ANNUAL REPORT 2015

# PERSPECTIVES

NMSBA
Los Alamos National Laboratory
Sandia National Laboratories

*Solving New Mexico's Small Business Challenges*

**$48.5M**
*Technical Assistance Provided by Labs*

**2,495**
*Businesses Assisted*

**4,863**
*Jobs Created and Retained*

**33**
*New Mexico Counties Supported*

*Cumulative numbers since the inception of NMSBA in 2000.*

# CONTENTS


Welcome Letter . . . . . 2

Program Information . . . . . 4

Success Stories

- bioLime . . . . . 6
- EcoSeal . . . . . 8
- HoneyMoon Brewery . . . . . 10
- Innobright Technologies . . . . . 12
- IR Dynamics . . . . . 14
- LAMMPS Instrument Leveraged Project . . . . . 16

Program Metrics . . . . . 18

Success Stories

- Milagro Ranch Resources . . . . . 20
- Right Sized Inventory . . . . . 22
- Smart Battery Manager Leveraged Project . . . . . 24
- Tibbar Plasma Technologies . . . . . 26

Leveraged Projects . . . . . 28

Individual Projects . . . . . 32

Award Celebrations and Information Sessions . . . . . 34

Acknowledgements . . . . . 36

*This vital program is critical in converting the technical expertise from our national laboratories into successful businesses. Thanks to the New Mexico Small Business Assistance Program, New Mexico businesses are creating jobs and growing ideas that are at the forefront of development and innovation.*

Demesia Padilla
*Cabinet Secretary*
*Taxation and Revenue Department*
*State of New Mexico*

*The Economic Development Department congratulates the New Mexico Small Business Assistance Program on another successful year supporting New Mexico entrepreneurs by leveraging technical expertise from the national laboratories located in our state. This is a remarkable Program and New Mexico's small businesses are fortunate to have the NMSBA here and ready to help them innovate and lead.*

Jon Barela
*Cabinet Secretary*
*Economic Development Department*
*State of New Mexico*

Dear Governor Martinez and New Mexico State Legislators,

We are pleased to share the 2015 Annual Report for the New Mexico Small Business Assistance (NMSBA) Program. This report highlights just a few of the hundreds of successful projects from 2015 and quantifies the overall performance of NMSBA, both for the past year and since its inception in 2000.

During 2015, a total of 366 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 nearly $4.77 million of national laboratory expertise and resources to help small businesses in 24 counties overcome technical challenges and grow.

Highlights from 2015 demonstrate the impact of NMSBA on small businesses from various industries around the state.

- A Las Cruces company received assistance in field testing their environmentally friendly pesticide for use on turf grass, leading to a grant award supporting further research of this potential market.
- A Santa Fe brewery developing kombucha beer sought help in understanding how yeast and bacteria contribute to the flavor and nutrition of their new product, which has already been preordered by Whole Foods.
- A group of ranchers in Santa Rosa acquired assistance with an innovative site assessment to estimate their land's wind development potential, helping them secure a contract.
- An inventory software product was improved through technical assistance, giving the Corrales company additional revenue based on increased sales of the updated software.

Two projects received the "Honorable Speaker Ben Luján Award for Small Business Excellence" for demonstrating the most economic impact. Smart Battery Manager, a group of five small businesses working in the unmanned vehicles industry, received help developing a technology to monitor the vehicles' battery packs. The Bernalillo and Otero County companies have received $2 million in new investments and hired nine new employees. Tibbar Plasma Technologies received assistance evaluating their plasma-based AC-DC electrical transformers which helped them win a $3.5 million contract, hire ten new employees, and remodel a building in Los Alamos for manufacturing.

NMSBA has helped New Mexico's small businesses create jobs, increase revenues, decrease operating costs, and attract new funding opportunities. Since 2000, 762 technical lab experts from the two national laboratories have provided $48.5 million in technical assistance to 2,495 businesses, enabling 4,863 jobs to be created and retained across the state's 33 counties.

We thank you for your continued support of NMSBA, which promotes collaboration between our national laboratories and small business community, leading to economic development throughout our great state.

Sincerely,

Micheline Devaurs
*Los Alamos National Laboratory*

Jackie Kerby Moore
*Sandia National Laboratories*

# PROGRAM INFORMATION

## OVERVIEW

In 2000, the New Mexico State 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 (NMSBA) 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.

During 2015, NMSBA helped 366 small businesses across the state reach business goals, develop their products for commercial use, and increase profitability.

NMSBA makes a statewide impact by:

- Enabling New Mexico small businesses to access 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

While each company utilizes NMSBA in a different way, all use it as a means to maintain or grow their businesses. NMSBA services are provided at no cost to the participating small businesses in the form of lab staff hours valued at up to $20,000 per calendar year for businesses located in rural counties and $10,000 for businesses located in urban counties (currently just Bernalillo County). 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.

# BEN LUJÁN AWARD

***NMSBA recognized Smart Battery Manager Leveraged Project and Tibbar Plasma Technologies with the "Honorable Speaker Ben Luján Award for Small Business Excellence" for demonstrating the most economic impact.***

***Smart Battery Manager Leveraged Project***

***Genaro Montoya, Sandia NMSBA Program Leader; Von Trullinger, Sandia Principal Investigator; William Neeley, Silent Falcon UAS Technologies Electronics Engineer; Duncan McBranch, Los Alamos National Laboratory CTO; John Brown, Silent Falcon CEO; Cliff Hudson, Emerging Technology Ventures, Inc. CEO; and Jane Powdrell-Culbert, New Mexico State Representative.***

***Tibbar Plasma Technologies***

***Patrick Duran, Office of U.S. Congressman Ben Ray Luján Field Representative and Economic Development Liaison; Genaro Montoya, Sandia NMSBA Program Leader; Duncan McBranch, Los Alamos National Laboratory CTO; John Finn, Tibbar Plasma Technologies Scientist; Jane Powdrell-Culbert, New Mexico State Representative; and Richaer Nebel, Tibbar Plasma Technologies President.***

## 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.

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

**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.

**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.

**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 Department of Management** interfaces with a variety of disciplines taught at the university to help accurately assess the current competitive position of small business technologies.

## FUTURE DIRECTION

As NMSBA moves into the future, it will continue to support the growth and diversification of the New Mexico economy. Ongoing goals for NMSBA include broadening the types of businesses receiving assistance, increasing the range of technical expertise offered by the national laboratories, and expanding NMSBA's coverage in underserved rural counties. In addition, NMSBA continues to look for new opportunities and avenues to partner with New Mexico universities and leverage the capabilities of other business support programs to mature technologies. NMSBA believes developing technology to a stage where a prototype or demonstration of a real-world application is possible helps move new and improved products and services to market.

***Brian Coia***
***Founder and President***
***bioLime***

# BIOLIME



*NMSBA has been a key component during the transition of relocating my company to New Mexico. The access to the expertise provided has been nothing short of outstanding.*

Brian Coia
*Founder and President*
*bioLime®, Inc.*

A lifetime spent in the construction industry enabled Brian Coia to sample various building materials, including one of the oldest: lime. After studying how ancient Egyptians, Greeks, and Romans used lime in building materials, Coia developed a modern version of lime-based structural coatings or "breathable skin" that would make modern buildings more energy efficient, healthier, and longer lasting.

Originally based in Florida, bioLime imported the bulk of its materials from Europe. However, as economic crises deepened in countries including Italy and Greece, Coia realized that he needed to source materials in the United States. Through the Nano Network of NM, Coia made contact with NMSBA advocate Scott Bryant, who advised him on ways that New Mexico's location could be advantageous. Four months later, Coia moved his company. He reached out to Bryant again, who by this time had joined the New Mexico Manufacturing Extension Partnership (New Mexico MEP).

New Mexico MEP helped address strategic concerns underlying bioLime's market expansion. Bryant and his team provided bioLime with help in identifying raw materials and techniques to manage its domestic partners and regional supply chain. One critical component of this assistance involved shifting from importing to domestic manufacturing.

Matching bioLime with materials suppliers in the Southwest saved the company approximately $25 million in avoided investment costs associated with site, equipment, and professional fees. More importantly, bioLime is now in a position to offer a distinctly New Mexico-made product that will attract new customers not just in the United States, but also around the world.

