ALBUQUERQUE

ABQ Tech Guide

A Catalogue of Central New Mexico's Technological Clusters and Assets

2007

Section 1: Executive Summary

The City of Albuquerque's Economic Development Department (EDD) works to create, diversify and enhance job growth and to promote business development and stability. EDD supports business and the development community within city government and between city agencies. It also partners with other organizations to further economic development.

Section 1: Welcome Letter & Executive Summary

- Welcome letter from Mayor Martin J. Chávez
- Executive Summary of Content by Section – Learn about the various resources that exist in Albuquerque, the industries, research activities, as well as the companies that make our city grow

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Allow me to be the first to welcome and congratulate you for considering Albuquerque for your business. Whether you're here because you're thinking about expanding your operations to Albuquerque, taking advantage of our wealth of technological assets and resources, or an exceptional local company looking to take that next step, Albuquerque has everything you need.

Our great city boasts a diverse economic base, a vigorous high-technology community, incomparable research institutions, an efficient transportation system, and a trained, friendly and very productive workforce.

Furthermore, Albuquerque stands at the junction of science and business; the commercial manifestation of which will yield the greatest gains yet for humankind: abundant, clean and affordable energy, treatment for disease, and sustainable prosperity.

Whether your enterprise is science based, or in the service of people's day-to-day needs, you will find a home and place of profit, with a business community and a public sector that is involved and deeply concerned for the well being of all its citizens.

I encourage you to utilize the many resources the City has at its disposal, as well as the numerous non-profit entities to support companies, like yours, in establishing and growing your business concern.
In Albuquerque you will find a community that welcomes you and your activities.

These wonderful attributes have earned Albuquerque top-notch rankings in *Forbes*, the Milken Institute's "Best Performing Cities" Index, *Inc.* magazine and many others. The City's Economic Development Department was created to help you, so let us know how we can be of service.

-Mayor Martin J. Chávez

Executive Summary

The purpose of this document is to inform the prospective business operator about the various technological assets present or available as a resource in the Central New Mexico region; the wealth of institutional competencies, as well as programs, services, and industrial concentrations present within the Albuquerque area.

Section 1 is a brief overview of the contents of this document; please see the table of contents above for specific sections of interest.

Section 2 is an overview of the research resources and activities present in the region; while New Mexico is well know for its wealth of Federally sponsored research within the National Laboratory structure, there is ample activity originating from the research universities, private organizations, as well as commercial companies. The National Laboratory presence in New Mexico is comprised of Sandia National Laboratories in Albuquerque, which is focused primarily on engineering disciplines, and Los Alamos National Laboratory about 70 miles north of Albuquerque, focused on research within physics and biology. While both share a common, primary national security mission, they have extensive activities within physical and biological sciences, computationally-intensive applications, materials sciences and engineering.

Sandia National Laboratories provide engineering support for the nation's nuclear mission, which results in a variety of technologies and materials with applications in other fields. Additionally, Sandia is heavily vested in renewable energy research. Focus areas include an expansive array of solar energy-related research (including photovoltaic, such as that utilized by Advent Solar), wind, and geothermal, but also distributed energy systems research. Sandia's engineering prowess also includes a strong presence in computational sciences, required by the extensive modeling performed for their primary mission. This has created a additional competencies within the realms of cyber security, design and engineering of information systems, simulation, and other information technology/computer science related activities. Los Alamos deploys ample resources for the study of computationally intensive questions within fields of biology, research in infectious disease, and complex systems.

Through special agreements, private parties can access technical talents and facilities for commercial research purposes. The methods to do so are described within this section.

In addition to the activities of the two resident DOE/NNSA National Laboratories, the Air Force Research Laboratory provides a technical presence for space vehicles research and development, as well as photonics related research and development. These activities played a developing role in the burgeoning Albuquerque photonics industry; many companies originally moved to Albuquerque to work on defense related contracts for space vehicles, (for

instance, solar panels for satellites), creating a wealth of technical knowledge and the basis for activities within telecommunications and consumer solar power.

There are numerous private research facilities in the area, devoted to a range of activities including genomic studies, mental illness and brain function, as well as respiratory illness, to name several of the largest.

Key resources for both small technology start-ups, as well as larger commercial enterprise are user facilities and technology parks. Albuquerque has a number of user facilities that provide a variety of services, including the University of New Mexico's Manufacturing Training and Technologies Center, which provides lab space, CAD rooms, and prototyping bays MEMS development. There are two, existing technology parks that offer tenant space and services, and a third new park, at Kirtland Air Force Base and the Air Force Research Laboratory.

Section 3 is an overview of the private companies present in the region, categorized by their respective "clusters." By virtue of like activities, need for similar technical talent and common customers, clusters of companies within specific technologies have developed over time and have become an anchor of the tech economy in Albuquerque. The clusters are in various stages of maturity, with several nascent clusters beginning to emerge and gain economic momentum, including "digital media."

Aerospace & Aviation is an evolving cluster. Originally, activities within the cluster were confined, principally, to avionics, lighting systems, engine components manufacture, and government aerospace contractors. However, the advent of Eclipse Aviation to New Mexico has changed this landscape, as the arrival of new companies has created a true aviation cluster, with several companies locating their activities in the region, creating additional need for training programs and supplier links.

Alternative Energy development is experiencing a resurgence across the country, after the disappearance of federal government incentive programs for many years. Albuquerque is at the forefront with companies like Advent Solar and Affordable Solar. There are a number of companies engaged in R&D, as well as product development of promising energy technologies, as well as methods for improving energy efficiency and mitigating the environmental impact of polluting activities.

Bioscience is a billion-dollar a year activity in New Mexico, with extensive research and development occurring within both institutions and small companies alike. The range of activities is expansive, covering computationally-intensive activities such as genomics and proteomics, as well as other forms of disease research, medical device development, and instrument and medical supply manufacture. A large proportion of medical device firms key-off of the optics and image analysis strengths resident in New Mexico, developing products that measure or quantify, based off optical properties. Key examples are Lumidigm (biometrics), VeraLight (non-invasive glucose measurement), Tru-touch (non-invasive alcohol measurement), Sage Sciences (high through-put flow cytometry) and other companies with innovative forms of spectroscopy and optical measurement.

Electronics & Semiconductor manufacturing have a long history in Albuquerque; in addition to manufacturing research, Central New Mexico became home to a number of fabrication sites, with Intel's Rio Rancho facility as one of the largest in

the world. Other manufacturers, such as Sumco, Emcore, and Xilinx maintain facilities, as well as do a host of service providers to the local industry.

Government Services is a diverse concentration of companies and entities that focus upon the Federal government as a key customer and have core competencies in negotiating the processes involved with Federal contracting. Companies offer services ranging from architectural design and construction, to computer information systems, engineering and other forms of technological service provision.

Information Technology and Software Development is a key component and underpinning skill within the region. Historically, much of the activities within the National Laboratory structure required knowledge of computationally intensive forms of programming and science, which concentrated skills in the region. The result has been the widespread germination of activities within computationally-focused branches of biology, physics, chemistry and financial services.

Manufacturing, as in much of the West, represents a smaller segment of over-all employment than in other parts of the country. The manufacturing activities present in the region, tend to be focused on light, high value-added products, such as semiconductors or other microelectronics, with a few exceptions. The advent of aviation manufacturing with Eclipse Aviation and American Utilicraft, as well as next-generation automotive, with Tesla Motor's electric sedan, has radically changed the nature of what manufacturing jobs look like in the region.

