

# PERSPECTIVES

2024 ANNUAL REPORT



**\$89.8M**

Technical Assistance Provided by Labs

**3,410**

Businesses Assisted

**12,723**

Jobs Created and Retained

**33**

New Mexico  
Counties Supported

**33**



# CONTENTS

<b>OPENING REMARKS</b> .....	2
<b>PROGRAM INFORMATION</b> .....	4
<b>SUCCESS STORIES</b> .....	6
Aperi Computational Mechanics Consulting .....	6
Biochar Production and Agricultural Use Leveraged Project .....	8
Cetaly.....	10
Indie.....	12
Mecca Enterprises .....	14
Rapid Laser-Based Pathogen Detection Leveraged Project .....	16
Ridgeline Manufacturing and Engineering .....	18
Sagecore.....	20
Sandia Biotech .....	22
SunSiteVR.....	24
<b>PROGRAM METRICS</b> .....	26
<b>LEVERAGED PROJECTS</b> .....	30
<b>INDIVIDUAL PROJECTS</b> .....	32
<b>BEN LUJÁN AWARD</b> .....	34
<b>ACKNOWLEDGEMENTS</b> .....	36
<b>INNOVATION CELEBRATION</b> .....	38





*Innovation doesn't happen in isolation. NMSBA is a vital bridge between groundbreaking research and real-world business solutions. By connecting our national laboratories with local entrepreneurs, we're not just fostering innovation but strengthening the entire economic fabric of New Mexico.*

**ROB BLACK**  
Cabinet Secretary  
Economic Development Department  
State of New Mexico



*NMSBA allows local small businesses to access the knowledge of leading scientific experts in New Mexico. With each project approved, innovative technologies are released, jobs are created, and economic growth in New Mexico is achieved. This collaboration between the public and private sector shows the dedication of New Mexico to find paths forward for our resident businesses to achieve success.*

**STEPHANIE SCHARDIN CLARKE**  
Cabinet Secretary  
Taxation and Revenue Department  
State of New Mexico

Since 2000, the two national laboratories have provided **\$89.8** million in technical assistance to **3,410** businesses.

## DEAR GOVERNOR LUJAN GRISHAM AND NEW MEXICO STATE LEGISLATORS,

We are pleased to present the 2024 Annual Report for the New Mexico Small Business Assistance Program. This report highlights a few of the many successful projects from 2024 and provides metrics for the performance of NMSBA for both the past year and since it began in 2000.

During 2024, a total of 248 small New Mexico businesses participated in NMSBA. Thanks to the Laboratory Partnership with Small Business Tax Credit Act, the State of New Mexico, along with Los Alamos National Laboratory and Sandia National Laboratories, invested \$4.66 million of national laboratory expertise and resources to help small businesses in 22 counties overcome technical challenges and grow.

The success stories in this report demonstrate the impact NMSBA has on small businesses from a wide range of industries across the state. Here are a few examples from some of the featured success stories:

- Data from an NMSBA project is being used by a bioreagent company to increase customer interest in a new class of fluorescent antibodies so they can be added to its product line.
- A successful NMSBA collaboration has moved an instrument to be used for real-time detection of coronavirus in wastewater closer to market readiness.
- Planning assistance provided through NMSBA has enabled a multi-location restaurant business to position itself for growth and add a new food distribution revenue stream.

Aperi Computational Mechanics Consulting received the Honorable Speaker Ben Luján Award for Small Business Excellence for demonstrating the most economic impact. The company has won \$575,000 in SBIR grants, \$100,000 from NIST, and \$100,000 from New Mexico EDD in matching grants. Aperi CMC is also planning to hire new employees and their software is moving towards market adoption.

For over 20 years, NMSBA has helped New Mexico's small businesses create jobs, increase revenues, decrease operating costs, and attract new funding opportunities. Since 2000, the two national laboratories have provided \$89.8 million in technical assistance to 3,410 businesses, enabling 12,723 jobs to be created and retained across the state's 33 counties.

Your continued support of NMSBA, which promotes collaboration between our national laboratories and small business community, leads to economic development throughout our great state. Thank you!

Sincerely,



**CANDICE SIEBENTHAL**  
Los Alamos National Laboratory



**DAVID KISTIN**  
Sandia National Laboratories

During 2024, NMSBA helped 248 small businesses across the state reach business goals, develop their products for commercial use, and increase profitability.

NMSBA makes a statewide impact by:

- Providing New Mexico small businesses access to cutting-edge technology
- Increasing New Mexico small businesses' technical sophistication and capabilities
- Sharing knowledge and resources between laboratory personnel and small businesses to address issues and develop real-world applications

# PROGRAM INFORMATION

## Overview

In 2000, the New Mexico Legislature created the Laboratory Partnership with Small Business Tax Credit Act for the purpose of "bringing the technology and expertise of the national laboratories to small businesses in New Mexico to promote economic development in the state, with an emphasis on rural areas." As a result, Sandia National Laboratories established the New Mexico Small Business Assistance Program to provide technical support to small businesses throughout the state. Los Alamos National Laboratory began participating in NMSBA in 2007. Jointly, the labs are committed to solving small businesses' critical challenges with national laboratory expertise and resources; influencing New Mexico business development by building capacity, capabilities, and competencies; and acting as an advocate for small businesses through an entrepreneurial culture.

While each company utilizes NMSBA in a different way, all use it as a means to maintain or grow their business. NMSBA services are provided at no cost to participating small businesses in the form of lab staff hours valued at up to \$40,000 per calendar year for businesses located in rural counties and \$20,000 for businesses located in urban counties (Bernalillo and Santa Fe Counties). The total amount of assistance is capped at \$2.4 million annually for each laboratory. NMSBA may not provide assistance that is available in the private sector, and no equipment or cash can be given to a participating company.

## Future Direction

In the coming year, NMSBA is focused on accelerating innovation in New Mexico's emerging technology sectors, including Space and Aerospace, Quantum Technologies, Artificial Intelligence, Advanced Manufacturing, Energy Security, and Biotechnology. By bridging the gap between science and industry, the program helps businesses adopt advanced technologies, bring new products to market, and enhance global competitiveness.

NMSBA will emphasize serving rural businesses. The program is deepening its engagement and outreach with entrepreneurs and small businesses in rural regions. Through continued support for emerging industries and locally led innovation, NMSBA is helping build a resilient, high-tech economy for all New Mexicans.

# Types of Small Business Assistance

## INDIVIDUAL PROJECTS

Individual NMSBA projects involve a single New Mexico for-profit small business. Projects address business-specific challenges that can be solved with national laboratory expertise and resources. Technical assistance challenges are wide ranging; however, the majority include testing, design consultation, and access to special equipment or facilities. Requests for individual projects are accepted year-round until funding is exhausted.

## LEVERAGED PROJECTS

Leveraged NMSBA projects allow a group of small businesses that share technical challenges to collectively request assistance. Leveraged projects address issues that are too large or complex to solve through an individual project. Proposals for projects are reviewed semi-annually by the NMSBA Advisory Council.

## CONTRACT PROJECTS

Legislation allows NMSBA to contract with entities that have the capability to provide small business assistance services not available in the private sector. For the benefit of New Mexico's small businesses, NMSBA has contracts for specific services with the New Mexico Manufacturing Extension Partnership and the state's three research universities.



## CONTRACT PARTNERS

The **New Mexico Manufacturing Extension Partnership** provides training and assessments in the areas of quality and lean manufacturing principles.

The **Arrowhead Center** at New Mexico State University evaluates small business capabilities and technologies using subject matter experts throughout the university.

The **New Mexico Tech Business and Technology Management Program** interfaces with a variety of disciplines taught at the university to help accurately assess the current competitive position of small business technologies.

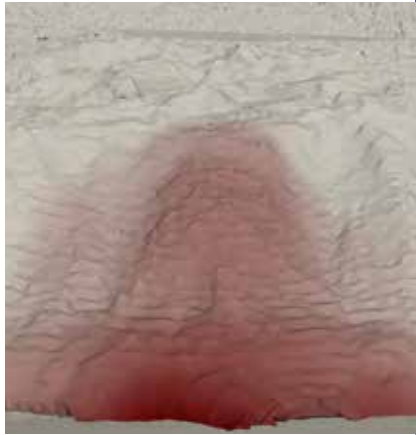
The **University of New Mexico Management of Technology Program** at the Anderson School of Management evaluates the commercial potential of small business technologies and identifies commercialization challenges and pathways.

The **University of New Mexico School of Engineering** addresses technical challenges faced by small businesses in computer science and chemical, biological, electrical, computer, civil, nuclear, and mechanical engineering.



Megan Ford of Aperi CMC presents a new capability in Aperi software that uses high-resolution 3D scan data to predict the long-term stability of nuclear waste storage tunnels.





## Aperi Computational Mechanics Consulting

Megan Ford founded Aperi Computational Mechanics Consulting in 2023 and learned about the NMSBA Program at an event later that year. Aperi CMC provides software and consulting services to enable cost-effective simulations of solid structures under extreme deformation.

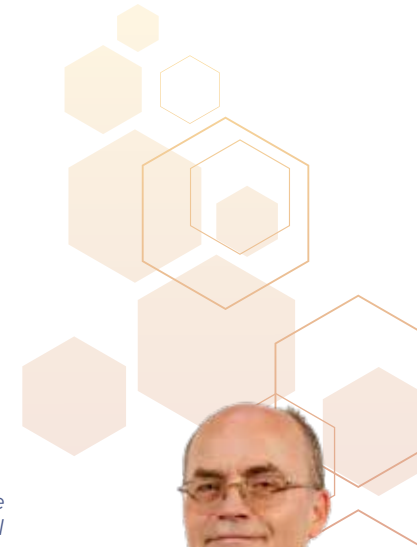
After successfully applying to NMSBA, Aperi CMC engineers were able to work with Alan Williams of Sandia National Laboratories on a project. Aperi CMC had an idea for creating engineering simulation software that could work on a graphics processing unit, or GPU, instead of a central processing unit, or CPU. This method would be 150 times faster than current methods, would cost half as much, and give the company a major advantage.