*Meet the*
PRINCIPAL INVESTIGATOR

Scott Bryant
*New Mexico Manufacturing Extension Partnership*

*Luke Smith*
*Founder*
*EcoSeal*

# ECOSEAL



Today's entrepreneurs have so many tools at their disposal that it is possible to start a company while still in college. Luke Smith was an undergraduate student at New Mexico State University (NMSU) when he founded EcoSeal, and he has since used modern techniques, such as crowdfunding and business model competitions, to raise capital.

*My connection with NMSBA has set me on the path toward commercializing a really cool technology.*

Luke Smith
*Founder*
*EcoSeal, LLC*

Smith was working on his accounting degree when his father, an NMSU researcher, told him about an interesting pesticide under development. Called NMX, this pesticide is based on environmentally friendly essential oils, known as "nature's pesticides."

Jazzed about this safe alternative to conventional pesticides, Smith founded EcoSeal to bring NMX to the marketplace. Getting a pesticide through the stringent regulatory process is difficult, and Smith soon realized more extensive testing needed to be performed to validate the product in the field. Griselda Martinez of NMSU's Arrowhead Center introduced Smith to Dr. Ryan Goss of NMSU. Together, Martinez and Goss evaluated the use of NMX on turf grass as one possible market.

As a result of this successful partnership, EcoSeal received an I-Corps grant for $50,000 to conduct market research to commercialize NMX. Smith in 2016 applied for an additional $50,000 from the New Mexico Economic Development Department and has launched a crowdfunding campaign to obtain $30,000 to further expand his startup company.

*Meet the*
PRINCIPAL INVESTIGATOR

Griselda Martínez
*Arrowhead Center at New Mexico State University*

▲ *David Fox, Principal Investigator*
*Los Alamos National Laboratory*

*Ayla Bystrom-Williams, CEO*
*HoneyMoon Brewery*

*Rena Glasscock, Consultant*

# HONEYMOON BREWERY



Santa Fe's HoneyMoon Brewery has recently developed a novel alcoholic hybrid that not only tastes amazing but is also low in calories, rich in probiotics, and retains essential vitamins and other nutrients. The method adopted by Founders Ayla Bystrom-Williams and James Hill is an age-old tradition in tea brewing known as the kombucha process. Kombucha is a symbiotic colony of bacteria and yeast (SCOBY) that converts sugar and tea extract into a unique blend of organic acids and polyphenols.

*Thanks to NMSBA, we have developed the first kombucha beer with the assistance of a top-level U.S. research facility.*

Ayla Bystrom-Williams
*CEO*
*HoneyMoon Brewery*

To successfully brew what some call "healthy beer," HoneyMoon Brewery sought technical assistance from NMSBA, whose project managers connected the startup with David Fox of Los Alamos National Laboratory. Using a zymurgy-based philosophy, Fox helped Bystrom-Williams and Hill gain a deeper chemical understanding of how both the yeast and bacteria contribute to the flavor profile while brewing alcoholic kombucha. Bystrom-Williams believes that nothing short of strict scientific scrutiny will enable her company to deliver the health promises related to the product.

As a result of the work performed in collaboration with Fox, HoneyMoon Brewery is rolling out its "Gypsy Brewing Plan," complete with the first kombucha-brewed product. The company has also received a preorder from the regional manager of Whole Foods Market. For Bystrom-Williams, the cost savings of this R&D work is incalculable. R&D is the backbone of her company and she believes the high-quality R&D performed by Los Alamos has been invaluable to her growing company.

*Meet the*
PRINCIPAL INVESTIGATOR

David Fox
*Los Alamos National Laboratory*

▲ *Raghu Kopalle*
*President and CEO*
*Innobright Technologies*

# INNOBRIGHT TECHNOLOGIES



*With the assistance of NMSBA, I am realizing my vision of shifting the paradigm of "computing" in computer-generated imagery and visual effects rendering.*

Raghu Kopalle
*President and CEO*
*Innobright Technologies, Inc.*

Although commonly used today in many blockbuster movies, computer-generated imagery (CGI) rendering has various drawbacks, including the time and money it takes to render complex scenes or animation sequences. At low render sampling or short/fast render times, current rendering technology results in output that is often snowy (noisy) or blurry.

Innobright Technologies, located in Albuquerque, has developed a new "denoiser" software that may change the cost, time, and results of CGI. Product named Altus, this software attaches as a denoising plugin for existing ray tracers that are deploying Monte Carlo rendering methods. Monte Carlo rendering consists of algorithms or methods that are time consuming and computationally intensive to obtain high quality results. Altus allows conventional rendering programs to render less and provides high-quality results up to 12 times faster by applying its patent-protected noise removal techniques.

Computer graphics imagery (CGI) has a diverse set of applications and this meant that majority owner Raghu Kopalle needed help identifying which markets would pose the greatest initial success for Altus. So Kopalle joined forces with Professor Steve Walsh of the University of New Mexico's Management of Technology program through NMSBA. Walsh and his team of students authenticated a product roadmap from a market perspective. Graduate students involved with this project, Alex Greenberg and Namrata Nepal, gained valuable experience in technology commercialization and market research specific to New Mexico economic development.

Having a clearer vision of possible markets and an effective product roadmap, Raghu Kopalle has since raised $330,000 in funding and has secured paying customers from all over the world. He has also hired two full-time and four part-time employees to help with his growing company.

*Meet the*
PRINCIPAL INVESTIGATORS

Alex Greenberg, Namrata Nepal, and Steve Walsh
*University of New Mexico*

*William J. Kurtz*
*President and COO*
*IR Dynamics*

# IR DYNAMICS



Entrepreneur and energy conservationist William Kurtz of Aerolenz, LLC, forged an alliance through NMSBA with Sandia National Laboratories to conduct experiments related to spectrally controllable materials. When the technology showed promise, Kurtz formed a new company, IR Dynamics, with the goal of manufacturing and marketing these new materials.

*As a result of research initially funded through NMSBA, I saw a substantial business opportunity and formed IR Dynamics.*

William J. Kurtz
*President and COO*
*IR Dynamics, LLC*

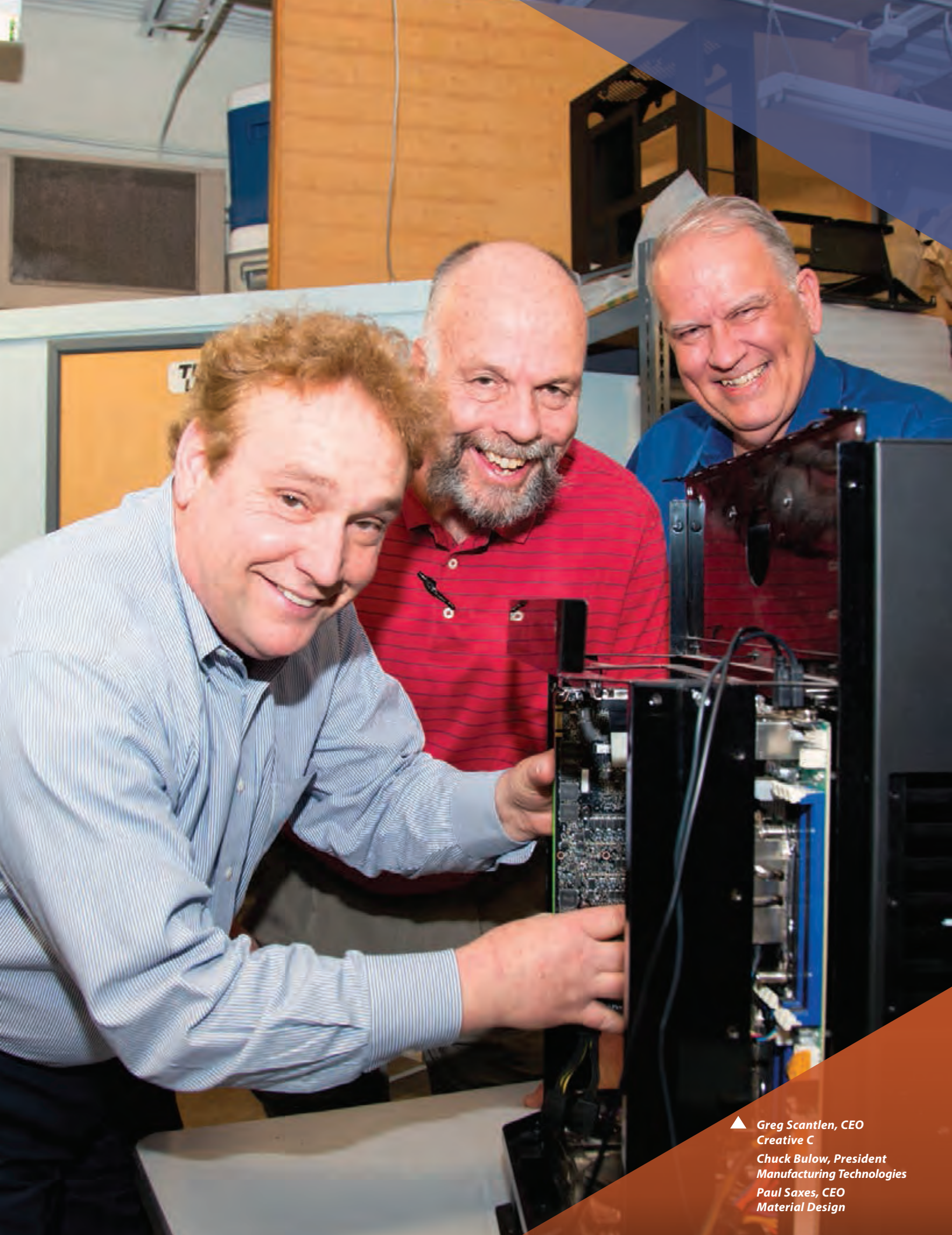
The thermally dynamic materials are in the form of nanoparticles. One of the principal applications of these nanoparticles is as a coating or film for windows in residential and commercial buildings. Once applied, on cold days the windows transmit the sun's heat into the structure. On hot days, the nanoparticles automatically shift so that the windows reject the sun's heat, keeping the inside of the structure cool. The coating is passive by nature, requiring no electronics or power source to shift back and forth from transmitting to repelling heat.