Digital and Multimedia activities originated from two very different sources. The National Laboratory system historically has been engaged in computationally intensive forms of visualization and modeling; additionally, New Mexico, with its scenic vistas and diverse geography has been home to movie making for many years. The convergence of these two disciplines has catalyzed new activities within digital media creation. An infusion of capital and targeted incentives has accelerated this growth; Albuquerque Studios has built six of the largest sound stages in North America in the Mesa del Sol development, immediately south of the Albuquerque Sunport. Sony Imageworks announced in May, 2007, that it would open a 100,000 square-foot digital animation, visual effects, and post production office at the facility.

Microsystems and Nanotechnology are nascent, evolving industries and Central New Mexico has strong capabilities within both. The infrastructure present within the National Laboratory facilities, as well as the University of New Mexico and Central New Mexico Community College, provide extensive resources and technical training for the resident companies. New Mexico is consistently recognized as a leading state for activities in "small tech."

Optics and Photonics activities in the region are a direct result of government research, in the past, on projected light. The modern evolution of the industry is commercially focused, with an emphasis on observed optic phenomenon, particularly photonic-based detection systems.

Section 4 contains information about the myriad of resources available to businesses in Central New Mexico. There are numerous organizations, entities and programs designed to assist entrepreneurs and mature businesses alike.

Section 5 is for reference and contains background research and other documents of interest.

Section 2: Research Resources

- Educational Institutions
- Government Research Labs
- Private Research Facilities
- User Facilities & Technology Parks

Research resources, whether at institutions of higher learning, or government and private research laboratories and their facilities, form the bedrock of New Mexico's technology infrastructure; with it we attract the brightest minds and generate state of the art technologies, processes and products. New Mexico receives a higher than average amount of Federal funding for a variety of research functions; from national defense to healthcare to advanced manufacturing. Research occurs in a variety of institutions, from government sponsored laboratories, state educational institutions, to private concerns engaged in some of the most compelling research activities in the world.

New Mexico has, historically, been a the center of some of the greatest scientific research the world has ever seen; while the state's reputation for physics is well-known, only recently has the world become aware of the byproducts of these activities, particularly in the realms of biology, computational science and much more.

Educational Institutions

- University of New Mexico (UNM)
- Central New Mexico Community College (CNM)
- New Mexico Institute of Mining and Technology (NM-Tech)

University of New Mexico

UNM Contact Info:
www.unm.edu

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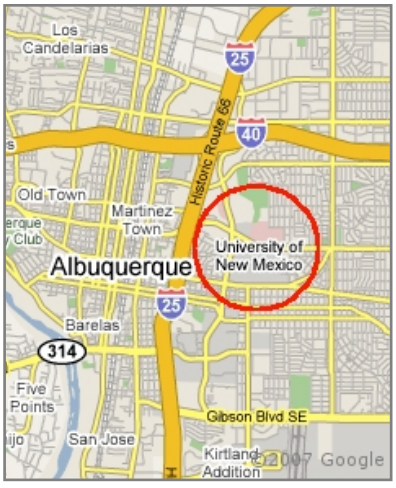

Founded in 1889, the University of New Mexico now occupies 600 acres along old Route 66 in the heart of Albuquerque, a city of more than 780,000 people. From the magnificent mesas to the west, past the banks of the historic Rio Grande to the Sandia Mountains to the east, Albuquerque is a blend of culture and cuisine, styles and stories, people, pursuits and panoramas.

Under the Carnegie Classification of Institutions of Higher Education, UNM is designated among Doctoral/Research Universities—Extensive. Institutions with this classification typically offer a wide range of baccalaureate programs, are committed to graduate education through the doctorate and awards 50 or more doctoral degrees per year across at least 15 disciplines.

UNM boasts outstanding faculty members and include a Nobel Laureate, two MacArthur Fellows and several members of the national academies. UNM faculty publish in many professional journals including Scientific American, New England Journal of Medicine and Nature. UNM professors have been quoted in *Newsweek*, *Los Angeles Times*, *Business Week*, *Parade Magazine*, *US News and World Report*, and *The New Yorker*, among others. UNM professors have shared their expertise on CNN, Today Show, Good Morning America, Nova and other news shows.

UNM's main and branch campuses offer 210 certificate and degree programs, with 93 bachelor's degrees, 68 master's degrees and 37 doctoral programs. Its funded research is nearly $300 million. Additionally, there are three professional programs – in law, medicine and pharmacy – as well as five education specialist certificates, one undergraduate certificate program and two associate degree programs. Through the Evening and Weekend Degree Program, nearly 40 complete degree programs are available with approximately 1,000 classes offered each semester after 4 p.m. or on weekends. About 12,000 non-traditional, working students attend UNM at night each semester.

In 2005 UNM opened a $10 million, 52,000-square-foot building that houses The MIND Institute, which studies the functions of the brain. The center makes UNM a leader in neuroscience and the study of mental illness.

UNM has distinguished itself in a number of areas:

- The University of New Mexico **Health Sciences Center** (see separate entry below) includes a medical school, colleges of nursing and pharmacy, four hospitals and the Cancer Research and Treatment Center. The Health Sciences Center gathers data on disease and interprets impacts with relative ease because it has a repository of data on entire populations of patients and access to high-performance parallel computing. The medical school consistently ranks well on U.S. News & World Report's annual survey.
- The **Center for High Technology Materials** has a national reputation for its work in electronics, optoelectronics and microelectronics. It's a Center of Excellence for Sematech and one of three optoelectronics centers for the Advanced Research Projects Agency (ARPA). It features a **Crystal Growth Facility** to create structures used in advanced semiconductor devices. See www.chtm.unm.edu.
- The **Manufacturing Training and Technology Center** (see separate entry below) supports teaching and training, research and development, start-up companies, manufacturing prototyping, and extension service activities. MTTC trains both UNM and CNM students and provides space for startup companies to prototype devices. See mep.unm.edu/html/mttc
- The Albuquerque **Center for High Performance Computing** was established in 1994 as a sister center to the Maui High Performance Computing Center, the Center has enjoyed a number of significant firsts, including: the first Linux cluster available through NSF allocation and first use of Access Grid technology. The Los Lobos "supercluster," inaugurated in August of 2000, became the highest ranked Linux cluster in the subsequent Top 500 list (narrowly edging out the Sandia Cplant cluster), placing UNM in the Top 5 universities for on-campus computing power, at the time. Along with its educational activities, it also makes high-performance computing more accessible to business. See www.hpc.unm.edu
- The **Robert O. Anderson Schools of Management** offer both bachelors' and masters' degrees in accounting, finance, information system management, and marketing. The school offers bachelors' degrees in human resource management, international management, organizational leadership, and production and operations. It offers masters' degrees in management of technology, operations management, and policy and planning. The **Technology Management Center** helps companies forecast, assess and commercialize technologies. See www.mgt.unm.edu
- The **ARTS Lab** is an interdisciplinary center that brings together art, science, business and technology. Its goal is to grow and sustain an advanced media industry in New Mexico. ARTS Lab supports computer labs in several locations on the UNM campus or affiliated with UNM, and built the **Digital Garage in the High Performance Computing Center**. The Digital Garage serves performance, experimentation and research in digital graphics, sound and real-time immersive projection systems. See artslab.unm.edu
- **Science & Technology Corp. @ UNM** located at the UNM Science and Technology Park a nonprofit corporation formed by UNM to license and commercialize faculty inventions. STC licenses innovative technology developed at UNM, including optical technologies, microfluidic and high-performance materials, as well as drug discovery tools. See stc.unm.edu
- **Science & Technology Park @ UNM** is comprised of 163 acres, 41 of which were developed during Phase I. Future phases will encompass approximately 80 acres. The modern Park was established in 1988, and today consists of 360,000 square feet of existing research & development, laboratory, office and mixed-use space. The tenant focus is on technology-based companies, many of which are the creation of the Science & Technology Corporation @ UNM, the University's technology commercialization arm. Leasing and development options include land sales, ground leases, and built-to-suit and

space leases. The Park is a short distance from UNM's main campus, and is adjacent to Interstate 25, less than one and one half mile from downtown Albuquerque and the Albuquerque International Sunport. See UNM STP

