



AMAG Technology Does its Part in the Fight against Terrorism

The University of Nebraska-Lincoln Biological Process Development Facility (BPDF) is a leading facility in the research and development of processes to produce recombinant vaccines and biotherapeutic agents.

The BPDF focuses on biopharmaceutical process research, development, and manufacturing of vaccines and biotherapeutics derived from recombinant expression systems. They are recognized as the leading expert in the recombinant expression system, *Pichia pastoris*, which is used to express the botulism vaccines. UNL is one of the few universities working in the area of recombinant proteins for vaccines against various strains of botulism which was weaponized by Iraq in the early 1990s and poses a threat today.

Othmer Hall is a brand new 133,000 square-foot four story building dedicated to chemical engineering. Othmer Hall was a component of a \$125 million dollar donation to UNL by the Donald and Mildred Othmer Trust Fund. The BPDF has 11 distinct units located in Othmer Hall: Molecular Biology, Fermentation Development, Purification Development, Cell Culture Development, Analytical Methods, Protein Characterization, Quality Control-Chemistry, Quality Control-Microbiology, Master Cell Banking, cGMP Pilot Plant, and Quality Assurance.

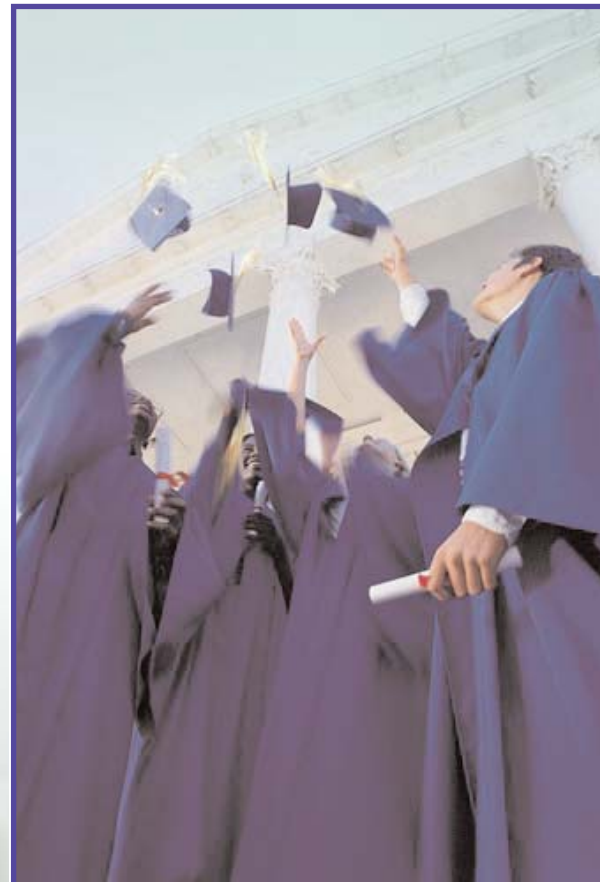
The BPDF houses all of its research and development laboratories on the third floor of Othmer Hall, with additional labs on both the first floor and lower level. The labs contain over \$4 million worth of equipment, and priceless proprietary client documentation. The BPDF maintains cell lines from

past and current clients with an estimated value of \$20 million. This sensitive data and expensive equipment required the BPDF to install a state-of-the-art security management system to protect research findings, lab experiments, and materials. When UNL's BPDF performs work for the Department of the Interior, Pentagon and the biotech industry, high-level security is a necessity.

Mike Meagher, Ph.D., Donald and Mildred Othmer Distinguished Professor of Chemical Engineering and Founder and Director of UNL Biological Process Development Facility, oversee the BPDF. An AMAG access control system secures a parking structure on campus and it was highly recommended that Meagher look into a similar system for the BPDF. After reviewing the system, Meagher agreed and chose an AMAG Homeland Edition security management system (SMS). Homeland Edition is an enhanced version of the standard AMAG SMS, designed for government agencies utilizing smartcards.

Meagher also chose AMAG because of its extensive government experience. AMAG Technology not only provided a quality product to secure extensive research and clinical trials the BPDF performs, but AMAG also protects several government agencies including the Pentagon. With references like that, Meagher knew he could trust the Homeland Edition SMS to protect his assets, documentation and staff.