Sandia scientists develop and maintain Trilinos open-source software, which contains the Sandia Toolkit libraries that are used to help Aperi's simulation code run on a GPU. Sandia's assistance has given Aperi CMC access to the Labs' unique expertise and helped the company move the development of their software ahead rapidly.

With the compelling proof of concept from the NMSBA project, Aperi CMC was able to win three Small Business Innovation Research grants totaling \$575,000, which included funding for more assistance from Sandia. The grants also let the company hire another engineer. Now Aperi CMC has applied for Phase II SBIR funding of \$1.5 million and is looking at taking part in the TRGR Technology Readiness Initiative which would allow further collaboration with Sandia.

*With NMSBA we were able to get specialized assistance that we would not have been able to obtain any other way. NMSBA was a perfect fit for our new company.*

**MEGAN FORD**  
CEO  
Aperi Computational Mechanics  
Consulting LLC



*Meet the  
Principal  
Investigator*

**ALAN WILLIAMS**  
Sandia National  
Laboratories







Carol Ann Fugagli of the New Earth Project and Gordon West of The Trollworks among Johnson-Su compost reactors filled with compost made with school lunch food waste, shredded biomass, and biochar at The Old Chinese Gardens.



## Biochar Production and Agricultural Use Leveraged Project



Trollworks is working to promote a local circular economy, minimizing waste and maximizing resources. One of the company's systems uses agricultural and forest "liability biomass" to create pellets. When the pellets are cooked in a controlled process called pyrolysis, they produce energy and biochar.

The company sought help from Los Alamos National Laboratory through the NMSBA Program to test the use of biochar as a component in compost. The resulting data would further market development. They also wanted to test the flue gases from the biochar production equipment to ensure regulatory compliance.

Compost with different percentages of biochar was applied and its effect on vegetables at project partner The Old Chinese Gardens LLC, were monitored. The Los Alamos team found that a 50% biochar-compost mixture provided the clearest benefits to squash productivity.

Another idea was adding recycled plastic to increase the energy of biomass pellets. Project partner Custom Steelworks LLC provided plastic from their Silver City recycling program. The Los Alamos team used their unique lab capabilities and experience in atmospheric chemistry for field testing.

The manufacturing process for pellets including plastic is still under development, but measurements of the flue gas from the current biochar production process indicated few particles, low emissions of carbon monoxide, and dominant carbon dioxide emissions indicating efficient combustion. Now this carbon dioxide might be used by another local manufacturer to cure their iron-based cement, yet another way to make sure nothing is wasted.

*NMSBA helps us achieve our vision and purpose of creating community-based systems and products that transform waste into assets, through innovation and collaboration.*

**GORDON WEST**  
CEO  
The Trollworks LLC



*Meet the  
Principal  
Investigator*

**SANNA SEVANTO**  
Los Alamos  
National Laboratory





The Cetaly team in their ISO 6 cleanroom laboratory, where they develop healthy, nutritious proteins biomanufactured for functional foods and America's booming wellness industry.





*NMSBA's vital support helps Cetaly overcome technical hurdles, saving millions in research and advancing our mission to reimagine agriculture—sustainably feeding billions on Earth and beyond.*

**ELAN COLELLO**

CEO and Product Innovation Manager  
Cetaly LLC

## Cetaly

Cultivated meat offers the opportunity to provide a protein source for the world's growing population. It is created by cultivating animal cells on fungi mycelium in a controlled environment.

Cetaly's goal is to grow highly dense, cruelty-free protein products for less than \$1 per pound. On the way to becoming a vertically integrated biomanufacturing company producing healthy, nutritious food, they have been working with Los Alamos National Laboratory through the NMSBA Program.

Los Alamos Scientist Anand Kumar is helping Cetaly develop a high-throughput research and development platform for testing multiple growth media variables related to cultivating this tasty foodstuff. The outcome of this research will further an understanding of the metabolism of the cells, showing how cells are affected by what they're fed. With this knowledge, researchers can determine what media to grow the cells on and how to maximize cell growth.

Collaboration with Los Alamos is ongoing and has helped the company discover new business opportunities. Since the path to gaining Food and Drug Administration approval to produce cultured meat is long, Cetaly is initially offering nutritious mycelium-derived protein products like ready-to-drink teas and vegan meats for pizzas, pastas, and soups.

An article being co-authored by Kumar and Cetaly Principal Investigator Greg Colello, will appear in the scientific journal, Cells. It will summarize their research on cell culture media throughout history, which will be used to train an AI Large Language Model to assist animal cell culture researchers and provide credibility for Cetaly that could attract investment for future development of their products.



*Meet the  
Principal  
Investigator*

**ANAND KUMAR**

Los Alamos  
National Laboratory





Lauren LoBue holds a banana fiber pad being developed by her company next to a rooftop evaporative cooler where it could be used as an alternative to aspen pads.



*This collaboration proves what's possible when entrepreneurs and scientists come together with a shared mission. Partnering with Los Alamos helped take BENDER from concept to breakthrough—and brought our vision for sustainable cooling closer to reality.*

**LAUREN LOBUE**  
Owner and Founder  
Indie LLC  
dba BENDER

## Indie

Evaporative coolers are efficient, but they haven't evolved. Lauren LoBue set out to change that—boosting their performance with a faster-growing, waste-based alternative to aspen pads.

Evaporative coolers, also known as swamp coolers, use up to 75% less energy than traditional air conditioning and work well in dry climates. During the COVID pandemic, LoBue began experimenting with banana crop waste—a fast-renewing fiber typically discarded after harvest—to develop a more sustainable, higher-performing alternative.

Through the NMSBA Program, LoBue partnered with scientist Nathan Conroy and his team at Los Alamos National Laboratory to test the concept. They began with small banana fiber prototypes and measured temperature drop, airflow, and relative humidity. Early results showed strong potential, and the project progressed toward manufacturable, full-scale pads designed for real-world use.

The data from Los Alamos confirmed that banana fiber pads could outperform traditional evaporative cooler pads, giving LoBue the confidence to pursue a portfolio of patents. Her company, BENDER, is now collaborating with American Excelsior Company, a leading manufacturer of cooling pads, to bring the product to market.

With final performance testing underway at Los Alamos, BENDER's banana fiber pads represent a breakthrough in clean cooling—merging sustainability, innovation, and commercial scalability. By turning agricultural waste into a high-value product, the technology also offers a powerful tool for reducing carbon impact and strengthening rural economies. LoBue hopes this is just the beginning of a new generation of bio-based cooling solutions.



*Meet the  
Principal  
Investigator*

**NATHAN CONROY**  
Los Alamos  
National Laboratory







The Mecca Enterprises team in the company's central kitchen where they produce food for multiple restaurants and other locations.





## Mecca Enterprises

Mary Ellen Chavez has transformed her mother Shirley's original Burritos Alinstante restaurant in Belen to a business that includes six restaurants around central New Mexico. As part of her plan for further growth, she was looking at either expanding the kitchen facility that supplies all the restaurants or building a new kitchen.

Through the NMSBA Program, Chavez was connected with the New Mexico Manufacturing Extension Partnership and Director Jeff Abrams. He was able to help Chavez look at potential new kitchen locations and evaluate her current space. A reorganization plan for the existing kitchen to make it function better and provide more capacity was implemented. This included adding a freezer and redesigning shelving. Chavez and her staff members also took a Lean 101 course through New Mexico MEP to learn how to increase efficiency.

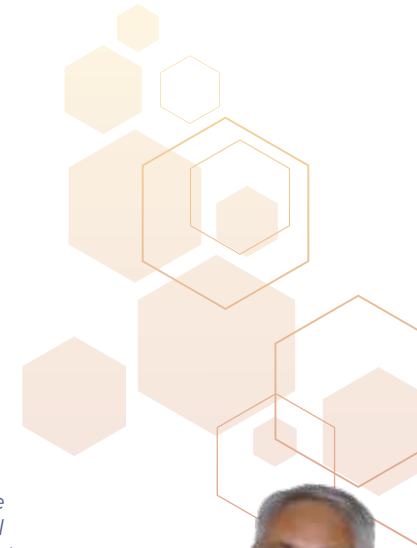
The added capacity enabled the kitchen to produce food for all the restaurant locations as well as for new food distribution partner Ben E. Keith, which is making the unique and delicious Burritos Alinstante carne adovada and green chile available at convenience stores, ski resort cafes, and event centers.

With the added business, the wholesale division, called Sazòn New Mexico, is providing another revenue stream and Chavez has positioned the company for the future. She can gather funds to build a new, larger kitchen as needed. Now, besides growing the wholesale side of the business, she's looking at the possibility of adding franchises to the Burritos Alinstante portfolio.

*NMSBA gave us the opportunity to work with New Mexico MEP and gain the knowledge and tools we needed to operate our business more efficiently.*

### MARY ELLEN CHAVEZ

Owner  
Mecca Enterprises Inc.  
dba Burritos Alinstante



*Meet the  
Principal  
Investigator*

**JEFF ABRAMS**  
New Mexico  
Manufacturing  
Extension  
Partnership





Rosalie Multari of Creative LIBS Solutions places a paper filter containing heat-inactivated virus to be analyzed onto the sample holder which will then go into the rotating stage of the prototype real-time pathogen detection instrument (green machine to her left) that her company is developing.