To ascertain the feasibility of manufacturing such innovative coatings, research scientists Raegan Johnson, Nelson Bell, and Paul Clem of Sandia provided structural and optical characterization data, materials analyses, and scientific consulting. IR Dynamics has since established a Cooperative Research and Development Agreement (CRADA) with Sandia for further development.

The company has raised $600,000 in private equity funding, secured $100,000 in grants, and received a $1.95 million grant from the Department of Energy. The plan is to build a lab and hire two to four employees. The worldwide market for the window coatings alone will be worth an estimated $5 billion by 2020. Other applications for the nanoparticles range from apparel to aerospace.

*Meet the*
PRINCIPAL INVESTIGATOR

Nelson Bell
*Sandia National Laboratories*



▲ *Greg Scantlen, CEO*
*Creative C*

*Chuck Bulow, President*
*Manufacturing Technologies*

*Paul Saxes, CEO*
*Material Design*

# LAMMPS INSTRUMENT
## LEVERAGED PROJECT



*Thanks to NMSBA, we have successfully demonstrated that the LAMPPS instrument can perform materials design at the atomic level.*

Greg Scantlen
*CEO*
*CreativeC, LLC*

Originally developed under a Cooperative Research and Development Agreement (CRADA) with Sandia National Laboratories, and Lawrence Livermore National Laboratory, and industry partners Cray, Bristol Myers Squib, and DuPont, the Large-scale Atomic/Molecular Massively Parallel Simulator (LAMMPS) is a classical molecular dynamics code. Key applications for LAMMPS, which is distributed as open-source code by Sandia, include solid-state materials and soft matter.

To take advantage of advances in computational architecture, three companies joined forces to develop and commercialize a LAMMPS instrument: CreativeC, Materials Design, Inc., and Manufacturing Technologies, Inc. The LAMMPS instrument is a hybrid graphics processing unit (GPU)/central processing unit (CPU) computer system that is tailored to run materials science problems. It is similar to having a supercomputer in your office. These companies then collaborated with scientist Saryu Fensin of Los Alamos National Laboratory through NMSBA.

Fensin performed various types of simulations including annealing and shock on copper-lead and copper using up to 50 million atoms. Through her simulations she determined that the breakeven point where GPUs outperformed conventional CPUs was 250,000-400,000 atoms, and showed significant speedups for larger calculations.

With this knowledge, CreativeC is now leading an Small Business Innovation Research (SBIR) Phase 1 project to commercialize the LAMMPS instrument. Materials Design is starting to sell a version of the LAMMPS instrument, including its proprietary graphic user interface (GUI) for LAMMPS, and believes that as sales grow it will be able hire new employees to support the effort. Manufacturing Technologies will manufacture prototypes for testing and will subsequently manufacture the LAMMPS instrument for commercial sale.

*Meet the*
PRINCIPAL INVESTIGATOR

Saryu Fensin
*Los Alamos National Laboratory*

# PROGRAM METRICS

## VALUE OF PROGRAM ASSISTANCE IN 2015

In 2015 the state of New Mexico, along with Los Alamos National Laboratory and Sandia National Laboratories, invested nearly **$4.77M** helping **366** small businesses in **24** 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 2015, and cumulative value from 2000 to 2015.

| | Los Alamos | Sandia | Total |
|---|---|---|---|
| **Number of Small Businesses Served** | | | |
| **2015** | **166** | **205** | **366†** |
| Rural | 127 | 107 | **230†** |
| Urban | 39 | 98 | **136†** |
| **2000-2015*** | **706** | **2012** | **2,495†** |
| Rural | 536 | 1243 | **1,620†** |
| Urban | 170 | 769 | **875†** |
| **Value of Assistance Provided** | | | |
| **2015** | **$2,368,073** | **$2,399,691** | **$4,767,764** |
| Rural | $2,051,933 | $1,657,671 | $3,709,604 |
| Urban | $316,140 | $742,020 | $1,058,160 |
| **2000-2015*** | **$16,872,195** | **$31,637,927** | **$48,510,122** |
| Rural | $15,157,715 | $24,098,666 | $39,256,381 |
| Urban | $1,714,480 | $7,539,261 | $9,253,741 |

**LANL began participating in NMSBA in 2007.* *†Some companies are served by both laboratories.*

## 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 and Polling, Inc., and economic analysis provided by Robert Grassberger, PhD Economist. The survey and analysis are performed six months to a year after the completion of the project.

**Economic Impact for Businesses from NMSBA Projects**

| | 2000 - 2014 |
|---|---|
| Return on Investment (ROI)* | **1.19** |
| Small Business Jobs Created and Retained | **4,863** |
| Mean Salary | **$38,768** |
| Increase in Revenue | **$236,173,794** |
| Decrease in Operating Costs | **$104,728,763** |
| Investment in NM Goods / Services | **$97,556,703** |
| New Funding / Financing Received | **$87,250,519** |

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

## BENEFITS TO NEW MEXICO SMALL BUSINESS

New Mexico small businesses achieved positive results after receiving technical assistance from NMSBA. Feedback from companies that participated in the 2014 economic impact client survey revealed that:

**57%** DEVELOPED A NEW PRODUCT OR TECHNOLOGY

**52%** IMPROVED OVERALL OPERATIONS

**57%** EXPANDED OR IMPROVED A PRODUCT OR SERVICE

**53%** BECAME MORE COMPETITIVE IN THE MARKETPLACE

**52%** IMPROVED THE EXPERTISE OR CAPABILITIES OF EMPLOYEES

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 program across the state.