"This facility competes with other institutions for government grants and federal monies," said Matt McCoy,



Senior Security Consultant, Security Equipment, Inc. (SEi). "It was their desire to have a secure facility using the most modern and encrypted technology available at the time. The Homeland Security Edition (formerly SEIWG) was especially attractive to them because of the funding they receive from the Department of Defense and other government entities. The fact that AMAG could comply with that specification was key."

The access control software allows Meagher's staff to establish control and monitor access on any door on any floor of Othmer Hall.

"I needed a computer based system that can grow with me," said Meagher. "Because of the nature of the work we do, security has to be under my control."

Meagher has trusted his Quality Assurance Staff with the responsibility of controlling access into the BPDF. His staff administers access control smart cards to students and staff.

Meagher's own IT staff oversees the administration of the security management system, monitors cameras and maintains an up-to-date database. Cardholders are charged a fee to issue a replacement access credential so they are less likely to lose their smart card. If a card is lost, it can easily be deactivated. This benefit alone provides Meagher a flexibility he requires, along with its ease of use.

"Smart cards were chosen because the BPDF wanted to be ahead of the competition in terms of technology," said McCoy.

Another example of flexibility is how the system manages contractors. For example, a contractor can be allowed access to the lab to perform work. After the contractor's preassigned time has expired, the contractor's

access is automatically terminated by the SMS. This function of the SMS provides peace of mind and a simple way to control access.

Small Silent Witness cameras are located at the three main floor entrances monitoring all activity. A camera also monitors a second floor room used for crucial storage, and an additional lab on the first floor. The cameras record all entrances and exits so the BPDF IT staff knows who is entering and leaving at all times. All images are transferred via an Integral digital video recorder to the server. If a problem occurs, it's easy to investigate and determine who was in the labs and when they were there.

Approximately 55 people have access to the BPDF including graduate students and staff.

Biometric Technology

All entrances to the third floor labs, main elevator, and freight elevator utilize a biometric fingerprint reader. Meagher chose the biometric reader technology because he was concerned about personal identification number (PIN) information getting into the wrong hands.

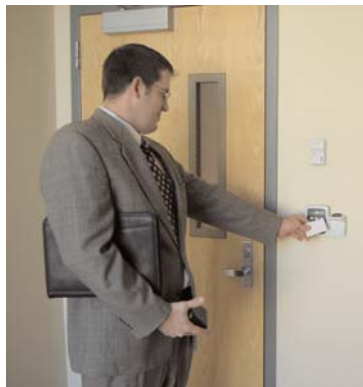
"I didn't want to worry about a card getting stolen and the person getting a PIN number," said Meagher.

A good security practice is to periodically change all cardholder PINs, however, that was an ongoing program that Meagher did not have time to administrate. Eliminating PINs eliminated worry and the possibility for human error. "Having the biometric scanner makes it so much easier," he said. (No one loses a fingerprint.)

Once inside the BPDF, students can

enter labs to perform their work based on the access rights programmed into their smart cards and monitored by the SMS. Not all students have access rights assigned to their cards that would allow them to enter all labs.

The IT Department is located in a room within the third floor lab. The security system and server sit within that room and an additional smart card reader is stationed at the door to control access.



Thrilled with the SMS

Security Equipment, Inc. (SEi) worked closely with Meagher and installed the SMS system in the BPDF. SEi, based in Omaha, Nebraska with satellite offices in Lincoln, Nebraska, Des Moines, Iowa and Kansas City, Kansas is a full-service security systems integrator offering commercial fire and intrusion alarm systems, UL listed central station monitoring services, closed circuit television, and access control systems.

It is difficult for Meagher to measure in dollars what their return on investment (ROI) is for the SMS. A return of "sense of security and sense of well-being, as well as a presentation to the client" is the best way to measure the ROI.

"My clients are impressed with the system...it provides a comfort to my clients to know their ongoing work is happening in a secure, restricted area. It helps a lot from a comfort level with federal and industrial clients," said Meagher.

The BPDF plans to expand their security management system on the first floor and the entire lower level in the next few years.

AMAG Technology
20701 Manhattan Place, Torrance, CA 90501
Phone: 800-316-7465 Fax: (310) 834-0685
www.amag.com