## Rapid Laser-Based Pathogen Detection Leveraged Project



*NMSBA has helped us further develop and advance our prototype instrument. Los Alamos provided us resources we would have had difficulty obtaining otherwise and we look forward to continued collaboration.*

**ROSALIE MULTARI**  
CEO  
Creative LIBS Solutions

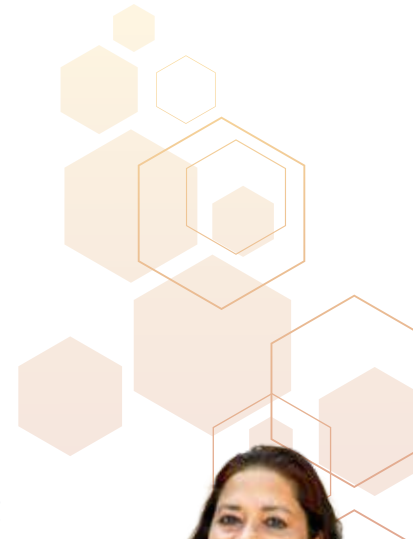
Communities monitor wastewater for SARS-CoV-2 (virus causing COVID-19) to help provide early detection of increasing cases. Current methods are slow, requiring a laboratory and trained technicians.

Creative LIBS Solutions was founded to move real-time detection using laser-induced breakdown spectroscopy into the commercial world. LIBS uses light emitted from a laser spark to rapidly analyze a sample. The technology is well established, but has not been used commercially to detect pathogens in liquid.

The company has created a prototype instrument that uses LIBS spectra and specialized detection algorithms as a low-cost method for monitoring wastewater or other fluids, including blood and plasma. This instrument can be operated in the field, requires minimal training, displays results quickly, and will result in non-hazardous biowaste. Project partner Photon Medilytics Inc. is also involved in the development of the technology and will be marketing the new instrument.

Creative LIBS Solutions worked with Los Alamos National Laboratory Scientist Kumkum Ganguly and her team on an NMSBA project designed to test the prototype instrument on the detection of the human coronavirus in water. The team prepared over 400 samples of inactivated virus applied to paper filters in their biology lab. These were used to develop algorithms, calibrate the instrument, gather data, and see how long samples remain viable.

This successful NMSBA collaboration has moved the instrument closer to market readiness. Multari and Ganguly plan to publish the results of this research in a peer-reviewed scientific journal.



*Meet the  
Principal  
Investigator*

**KUMKUM GANGULY**  
Los Alamos  
National Laboratory







The Ridgeline team with some of the equipment used to run high fidelity acoustic tests on their suppressors.





## Ridgeline Manufacturing and Engineering

Firearm suppressors are meant to attenuate sound and reduce the risk of hearing damage. For professionals who use firearms regularly, like those in military and law enforcement, suppressors are vital.

Matias Roybal, owner of Ridgeline, is a mechanical engineer whose company provides machine components and engineering support to the defense and aerospace industries. He came up with a new type of firearm suppressor for professionals and wanted to validate its performance.

Roybal took part in the NMSBA Program to work with Sandia National Laboratories Acoustics and Vibration Engineer Michael Denison. Together, they were able to perform high fidelity acoustic testing on suppressors using an array of strategically placed microphones and a data acquisition system at a shooting range. Later, analysis at Sandia applied the Auditory Hazard Assessment Algorithm for Humans developed by the Army Research Laboratory to calculate auditory risk units.

Suppressors are typically rated by their peak pressure reduction in decibels. ARUs take it a step further and provide a more accurate representation of how sound can impact hearing damage by incorporating frequency content, pulse duration, and human ear acoustic models.

The data Sandia collected has been critical in backing up noise attenuation claims for the new suppressor and finalizing its design. The product is now on the market, carried by a national retailer. Looking ahead, the company expects to add 10-15 employees in the next couple of years and increase revenue by \$6 million.

*Leveraging the expertise of New Mexico's national laboratories through NMSBA gave us the data we needed to meet market needs.*

### **MATIAS ROYBAL**

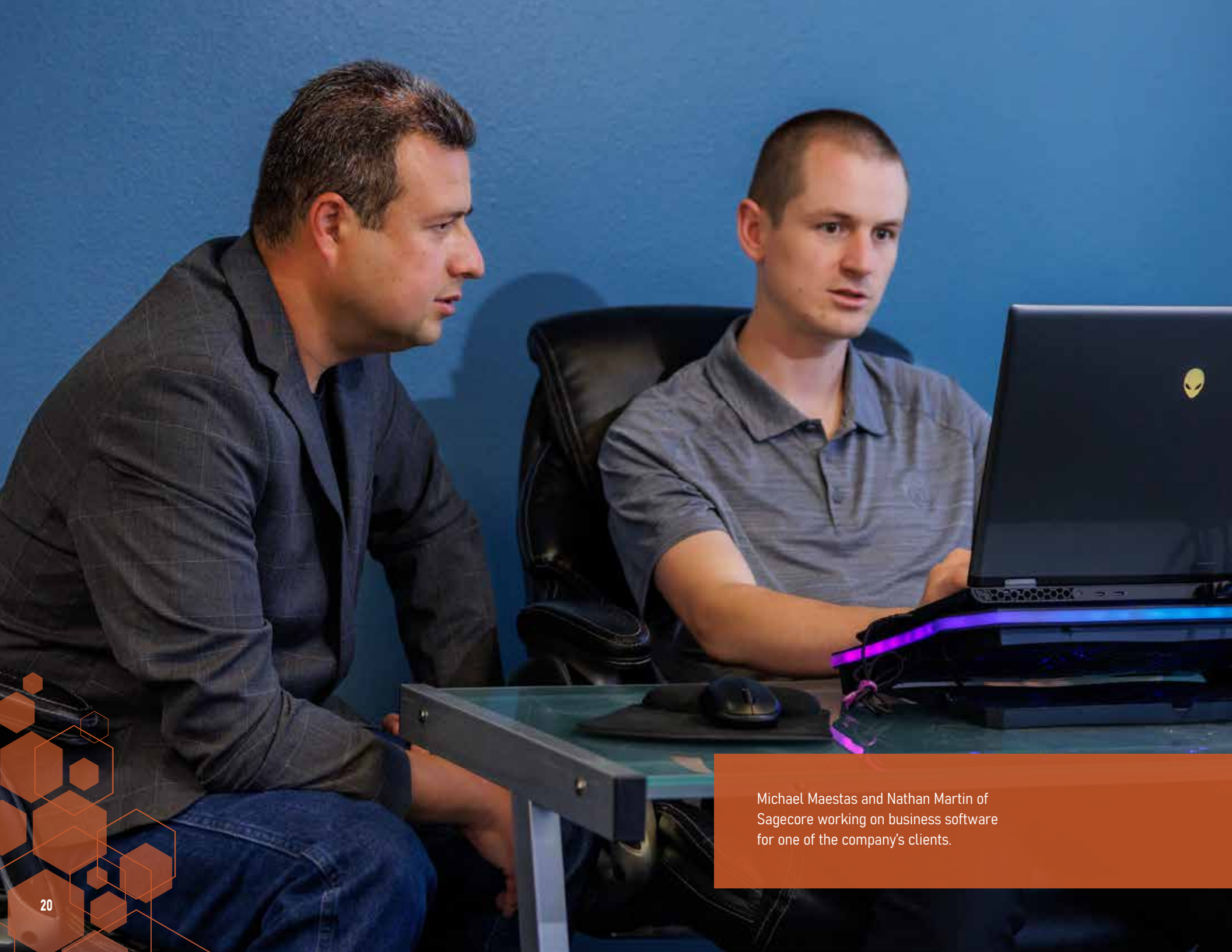
Owner  
Ridgeline Manufacturing  
and Engineering Inc.



*Meet the  
Principal  
Investigator*

**MICHAEL DENISON**  
Sandia National  
Laboratories





Michael Maestas and Nathan Martin of Sagecore working on business software for one of the company's clients.



*Aligning your message to your customers is always one of the most challenging endeavors. Our heartfelt gratitude goes out to UNM and the NMSBA Program for all their guidance!*

**MICHAEL MAESTAS**  
CTO  
Sagecore Technologies LLC

## Sagecore Technologies

Sagecore Technologies is a software company dedicated to building systems to solve business needs. No matter the industry, every company faces many of the same software challenges.

Companies often go to great lengths to shoehorn software business models to fit their own. Complexity, costly software implementation, ongoing upkeep and the difficulty of functionality changes are the challenges once systems have been adopted.

Instead of letting traditional software systems dictate a company's business model, Sagecore works to align the business model software provides with its clients' business models. Although its service offerings for customers have been successful, Sagecore's challenge was educating its clients and communicating its capabilities to potential clients in a clear, concise manner.

Through NMSBA, Sagecore tapped into the resources of the University of New Mexico's Management of Technology and Technology Project Management Programs. Under the direction of Professor Steve Walsh, Project Lead Brandon Sanchez and a group of other students helped the company link its technology capabilities to Industry success. They then developed a new product development process and commercial development techniques to better align the company's services to target industries. The team used tools such as advanced road mapping techniques, innovation readiness levels, and earned value management methods for its assessment.

Gaining a new perspective on the market with the insights the UNM team discovered has allowed Sagecore Technologies to continue to grow and acquire new customers, leading to increased sales and revenue.