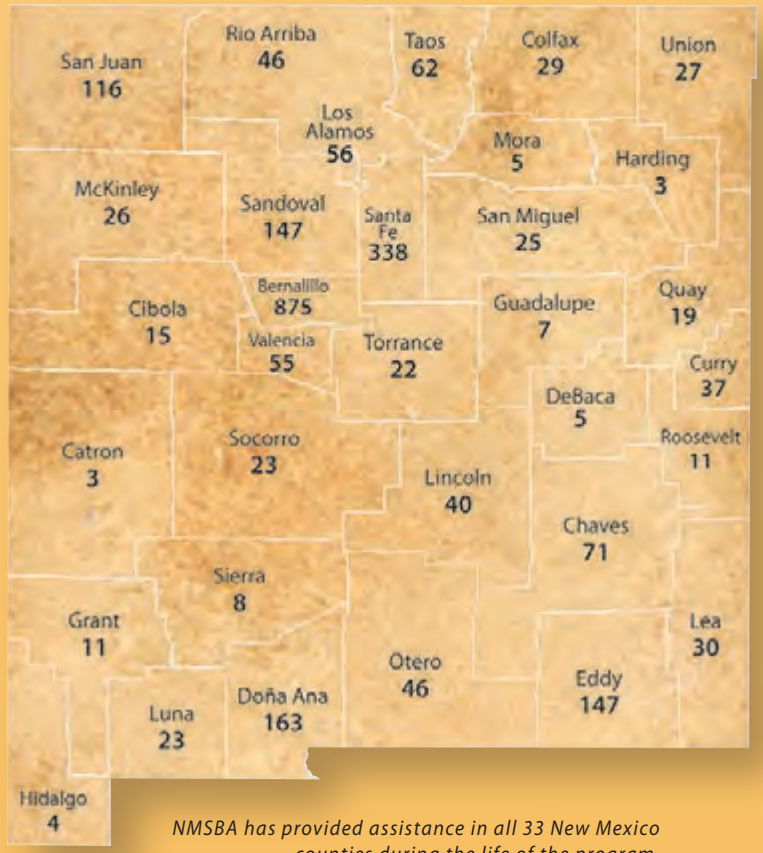
## LABORATORY CAPABILITIES UTILIZED IN 2015

| | |
|---|---|
| Manufacturing | 26.5% |
| Engineering | 20.0% |
| Energy | 7.7% |
| Materials Science | 7.1% |
| Advanced Modeling and Simulation | 6.8% |
| Business Development | 6.8% |
| Earth and Environmental Sciences | 6.8% |
| Chemistry | 6.0% |
| Math and Computer Science | 5.7% |
| Biological and Medical | 4.6% |
| Micro-Nano Technology | 1.4% |
| Astronomy and Physics | 0.6% |

## INDUSTRIES OF SMALL BUSINESSES SERVED IN 2015

| | |
|---|---|
| Manufacturing | 37.7% |
| Professional, Scientific, and Technical Services | 35.3% |
| Agriculture and Natural Resources | 8.7% |
| Retail and Wholesale Trade | 5.7% |
| Oil & Gas, Utilities, and Mining | 3.6% |
| Other Services except Public Administration) | 3.0% |
| Real Estate, Finance, Insurance, and Management Services | 2.7% |
| Education Services and Health Care | 2.5% |
| Media and Hospitality | 0.8% |

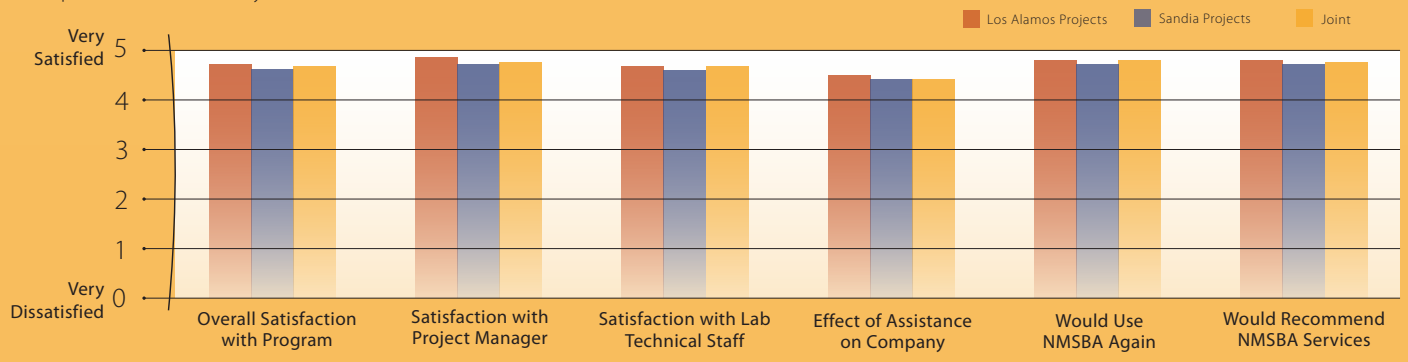
## BUSINESSES ASSISTED BY COUNTY 2000–2015




*NMSBA has provided assistance in all 33 New Mexico counties during the life of the program.*

## CUSTOMER SATISFACTION IN 2015

Each year, NMSBA surveys the participating businesses to learn about their satisfaction with the program. In 2015, 95% of the businesses responded to the survey.



*Max Tenorio and Don Thompson*
*Partners*
*Siempre Wind Project*

# MILAGRO RANCH RESOURCES



*I've taught Spanish and PE, but ranching—it is in my blood. With the help we got from NMSBA on our Siempre Wind Project, our ranches may continue to survive in eastern New Mexico.*

Max Tenorio
*Owner*
*Milagro Ranch Resources*

For the past 15 years, eastern New Mexico has suffered from what seems like a never-ending drought. Ranches are dwindling and ranchers like Don Thompson and Max Tenorio have in recent years sold cattle and land to survive. However, this flat landscape may offer another possible resource: wind to serve as an alternative energy source. The ranchers needed to prove to investors that wind on their land can produce consistent power.

To start their Siempre Wind Project, Thompson and Tenorio attended a five-month series of courses coordinated by the Coalition of Renewable Energy Landowners (CRELA) Landowners Institute presented by Los Alamos National Laboratory through NMSBA. At this series of courses, the ranchers connected with Los Alamos engineer G. Loren Toole. For this project, Toole and his team applied an innovative site-assessment method to estimate wind development potential. The method analyzed a variety of elements and factors of interest to commercial developers. The site assessment has a key element of wind profile mapping, a tool developed at Los Alamos specifically for this application.

With their assessment and wind map profile, Thompson and Tenorio secured a contract with a California wind developer who paid the ranchers an option lease/retention fee for a to-be-constructed wind-turbine farm. Transmitting the wind-generated electricity into New Mexico's grid will be a 345-kilovolt transmission line known as Western Spirit, now under development.

Los Alamos' site-assessment method has proven invaluable. Early estimates indicate that about 400 wind turbines could be built in eastern New Mexico, bringing an initial capital investment of $1.6 billion.

*Meet the*
PRINCIPAL INVESTIGATOR

G. Loren Toole
*Los Alamos National Laboratory*

▲ ***David Cook***
***Founder and CEO***
***Right Sized Inventory***

# RIGHT SIZED INVENTORY



*Thanks to NMSBA, our statistical anomaly recognition and resolution capability has been very well received by our customers and undoubtedly contributed to us closing all of our large customer deals since the completion of this project.*

David Cook
*Founder and CEO*
*Right Sized Inventory, LLC*

For 15 years, David Cook worked in supply-chain operations either as a company employee or as a consultant. During this time, Cook watched as hundreds of businesses attempted to solve inventory challenges with little more than spreadsheets. Cook then brought together individuals with similar interests and formed Right Sized Inventory. His goal was to create a computer-driven analysis platform that would enable users to identify and maintain an optimal amount of inventory for any item in any location.

Although his original software design worked well, Cook struggled with the ability to flag statistical "anomalies" in a way that reliably helped users fine-tune their inventory analysis. Sandia posted Cook's problem on its SharePoint® site, where Andy Scholand of Sandia National Laboratories spotted it and was immediately intrigued. Scholand has extensive experience working on large-scale, agent-based economic models of critical infrastructures, such as food distribution, manufacturing, and petrochemical processing.

Sandia achieved three improvements: statistically valid identification of outliers, trend, and seasonality. These improvements dramatically improved customers' ability to refine their inventory analysis, making the Right Sized Inventory software more accurate and dependable. The company has added revenues of approximately $50,000 since rolling out the improved software, with much larger revenues expected in the coming years. Cook is excited about his highly scalable but reasonably priced software, and he sees huge market opportunities for continued growth. Scholand is similarly excited about this technology, as it provides real insight into a very common problem businesses often fail to recognize, with a solution that can lead to substantial cost savings.

*SharePoint is a registered trademark of Microsoft Corporation in the United States and/or other countries.*

*Meet the*
PRINCIPAL INVESTIGATOR

Andrew Scholand
*Sandia National Laboratories*

***William Neeley***
***Electronics Engineer***
***Greg Walker***
***Chief Operating Officer***
***Silent Falcon UAS Technologies***

# SMART BATTERY MANAGER
## LEVERAGED PROJECT



According to Markets and Markets, the global market for unmanned vehicles was worth $2.29 billion in 2015 and will likely reach $4 billion by 2020. Five small businesses, four at the Alamogordo Science and Technology Park and one in Albuquerque, are trying to capture a significant portion of this market with the development of advanced unmanned mobile robots.