- The **School of Engineering** has programs in Chemical & Nuclear Engineering, Civil Engineering, Computer Science, Electrical & Computer Engineering, and Mechanical engineering, awarding bachelors, masters, and doctoral degrees. The school is frequently listed among the top 50 engineering schools in the United States. Students interact regularly with companies through internships, co-ops, and research or design projects. See www.soe.unm.edu
- The **Bureau of Business & Economic Research** (BBER) is the central repository for economic and demographic research and analysis related to New Mexico. The BBER library is open to the public, while the professional staff provides economic forecasting services, as well other research related tools. See www.unm.edu/~bber

University of New Mexico Health Sciences Center (UNM HSC)

UNM Health Sciences Center Contact Info:
hsc.unm.edu

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Established in 1994, the University of New Mexico **Health Sciences Center** is the largest academic health complex in the state. Located on the University of New Mexico campus in Albuquerque, New Mexico, the HSC combines its four mission areas - education, research, patient care and partnership - to provide New Mexicans with the highest level of health care.

The UNM Health Sciences Center is made up of the following academic and clinical entities:

- College of Nursing
- College of Pharmacy
- School of Medicine
- Health Sciences Library and Informatics Center
- UNM Hospitals
- UNM Cancer Research and Treatment Center

Science & Technology Corporation @ UNM

STC@UNM Contact Info:
stc.unm.edu

Peter Rachor
Director,
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Technology Portfolio

LOBO Venture Lab

The STC.UNM (STC) is a nonprofit corporation formed by and owned entirely by the University of New Mexico (UNM) to protect and transfer its faculty inventions to the commercial marketplace. STC licenses innovative technology developed at UNM, including optics, microfluidics, and high performance materials as well as therapeutics, diagnostics, medical devices, and drug discovery tools.

STC works closely with UNM's Research and Technology Law (R&TL) office and the University Counsel's office in the management and administration of their responsibilities.

The mission of STC is to support the University of New Mexico's inventive culture by creating commercial opportunities resulting in benefits for the University, UNM

inventors, and the State of New Mexico.

UNM ranks in the top five in rate of growth of National Institute of Health funding, spends over $200 million in annual research funding, and has a wealth of laboratory facilities, high performance computing and information systems capabilities, as well as collaborative ties to researchers at Los Alamos National Laboratory and Sandia National Laboratories located nearby. STC can look for research in areas that can fuel your company's future growth.

University of New Mexico Manufacturing Technology & Training Center (MTTC)

One of only 12 such incubators in the United States, Albuquerque's **Manufacturing Technology and Training Center** is a 56,000 square foot facility that supports the university's educational mission. Most importantly, however, private companies can utilize the facility for prototype development and initial manufacture. Numerous start-up companies in the local area have made use of the facility, including Advent Solar and others.

UNM MTTC Contact Info:
www.unm.edu/mttc

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MTTC Director
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Dr Harry Weaver
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MTTC Process List:
The UNM MTTC Clean room can presently support a number of processes, principally those associated with photolithography steps (wet etch, bake, solvent cleaning, resist spinning, resist strip, rinse, stepping, alignment, plasma etch (single wafer), metrology, SEM, etc.).

MTTC Rate Structure:
For FY-07, commercial customers (non-academic) are charged for use of the MTTC Clean room on a monthly billing cycle per the following schedule:

Fee Structure:
Basic Lab fee: $60/hour non-academic users, capped at $1,800/month non-academic users. The basic lab covers photolithography tools.

Staff support fee: $70/hr non-academic users (no cap).

Annual user admin fee: Users of the clean room are charged an administrative fee each fiscal year of $200. SEM use requires user certification; $40/hour.

Equipment fee: Selected utility-intensive equipment will have an additional hourly charge associated with it, above the basic lab fee.

The **MTTC** houses offices, labs, classrooms, prototyping bays, CAD rooms, an auditorium, a café, and a 6,200 SF clean room.

Central New Mexico Community College

CNM Contact Info:
www.cnm.edu

Office of the President
(505) 224-4411

Sally Pearson
VP for Academic Affairs
(505) 224-4427

CNM
525 Buena Vista SE
Albuquerque NM 87106

CNM is New Mexico's largest and most comprehensive community college. In over 40 years it has built a reputation for preparing citizens of the New Mexico community for rewarding careers in a variety of industries, services and occupations, while programs continue to grow and evolve to provide workforce and career-technical training for New Mexicans.
CNM hosts five locations across the Albuquerque metropolitan area: the Main Campus is near downtown and the University of New Mexico; Montoya Campus in the northeast heights; the South Valley Campus; the Westside Campus; and the CNM Workforce Training Center.

Occupational training courses include more than hands-on skill-building, CNM also offers associate's degrees and certificates in:

Applied Technologies (AT)
This division is dedicated to supporting the workforce and economic development needs of the local and state-wide community; guided by industry advisory groups, Applied Technologies offers outstanding faculty and state-of-the-practice laboratories that provide entry-level opportunities, retooling and retraining, as well as customized training packages for employers.
For more information about Applied Technologies, contact technology@cnm.edu.

Business & Information Technology (BIT)
The School of Business & Information Technology is focused on preparing learners for the world of business and information technology, by offering contemporary training within certificate and associate degree programs. Students may also enroll in Cisco Academy, Microsoft Academy, RedHat Academy, and Oracle programs.
For more information about Business & Information Technology, contact BIT.

Communication, Humanities & Social Sciences (CHSS)
The Division of Communications, Humanities, and Social Sciences offers associates degrees in Elementary Education, Fine Art, Liberal Arts, and Child, Youth and Family Development, with skill sets in pre-professional writing and for Child Development Associate licensure.
For more information about Business & Information Technology, contact CHSS.

Educational & Career Advancement (ECA)
The Division of Educational and Career Advancement offers a variety of courses in English, math, reading, science, accounting, health, study skills, and basic computer skills.
For more information about Educational and Career Advancement, contact ECA.

Health, Wellness & Public Safety (HWPS)
Health, Wellness and Public Safety offers credit and noncredit programs that lead to certificates, associates degrees and skills upgrading within the focus areas. Health: Biotechnology, Medical and Clinical Laboratory Technician, Dental, Pharmacy, Phlebotomy, Radiology, Respiratory, Surgical, and Nursing; Public Safety: Criminal Justice, EMS, Environmental Safety, and Fire Science;

Veterinary Science: Veterinary Technology; Wellness: Cosmetology and Fitness.
For more information about Educational & Career Advancement, contact HWPS.

Mathematics, Sciences & Engineering (MSE)
The School of Math, Science and Engineering provides students with a strong academic curriculum that supports certificate programs, associates degrees and transfer purposes. MSE also offers an Associates of Science degree in Engineering.
For more information about Educational & Career Advancement, contact MSE.

CNM also offers classes for high school-aged students and older adults, distance learning courses, career enhancement courses offered through the CNM Workforce Training Center and more.