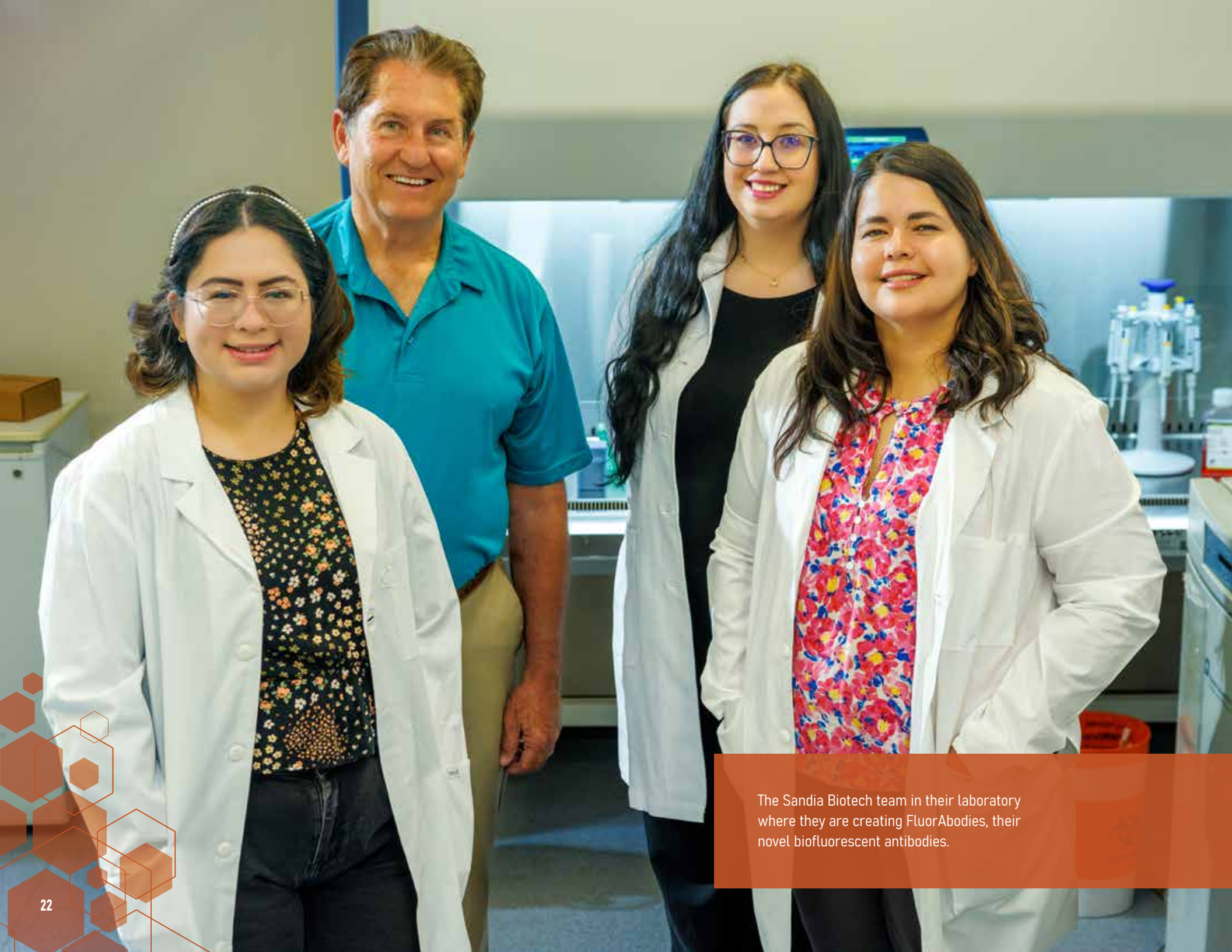


*Meet the  
Principal  
Investigator*

**STEVE WALSH**  
University of  
New Mexico







The Sandia Biotech team in their laboratory where they are creating FluorAbodies, their novel biofluorescent antibodies.





*Partnering with NMSBA and Sandia allowed us to validate the performance of our FluorAbodies with robust data. This collaboration has been key in accelerating our path to market and demonstrating the value our technology brings to researchers.*

**TONY PINO**  
President  
Sandia Biotech Inc.

## Sandia Biotech

Sandia Biotech is a bioreagent company that specializes in fluorescent technology. They have developed a novel type of biofluorescent antibodies called FluorAbodies®. FluorAbodies enhance biological research by providing a more affordable and accurate solution for fluorescence-based applications such as immunofluorescence, microscopy, and flow cytometry.

Sandia Biotech wanted to analyze the unique properties of their FluorAbodies to gather data that would show the new products' benefits to their target market. They connected with the NMSBA Program and gained access to the expertise of Bioscience team Bryce Ricken and Stephanie Kolker at Sandia National Laboratories. Using the Labs' specialized equipment, fluorescent plate reader, and other fluorescent imaging capabilities, Ricken was able to document the absorbance and emission spectrum of several of their FluorAbodies.

The data demonstrates that Sandia Biotech's patented production methodology reduces variation between lots in their FluorAbodies. This complements their other advantages, like their monovalent design, reduced size, and multiplexing capabilities (the ability to simultaneously measure multiple elements in the same experiment). Their unique design also streamlines experimental protocols, helping researchers save valuable time.

Data from the NMSBA project has helped the company increase customer interest. Sandia Biotech markets their products directly through their website, [www.sandiabio.com](http://www.sandiabio.com), worldwide and is in talks with distributors now, using the data to show how impactful this new class of fluorescent antibodies can be to research. FluorAbodies should be on the market soon, at least in part, thanks to the assistance from NMSBA.



*Meet the  
Principal  
Investigator*

**BRYCE RICKEN**  
Sandia National  
Laboratories





Mohammad Bundrage of SunSiteVR stands in front of a 3D computer model of the drone the company is developing to operate on land, in the air, and under water.



*Working with NMSBA gave us the resources to strengthen our SBIR proposal and position this technology for future development in New Mexico. We appreciate NMSU's help moving our design forward.*

**ARIES DRAKE HILTON**  
CTO  
SunSiteVR LLC

## SunSiteVR

SunSiteVR is developing a drone designed to operate in both air and underwater environments, combining data from three modular sensors to deliver real-time insights for multi-environment surveying applications.

The company identified growing customer demand for integrated solutions that reduce the need for multiple specialized tools in geospatial mapping, environmental monitoring, and infrastructure inspection. Building on its expertise in lidar, sonar, and photogrammetry technologies, SunSiteVR began advancing this next-generation drone to meet those market needs.

To move the design forward, the company submitted a Small Business Innovation Research proposal to the National Science Foundation. Although the initial submission was not funded, feedback from the NSF recommended improving the technical presentation with a detailed 3D model.

Through the NMSBA Program, SunSiteVR partnered with John Waller of the Arrowhead Center at New Mexico State University. Waller connected the company with Alexander Santiago, a 3D modeling expert at NMSU's Creative Media Institute. Santiago looked at the company's sketches, listened to their ideas, and created a comprehensive 3D computer model, along with side, front, and top 2D views.

SunSiteVR is now awaiting the results from their updated NSF SBIR submission. If funded, COSMIAC, a research center at the University of New Mexico's School of Engineering, is listed as a subawardee on the company's SBIR proposal and will support Phase I feasibility studies. There is already interest in the drone design from potential government and commercial customers.



*Meet the  
Principal  
Investigator*

**JOHN WALLER**  
New Mexico  
State University





# PROGRAM METRICS

# 2024

## VALUE OF PROGRAM ASSISTANCE

In 2024, the state of New Mexico, along with Los Alamos National Laboratory and Sandia National Laboratories, invested **\$4.66 million**, helping **248 small businesses** in **22 counties** to solve technical challenges. The following table contains the number of small businesses that received assistance from NMSBA, dollar value of the assistance for calendar year 2024, and cumulative value from 2000 to 2024.

	LOS ALAMOS*	SANDIA	TOTAL**
<b>NUMBER OF SMALL BUSINESSES SERVED</b>			
<b>2024</b>	<b>109</b>	<b>139</b>	<b>248</b>
Rural	56	37	93
Urban	53	102	155
<b>2000 - 2024**</b>	<b>1,268</b>	<b>2,567</b>	<b>3,410</b>
Rural	835	1,477	2,068
Urban	433	1,090	1,342
<b>VALUE OF ASSISTANCE PROVIDED</b>			
<b>2024</b>	<b>\$2,260,672</b>	<b>\$2,399,930</b>	<b>\$4,660,602</b>
Rural	\$1,408,645	\$1,013,992	\$2,422,637
Urban	\$852,027	\$1,385,938	\$2,237,965
<b>2000 - 2024</b>	<b>\$36,652,701</b>	<b>\$53,106,736</b>	<b>\$89,759,437</b>
Rural	\$28,896,489	\$35,267,302	\$64,163,791
Urban	\$7,756,212	\$17,839,434	\$25,595,646

\* Los Alamos began participating in NMSBA in 2007.

\*\* Some companies are served by both laboratories.

Note - In 2019, Santa Fe County moved from being a rural county to an urban county.



## BENEFITS TO NEW MEXICO SMALL BUSINESSES

New Mexico small businesses achieved positive results after receiving technical assistance from the NMSBA. Feedback from companies that participated in the 2023 economic impact client survey revealed that:

**64%** DEVELOPED A NEW PRODUCT OR TECHNOLOGY

**55%** IMPROVED OVERALL OPERATIONS

**63%** EXPANDED OR IMPROVED A PRODUCT OR SERVICE

**59%** BECAME MORE COMPETITIVE IN THE MARKETPLACE

**56%** IMPROVED THE EXPERTISE OR CAPABILITIES OF EMPLOYEES

## ACCOUNTABILITY & ECONOMIC IMPACT

NMSBA, enabled by the Laboratory Partnership with Small Business Tax Credit Act, is accountable to the state of New Mexico for its expenditures. NMSBA measures its economic impact through client surveys conducted by Research & Polling Inc., and economic analysis provided by Robert Grassberger, PhD Economist.