*NMSBA pulled together an awesome team that helped us realize our vision.*

Greg Walker
*Chief Operating Officer*
*Silent Falcon UAS Technologies, Inc.*

Two companies, Emerging Technology Ventures, Inc. and North Alabama Robotic Systems, Inc. (NARS), make unmanned vehicles for land, air, and sea. Motion Picture Marine, Inc. uses unmanned vehicles to create sequences for motion pictures like *X-Men*, *Armageddon*, and *Star Trek*. American Lithium Energy Corporation manufactures lithium-ion batteries that power unmanned vehicles. Along with Albuquerque's Silent Falcon (a developer of aerial unmanned vehicles), these companies joined forces to develop a technology capable of monitoring the health of battery packs for all kinds of unmanned vehicles. To help them realize this technology, company representatives met with NMSBA, which partnered them with electrical engineer Von Trullinger at Sandia National Laboratories.

For the "smart battery manager," Sandia advanced the battery-monitoring electronics and advanced algorithms that could be embedded within the battery's hardware. They also improved the software designed to communicate with operators via web page or Ethernet connection.

As a result, users can now monitor battery condition and historical data, enabling them to plan even more complicated and involved missions. As word has spread regarding this technology, the companies have received $2 million in new investments and added nine new employees.

*Meet the*
PRINCIPAL INVESTIGATOR

Von Trullinger
*Sandia National Laboratories*

*Richard Nebel*
*President*
*Tibbar Plasma Technologies*

# TIBBAR PLASMA TECHNOLOGIES



*The technical evaluation performed through NMSBA enabled us to successfully compete and win grants to begin manufacturing prototypes of our technology.*

Richard Nebel
*President*
*Tibbar Plasma Technologies, Inc.*

Eight years ago, Richard Nebel retired after serving as a theoretical plasma physicist at Los Alamos National Laboratory. Retirement did not suit him, however, and he craved the pursuit of science that by nature is high risk and high gain. So Nebel founded Tibbar Plasma Technologies to design plasma technologies for commercial applications.

Working with other like-minded individuals, Nebel has developed plasma-based AC-DC electrical transformers. These transformers can reduce costs associated with transmitting electrical power by 10 times. This technology also enables the transmission of electricity over great distances—as far as 1,200 miles, compared to current technologies, which transmit at a maximum 400 miles.

To validate the efficacy of this technology, Nebel requested technical assistance through NMSBA from senior scientist Juan Fernandez, team leader for experiments in Relativistic Laser Plasmas at Los Alamos. Fernandez evaluated the concept and design for the AC-DC single-phase transformer. Part of this evaluation consisted of reviewing the methodology for executing the experimental protocol to measure transformer efficiencies.

The company used the evaluation to compete for several grants. In 2015, Tibbar received a $3.5 million contract from the Department of Energy's Advanced Research Projects Agency–Energy. Tibbar has hired 10 new people as of April 2016, and completed machine development for manufacturing these advanced transformers. The company has also secured a building which they are remodeling so that they can manufacture prototypes. According to research and consulting firm GlobalData, the market for this type of technology is estimated to be $89.6 billion by 2020.

*Meet the*
PRINCIPAL INVESTIGATOR

Juan Fernandez
*Los Alamos National Laboratory*

# 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, or group, projects.**

| Lab | Project | Description | Business Participants | Counties | Funding |
|---|---|---|---|---|---|
| Sandia | **Activated Carbon** | The Labs characterized samples, tested different methods of activating the materials, and provided data about the relative time and temperature to process these materials as well as a description of the process at laboratory scale. | A Green Mechanical, LLC<br>Energy Conversion Corporation<br>GN Services | Bernalillo<br>Dona Ana<br>Santa Fe | $47,000 |
| Sandia | **Algorithm Analysis** | The Labs evaluated functionality of hardware and electronics and replaced the existing Neural Net algorithm with a more robust option for detection of suicide bombs hidden under clothing. | Active Security, LLC<br>APPI, Inc.<br>Indelible Enterprises, LLC<br>McLemore Enterprises, LLC<br>R3 Technologies, LLC<br>The MacAleese Companies, Inc. dba Safe Zone Systems | Bernalillo<br>Dona Ana | $80,000 |
| Sandia | **Anaerobic Digester** | The Labs provided technical consulting, formulated mathematical representations of processes, implemented computational models, and then tested the models to simulate an anaerobic digester system. | AgPower FP-1, LLC<br>Living Arts Systems, LLC<br>Tropical Institute for Sustainable Agriculture and Renewable Energy (TISARE) | Chaves<br>Santa Fe | $57,000 |
| Sandia | **Applied Cold Agriculture** | The Labs provided technical and design consulting on a systems-level approach for adaptation of condensation-watering and demonstration of a more cost-efficient extension to Cold-Ag technology under New Mexico agricultural conditions. | AHL Garden Supply<br>Cold Thumb Agriculture<br>Crocker Construction, Inc.<br>Energy Related Devices, Inc.<br>McCune Solar Works, LLC<br>Sentient Sensors, LLC | Bernalillo<br>Quay<br>Sandoval<br>Santa Fe | $77,000 |
| Los Alamos | **Automated RESA** | The Lab enhanced the existing site analysis process: linking resource maps, creating a user interface, and ensuring quality controls to transition the RESA tool for use. | Heckendorn Ranch<br>Himalaya Corporation<br>WindForce | Bernalillo<br>Quay<br>Santa Fe | $45,000 |
| Sandia | **Blended Water** | The Labs provided technical assistance to identify, design, and assist with implementation and testing of an innovative pre-treatment step to overcome membrane fouling problems. | 2FF, LLC<br>Biosphere Environmental Sciences & Technologies, LLC (B.E.S.T.)<br>M & M Production & Operation, Inc.<br>Shoreline Oil & Gas Company<br>Soil Remediation Systems, LLC<br>TL Phillips Enterprises, LLC | San Juan | $94,000 |

| Lab | Project | Description | Business Participants | Counties | Funding |
|---|---|---|---|---|---|
| Los Alamos | **Bone Attachment** | The Lab evaluated and tested the chemical environment of metal surfaces before and after cell growth to show the general topography of the surfaces and measured cell survival. The team also used the High Throughput Sequencing technique to distinguish genetic level effects of cell growth. | Metallicum, Inc.<br>Sigma Labs dba B6 Sigma, Inc. fka Beyond6 Sigma | Santa Fe | $40,000 |
| Sandia | **Brewery Biofuel** | The Labs provided technical consulting to determine the use of brewery spent grain to generate energy. This energy, in the form of steam, will be used in the production of beer. | Kaktus Brewing Company, Inc.<br>Mt. Taylor Machine, LLC dba Mt. Taylor Manufacturing<br>Welch's Boiler Service, Inc. | Bernalillo<br>Cibola<br>Sandoval | $41,000 |
| Los Alamos | **CUB** | The Lab advanced the instrumentation and control system architecture capable of monitoring and controlling various portable Critical Utility Base (CUB) energy and utility units. The team also performed a technical risk assessment of the instrumentation and control system architecture. | AM Energy, Inc.<br>Amethyst Electric, Inc.<br>CUB, Inc.<br>Page Consulting dba Southwest Solar Products, Inc. | Sandoval<br>Santa Fe | $80,000 |
| Sandia | **Embedded Code** | The Labs provided technical consulting to assess improvements of hardware and software in a wireless water management system along with accessing and implementing protocols into the design. | Anglim's Western Metal Works, Inc.<br>Betatron Electronics<br>IC Tech Incorporated<br>Left Turn, Inc.<br>LM Concrete<br>Toltec Enterprises, Inc. | Bernalillo<br>Santa Fe | $65,000 |
| Sandia | **Ferroelectric Composites** | The Labs applied advanced post processing techniques to test and characterize slurries for unique capacitive qualities. | 1N1 Materials<br>Radiant Technologies, Inc.<br>TPL, Inc. | Bernalillo<br>Santa Fe | $37,000 |
| Los Alamos | **Fly Ash** | The Lab performed laboratory analyses and developed procedures for sample preparation and classification based on the physical features of samples. For fabricated products, chemical and mineralogical analysis was conducted along with petrographic examination and engineering testing. | Aerblock Enterprises, LLC<br>Los Alamos Business Incubation, LLC<br>Luca Industries USA, LLC<br>PORTAL Branding Company | Los Alamos<br>Santa Fe<br>Union | $72,000 |
| Sandia | **Fuels from Biosolids** | The Labs provided technical assistance demonstrating the extraction of fuels from biosolids and performed analysis characterizing the formulations. | Diver Solar, LLC<br>ReGen Technology fka SoilCo, LLC | Bernalillo | $19,000 |

