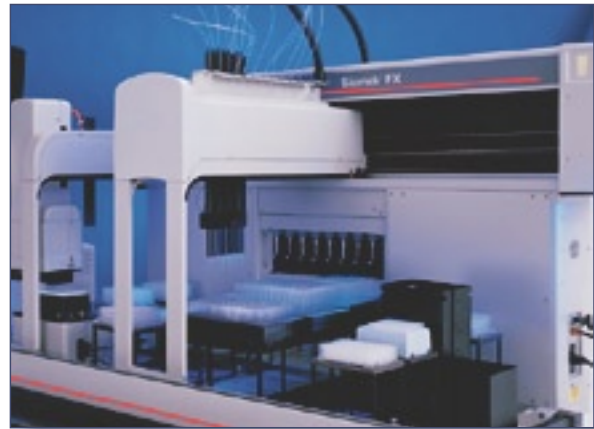
The Automated Biological Agent Testing System (ABATS) will play a vital role in supporting homeland defense efforts by quickly and efficiently screening air samples for biological threat agents. The spate of anthrax-tainted letters in late 2001 suddenly and significantly increased demand for biological weapons screening capabilities, placing a tremendous burden on the existing staff of biologists that specialize in this area of testing. ABATS, a device sixteen feet long by seven feet wide, will automate sample extraction and assay setup for the polymerase chain reaction and immunoassays, combining both functions on a single platform using an intuitive method development and scheduling interface. The data will be integrated using a custom engineered laboratory information management system that can be accessed from a web browser.



ECBC and the Program Executive Office for Chemical and Biological Defense initiated a fast-track program to develop and field a high throughput robotic system to screen environmental samples for biological warfare agents. ABATS automates real-time polymerase chain reaction and immunoassays for a variety of environmental samples, including air, food, mail and soil.

The ABATS will be able to handle three times the number of samples a similarly staffed manual lab could handle—for example, 300 samples compared to 100 samples for a manual lab—using one third of the staff, or two people for ABATS versus nine

people for a standard manual laboratory. The result is an approximately 66 percent reduction in cost to screen samples for six bio-threat agents. ABATS also reduces the need for people to labor over potentially hazardous unknown samples by tasking a robot to perform this dangerous work instead. In short, ABATS delivers more samples at reduced cost and reduced human risk.



The ABATS robotic approach to biodetection increases capacity and minimizes the impact on research and development laboratories during a surge in requests to evaluate samples for potential biological agent contamination. The system can be adapted for specific application at fixed sites, and requires minimal operator training.

The ABATS also represents ECBC's constant and ongoing initiatives to partner with private industry to better meet the nation's force protection and homeland security needs. The ABATS project includes a partnership with two biotechnology companies, IGEN International and Beckman Coulter, Inc. ECBC, in conjunction with IGEN and Beckman Coulter, is now integrating IGEN's M-SERIES M8 Analyzer with Beckman Coulter's SAGIAN™ and Biomek™ FX lab automation systems to automate sample preparation and plate handling for ORIGEN immunoassays. ORIGEN, IGEN's proprietary technology, is a critical component of many bio-detection systems used in a wide variety of applications, including clinical diagnostics, pharmaceutical research and development, life science research and industrial

testing for food safety and quality control. IGEN holds a patent on the electrochemical luminescence technology and is mass-producing the ORIGEN assays for ECBC under contract. In addition, IGEN has provided substantial assistance in rewriting software for the M8 Analyzer to allow it to interface with the ABATS robotic system. Beckman Coulter is responsible for providing the automation technology and has been working in cooperation with IGEN and ECBC to integrate the systems.

The system will be performing analysis at Edgewood prior to Sept. 11, 2002. It will operate at ECBC for a period of four months, at which time it will deploy to an undisclosed location in the National Capital Region to support homeland defense efforts. The goal is to strategically field these robots

throughout the country so that they will be available to meet future needs.

With the maturation of ABATS, ECBC is able to enhance its role as an essential partner with numerous federal, state and local agencies involved in homeland security efforts by providing a more time- and cost-efficient biological testing resource. At the same time, ECBC is strengthening its cooperative relationships with commercial entities to further its work to transfer technology to the private sector. ABATS represents the best of ECBC's intellectual capital, enterprise efforts and cooperation with industry—all tied together by the goal of serving the nation's homeland security needs.