### Cumulative Economic Impact for Businesses from NMSBA Projects (2000-2023\*)

SMALL BUSINESS JOBS CREATED AND RETAINED	12,723
AVERAGE REPORTED SALARY (2023)	\$70,262
INCREASE IN REVENUE	\$573,270,233
DECREASE IN OPERATING COSTS	\$395,999,065
INVESTMENT IN NM GOODS / SERVICES	\$205,602,883
NEW FUNDING / FINANCING RECEIVED	\$348,921,230
RETURN ON INVESTMENT (ROI)**	

**For every \$1.00 of tax credit invested, the state receives a return of \$1.79.**

\*Economic surveys are performed six months to one year after project completion.

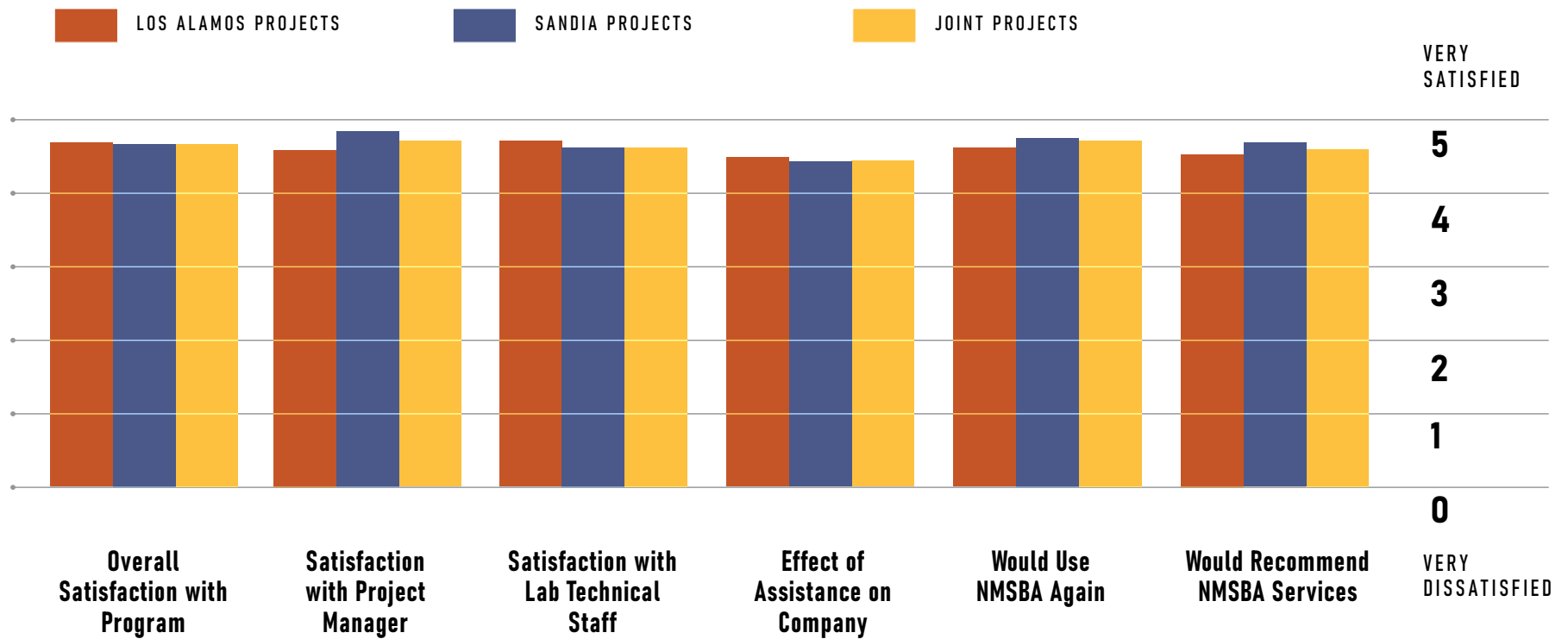
\*\*ROI is based on salaries of jobs created and retained.



## CUSTOMER SATISFACTION

Each year, NMSBA surveys the participating businesses to learn about their satisfaction with the Program.

# 2024



NMSBA identifies the areas of technical expertise that the national laboratories and their contractors utilized in NMSBA technical assistance projects, as well as the industry sector for the participating companies. The counties in which the small businesses are located are tracked to gain a better understanding of the reach of the NMSBA Program across the state.

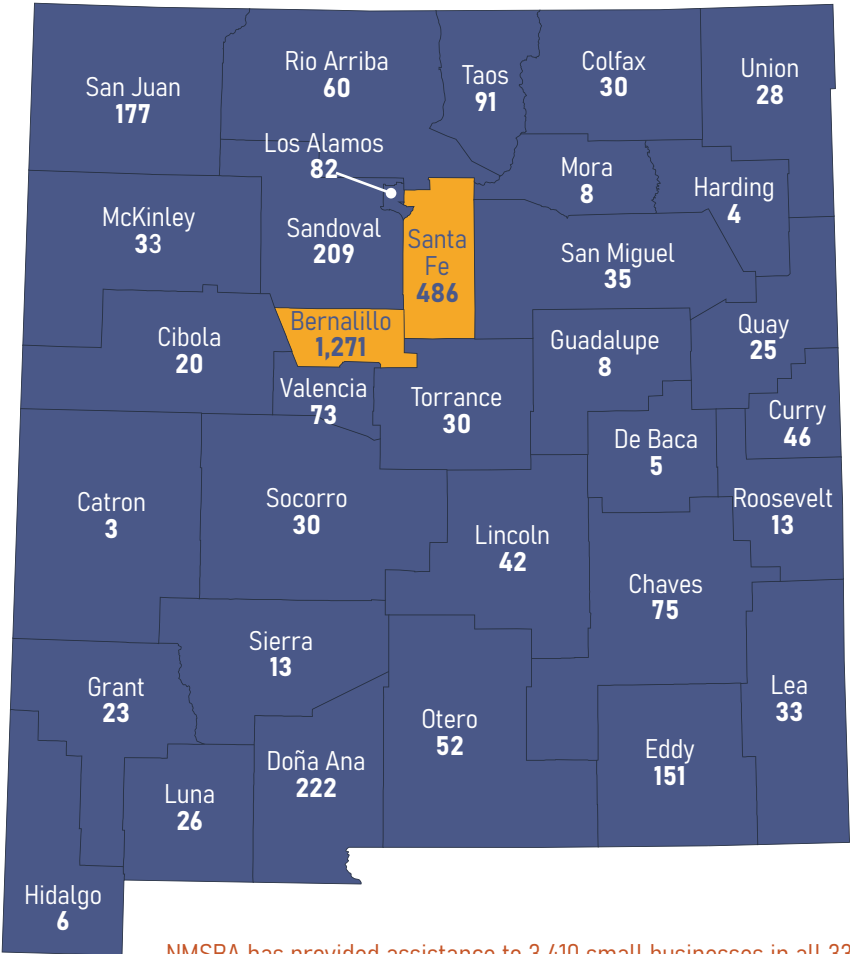


**LABORATORY CAPABILITIES UTILIZED [2024]**

Manufacturing	23.9%
Engineering	22.0%
Chemistry	9.8%
Advanced Modeling and Simulation	9.4%
Biological and Medical	9.0%
Materials Science	7.5%
Earth and Environmental Sciences	5.5%
Business Development	3.9%
Math and Computer Science	3.5%
Micro-Nano Technology	3.1%
Energy	2.0%
Astronomy and Physics	0.4%

**INDUSTRIES OF SMALL BUSINESSES SERVED [2024]**

Manufacturing	47.8%
Professional, Scientific, and Technical Services	26.7%
Agriculture and Natural Resources	10.2%
Other Services (except Public Administration)	4.3%
Oil & Gas, Utilities, and Mining	3.5%
Real Estate, Finance, Insurance, and Management Services	3.5%
Retail and Wholesale Trade	2.4%
Education Services and Health Care	1.2%
Media and Hospitality	0.4%



NMSBA has provided assistance to 3,410 small businesses in all 33 New Mexico counties during the life of the Program from 2000-2024.



