LANL spinoff receives NIH grant for respiratory disease diagnostic device

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LOS ALAMOS, New Mexico, October 19, 2011—A spinoff of Los Alamos National Laboratory, Mesa Tech, has been awarded a $300,000 Phase I Small Business Innovation Research grant from the National Institutes of Health. The grant will allow Mesa Tech to develop an inexpensive, instrument-free, nucleic-acid testing device able to diagnose various respiratory diseases in record time.The managers of Mesa Tech, who are currently developing a prototype, plan to initially target the global diseases surveillance market. They also envision applications in point-of-care diagnostics, particularly in poor areas of the world, said former LANL scientist Hong Cai, who cofounded Mesa Tech and is the principal investigator for the effort benefitting from the grant.For point-of-care applications, Mesa Tech plans to develop an inexpensive handheld device about the size of a cell phone with a disposable cartridge, Cai said. In the case of a pandemic, such as SARS or avian influenza, the device also could be made disposable, she added.Mesa Tech's proposed instrument

expands on technology developed by Cai and colleague Bruce Cary while they were researchers at LANL, which licensed the technology to the company. It also builds on previous work conducted by Mesa Tech under an $82,000 grant awarded under the American Recovery and Reinvestment Act. Using that grant, Mesa Tech began developing the consumable portion of the platform, an inexpensive nucleic-acid "dipstick" device capable of detecting and distinguishing multiple flu-like pathogens in under an hour, Cai said, explaining that current methods take anywhere from 60 to 90 minutes.Mesa Tech's research and development was also sped up by a 2009 Venture Acceleration Grant from Los Alamos National Security, LLC, the company that manages and operates LANL for the Department of Energy's National Nuclear Security Administration. The VAF, which awards grants up to $100,000, was started in 2006 to fill a funding gap that slowed the commercialization of technologies by Northern New Mexico companies. Mesa Tech also participated successfully in LANL's New Mexico Small Business Tech Assistance Program.With the most recent SBIR Phase I grant administered by the National Institute of Allergy and Infectious Diseases, "We're really trying to integrate the sample prep and all the amplification and detection pieces into one simplified device that would minimize user intervention," Cai noted. She added that the device would also be suitable for high-volume manufacturing, "allowing rapid production of millions of units to meet surge capacity during a pandemic outbreak."Once the prototype is completed, Mesa Tech will begin working others, such as disease-surveillance labs, to validate the technology. "Once we do well with those validation tests, we would be moving out into point-of-care disease diagnostics," Cai said. When Mesa Tech reaches that stage, it will likely look for outside investments to supplement its grant funding.