New Mexico Institute of Mining and Technology

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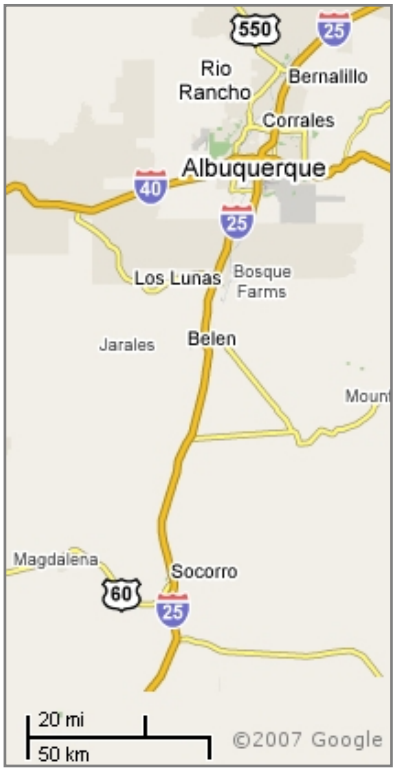
New Mexico Tech (officially, New Mexico Institute of Mining and Technology) was founded in 1889 as the New Mexico School of Mines. Located 80 miles south of Albuquerque, near I-25 in Socorro its primary mission was historically focused on mining technology. Over the years, its mission has expanded, and it is now an outstanding research university, specializing in areas of science, engineering, and related fields.

Students come to New Mexico Tech for its outstanding academic reputation. New Mexico Tech is a world leader in many areas of research, including hydrology, astrophysics, atmospheric physics, geophysics, homeland security, information technology, geosciences, energetic materials engineering, and petroleum recovery.



Research & Economic Development
(R&ED) Facilitates research throughout Tech by providing financial support, professional and technical expertise, research services, and specialized research facilities to Tech faculty members and researchers.

Bureau of Geology and Mineral Resources
A non-regulatory research and public service agency that serves as the geological survey for the State of New Mexico.

Center for Explosives Research & Education
Links academic programs that traditionally have a long-standing history of explosive engineering and science education and research at New Mexico Tech.

Energetic Materials Research and Testing Center (EMRTC)
Incident Response to Terrorist Bombing - (IRTB) Course, Anti-Terrorism Assistance Program - (ATAP) - Safety and procedures of energetic materials training, fundamental and applied research and testing of energetic materials.

Go Tech
GO-TECH includes a searchable NM oil and gas production database, a well-info database, a database of information for state oil and gas leases, GIS pool maps, production data plotting tools, downloadable software, current price sheets, lease notices, and petroleum links.

Institute for Complex Additive Systems Analysis (ICASA)
Behavior, vulnerabilities and predictability of complex systems.

Institute for Engineering Research and Applications
(IERA) is a research and development organization focusing on the environment, power and energy, and homeland defense.

International Law Enforcement Academy (ILEA)
ILEA provides advanced criminal justice management instruction to mid- to senior law enforcement officials from around the world and expose them to American society and institutions.

Langmuir Laboratory for Atmospheric Research
World renown studies of cloud processes that produce lightning, hail, and rain.

IRIS / PASSCAL
The parent organization, Incorporated Research Institutions for Seismology, is a university research consortium dedicated to exploring the Earth's interior through the collection and distribution of seismographic data. PASSCAL Instrument Center is a core facility of IRIS, located on the New Mexico Tech campus and operated by New Mexico Tech. PASSCAL stands for Program for Array Seismic Studies of the Continental Lithosphere, and it supports state-of-the art equipment and worldwide field research in seismology. IRIS and PASSCAL have played a key role in the ongoing development of EarthScope in collaboration with the National Science Foundation, The UNAVCO Consortium, Stanford University, the New Mexico Congressional Delegation, and other partners.

Magdalena Ridge Observatory (MRO)
A multi-instrument observatory on top of Magdalena Ridge which includes a Target-of-Opportunity 2.4m telescope and a multi-element optical interferometer array designed to produce model independent images.

Mt. Erebus Volcano Observatory
(MEVO) Conducts real-time studies of Mt. Erebus, an active volcano in Antarctica.

National Cave and Karst Research Institute
Facilitates speleological research, enhances public education, and promotes environmentally sound cave and karst management.

National Radio Astronomy Observatory (NRAO)
A facility of the National Science Foundation operated under cooperative agreement by Associated Universities, Inc. NRAO operates several national radio telescopes, including the VLA and VLBA.

Optical Surface Technologies
Located in Albuquerque is a joint venture for manufacturing high quality optics. Optical Surface Technologies, LLC is a full-service custom optical manufacturing facility that has the staff and skills to provide its customers with solutions to challenging optical needs.

Petroleum Recovery Research Center (PRRC)
Research in improved oil and gas recovery; tech-transfer assistance to industry.

Technology Transfer Support Group (TTSG)
Partners with the Air Force Research Laboratory Phillips Research Site to facilitate the transfer of technology and to provide education outreach activities.

The New Mexico Technology Research Collaborative (TRC)
To collaborate in the acceleration of new technology business formations and expansions that will benefit research programs of TRC members (UNM, NMSU, NM Tech, LANL, & Sandia) entrepreneurs, industry, investors and the State of New Mexico.

Government Research Laboratories

- Sandia National Laboratories (SNL)
- Air Force Research Laboratory (AFRL)
- Los Alamos National Laboratory (LANL)
- Other Government laboratories

Sandia National Laboratories

Sandia National Laboratories Contact Info:
www.sandia.gov

Dr. Tom Hunter
President & Lab Director

Technology Access
partnerships@sandia.gov

User Facilities
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Small Business Assistance
Vic Chavez
(505) 281-3628

Mentor-Protégé Program
Corina Gallegos
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Cristi Sala
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Training
Corina Gallegos
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Sandia is a world-renowned national security laboratory involved in a variety of research and development programs to help secure a peaceful and free world through technology.

Operated under contract by Lockheed Martin, Sandia develops technologies to sustain, modernize, and protect the US nuclear arsenal, prevent the spread of weapons of mass destruction, defend against terrorism, protect the national infrastructures, ensure stable energy and water supplies, and provide new capabilities to the armed forces.

Many technologies that find their way into modern industrial processes and materials were originally conceived by Sandia's scientists.

The primary sponsors are the Department of Energy's National Nuclear Security Administration (NNSA), the Department of Defense (DoD), and Department of Homeland Security (DHS). Sandia also works with other government agencies, industry, and academic institutions to accomplish missions in the following strategic areas:

- Nuclear Weapons
  ensuring the stockpile is safe, secure, reliable
- Nonproliferation and Assessments
  reducing the proliferation of weapons of mass destruction, the threat of nuclear accidents, and the potential for damage to the environment
- Military Technologies and Applications
  addressing new threats to national security
- Energy and Infrastructure Assurance
  enhancing the surety of energy and other critical infrastructures
- Homeland Security and Defense
  helping to protect our nation against terrorism

Sandia's Science, Technology, and Engineering program conducts a large variety of R&D programs that support the five key areas above.

The Energy and Infrastructure Assurance program supports Sandia's core purpose of helping our nation secure a peaceful and free world through technology. Sandia's goal is to enhance the surety (safety, security, and reliability) of energy and other critical infrastructures.

Strides are being made in the areas of energy research, earth sciences, transportation systems, risk management technologies, environmental stewardship, and nuclear waste

management. Sandia is also actively working to improve the nation's critical infrastructure surety. Focusing on infrastructure elements in the areas of transportation, electric power grid, oil and gas distribution, telecommunications, finance and banking, and vital human services, Sandia researches:

- Critical Resources
- Renewable Energy
- The Water Initiative

The purpose of the Renewable Energy Technologies Division at Sandia National Laboratories is to develop commercially viable energy technologies based on solar, wind, and geothermal resources that become significant domestic and international energy supplies, with a primary focus on the utility sector.