# LEVERAGED PROJECTS (CONTINUED)

| Lab | Project | Description | Business Participants | Counties | Funding |
|---|---|---|---|---|---|
| Los Alamos | **Geothermal Tool** | The Lab assisted with the implementation of geophysical and hydrothermal models in the RAREDGE tool, validated the models using synthetic data, and ran risk analyses to facilitate application to real world problems. | Earth System Sciences, LLC<br>Geo-Risk<br>TERRAMAR, Inc. | Santa Fe | $60,000 |
| Sandia | **HDMI Display** | The Labs consulted on the electronic and physical designs of a WiFi-enabled, microprocessor-controlled, HDMI adapter. | Quikbiteat, LLC<br>Redon Systems, LLC<br>The Circuit Shop, Inc. | Bernalillo<br>Dona Ana | $47,000 |
| Los Alamos | **Heppolt VAWT** | The Lab performed simulations using high-performance computing software (HIGRAD/FIRETEC) using data collected from the VAWT prototype, derived a preliminary turbine power curve, and assessed noise, vibration, and wind shadowing issues. | Heppolt Wind, LLC<br>Native Star Energy, LLC<br>Southwest Heritage, Inc.<br>TeePee C, Inc. | Bernalillo<br>Curry<br>Los Alamos | $70,000 |
| Sandia | **Humate** | The Labs provided technical evaluation on the concept of the potential use of humate material as a carbon, nitrogen, and water offset. | Enchantment Organics<br>Lone Tree Partners, LLC<br>Platinum Star IP Partners, LLC | Bernalillo<br>Sandoval | $49,000 |
| Los Alamos | **HydroFLOW** | The Lab evaluated the product in a cooling tower simulated by evaporative coolers. | New Water Innovations<br>Vibrantcy | Bernalillo<br>Santa Fe | $30,000 |
| Los Alamos | **LAMMPS Instrument** | The Lab assisted in performing benchmark annealing and shock simulations to determine the effect of architecture on simulation time. | CreativeC, LLC<br>Manufacturing Technologies, Inc.<br>Materials Design, Inc. | Colfax<br>Los Alamos<br>Sandoval | $49,000 |
| Los Alamos | **LIBS** | The Lab analyzed the distribution of important plant nutrients in soil samples from participating farmers providing: data on the distribution, concentration of nutrients, and recommendations for modifications to improve crop yield. | Alvarez Farms<br>Eaton Farms<br>Martinez Hay & Cattle<br>Seco Spice Company, Ltd.<br>Willie Hernandez Farms | Dona Ana | $50,000 |
| Los Alamos | **Microwave Biostimulation** | The Lab characterized microwave source, amplifier, and antenna for bio stimulation platforms; developed protocols for algae growth and monitoring; and conducted control experiments in replicates for algae cultivation of different varieties. | BioStim, Inc.<br>Innovative Organic Solutions Intl., Inc.<br>New Solutions Energy Corporation<br>Pocagua Consulting<br>Technical Management Solutions, Inc. | Bernalillo<br>Los Alamos<br>Santa Fe | $80,000 |

| Lab | Project | Description | Business Participants | Counties | Funding |
|---|---|---|---|---|---|
| Sandia | **OES** | The Labs provided technical consulting to help optimize the current design of a portable, self-contained, modular hybrid power-generating system utilizing photovoltaic panels and battery power. | Carroll Machine & Tool<br>David Chrissinger<br>MS Enterprises, Inc. dba Metal Supermarkets<br>Sustainable Planet Solutions (SPS) | Bernalillo | $38,000 |
| Sandia | **Samobi** | The Labs provided a conceptual design for and performance of structural and thermal testing. Tests included consideration of appropriate structural loading conditions and estimation of R-value for different configurations of a block concept. Both structural and thermal characteristics were compared to structural technology that is used for similar applications. | Bill Roth Plastering, Inc.<br>Champion Truss, Inc.<br>Pumice-Crete Building Systems of NM<br>Samobi Industries, LLC (Manufacturing)<br>Samobi Industries, LLC (Research) fka Samobi Block, LLC (Research) | Bernalillo<br>Santa Fe<br>Taos | $84,000 |
| Sandia | **Smart Battery Manager** | The Labs combined and tested existing technologies providing embedded battery management. Sandia then consulted on ways to monitor the battery condition and history data, and development of the battery system. | American Lithium Energy Corporation<br>Bye UAS, Inc. dba Silent Falcon UAS Technologies, Inc.<br>Emerging Technology Ventures, Inc.<br>Motion Picture Marine, Inc. aka Perfect Horizon<br>North Alabama Robotic Systems, Inc. (NARS) | Bernalillo<br>Otero | $85,000 |
| Sandia | **Solar Pond** | The Labs provided technical consulting and assistance with modeling and calculations for a solar pond concept for energy storage. A scalable model was evaluated in order to benchmark/validate computational fluid dynamics code and structural dynamics code in order to determine the feasibility of deployment. | Daniel Buck Construction, Inc.<br>El Milagro Herbs<br>Epazote on the Hillside<br>San Miguel Sun Dwellings | Santa Fe | $76,000 |
| Sandia | **Space Propulsion** | The Labs performed simulations and provided data to evaluate a code framework for modeling safety issues for a space nuclear rocket. | Little Prairie Services<br>Power Source Services<br>Surreal Studios | Bernalillo<br>Santa Fe | $38,000 |
| Los Alamos | **Sphere** | The Lab evaluated and characterized a carbon dense by-product (HTC) for use as a remediation agent. Evaluations included metal binding capacity and Total Petroleum Hydrocarbon uptakes studies. | Cottonwood Technology Group<br>Sun Mountain Capital<br>TerranearPMC<br>xF Technologies fka Incitor, Inc. | Bernalillo<br>Los Alamos<br>Santa Fe | $57,000 |

# INDIVIDUAL PROJECTS

***Bernalillo***

A-1 Service Company
ABARR, Inc.
Advanced Air Vehicles (AAV)
Advanced Optical Technologies, Inc.
Agilvax
Alternative Industry Resources (AIR) Division of Sandia Development, Inc.
Applied Technology Associates (ATA) / A-Tech Corporation / ATA Sensors
Aqua Research, LLC
Ark Enterprises, LLC
Armour Pavement, Inc.
Azano Pharmaceuticals
BabyPage, LLC
Backerworks Manufacturing
Bio-Detector, LLC
Biophagy
Blur to Focus Productions
Bogue Machine Company
Bosco Tech
BrightCores, Inc.
Burnley Design
CDS Lighting, Inc.
Century Sign Builders
Certified Packing & Crating, Inc.
Continental Machining Company
Cooper Core Technologies, Inc.
CR Technical Services, LLC
Creel Properties
Dark Sea Industries, LLC
Desert Paper & Envelope Company, Inc.
Diversified Tooling Corporation
DroneU
Earth Czar, LLC
Excel Manufacturing
EXHIB-IT!
Fiore Industries, Inc.
FIRES, Inc.
Flying Star Cafe, Inc.
Flying Star Foods
Galisteo Consulting Group, Inc.
Gilly Loco Salsa
Guardian Sensors, Inc. fka Sentient Business Systems, Inc.
HT MicroAnalytical, Inc.
Improve Group, The
Integrated Machining Company
Innobright Technologies, Inc.
Jaguar Precision Machine Corporation
JC Riant
LAD Engineering
Lobo Cell Phone Solutions (CPS)
Los Poblanos Historic Inn & Organic Farm
Lotus Leaf Coatings, Inc.
Medici Technologies, LLC
Megalith Solutions
Michael Wallace & Associates (MW & A)
Mountain Road Soda
Mountain Top Tees
mPower Technology, Inc.
MVD Express
NM Nano
Obvious Engineering, LLC
OGB Architectural Millwork, Inc.
OptiSource, LLC
Orion International Technologies, Inc.
Osuna Development
Paragon Electric, Inc.
Peter Defries Corporation dba Dion's
Precision Grinding, Inc. (PGI)
PRISM Analytics Corporation
PureColor, Inc.
Radiation Detection Solutions, LLC
Rebel Luxe Management, LLC
Red Rock Distributing Company, LLC fka Red Rock Roasters
Relios, Inc.
Resilient Solutions 21, LLC
Rio Bravo Brewing
RiskSense, Inc. fka CAaNES, LLC
Roberson Construction Company, Inc.
Senior Scientific, LLC
Sierra Peaks Corporation
Sigma Medical Technologies, LLC
Simply Albuquerque Foods, LLC
Skylite Aeronautics
SolaranRx, Inc.
Southwest Composite Works
Spa Enrichment Strategies dba My Sacred Fig
SpaceBooster, LLC
Squeezed Juice Bar
Steward's Plumbing
Strategic Services, Ltd. Company dba Document Imaging of the Southwest
Sugar House Brewery, LLC
Summit Industries, LLC
Sun Country Industries
TEAM Technologies, Inc. fka TEAM Specialty Products
Team, LLC dba Tri-Tech Machine Tool Company
TH Chem, Inc.
Total Impulse, LLC
TriLumina Corporation
Turner Manufacturing
Unified Safety Group, LLC
Vamco, LLC
VanDevender Enterprises, LLC
Veritran, Inc.
Vibrant Corporation
Yamasato, Fujiwara, Higa & Associates, Inc. dba Aquila Technologies Group, Inc.