# LEVERAGED PROJECTS

*Los Alamos National Laboratory and Sandia National Laboratories provide technical assistance for both individual and leveraged NMSBA projects. The following is a listing of this year's leveraged projects.*

		COUNTIES	FUNDING
<p><b>SANDIA</b> <b>Advanced Ophthalmic Diagnostics</b></p>	<p>The Labs team modeled the optical system for a prototype of the Partially Automated Technician ophthalmic system. The leveraged partners are developing PAT to automatically conduct examinations of human eyes including non-invasive measurement of tissues within the eye. The Sandia engineers generated opto-mechanical models of the prototype optical system and of the human eye for off-axis observation, and used those models to test the accuracy of the proposed measurements under different viewing angles. This project has shown that these measurements are feasible under the conditions expected in eye clinics and has reduced PAT technical and business development risks.</p> <p><b>BUSINESS PARTICIPANTS</b> Apex Machining LLC   Contrast Inc.   Deuce LLC   Integral Corporation   Scintellite LLC</p>	Bernalillo	\$115,700
<p><b>LOS ALAMOS</b> <b>Biochar Production and Agricultural Use</b></p>	<p>The Lab studied the impacts of using biochar in conjunction with Johnson-Su and traditional composting on soil properties and plant performance in a field setting and performed a greenhouse gas composition analysis during biochar pyrolysis. The Lab supported the leveraged companies by 1) testing the effects of their biochar dosage (5%, 10% and 50%) in conjunction with a traditional and Johnson-Su compost on plant growth at the Old Chinese Gardens and 2) testing the composition of the flue gases from the biochar production equipment. The results show that despite the higher soil temperatures in the 50% biochar plot, the Johnson-Su compost in conjunction with the high biochar provided the clearest benefits to squash growth and productivity. The flue gas measurements indicate few particle emissions and low emissions of carbon monoxide in the current setup for burning pellets for biochar production. The dominant emissions were carbon dioxide which indicates efficient combustion.</p> <p><b>BUSINESS PARTICIPANTS</b> Custom Steelworks LLC   The Old Chinese Gardens LLC   The Trollworks LLC</p>	Grant	\$75,700
<p><b>SANDIA</b> <b>Cross-Domain Autonomous Systems</b></p>	<p>The Labs assisted the Cross Domain Autonomous System NMSBA Leveraged team in navigating the extensive literature and open-source libraries related to Multi-Agent Collaboration, Dynamic Replanning, and Simultaneous Localization and Mapping. Sandia provided desk testing and guidance on the implementation of various SLAM libraries. Additionally, The Labs conducted a comprehensive physical hardware test of an open-source optimal UAV trajectory generation planner, specifically designed for thorough robotic inspection and complete 3D reconstruction of a test object. Furthermore, the Labs offered guidance on system architecture, sensor selection, and the integration of subcomponents.</p> <p><b>BUSINESS PARTICIPANTS</b> Emerging Technology Ventures Inc.   Systems Technology Solutions LLC dba KeenAI Technology</p>	Doña Ana	\$78,100

		COUNTIES	FUNDING
<p><b>SANDIA</b> <b>Dry Powder Nebulizer</b></p>	<p>The Labs used Computational Fluid Dynamics-Discrete Element Modeling tools to simulate the aerosolized flow of three different powdered drug blends through the DryNeb device designed by Nob Hill Therapeutics. The Labs ran simulations of the drug containment system. The model captured aerodynamic interaction of the flow and particles in addition to the mechanical interactions between particles and collisions between particles and device boundaries.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Coelus LLC   NobHill Therapeutics</b></p>	<b>Bernalillo</b>	<b>\$38,900</b>
<p><b>LOS ALAMOS</b> <b>Ductile Cellular Lightweight Concrete</b></p>	<p>The team developed 40 distinct formulations of Cellular Lightweight Concrete incorporating various fiber materials. Laboratory testing—including uniaxial compression, Brazilian splitting, three-point bending, X-ray Diffraction, X-ray Fluorescence, and Scanning Electron Microscopy—were performed to evaluate the mechanical, physical, and chemical properties of the materials. The results identified the most promising CLC designs for insulation infill applications in modular buildings. Additionally, XRD and XRF analyses revealed effective CO<sub>2</sub> mineralization in specific CLC formulations when CO<sub>2</sub> was introduced during the curing process. These findings provided valuable insights into the mechanical, physical, and chemical performance of CLC, contributing to the development of more ductile variants reinforced with specialized microfibers.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Aerblock Enterprises LLC   Bonner Design Consultancy   Timbernaut Studios</b></p>	<b>Santa Fe</b>	<b>\$59,400</b>
<p><b>LOS ALAMOS</b> <b>Effects of Facial Moisturizer on the Skin's Microbiome</b></p>	<p>Boodle Body is interested in testing the effects of their Santa Fe Dirt facial moisturizer on the human skin microbiome under laboratory conditions. Although the Principal Investigator and the team only partially accomplished the proposed tasks due to logistical and technical challenges, they made significant progress in procuring the necessary reagents and establishing the required protocols. The remaining tasks are expected to be completed in the upcoming year.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Boodle Body   Invisible City Designs   Maison Smith / Smith Interior Design   Santa Fe IP LLC</b></p>	<b>Bernalillo Santa Fe</b>	<b>\$75,500</b>
<p><b>SANDIA</b> <b>Finding Weapons of Mass Destruction</b></p>	<p>The Labs provided the companies with guidance on creating, modeling, and testing magnets for long-lasting ion sources, which are designed to generate strong magnetic fields capable of handling high currents. These magnets will be used for applications such as beam steering and plasma switching. The work involved analyzing data with modeling software tools, testing electromagnetic coils for magnetic strength, forces, and temperatures while comparing results to computer models, exploring fabrication methods, and developing a system to integrate the strong magnets into the ion sources.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Absolute Concept Designs LLC   Aquila Inc.   Gold Standard Radiation Detection Inc.   Tetra Corporation   Unmanned Systems of America LLC</b></p>	<b>Bernalillo Sandoval</b>	<b>\$120,000</b>



		COUNTIES	FUNDING
<p><b>LOS ALAMOS</b> <b>Frost/Drought Mitigation</b></p>	<p>The following were completed as part of the leveraged project for rural farms in northern New Mexico: meteorological sensors were installed and data collected at five sites; data was analyzed to build AI models that can predict frost up to 48-hours in advance and determine how the occurrence of frost varies across each site as well as across seasons/years; drone surveys with thermal imaging sensors were done to better understand how temperature varies across each site; an overview of the equipment/techniques used and recommendations for self-installation and monitoring for each site were provided; and greenhouse experiments were conducted on plant water needs and soil water availability to improve irrigation under various climate conditions.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Diamond Sow Garden   Freshies of New Mexico LLC   Seed + Stone LLC   Vela Vineyards / Sierra Vista Farms   Velarde Vines</b></p>	<p><b>Rio Arriba San Miguel Taos</b></p>	<p><b>\$198,000</b></p>
<p><b>LOS ALAMOS</b> <b>Hybrid UAV</b></p>	<p>This work shows the computational fluid dynamics simulations, water tunnel design and the conducted research on an appropriate submersion system that the Lab performed as support for New Mexico small businesses designing a hybrid unmanned aerial underwater vehicle. During aquatic operation the buoyant force is the dominating term. While this is helpful for payload, it is also detrimental for the vehicle when it comes to immersion. The mentioned variable buoyancy system will drive the buoyancy control needs; however, the HUAUV baseline design will need additional design optimization in order to employ such a device to allow neutral and negative buoyancy.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>AmphiB Industries   Sixth Sense Designs   Southwest Design and Prototyping</b></p>	<p><b>Bernalillo Sandoval</b></p>	<p><b>\$88,100</b></p>
<p><b>SANDIA</b> <b>Nano-Grating</b></p>	<p>The Labs assisted the companies with several tasks related to Voss-designed metasurfaces. The team helped create SiO<sub>2</sub> metasurfaces with a size ratio of about 40:1 on a 150 nm scale and developed a process for etching these surfaces based on a recent patent application. They also translated the metasurface design into nanofabrication steps, modeled larger metasurfaces for radial polarization, and fabricated both individual elements and a large-scale metasurface for testing. Additionally, they measured and analyzed the samples to understand the fabrication process better. The team provided data, recipes, procedures, and samples as part of their support.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>CNC Machining   InSync Inc.   Sandia Electro-Optics Corporation / Unique Services   Voss Scientific LLC</b></p>	<p><b>Bernalillo</b></p>	<p><b>\$79,300</b></p>
<p><b>LOS ALAMOS</b> <b>Novel Anti-Microbial Peptides</b></p>	<p>This project encompasses work related to the evaluation of the Innate Immunity peptide, 28P. Specifically, the work involved elucidating molecular biology interactions with human host cells, including toxicity and innate immune stimulation, to better understand its therapeutic potential. Human organ systems evaluated included lung, liver, kidney, and skin, as well as the NF-κB and IRF, or Nuclear factor kappa B and Interferon regulatory factor, pathways of the innate immunity.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>Blackgarden Law PC   HD3 Equity Holdings   Innate Immunity LLC</b></p>	<p><b>Bernalillo Santa Fe</b></p>	<p><b>\$59,700</b></p>
<p><b>LOS ALAMOS</b> <b>Orphan Well Leak Detection</b></p>	<p>The Lab assisted SensorComm by providing recommendations to enhance the reliability and performance of their sensors to measure methane and heavy hydrocarbons SCT. The Lab also evaluated Ring-IR's cavity ringdown methane sensor with available technical data provided by the company.</p> <p><b>BUSINESS PARTICIPANTS</b> <b>K &amp; A Wireless LLC   RingIR Inc.   SensorComm Technologies Inc.</b></p>	<p><b>Bernalillo</b></p>	<p><b>\$59,300</b></p>