Photovoltaics

Sandia's photovoltaic programs are part of the National Center for Photovoltaics, which unites much of the photovoltaic work in the United States into a working partnership.

Concentrating Solar Power and Sun Lab

Operating as SunLab, a virtual laboratory comprising CSP groups at Sandia and NREL, Sandia's work focuses on three types of concentrating solar power systems: parabolic troughs, power towers, and dish/engine systems.

National Solar Thermal Test Facility (NSTTF)

This facility is an important resource for users and manufacturers of Concentrating Solar Power systems. Manufacturers can use the facility to test new designs, ideas, and products in an environment duplicating operating conditions.

Wind

Sandia conducts supporting research and testing in the areas of aerodynamics, structures, materials and reliability. Our main role in the U.S. DOE wind program is in the development of improved blade design and manufacturing, as well as developing and applying the analysis tools that make this progress possible.

Geothermal

Sandia's work in geothermal technology is aimed at reducing the cost and risk associated with significantly expanding the nation's utilization of geothermal energy. We search for practical solutions to challenges associated with tapping the most intense geothermal sources of heat, typically found well below the earth's surface in very harsh environments.

Solar Pools

Sandia provides support, analysis and implementation to address the energy consumption of swimming pools by aiding in the transition to solar heating of large, commercial or municipal pools.

Distributed Energy Storage

The goal of the Energy Storage Systems program is to develop advanced energy storage technologies and systems in collaboration with industry and to increase the reliability, performance and competitiveness of electric generation, transmission and use in both grid-tied and off-grid systems. The program develops advanced electric energy storage devices (batteries, flywheels, supercapacitors, etc.), power electronic converters and controls, and then integrates these into utility-scale storage systems. Both in-house and field testing are conducted in collaboration with partner utilities to evaluate performance under a variety of conditions.

Energy Storage Systems

The Energy Storage Systems (ESS) Research Program is part of the Office of Electricity Delivery and Energy Reliability at DOE. The program is managed through Sandia National Laboratories.
The goal of the ESS program is to develop advanced energy storage technologies and systems, in collaboration with industry, to increase the reliability, performance and competitiveness of electric generation, transmission and use in utility tied and off-grid systems.

Distributed Energy Technology Lab (DETL)

Distributed Energy Resources and associated technologies by controlled testing in a flexible microgrid configuration. DETL is an extension of the inverter test facility that supports the DOE Photovoltaic Program. DETL is located at SNL.

Fuel Cell

Sandia conducts extensive research on all aspects of fuel cell prototyping and development; catalyst development, testing, as well as collaborative activities with private industry and government.

See the Technology Assistance Program for additional information.

Technology Access

Sandia addresses technical issues of critical national importance. While solving the problems related to the primary mission of national security, Sandia also develops solutions that can be used in other applications needed by industry, small business, universities, and governmental agencies.

The following links provide a gateway to the many technological capabilities that Sandia has developed in varied disciplines. You may wish to search these areas to find the technologies that pertain to the problem for which you are seeking solutions.

- **Advanced Computing**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
- **Aerospace Engineering**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
- **Basic Energy Science**
  Craig Smith, (925) 294-3358, casmith@sandia.gov
  - **Bioscience & Technology**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
    Carrie Burchard, (925) 294-1213, clburch@sandia.gov
  - **ChemBio Detection**
    Laura Santos, (925) 294-1214, lesanto@sandia.gov
  - **Combustion, Chemical, & Plasma Sciences**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
    Craig Smith, (925) 294-3358, casmith@sandia.gov
  - **Cyber Security**
    Craig Smith, (925) 294-3358, casmith@sandia.gov
  - **Data Instrumentation / Telemetry**
    Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
  - **Design & Engineering Information Systems**
    Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
  - **Digital & Analog Subsystems**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
  - **Directed Energy**
    Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
  - **Electromechanical Components / Firing Sets**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
  - **Electronic Components**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
  - **Energetic Components**
    Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
  - **Energy System & Environmental Characterization**
    Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
  - **Engineering Sciences**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
  - **Environmental Remediation Systems**
    Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
  - **Gas Transfer Systems**
    Sandy Sanzero, (505) 284-2198,gsanzer@sandia.gov
  - **GeoSciences**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov
  - **Hydrogen**
    Scott Vaupen, (925) 294-2322, sbvaupe@sandia.gov
  - **Information Technology**
    Craig Smith, (925) 294-3358, casmith@sandia.gov
  - **Intelligence Technologies & Assessments**
    Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
  - **Intelligent Systems**
    Mary Monson, (505) 844-3289, mamonso@sandia.gov

- **International Cooperation**
  Gary J. Jones, (505) 844-3130,gjjones@sandia.gov
- **Laser Optical Sensing**
  Craig Smith, (925) 294-3358, casmith@sandia.gov
- **Manufacturing / Manufacturing Engineering**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
- **Materials Science & Technology**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
  Scott Vaupen, (925) 294-2322, sbvaupe@sandia.gov
- **Microelectronics / Microsystems**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
  Scott Vaupen, (925) 294-2322, sbvaupe@sandia.gov
- **Nuclear & Risk Technologies**
  Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
- **Physical Security / Surety Technologies**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
- **Process Development / Fabrication**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
- **Pulsed Power**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
- **Radars**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
- **Radiation Effects Science**
  Mary Monson, (505) 844-3289, mamonso@sandia.gov
- **Radiation Sensing**
  Jim Wilhelm, (925) 294-3673, jpwilhe@sandia.gov
- **Remote Sensing & Satellite Systems**
  Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
- **Simulation & Integration**
  Laura Santos, (925) 294-1214, lesanto@sandia.gov
- **Stockpile Surety & Analysis**
  Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
- **Stockpile Surveillance**
  Bob Blewer, (505) 844-6125, blewerr@sandia.gov
- **Systems Data Exploitation & Information Technologies**
  Steve Grieco, (505) 284-9000, segriec@sandia.gov
- **System Performance Assessment**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
- **Test Ranges / Facilities / Readiness**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov
- **Transportation Materials Management**
  Gary J. Jones, (505) 844-3130, gjjones@sandia.gov
- **Weapon Engineering / Design**
  Sandy Sanzero, (505) 284-2198, gsanzer@sandia.gov

User Facilities

Many of Sandia's unique research facilities are available for use by U.S. industry, universities, academia, other laboratories, state and local governments, and the scientific community in general. User Facilities are a unique set of scientific research capabilities and resources whose primary function is to satisfy Department of Energy (DOE) programmatic needs, while being accessible to outside users.

User Facilities consist of interrelated physical plants, equipment, instrumentation, scientific expertise, and necessary operational personnel.

- Advanced Battery Engineering Facility
- Center for Security Systems
- Combustion Research Facility
- Design, Evaluation and Test Technology Facility

- Electronic Technologies User Facility
- Engineering Sciences Experimental Facilities (ESEF)
- Explosive Components Facility
- Geomechanics Laboratory
- Intelligent Systems and Robotics Center
- Ion Beam Materials Research Laboratory
- Manufacturing Science & Technology
- Materials and Process Diagnostics Facility
- Mechanical Test and Evaluation Facility
- National Solar Thermal Test Facility (NSTTF)
- NUFAC Nuclear Facilities Resource Center
- Photovoltaic Laboratories
- Plasma Materials Test Facility
- Primary Standards Laboratory
- Pulsed Power and Systems Validation Facility
- Radiation Detector Analysis Laboratory
- Sandia's Orpheus Site
- Shock Thermodynamic Applied Research Facility (STAR)

Small Business Programs

Sandia is dedicated to strengthening our national and regional economy by helping to improve and expand opportunities for small businesses.