***Chaves***

GeoScience Technologies
Liquid Rod Company, LLC

***Cibola***

Mt. Taylor Millworks

***Colfax***

Anthony & Cathie Hephner Ranch
Cimarron Real Mountain Jerky

***Curry***

Clovis Machine and Manufacturing, Inc.
Front Line Equipment Company

***Dona Ana***

Aztec Algae
bioLime Innovations, LLC
EcoSeal, LLC
GBS Environmental, LLC
Las Cruces Machine Company
Oso Coatings
PAR Associates
Wildlife Diagnostics, LLC
Zetaac, LLC

***Eddy***

George Rauch Ranch

***Guadalupe***

David Hamby Design
Milagro Ranch Resources

***Lea***

STD Quick Screen

***Los Alamos***

Alpha Analytics, LLC
MIMICRI, LLC
Mountain Storm Instruments, LLC
Oasis Skin Spa, LLC
Porcupine Holding
RockSmith Precision Machining, Inc.
Samitaur Medical Technologies, LLC
Sci Tac, LLC
Select Solar, LLC
Silverpeak Consultants

STRA, LLC
Tibbar Plasma Technologies, Inc.
UbiQD, LLC
VI Control Systems

***Mora***
Mora Valley Woodworking, LLC
Union Land and Grazing Company

***Quay***
Apache Canyon Wind Creations
eQsolaris, Inc.

***Rio Arriba***
Abiquiu Valley Farm
Growing Opportunities
McFarland Instrumentation Services, Inc.
Naturally New Mexico Food Products, LLC
Shaking Oak Productions, LLC

***Roosevelt***
Hampton Farms

***San Juan***
Bank of the SouthWest
Clay Groomer Machine Shop
Cooper Fire Protection Services
GG's Designs, Alterations & More, LLC
Glenhasbah Renewable Energy Technologies, Inc.
Henry Production, Inc. (HPI)
Jack's Plastic and Welding, Inc.
Jumbo, Inc.
MMJ Delivery Courier, LLC
NextGas, LLC
One Source Service
PESCO, Inc.
Professional Janitor's
Quick Carriers dba Hauling Accessories
R & T Holdings, LLC
Real Green Building Systems (RGBS)
San Juan Closet Works
Tethering Ideas
Teton Energy Consulting, LLC dba E3 Power and Water
Worthy, Inc.

***San Miguel***
Energy Concepts Corporation
Old Wood, LLC
Randy Huston Ranch

***Sandoval***
Applied AI, LLC
Arjuna Resources, LLC
Bladewerx, LLC
Bright Valley Enterprises, LLC
Cordova & Sons Tire Recycling & Manufacturing fka Cordova & Sons Tire Disposal & Recycling
Double Horseshoe Brewing Company
ECOterra, LLC
Fluid Analytics, Inc.
Focus, LLC
Giggling Springs / Giggling Star, LLC
Insight Lighting
Inspyrd Products Corporation
JSA Photonics
Mezel Mods
MyBeebe, LLC
RG Construction Services, LLC
Right Sized Inventory, LLC
SAB Investments
Safe Fueling Devices, LLC
Southwest Technical Service, Inc.
Walatowa Timber Industries
WEN Engineering

***Santa Fe***
American Natural Feed Ingredients
Arete Sigma, LLC
Aromaland
Atmocean, Inc.
AttoLight Group, The
Avisa Pharma, Inc.
Awesome Harvest, LLC
Big Sky Learning
bioLime, Inc.
CAFO Web Modules
Culinary Cocktails
Decysive Systems
Dixon, LLC
EarZin, LLC fka EarPod, LLC
Extraordinary Structures
FarmPod, LLC
Foxtrotter Geophysical, LLC
HBN-DSN, Heilbron-Design, LLC
Herbs, Etc., Inc.
Hollowpoint, LLC
HoneyMoon Brewery
iBeam Materials, Inc.
Idea Tree Live
IR Dynamics, LLC
Michelle Henrie, LLC dba MHenrie Land Water Law
Mesa Photonics, LLC
Monika Kaden Fine Arts, LLC
Nano Catalyzer Systems, Inc.
National Water Services, Inc.
New Mexico Algae Production, LLC
NMGC Solutions, LLC
Pajarito Scientific Corporation (PSC)
Pharma Connect Xpress
Pleasanton Ridge Research
POV Fund 1, LLP
ProsserForge, Inc.
Rader Awning & Upholstering, Inc.
Resonant Body
Santa Fe Probiotics
SAVSU Technologies
SolarSPOT, LLC
STAR Cryoelectronics, LLC
Tazwell's Woodworks
Vapor Blast Solutions, LLC
Vista Therapeutics, Inc.
VM Technology, Inc.
Weka Biosciences, LLC
Zetanostics, Inc.
Zoetic Nourishing Earth
Zoetic, LLC

***Socorro***
EFX Energy Technologies, LLC
Solaro Energy, Inc.
Space Sciences Corporation

***Taos***
Beyond Laundry, LLC
Plenish Skincare
Private Label Select, Ltd. Company
Select One Consulting, Ltd. Company
Select Testing Labs, LLC
Taos Mountain Energy Foods, LLC
Vapour Organic Beauty

***Torrance***
Falcon Industries dba ERGO Grips
KemKey, LLC
Sandia Tobacco Manufacturers

***Valencia***
Col. Ichabod Conk Products, Inc.
Paideia, LLC
Sisneros Bros. Mfg., LLC
Soil Secrets, LLC
SouthWest Biosensors, LLC
Wall Colmonoy

# AWARD CELEBRATIONS & INFORMATION SESSIONS

Award Celebrations and Information Sessions were held in six different counties throughout the state in 2015 to recognize the success of small businesses that received assistance from NMSBA in 2014.

In addition to honoring NMSBA participants, the events 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. Panel discussions allowed company owners to share the positive impact they experienced as a result of their NMSBA projects. NMSBA project managers were also on hand to answer questions about the program.

**On May 6, NMSBA held an event at the Taos County Economic Development Corporation to recognize Taos Mountain Energy Foods.**

Isaac Schilling, Los Alamos National Laboratory NMSBA Project Assistant; Genaro Montoya, Sandia National Laboratories NMSBA Program Leader; Kyle Hawari, Taos Mountain Energy Foods CEO and Founder; Cathy Musgrave, New Mexico Manufacturing Extension Partnership Innovation Director; Carlos Cisneros, New Mexico State Senator; Bobby Gonzales, New Mexico State Representative; and Dan Barrone, Taos Mayor.

