

The National Strategic Research Institute (NSRI) at the University of Nebraska (NU) seeks technical capabilities and competencies for its sponsor, U.S. Strategic Command (USSTRATCOM), as well as the broader U.S. Department of Defense (DOD) community focused on detecting and countering weapons of mass destruction (CWMD). Funding is available through the NU Collaboration Initiative (NUCI) to NU researchers, faculty, students and staff. All applications within the NSRI mission space will be considered; however, NSRI encourages applications that address the following priorities. Applications are also encouraged to collaborate with NSRI content area experts.

PRIORITIES

- 1.** Examination and experimentation with machine learning methodologies and tools to create products that USSTRATCOM can integrate for strategic deterrence. A successful project will simultaneously investigate and create machine learning tools that improve decision-making capabilities by improving greater access to data and analytics capabilities while training NU students to fill the workforce gap that exists.
- 2.** Advanced workforce development, as identified in the National Defense Strategy, within USSTRATCOM research areas, biodefense and the broader CWMD enterprise. Successful completion of these projects will result in not only additional extramural funding, but also employment opportunities for NU students.
- 3.** Novel explorations of Joint Electromagnetic Spectrum Operations (JEMSO) that address USSTRATCOM's identified JEMSO readiness shortfalls.
- 4.** Development of next-generation medical countermeasures for chemical, biological, radiological and nuclear (CBRN) threats to overcome current standard-of-care shortfalls.
- 5.** Development of advanced surveillance technologies for CBRN threats, including but is not limited to: wearable sensors with or without automated medical countermeasure delivery capabilities, wastewater and other environmental concerns, agricultural operations, and the built environment (human, animal and food processing concerns).
- 6.** Risk assessments, including secondary and tertiary impacts, across a whole of society framework for high-consequence pathogens impacting animal and crop agriculture production as well as human epidemics and pandemics.
- 7.** Novel methodologies and risk-assessment studies for identification of actual or potential undiscovered environmental pathogens.