The technologies and expertise developed at Sandia offer many benefits to American companies. They create practical solutions to complex problems.

Check out the Small Business Programs to find out what Sandia can do for you. Most of their services are free to qualifying small businesses (with 500 employees or less).

Regional Economic Development Program

Sandia's Regional Economic Development Program promotes partnerships between Sandia National Laboratories and industry; state and local governments; federal programs; universities; technology-based organizations; and economic development organizations. They support innovation and economic development by forging partnerships that address market needs through technology advances. They strive to advance economic growth by providing:

- Advocacy and relationship development
- Access to Sandia's technical expertise (especially for small businesses)
- Product innovation and technology commercialization
- Supplier development and advocacy
- Development of entrepreneurial talent
- Professional technical assistance to solve business problems
- Technologies for infrastructure improvements

Sandia is a leader in stimulating cluster-based economic development and building high-tech communities. They work in the following regional partnerships to help grow the "Innovation Economy":

- Sandia's Science and Technology Park — This 217-acre technology center sits adjacent to Sandia Labs and provides tenant companies with easy access to world-class facilities, technologies, scientists, and engineers
- Technology Ventures Corporation — Technology Ventures Corporation acts as a bridge between technology and investment, providing services to assist client companies obtain investor interest and funding

Sandia's technology solutions can be applied to safety and security, energy, transportation, telecommunications, water, and other infrastructure systems. They understand that technology must improve the bottom line, so their "systems" approach also examines how solving a problem will impact a company's profits.

Small Business Assistance Program

Sandia's New Mexico Small Business Assistance Program (NMSBAP) provides New Mexico small businesses (fewer than 500 employees, click here to see definition) with assistance **to help resolve specific technical and business problems**. Technical assistance is provided by Sandia staff and staff from other partnerships that have been established.

- Assistance helps New Mexico small businesses resolve short-term problems or issues.
- Sandia's assistance is rendered at no cost to the small business.
- For businesses in Bernalillo County, Sandia's services are capped at **$10,000**.
- For businesses outside Bernalillo County, Sandia's services are capped at **$20,000** (to enhance rural economic development).
- Your business must be a "for profit" Small Business.
- You must certify that you are a New Mexico business.
- You must certify that the assistance requested is not available at reasonable cost through private sources.

To request assistance through the NMSBAP, please download and complete a NMSBA application form. All other questions or comments: sbpadmin@sandia.gov, (800) 765-1678

Mentor Protégé Program

Sandia's Mentor Protégé Program is designed to help small businesses strengthen their business practices.

They accomplish this by matching volunteer Mentors (Sandia technical or management personnel, large suppliers, small suppliers, and Business Service Providers) with Protégés (regional small businesses) to create advisory relationships that focus on helping the Protégé achieve established business development goals.

Protégés will work with a Mentor assigned by the Mentor Protégé Program. Participants may choose to participate in either one-year or two-year advisory relationships.

Mentor application form (12K PDF or 31K Word doc)

Protégé application form (16K PDF or 36K Word doc)

Business Service Advisor application (12K PDF or 36K Word doc)

Mentor Protégé Team agreement form (6K PDF or 24K Word doc)

Business Service Advisor agreement form (8K PDF or 28K Word doc)

Mentor Protégé Reporting form

Training

Sandia's Office of Small Business Advocacy presents a series of innovative training opportunities designed to help your small business become more competitive in the burgeoning technical marketplace.

The Center for Commercialization and Entrepreneurial Training (CCET) offers a series of free monthly seminars for aspiring entrepreneurs to acquire information on starting and growing successful technology companies. CCET is the education and training arm of Technology Ventures Corporation in partnership with the National Nuclear Security Administration.

The CCET class outlines the application process for SBIR grants. The SBIR grant is a competitive process for small businesses creating new technology and products that meet the needs of various federal agencies.

In partnership with the New Mexico Manufacturing Extension Partnership, Lean 101 is available only to New Mexico small businesses. This day-long interactive, experiential workshop provides an opportunity for participants to observe the power of the principles of Lean manufacturing in improving their own shop-floor operations. The workshop helps companies develop a common understanding of how these principles can be deployed across a variety of workplace situations.

New Mexico 9000 is a year-long, classroom style instruction program that provides coursework, consulting services, and ISO certified lead auditors to work with participating individuals in the implementation of an ISO 9001:2000 (see definition here) quality management system in their companies. Through this program, New Mexico small businesses receive technical assistance to achieve ISO 9001:2000 compliance/certification at a very affordable cost.

Contacts

More information about training opportunities for your small business: Corina Gallegos (cegalle@sandia.gov), (505) 284-9012 or (800) 765-1678

Ways to Partner with Sandia

There are many ways to partner with Sandia. Please click on one of the areas below for more information.

- Industry
- Federal Agencies
- State & Local Governments
- International
- Licensing

Air Force Research Laboratory

AFRL Contact Info:
www.afrl.af.mil

Colonel Robert S. Green
Director
Space Vehicles Directorate
Space Vehicles Public Affairs
(505) 846-4321

Susan J. Thornton
Director
Directed Energy Directorate
(505) 846-1911

Air Force Research Lab
Public Affairs
3550 Aberdeen Avenue S.E.,
Kirtland AFB, NM
87117-5776

The mission of the Air Force Research Laboratory (AFRL) is to discover, develop, integrate and deliver affordable technologies for improved warfighting capabilities. Formed in October 1997 as the product of an organizational consolidation that integrated previously separate Air Force laboratories (Armstrong, Phillips, Rome and Wright-Patterson) with the Air Force Office of Scientific Research, AFRL consists of 10 directorates, situated across the country.

The Air Force Research Laboratory has two of its ten directorates at Kirtland Air Force Base in Albuquerque: **Space Vehicles** and **Directed Energy** (laser technology). The latter is the Air Force center of expertise for lasers, high-energy microwaves, and other directed energy technologies.

Space Vehicles Directorate

The Space Vehicles Directorate serves as the Air Force's "Center of Excellence" for space research and development.

The Space Vehicles Directorate is located at Kirtland Air Force Base, at the site of the former Phillips Laboratory. In addition, the organization operates a division at Hanscom Air Force Base, MA.

The Space Vehicles Directorate utilizes the assets and personnel of the former Phillips' Space Technology, Space Experiments, and Geophysics Directorates, as well as part of Phillips' Lasers and Imaging Directorate now called the Directed Energy Directorate, also located at Kirtland Air Force Base. The Space Vehicles Directorate is comprised of a talented and dedicated team of nearly 1,000 military, federal, and contract employees, and has an annual budget of approximately $378 million.

The Air Force Research Laboratory's Space Vehicles Directorate (AFRL/VS) emphasizes technology transfer - the sharing or transferring of information, data, hardware, personnel, services, facilities or other scientific resources for the benefit of the private or public sector.

AFRL/VS's mission is to develop and transition high pay-off space technologies supporting the warfighter while leveraging commercial, civil and other governmental capabilities to ensure America's advantage. Primary mission thrusts include Space-Based Surveillance (space to space and space to ground) and Space Capability Protection (protecting space assets from man-made and natural effects). Many of AFRL's Space Vehicles Technology developments are by their very nature applicable to both the military and the commercial world - they are "Dual Use."

