



# Los Alamos and University of Nebraska team for biodefense program

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LOS ALAMOS, N.M., May 8, 2018—A partnership involving the University of Nebraska and Los Alamos National Laboratory will boost educational opportunities for students seeking careers in the biodefense field.

“You can develop solutions through partnerships. You can accomplish much more as a whole than by working alone,” said Los Alamos National Laboratory scientist and partnership coordinator Harshini Mukundan, Ph.D.

The partnership was made possible through a meeting of the two institutions arranged by the National Strategic Research Institute (NSRI), which is headquartered on the UNMC campus in Omaha. The NSRI is one of only 13 University Affiliated Research Centers (UARC) in the country, and the only UARC with a primary mission responsibility to deliver research solutions across the Combating Weapons of Mass Destruction (chemical, biological, radiological and nuclear) portfolio.

The partnership with the University of Nebraska and Los Alamos is specifically looking into the diagnosis and detection of infectious disease agents through the use of biosensors, analytical devices that convert a biological response into an electrical signal. Biosensors can be used for detecting biological and chemical warfare agents, including nerve gases and anthrax spores.

Mukundan called the partnership “a technology exchange,” noting that seven Los Alamos researchers attended a mini-symposium in Omaha, and that the collaboration also would feature a variety of opportunities for Nebraska students to participate in internships at Los Alamos.

Mukundan cited five of her associates at Los Alamos for playing a key role in the collaboration. The five scientists and their areas of expertise include:

- Claudia Mora, Ph.D., deputy division leader for chemistry - student pipeline;
- Scott White, Ph.D., program manager - program engagement and collaboration with NSRI at UNMC;
- Norman Doggett, Ph.D., scientist and team leader - nucleic acid-based diagnostic platforms and sequencing;
- Benjamin McMahon, Ph.D., deputy group leader for theoretical biology and biophysics - engaged entrepreneurs in informatics and analytics; and
- Jessica Sutherland, Ph.D., post-doctoral student - microbiology and infection.

Heading the collaborative effort for the University of Nebraska is Ken Bayles, Ph.D., professor, pathology/microbiology for UNMC. Mark Riley, Ph.D., associate dean for research for the University of Nebraska-Lincoln College of Engineering, is assisting Bayles on the UNL campus.

“We are interested in technology development, new methods of analysis and modeling, and in translation and use of new schemes to monitor microbes in a variety of environments. We are especially interested in connections of students at the graduate and undergraduate levels,” said Riley, who is professor of biological systems engineering at UNL.

The career applications are numerous, he said, ranging from public health areas to medical facilities, manufacturing environments, and municipal water systems.

Riley said the collaboration with UNL, UNMC and Los Alamos is in its “infancy,” but he noted that about 10 UNL faculty attended the Omaha symposium and that more UNL faculty would like to become engaged.

Bayles said the Los Alamos program would complement an existing educational pipeline previously established between other Department of Defense laboratories, UNMC and the University of Nebraska at Omaha.

**Los Alamos National Laboratory**

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