		COUNTIES	FUNDING
<p><b>LOS ALAMOS</b> <b>Produced Water H<sub>2</sub>S Removal</b></p>	<p>The Lab supported Delaware Water by assessing the company’s novel produced water dissolved air flotation treatment system. The Lab sampled and analyzed produced water, solid precipitates, and gas from the DAF system. Findings include noting variations in redox conditions in the DAF, and noting the presence of at least four different sulfur-species. A more thorough sampling and analytical suite should allow for a better understanding of the geochemical effects of each of the components used in the novel DAF system.</p> <p><b>BUSINESS PARTICIPANTS</b> CK Supply LLC   Delaware Water LLC</p>	Lea	\$61,700
<p><b>LOS ALAMOS</b> <b>Rapid Laser-Based Pathogen Detection</b></p>	<p>Creative LIBS Systems is developing a laser-based instrument for the rapid detection of SARS-CoV-2 in different media. This instrument will enable the real-time detection of COVID infection using only paper filters and a laser. To generate the datasets used for the development of detection algorithms for this instrument, CLS required samples of human coronavirus prepared in tap water and deionized water and applied to paper filters which were provided by the Lab. As the analysis is based on programmed analysis of light emissions from a laser spark, the instrument will be simple to operate (push-button) and the result will be available within minutes. The cost to purchase (or lease) and operate the instrument are expected to be low.</p> <p><b>BUSINESS PARTICIPANTS</b> Creative LIBS Solutions LLC   Photon MediLytics Inc.</p>	Sandoval	\$75,600
<p><b>SANDIA</b> <b>Reactor Impact Criticality</b></p>	<p>Using a finite element model of the 1kW-scale design of NASA’s KiloPower nuclear thermal rocket, the Labs generated numerical models for a wide breadth of planetary surface media—enveloping impact conditions for water and soils. Subsequently, the Labs performed a variety of impact simulations representing potential, although unlikely, accident scenarios. The results from these simulations, i.e., the condition of the 1kW Kilopower NTR after the impact event, was provided to the small businesses for their use in calculating the potential for criticality.</p> <p><b>BUSINESS PARTICIPANTS</b> Little Prairie Services   Space Nuclear Power Corporation   Surreal Studios   The Grant Energy and Water Group</p>	Bernalillo Los Alamos Santa Fe	\$97,400
<p><b>SANDIA</b> <b>Solid State Radiation Detector</b></p>	<p>The Labs tested a variety of company-provided printed radiation dose detectors, (Solid State Tissue Equivalent Detectors), over a possible wide range of doses. Testing assessed the minimum detectable dose rate, and output signal accuracy and consistency throughout the range of detection (compared to a calibrated detector).</p> <p><b>BUSINESS PARTICIPANTS</b> Assurance Engineering   Integrated Deposition Solutions   nStone Corporation   Radiation Detection Solutions LLC   Sigma Science   Testudo Engineering</p>	Bernalillo	\$85,500
<p><b>SANDIA</b> <b>Taggant Characterization</b></p>	<p>The Labs helped the companies identify and study the digital signature of a material called Leonardite. This involved collecting samples of the material and using lab tests like scanning electron microscopy and inductively coupled plasma mass spectrometry. The Labs looked into how the digital signature of Leonardite could be used as a tag to help with a life cycle analysis and how it fits into the companies’ digital measurement reporting and verification process. The Labs provided a final report that included details on how to collect samples, where to collect them, the analysis methods used, and the results.</p> <p><b>BUSINESS PARTICIPANTS</b> Cedar Creek Technologies LLC   Enchantment Organics LLC   Heelstone Proprietary LLC</p>	Bernalillo Sandoval	\$48,800



# INDIVIDUAL PROJECTS

## **BERNALILLO**

Advanced Manufactured Power Solutions LLC  
Apple Canyon Gourmet Inc.  
Assila LLC dba EasyFlo  
AWS Bio-Pharma Technologies  
BioFlyte Inc.  
Blue Dog Fine Woodworking LLC  
Bogue Machine Company  
CCW LLC  
Century Sign Builders  
Cheshir Industries Inc.  
Chile del Sol  
Class Bucks LLC  
Continental Machining Company  
Critical Materials LLC  
CVI Laser LLC  
Dark Sea Industries LLC  
Dash2 Consulting LLC  
Dash2 Labs Inc.  
Design & Spec Assemblies LLC  
Eclipse Aerospace Inc.  
El Pinto Foods LLC  
Enchanting Soap Collections LLC by Roberta LLC  
Energy Catalytics  
Ernest Thompson & Co. Inc. fka Ernest Thompson Furniture  
Eternal Stone Inc.  
Excel Manufacturing  
Five Ton Monkey LLC

Garcia Enterprises Inc. dba The Original Garcia's Kitchen  
Hoonify Technologies Inc.  
HT MicroAnalytical Inc.  
Hugo's TV Repair  
Hydrosonics Inc.  
Industrial Water Engineering  
IR Dynamics LLC  
K.R.E. Industries  
Kairos Power LLC  
Kena Wrap LLC  
LAD Engineering LLC  
Life Science Testing and Analysis LLC  
Los Poblanos Historic Inn & Organic Farm  
Management Sciences Inc.  
MARPAAC Inc.  
Memzyme LLC  
Mesa Alta Research LLC  
MNT SmartSolutions  
MYCO Delens LLC  
New Mexico Clay Inc.  
Not-A-Loud LLC  
OBTC Warehouse LLC dba Old Barrel Tea Company - ABQ  
One Infinite Division Inc.  
Pajarito Powder LLC fka Verge NewTech I LLC  
ParadOxy Particles LLC  
Passages International Inc.  
Pharmers Market LLC  
PillCall Inc.

Precision Solar Technologies Corporation  
Radiant Technologies Inc.  
Reytek Corporation  
Riccobene Masonry Co. Inc. dba Hard Scape Systems  
Ridgeline Manufacturing and Engineering Inc.  
Riot Technology  
Robertson & Sons Violin Shop Inc.  
Robocasting Enterprises LLC  
Sagecore Technologies LLC  
Sandia Biotech Inc.  
Sandia Pet Products LLC dba V. F. Pet Products LLC  
Shirley's Dream Inc.  
Sierra Peaks Corporation  
Sigma Advanced Technologies LLC fka Sigma Medical Technologies LLC  
Silicon Carbide Nanosheets Technology LLC  
Skout Strategy Inc.  
Southwest Composite Works / Southwest Pattern Works Inc.  
Starlight Process Technology Demonstrations LLC  
SunSiteVR LLC  
TEAM Technologies Inc.  
Theta Plate Inc.  
Thompson Machine the Tool & Die Group Inc.  
TPL Inc.  
Trail 9 Outdoors LLC

Turner Manufacturing  
Turquoise Skies Inc. dba T.Skies Jewlery  
Vali Cyber  
Valkyrie Machining LLC  
Vamco LLC  
VanDevender Enterprises LLC  
Voss Scientific Inc.  
Waterjet Cutting Inc.  
World Exhibition Center LLC  
YEEEO Eco-Safe Inc.

## **CIBOLA**

Emerging Equities Solutions Group  
Mt. Taylor Machine LLC dba Mt. Taylor Manufacturing  
Northstar MicroHomes

## **COLFAX**

Angel Fire Resort Operations LLC

## **DOÑA ANA**

Argyle Earth  
Backyard Farms  
Filtravate Inc.  
Frigerator  
Indie LLC dba BENDER  
Mutchnick  
Project Maldonado  
Ruby Rooster Trading Company LLC

## **EDDY**

Intrepid Potash - New Mexico LLC

## GRANT

Syzygy Inc.

## HARDING

Ute Creek Cattle Company

## LEA

Panther Energy Services LLC

## LOS ALAMOS

Odysseus Technologies Inc.  
Pajarito Cloud Computing LLC  
Richard Sayre Consulting LLC  
SALA Los Alamos  
Tibbar Plasma Technologies Inc.  
UbiQD Inc.  
Undesert Corporation Inc.

## LUNA

New Mexico Wineries

## MCKINLEY

Mr. Teez Global LLC  
Navajo Spirit Southwestern Wear LLC  
dba Navajo Spirit LLC

## OTERO

Got Wood NM LLC

## QUAY

BugZing Devices / Zing Devices Inc.  
fka eQsolaris Inc.  
Rancho Alma Linda

## RIO ARRIBA

Milagro Goat Farm  
ORC Tech LLC  
Purple Adobe Lavender Farm

## SAN JUAN

ABC Canvas Inc.  
Affordable Blinds LLC  
Agape  
Brady Trading LLC  
Hauling Accessories LLC  
Industrial Cooling Exchanger  
Jack's Plastic Welding Inc.  
Linear Motion 120 LLC  
Power and Control Solutions Inc.  
Real Green Building Systems  
Simply Solid LLC  
Stand Strong Arch LLC  
Third Axis LLC / Third Axis  
Custom Engraving LLC  
Wines of the San Juan

## SAN MIGUEL

MxRam LLC  
Old Wood LLC  
San Miguel Sun Dwellings

## SANDOVAL

Advanced Optical Technologies Inc.  
Alpha Arietis LLC  
Aztlan Inc.  
fka Aeon Blue New Mexico

Bladewerx LLC  
Cetaly LLC  
Daedalus Technology Group LLC  
DHF Technical Products LLC  
Larry's Tires & Power Saw Shop  
Mezel Mods  
Mountain Vector Energy LLC  
Seed International Inc.  
Space Kinetic  
Stainless Motors Inc.  
Taylor Garrett Spirits

## SANTA FE

Apogee Spirulina  
Beck & Bulow Buffalo LLC  
Better Music Boxes  
Broken Arrow Glass Recycling Inc.  
Canton Custom Guitars  
Chronicle Cremation Designs LLC  
dba Parting Stone Inc. fka Purified  
Remains fka Lifeware  
El Milagro Herbs  
Element 3 Energy  
EnviTrace LLC  
Excedere LLC  
Fault Tolerant Technology LLC  
Hollowpoint LLC  
dba Wicked Edge Sharpeners  
Keystone Restoration Ecology Inc.  
Libertad Power Project LLC  
Lithified Technologies US LLC  
Molten Salt Solutions Inc. fka UCL3 Inc.

Ocean-based Climate Solutions Inc.  
Santa Fe Brewing Company Inc.  
Soap Santa Fe LLC  
dba Soap & Supply  
STAR Cryoelectronics LLC  
Submersive  
Surfmouse LLC  
Tummi Yummi dba Tall Goods LLC  
UHV3D Inc.  
Western Ecology LLC  
Woodruff Engineering Inc.  
Woodruff Scientific Inc.