The Directorate uses three primary types of agreements as tools to collaborate and transfer directorate technology. The first is Cooperative Research and Development Agreements (CRADA) with industry, academic, and state/local government agencies. The second is Education Partnership Agreements (EPA) with educational/academic organizations/institutions. The third is Patent License Agreements with private industry. There are many other ways to accomplish the transfer of technology and the directorate uses a variety of technology transfer mechanisms.

Directed Energy Directorate

Ms. Susan J. Thornton is the director of the Directed Energy Directorate. The Air Force Research Laboratory's Directed Energy Directorate develops high-energy lasers, high-power microwaves, and other directed energy technologies for the United States Air Force and the Department of Defense. The Directorate is also involved with advanced optics and imaging technologies to improve the nation's ability to precisely project these directed energies at the speed of light anywhere, at any time and with graduated intensity.
The Directed Energy Directorate employs more than 800 people (including in-house contractors) and operates with an annual budget of more than $300 million.

Phillips Institute / Kirtland Technology Park

The Phillips Institute is a government/industry/academia consortium that will be the nation's premier resource for development, analysis, integration, transition, and transfer of advanced space and directed energy technologies. It will operate in close coordination with the Air Force Research Laboratory (AFRL) directorates located at Kirtland Air Force Base. The Phillips Technology Institute will be more than just a "virtual" consortium of member organizations. AFRL and the Kirtland Air Force Base leadership have established the Kirtland Technology Park to enable consortium members and other interested parties to lease land and construct facilities immediately adjacent to the existing AFRL campus. The Kirtland Technology Park is planned to be a 300 acre development located on base property along Gibson Boulevard, one mile east of the Albuquerque International Airport. The Park will be developed through use of Enhanced Leasing authority. For more information contact pti@kirtland.af.mil.

Los Alamos National Laboratory

LANL
Contact Info:
www.lanl.gov

Michael Anastasio
Director

Technology Partnerships and Licensing

Technology Transfer
(505) 665-9090

Small Business Program
(505) 667-4419

Ombuds Office
(505) 665-2837

Los Alamos Research Park

Los Alamos National Laboratory (LANL) a US Department of Energy laboratory, operated by Los Alamos National Security, LLC, located in Los Alamos, NM, about 80 miles northwest of Albuquerque. A unique partnership — Bechtel National, University of California, BWX Technologies, and Washington Group International—is the new management and operating (M&O) contractor. LANL is one of the largest institutions of its kind, employing over 12,000 personnel and an additional 3,000 contractors. Almost one third of staff are physicists, a quarter engineers, the remaineder distributed across materials science, mathematics, computational and biological sciences. It posesses strong capabilities and unique facilities in the areas of advanced computing, modeling and simulation, information management, advanced materials, sensor technologies, biosciences, energy, and geophysical end environmental sciences.

LANL's principal effort areas are National Security and Strategic Science. The centers contained under Strategic Sciences include:

- Space Science & Exploration
- Nonlinear Studies
- Institute of Geophysics and Planetary Physics
- Quantum Institute

The Los Alamos Research Park is a 44 acre development directly adjacent to the main technical area of the world-renowed Los Alamos National Laboratory. The research park houses a collection of 20 technology businesses, institutes, and LANL research activities and provides a place for housing collaborative efforts among corporate, academic, institutional, and laboratory researchers and technical experts.

Other Government Laboratories

- Albuquerque Seismological Laboratory: Located on Kirtland Air Force Base and operated by the U.S. Geological Survey, the lab operates a New Mexico observatory; collects, processes and distributes data from the global network stations; and develops, tests and evaluates seismographic instrumentation. Locate with the USGS.
- Center for Advanced Studies: State-funded center for excellence housed within the Department of Physics and Astronomy at the University of New Mexico. Research focus is on tiny scales, intense fields, and complex systems. Located at the University of New Mexico.
- Center for Global Environmental Technologies: Develops new technologies and engineering approaches to solve problems related to stratospheric ozone depletion and global warming.
- Center for High Technology Materials: One of New Mexico's Centers of Technical Excellence, CHTM is renowned for its work in semiconductor and thin-film materials growth; high resolution fabrication, optoelectronic device design and fabrication; laser spectroscopy and laser processing of materials; semiconductor manufacturing metrology; and thin-film technologies. Located at the University Science & Technology Park (STP)
- Center for Micro-Engineered Materials: Hosts the National Science Foundation's Ceramic and Composite Materials Center. Research objectives are to understand and use molecular and near-molecular processes to synthesize improved ceramic materials with controlled composite structures at nano- to micro-length scales. Located at the University's Science & Technology Park (STP)
- Earth Data Analysis Center: Provides services in geospatial data technologies. Located at the University of New Mexico.
- High Performance Computing Education and Research Center: Provides supercomputing for government agencies, UNM, other academic institutions and industry.
- New Mexico Engineering Research Institute: The gateway to UNM's technology and intellectual assets, NMERI conducts innovative research, education, and economic development for federal, state and regional organizations, industry and foundations. NMERI has operated continuously since 1961 as the contract research arm of the University of New Mexico's School of Engineering. It has achieved national and international recognition in such fields as:
    - community and business development
    - sustainable development
    - environmental engineering and finance
    - engineering and prototype development
    - modeling and analysis
    - threat reduction and critical infrastructure protection
    - space power and propulsion
    - unconventional energy resources
    - information technology
    - technical communication
    - professional development and training

  Located at the University's Science & Technology Park (STP).

Private Research Facilities

- Lovelace Respiratory Research Institute (LRRI)
- MIND Institute
- National Center for Genome Resources
- The Santa Fe Institute
- Other notable facilities and institutions

Lovelace Respiratory Research Institute (LRRI)

LRRI
Contact Info:
www.lrri.org

Dr Robert Rubin
President & CEO

General Information
info@lrri.org
(505) 348-9400

2425 Ridgecrest Dr. SE
Albuquerque, NM
87108-5127

Affiliated Entities:
Lovelace Scientific Resources

National Environmental Respiratory Center

Founded in 1947, the Lovelace Respiratory Research Institute is a private biomedical research institute dedicated to the reduction of the nation's substantial respiratory health burden. With a budget of $38 million, over 70 PhD level scientists, 330 technicians and support staff and 450,000 square feet of facilities, Lovelace is a premier respiratory research facility with extensive capabilities in a number of research areas: Asthma, emphysema, lung cancer, inhalation toxicology, aerosol inhalation drug delivery, bronchitis, and allergies.

The Institute brings a broad range of research capabilities and research alliances to bear on respiratory health issues of concern to government, industry, universities, health advocacy organizations, and the public. They are committed to the cure of respiratory diseases through research aimed at understanding their causes and biological mechanisms, eliminating exposures to causal agents, and developing improved treatments.

MIND Institute

MIND Institute
Contact Info:
www.themindinstitute.org

John Rasure
CEO

1101 Yale Boulevard, N.E.
Albuquerque, NM 87106
(505) 272-5028

The MIND Institute is a non-profit partnership committed to expanding neuroscience research by discovering new ways to understand human behavior, as well as to treat and cure brain disease and mental illness. Based in Albuquerque, New Mexico, MIND scientists collaborate with colleagues at nationally renowned partnering sites. Led by many of the country's leading neuroscientists, this partnership combines more than 400 researchers and staff with an annual budget of $50 million to unlock the brain's remaining secrets.