**On May 27, NMSBA held an event at Arrowhead Center at New Mexico State University in Las Cruces to recognize Fundamentalist Flowerchild Productions.**

Anthony Hyde, New Mexico State University M-TEC Director; Griselda Martinez, Arrowhead Center Program Manager; Kate Brown, Fundamentalist Flowerchild Productions Owner/Animator; Genaro Montoya, Sandia NMSBA Program Leader; Doreen Gallegos, New Mexico State Representative; and Greg Smith, Las Cruces Mayor Pro-Tem.

**On July 22, NMSBA held an event at Katrinah's East Mountain Grill in Edgewood to recognize KemKey.**

Jackie Kerby Moore, Sandia Manager; Matthew McQueen, New Mexico State Representative; Sue Wilson Beffort, New Mexico State Senator; Genaro Montoya, Sandia NMSBA Program Leader; Randy Brown, KemKey President and Owner; Juan Romero, Sandia Principal Investigator; Kim Sherwood, Los Alamos NMSBA Project Manager, and John Chavez, New Mexico Angels President.

**On August 5, NMSBA held an event in Santa Fe to recognize iBeam Materials, Pharma Connect Xpress, and three Geothermal Tool Leveraged Project companies: Earth System Sciences, Geo-Risk, and TERRAMAR. In addition, Taos Mountain Energy Foods received the "Honorable Speaker Ben Luján Award for Small Business Excellence" for demonstrating the most economic impact.**

Dylan Harp, Los Alamos Principal Investigator; and William Glassley, Earth System Sciences Executive Director.

Becky Coel-Roback, Los Alamos Project Manager; and Kimberly Corbitt, Pharma Connect Xpress CEO.

Terry Holesinger, Los Alamos Principal Investigator; Vladimir Matias, iBeam Materials President; and Kim Sherwood, Los Alamos NMSBA Project Manager.

Brooks Thostenson, Taos Mountain Energy Foods President Founder; and Ben Ray Luján, U.S. Representative (D-NM 3rd District).

**On August 12, NMSBA held an event at Sisneros Bros. Mfg. in Belen to recognize the company.**

Michael Sanchez, New Mexico State Senator; Kim Sherwood, Los Alamos NMSBA Project Manager; Jerah Cordova, City of Belen Mayor; Joaquin Sisneros, Sisneros Bros. Mfg. Vice President of Manufacturing; John Robert Laing, Sandia Principal Investigator; Thomas Bosiljevac, Sandia Principal Investigator; Genaro Montoya, Sandia NMSBA Program Leader; Barbara Brazil, State of New Mexico Economic Development Department Deputy Cabinet Secretary; and Jackie Kerby Moore, Sandia Manager.

**On August 18, NMSBA held an event in Albuquerque to recognize Facility Facts, IC Tech, and five LASER Array Submounts Leveraged Project companies: TriLumina, Dynamic Photonics, 3D Glass Solutions, Theta Plate, and Ideum.**

Gerald Ortiz y Pino, New Mexico State Senator; Deirdre M. Firth, City of Albuquerque Economic Development Department Deputy Director; Corey Cooper, University of New Mexico (UNM) Project Research Intern; Jason Strauss, Facility Facts CEO; Raaj Mohan, Facility Facts CTO; Lauren Elizabeth Lockett, UNM Project Research Intern; Becky Coel-Roback, Los Alamos Project Manager; Gale Chasey, New Mexico State Representative; and Genaro Montoya, Sandia NMSBA Program Leader.

Deirdre M. Firth, City of Albuquerque Economic Development Department Deputy Director; Gale Chasey, New Mexico State Representative; Michael Holzrichter, Sandia Principal Investigator, Brad Buffington, IC Tech CEO; Don Small, Sandia Principal Investigator; Becky Coel-Roback, Los Alamos Project Manager; Gerald Ortiz y Pino, New Mexico State Senator; and Genaro Montoya, Sandia NMSBA Program Leader.

Gerald Ortiz y Pino, New Mexico State Senator; Deirdre M. Firth, City of Albuquerque Economic Development Department Deputy Director; Gale Chasey, New Mexico State Representative; Richard Carson, TriLumina Director of Product Quality; Robert Brocato, Sandia Principal Investigator, Dan Lenskold, TriLumina Director of Product Line Management; Becky Coel-Roback, Los Alamos Project Manager; and Genaro Montoya, Sandia NMSBA Program Leader.

# ACKNOWLEDGEMENTS


- Thank you to all the small businesses for participating in NMSBA and creating jobs and economic wealth for New Mexicans.
- Thank you 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.
- Thank you to the Governor's office and the New Mexico State Legislature for supporting the Laboratory Partnership with Small Business Tax Credit Act.
- Thank you to the Advisory Council for their leadership, advice, and guidance in support of NMSBA.

**Peter Atherton**
Sandia National Laboratories

**Todd Bisio**
Qynergy Corporation

**Barbara Brazil**
NM Economic Development Department

**John Chavez**
New Mexico Angels

**Robert Dye**
Los Alamos National Laboratory

**Jerome Garcia**
Los Alamos National Laboratory

**Steven Girrens**
Los Alamos National Laboratory

**Charles Hanley**
Sandia National Laboratories

**Jim Novak**
Sandia National Laboratories

**Kim Sanchez Rael**
Flywheel Ventures, Partner Emeritus

**Michael Roach**
Entrepreneur

**Daniel Sanchez (Ex-Officio)**
U.S. DOE / NNSA Sandia Field Office

**Nan Sauer**
Los Alamos National Laboratory

**Eva Woods**
Woods Farms, Inc.; ZC Partners

- Thank you to the Emeritus Advisory Council members—Jim Brockmann, David Griscom, Stephen Guerin, Steven Hernandez, Gil Herrera, David Janecky, Terrence Kamm, Jim Manatt, Kevin McMahon, David Meurer, Bob Sachs, Kurt Steinhaus, and Patrick Vanderpool—for their continued championing of NMSBA.
- Thank you to Los Alamos Connect, the principal economic development investment of Los Alamos National Security, LLC, managed by the Regional Development Corporation, for its support of NMSBA.
- And a final thank you to the Staff who work every day to ensure the success of NMSBA.

Becky Coel-Roback / Los Alamos
Micheline Devaurs / Los Alamos
Marisa Durfee / New Mexico MEP / Sandia
Sharon Evans / Sandia
Judy Hendricks / New Mexico MEP / Sandia
Mariann Johnston / Los Alamos
John Martinez / New Mexico MEP / Sandia
Genaro Montoya / Sandia
Jackie Kerby Moore/ Sandia
Kimberly Sherwood / Los Alamos
Janelle Ulibarri / Los Alamos
Linda von Boetticher / Akima / Sandia

Thank you to everyone who contributed to this report.

## PERSPECTIVES ANNUAL REPORT TEAM

**Sandia National Laboratories**

Jackie Kerby Moore, *Manager*

Genaro Montoya, *Program Leader*

Laura Hatfield, *Designer*

**Los Alamos National Laboratory**

Micheline Devaurs, *Program Manager*

Kim Sherwood, *Project Manager*

Mariann Johnston, *Communications Lead*
*Richard P. Feynman Center of Innovation*

Octavio Ramos, *Writer*

Sandra Valdez, *Photographer*

**Akima Infrastructure Services, LLC**

Linda von Boetticher, *Project Manager and Art Director*

**New Mexico Manufacturing Extension Partnership**

Judy Hendricks, *Project Manager*

John Martinez, *Project Manager*

**Contractors**

Ellen Cline, *Editor*

Norman Johnson, *Photographer*

Minesh Bacrania, *Photographer*

NMSBA
Los Alamos National Laboratory
Sandia National Laboratories

*Solving New Mexico's Small Business Challenges*

www.NMSBAprogram.org

Los Alamos
NATIONAL LABORATORY

**Los Alamos National Laboratory**
Kim Sherwood
Project Manager
P.O. Box 1663, C333
Los Alamos, NM 87545
P: 505-665-1305
ksherwood@lanl.gov

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Los Alamos National Security, LLC, for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396.

Sandia National Laboratories

**Sandia National Laboratories**
Genaro Montoya
Program Leader
P.O. Box 5800 MS 1495
Albuquerque, NM 87185-1495
P: 505-284-0625
F: 505-284-9551
gmontoy@sandia.gov

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.
SAND2016-5779 M

U.S. DEPARTMENT OF ENERGY