## SOCORRO

Dicaperl Minerals  
RadiantAero LLC  
Techie Innovative Solutions LLC

## TAOS

BDT Manufacturing LLC  
Taos Wicks

## TORRANCE

Rescue Tactics and Training LLC  
Schwebach Farm


## VALENCIA

Aperi Computational Mechanics  
Consulting LLC  
Mecca Enterprises  
dba Burritos Alinstante  
Nguyen Energy Consulting Company

HONORABLE  
SPEAKER

# BEN LUJÁN AWARD

for Small Business  
Excellence

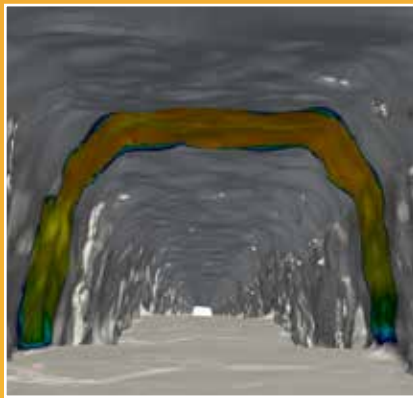


VP of Engineering Analysis Kurtis Ford and CEO Megan Ford reviewing Aperi simulation results in preparation for a customer presentation.



# APERI COMPUTATIONAL MECHANICS CONSULTING

The 2024 Honorable Speaker Ben Luján Award for Small Business Excellence for demonstrating the most economic impact was won by Aperi Computational Mechanics Consulting. An NMSBA project provided a proof of concept for engineering simulation software that works on a graphics processing unit, or GPU, instead of a central processing unit, or CPU.



Screenshot from an evaluation run with Aperi software modeling stress on a scanned tunnel in a salt cave that is being evaluated as a potential site for nuclear waste storage. The highlighted section shows deformation.

The success of the NMSBA project has led to additional research grants and a second NMSBA project, which is helping to move the Aperi CMC software to market much sooner than expected.

Research done with Alan Williams of Sandia National Laboratories showed that using Sandia Toolkit libraries, which are included in Trilinos open-source software developed and maintained by the Labs, as part of Aperi CMC's new software help it operate on a GPU, resulting in incredibly accelerated processing. While speeds 150 times faster than current methods were expected, preliminary testing has already shown speeds exceeding 300 times faster. This is well beyond the closest competitor, and has led to interest from potential investors and corporate partners.

Joint research between Aperi CMC and Sandia has benefited the Labs as well. Technical advances are being added to Trilinos, which is used in critical

national security applications. These efficiency improvements lead to lower computing costs.

As a result of rapid progress on its new type of commercial engineering simulation software, Aperi CMC won \$575,000 in Small Business Innovation Research grants, \$100,000 from NIST, and \$100,000 in matching grants from the state of New Mexico Economic Development Department, as well as \$35,000 from a lunar mining company, with more funding from various sources on the way.

Aperi CMC is also discussing terms with angel investors outside of New Mexico. The company plans to hire six additional people in the next year and has applied for other research and funding opportunities which could result in even more rapid growth.

*Read more about Aperi CMC and its NMSBA project on page 6.*

# THANK YOU

...to all the small businesses for participating in NMSBA and creating jobs and economic wealth for New Mexicans.

...to all the Los Alamos and Sandia national laboratories principal investigators who applied their expertise and knowledge to help New Mexico small businesses solve their technical challenges.

...to the Office of the Governor, New Mexico Legislature, New Mexico Economic Development Department, and New Mexico Department of Taxation and Revenue for their continued support of the Laboratory Partnership with Small Business Tax Credit Act and NMSBA.

## ACKNOWLEDGEMENTS

Thank you to the **Advisory Council** for their leadership, advice, and guidance in support of NMSBA.

**James Carney**  
Sandia National Laboratories

**Dana Derego Catron**  
Arrowhead Center New Mexico State University

**John Elling**  
Molten Salt Solutions

**Devin Fell**  
Sentiré Medical Technologies

**Adriene Gallegos**  
New Mexico Small Business  
Development Center Network

**Karl Halpert**  
Private Label Select Ltd.

**John Heaton**  
City of Carlsbad

**Cliff Hudson**  
Emerging Technology Ventures Inc.

**Ron Manginell**  
Sandia National Laboratories

**Nathan Moody**  
Los Alamos National Laboratory

**Carl McLendon**  
Santa Fe Business Incubator

**Vanessa Roanhorse**  
Roanhorse Consulting

**Nora Sackett**  
New Mexico Economic Development  
Department

**Dan Sanchez**  
(ex officio) U.S. Department of Energy  
NNSA Sandia Field Office

**Michael Vickers**  
New Mexico Biotechnology &  
Biomedical Association

Thank you to the **Emeritus Advisory Council Members** for their continued championing of NMSBA.

Nyika Allen, Todd Bisio, Barbara Brazil, Jim Brockmann, Grace Brill, John Chavez, T.J. Cook, Kim DeFriend, Jerome Garcia, David Griscom, Charles Hanley, Steven Hernandez, Gil Herrera, David Janecky, James Manatt, Duncan McBranch, Kevin McMahon, David Meurer, Mary Monson, Thomas Jensen Donald Quintana, Kim Sanchez Rael, Michael Roach, Robert Sachs, Francine Sommer, Myrriah Tomar, and Eva Woods.

Thank you to the **Contract Project Representatives** for their evaluations and input on leveraged project proposals.

**Christos Christodoulou**  
University of New Mexico

**Kristin Morehead**  
New Mexico State University

**Haoying Wang**  
New Mexico Tech

**Jennifer Sinsabaugh**  
New Mexico Manufacturing  
Extension Partnership

**Steve Walsh**  
University of New Mexico

Thank you to the **Government Relations Representatives** for their support of NMSBA.

**Danny Milo**  
Sandia National Laboratories

**Valerie Salim-Meza**  
Sandia National Laboratories

**David Trujillo**  
Los Alamos National Laboratory

And a final thank you to the **staff** who work every day to ensure the success of NMSBA.

**Sharon Evans**  
Sandia National Laboratories

**Judy Hendricks**  
Sandia National Laboratories

**David Kistin**  
Sandia National Laboratories

**John Martinez**  
Sandia National Laboratories

**Genaro Montoya**  
Sandia National Laboratories

**Lucas Reiglesperger**  
New Mexico Manufacturing  
Extension Partnership  
Los Alamos National Laboratory

**Judi-Anne Romero**  
Los Alamos National Laboratory

**Candice Siebenthal**  
Los Alamos National Laboratory

**Jeanette Trujillo-Rondeau**  
Los Alamos National Laboratory

**Linda von Boetticher**  
Sandia National Laboratories

**Julia Wise**  
Los Alamos National Laboratory

**Megan Zipperian**  
New Mexico Manufacturing  
Extension Partnership  
Los Alamos National Laboratory

#### Perspectives Annual Report Team

##### Sandia National Laboratories

David Kistin, Manager

Genaro Montoya, Program Leader

Sharon Evans, Financial Administrator

Linda von Boetticher  
Annual Report Project Manager

Jami Butler, Designer

Ellen Cline, Writer

Bret Latter, Photographer

##### Los Alamos National Laboratory

Candice Siebenthal  
Technology Engagement &  
Entrepreneur Program Manager

Julia Wise, Program Lead

Judi-Anne Romero, Finance

Jeanette Trujillo-Rondeau, Finance

Porter McLeod, Photographer

Ignacio Perez, Photographer

David Woodfin, Photographer





# INNOVATION CELEBRATION

On September 11, 2024, NMSBA hosted the annual Innovation Celebration to recognize the 10 companies featured in the Perspectives 2023 Annual Report at the Santa Fe Brewing Company in Santa Fe. The event was sponsored by New Mexico MEP. In addition to honoring NMSBA participants, the event provided an opportunity for small businesses, local economic development representatives, elected officials, and community leaders to network and learn what NMSBA offers to help businesses grow.

## 2023 SUCCESS STORIES

- Assessing the Impact of Ultrasonic Filtration on New Mexico Beer Quality Leveraged Project
- Dash2 Labs
- Emerging Technologies Ventures
- Muhlala Turbine
- National Water Services
- Ophthalmic System Leveraged Project
- Remote Well Solutions
- SALA Los Alamos Event Center
- SEED International
- SensorComm Technologies



## 2023 BEN LUJÁN AWARD WINNER

Remote Well Solutions won the Honorable Speaker Ben Luján Award for Small Business Excellence for demonstrating the most economic impact. In 2023, a \$502,000 pilot project installed the company's water systems on four Navajo tribal ranches. Several million dollars was allocated for more installations in 2024, and the Navajo Nation has been awarded a \$25 million U.S. Department of Agriculture Regional Conservation Partnership Program grant to increase utilization of these systems on its lands. The company expects to hire 25 to 40 new employees.

**SOLVING**

**NEW  
MEXICO'S SMALL  
BUSINESS**

**CHALLENGES**





**Candice Siebenthal**  
Technology Engagement &  
Entrepreneur Program Manager

Los Alamos National Laboratory, an affirmative action/  
equal opportunity employer, is managed by Triad  
National Security, LLC, for the National Nuclear Security  
Administration of the U.S. Department of Energy under  
contract 89233218CNA000001.

P.O. Box 1663, C334  
Los Alamos, NM 87545  
(505) 458-9035  
candices@lanl.gov



**Genaro Montoya**  
Program Leader

Sandia National Laboratories is a multimission  
laboratory managed and operated by National  
Technology & Engineering Solutions of Sandia, LLC, a  
wholly owned subsidiary of Honeywell International Inc.,  
for the U.S. Department of Energy's National Nuclear  
Security Administration under contract  
DE-NA0003525. SAND202#####

P.O. Box 5800 MS 1495  
Albuquerque, NM 87185-1495  
(505) 908-8852  
gmontoy@sandia.gov



[NMSBAprogram.org](http://NMSBAprogram.org)

