



Article 143

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## **National Labs Want to Help Small Businesses Solve Problems**

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The New Mexico Small Business Assistance program provides free technical assistance and expertise from scientists and engineers at Los Alamos and Sandia national laboratories to New Mexico small businesses facing challenges with testing, design and access to equipment or facilities. Businesses do not have to be technology-based, however, the challenge they face must be potentially solvable using laboratory resources. While individual businesses can request assistance anytime, the program annually considers leveraged projects involving multiple businesses with a shared problem.

Small businesses can submit a pre-proposal for leveraged projects through July 23. The pre-proposal should explain the problem, identify what expertise NMSBA offers that can't be found in the private sector at reasonable cost and the expected economic benefit to the businesses. Successful applicants will be asked to submit a full proposal.

NMSBA awarded 27 leveraged projects last year to New Mexico businesses, including

**\* The Bovine Tuberculosis Detection project:** LANL scientists Harshini Mukundan, Basin Swanson and LANL's sensor team helped develop an accurate, hand-held sensor to test cattle after tuberculosis-infected herds were discovered in the Clovis-Portales area. Traditional tests for bovine tuberculosis are inaccurate and expensive and results take too long. A biosensor developed at LANL for detecting TB in humans was modified for cattle, and the new instrument provides results within 30 minutes at significantly lower costs. Myles Culbertson, director of the New Mexico Livestock Board, predicted that "the new sensor will reduce costs for producers, avoid industry catastrophes and eradicate this disease from the US once and for all."

**\* On-site desalination:** Allan Sattler from Sandia and Jeri Sullivan from LANL worked with companies led by Biosphere Environmental Science and Technologies to test a pretreatment system that enables saline water brought to the surface during oil or gas production to be reused on site. Participating companies hope to improve water treatment at oil and gas production sites in the San Juan Basin to reduce the cost of shipping and disposing of nearly one billion barrels of saline water each year.

**\* Water-quality for wells:** Scientists from both labs worked with companies that sell water-treatment systems to private well owners. Malcolm Siegel, an environmental scientist at SNL, teamed with local businesses to evaluate water quality on and near the Navajo Reservation in Ramah. Near Española, Patrick Longmire, an aqueous geochemist at LANL, and his team of Benjamin Linhoff and Michael Rearick tested more than 500 private wells for contaminants and water-quality parameters. They gave well owners water quality data and created regional groundwater quality maps identifying areas of natural mineralization and contamination. The data will be used to identify potential customers, offer inexpensive treatment systems and develop innovative treatment technologies.

**\* Fusion-power technology:** Four Northern New Mexico companies are collaborating on a prototype based on the Polywell, an evolving fusion-power technology. Fusion power is a form of nuclear energy found naturally in the sun. It creates nuclear energy by fusing light nuclei together in a plasma state, rather than splitting heavy nuclei and leaving radioactive waste. LANL scientists Glen Wurden and Mark Smith and theorist Gian Luca Delzanno are helping the companies understand instabilities in the plasma that affect the reactor's operation. "The stakes are high in developing new energy technologies," said Wurden. "The companies are working to make fusion power practical, and LANL is proud to provide assistance that will enable new options for our energy future."

See guidelines at [www.nnmconnect.net](http://www.nnmconnect.net) or contact Lisa Henne at LANL (505-667-1710 or [henne@lanl.gov](mailto:henne@lanl.gov)) or Jenni Degreiff at SNL (505-844-9623, [jldegre@sandia.gov](mailto:jldegre@sandia.gov)).

*Finance New Mexico is an initiative of the New Mexico Small Business Investment Corporation (NMSBIC) and its partners to assist individuals and businesses in obtaining skills and funding-resources for their business or idea. To learn more, go to [www.FinanceNewMexico.org](http://www.FinanceNewMexico.org).*