Brain research at The MIND Institute is unique. Not only do their scientists examine the brain by using all the cutting-edge imaging tools currently available, but they then combine and layer this overlapping information to produce the most complete mapping of brain activity to date. This multi-technological approach is helping to chart the networks and connections among brain regions and activities, so they can more fully understand brain functions and disorders. Their basic research today will lead to future cures or treatments for the millions currently afflicted with schizophrenia, multiple sclerosis, Alzheimer's and dementia, cerebral palsy, traumatic brain injury, and drug addiction, among others.

National Center for Genome Resources

NCGR
Contact Info:
www.themindinstitute.org

John Rasure
CEO

1101 Yale Boulevard, N.E.
Albuquerque, NM 87106
(505) 272-5028

The National Center for Genome Resources (NCGR) in Santa Fe, New Mexico, is a non-profit research institution dedicated to improving human health and nutrition through collaborative research at the intersection of Bioscience, computing and mathematics. Their vision is to pioneer the use of software and computation to improve treatment of diseases and nutrition.

NCGR studies the influence of genetic variability of both host and pathogen on infectious disease progression and its subsequent impact on human health. NCGR has evolving programs in Infectious Disease, Legume Crop Improvement, Food Security, Clinical Decision Support Systems, and Personalized Medicine.

The Santa Fe Institute

The Santa Fe Institute
Contact Info:
www.santafe.edu

Geoffrey West
President & Distinguished Professor

Pierre Omidyar
Co-Founder & CEO

email@santafe.edu
1399 Hyde Park Road
Santa Fe, NM 87501
505-984-8800

The Santa Fe Institute is a private, independent organization whose research seeks to understand complex systems through an interdisciplinary approach. The Institute attracts internationally-known scholars, including Nobel Laureates, to Santa Fe for its workshops and research programs.

The Santa Fe Institute is devoted to creating a new kind of scientific research community, one emphasizing multidisciplinary collaboration in pursuit of understanding the common themes that arise in natural, artificial, and social systems. This unique scientific enterprise attempts to uncover the mechanisms that underlie the deep simplicity present in our complex world.

Other Facilities & Institutions

Biomedical Research Institute of New Mexico (BRINM) is full service institution that exists to support Veterans Administration research programs to promote advances in medical diagnosis and treatment through research. With a growing number of active research investigators, projects and staff, BRINM employs more than 76 full time and part time individuals and administers more than $5 million annually in funding.

Biomedical Research Institute of New Mexico
1501 San Pedro SE (151) - Bldg 14
Albuquerque, NM 87108
Donna Wilt
Executive Director
(505) 260-1033

Behavioral Health Research Center of the Southwest (BHRCS) was established in 1997 to conduct research on substance abuse and other behavioral health issues. A major research focus is the impact of cultural factors on substance use and abuse.
Behavioral Health Research Center of the Southwest
612 Encino Place NE
Albuquerque, New Mexico 87102
(505) 244-3099

User Facilities & Technology Parks

- Center for Integrated Nanotechnology (CINT)
- Sandia Science & Tech Park
- Science & Technology Park@UNM
- Phillips Technology Institute & Kirtland Technology Park

Center for Integrated Nanotechnologies (CINT)

CINT
Contact Info:
cint.lanl.gov

Julia Phillips
CINT Director
Sandia National Laboratories
PO Box 5800
Albuquerque, NM
87185-1427
(505) 844-1071

Toni Taylor
CINT Associate Director
Los Alamos National Laboratory
PO Box 1663, MS K771
Los Alamos, NM 87545
(505) 667-9243

CINT Capabilities

Dedicated Facilities

The Center for Integrated Nanotechnologies (CINT) is a Department of Energy/Office of Science Nanoscale Science Research Center (NSRC) operating as a national user facility devoted to establishing the scientific principles that govern the design, performance, and integration of nanoscale materials.

CINT is one of five NSRCs throughout the U.S. that form an integrated national program, affiliated with major facilities at the DOE's National Laboratories, to cover the diverse aspects of nanoscience and technology. This complex aspires to become a cornerstone of the nation's nanotechnology revolution, contributing to DOE's principal missions in national defense, energy, and the environment while providing an invaluable resource for universities and industries.

Through its core facility in Albuquerque with gateways to both Los Alamos and Sandia National Laboratories, CINT provides open access to tools and expertise needed to explore the continuum from scientific discovery to the integration of nanostructures into the micro- and macro world.

Sandia Science & Technology Park

Sandia Science & Tech Park
Contact Info:
www.sstp.org

Jackie Kerby Moore
Executive Director
(505) 845-8107

Jim Clinch
Program Leader
(505) 844-1017

Park Map

The Sandia Science & Tech Park is a 200+ acre technology community in located adjacent to Sandia National Laboratories in Albuquerque. Tenants have access to Sandia's world-class technologies, state-of-the-art facilities, and internationally recognized scientists and engineers. The Park is a pedestrian-oriented, campus-style development with redundant electrical power and a cutting edge fiber optic infrastructure. All property is zoned industrial, and companies can benefit from an accelerated City of Albuquerque approval process for construction. A credit union and daycare center are available as amenities for companies. The Park is managed by full-time, customer-focused staff. Visit here, for a complete list of tenants.

Science & Technology Park @ UNM

STP@UNM Contact Info:
stp.unm.edu

Connie Vance
Property Manager

851 University Blvd., SE
Suite 202
Albuquerque, NM 87106
(505) 272-7916

The Science & Technology Park @ UNM is owned and managed by the University of New Mexico. The Park is comprised of 163 acres, 41 of which were developed in Phase 1. Phase 2 has commenced with the development of an additional 42 acres, while future phases will encompass approximately 80 acres.

The Park's 360,000 square feet of existing research and development space currently houses a number of start-up companies, several of which are the creation of the Science @ Technology Corporation (STC), as well as the University's training and community clean room, the Manufacturing Training and Technologies Center, which features a six inch process tool line for start-up companies to utilize for prototyping and development, in addition to the Universities teaching mission. For more information about the MTTC please visit the MTTC. For more information about the Science & Technology Park at UNM please visit: STP.

Phillips Technology Institute @ Kirtland Technology Park

Phillips Institute at KFB Contact Info:

pti@kirtland.af.mil

The Phillips Institute is government/ industry/ academia consortium that will be the nation's premier resource for development, analysis, integration, transition, and transfer of advanced space and directed energy technologies. It will operate in close coordination with the Air Force Research Laboratory (AFRL) directorates located at Kirtland Air Force Base. The Phillips Technology Institute will be more than just a "virtual" consortium of member organizations. AFRL and the Kirtland Air Force Base leadership have established the Kirtland Technology Park to enable consortium members and other interested parties to lease land and construct facilities immediately adjacent to the existing AFRL campus. The Kirtland Technology Park is planned to be a 300 acre development located on base property along Gibson Boulevard, one mile east of the Albuquerque International Airport. The Park will be developed through use of Enhanced Leasing authority.

Section 3: Cluster Overview

- Summary & Origins
- Aerospace & Aviation
- Alternative Energy
- Bioscience
- Digital / Multimedia
- Electronic Assembly & Semiconductors
- Government Services
- Info Technology & Software Development
- Microsystems & Nanotechnology
- Optics and Photonics
- General Manufacturing
- Consolidated List

The concept of "industry clusters" in Central New Mexico has evolved through several benchmarking studies of the regional economy. Traditionally, industry clusters are defined by a geographical concentration of either vertically-integrated, such as supplier and buyer relationships or horizontally-integrated clusters, where a particular industry may share a common market for the end product, use a similar technology or process, utilize a nearby natural resource or share in a particular talent pool of localized labor. In Central New Mexico, there are a number of companies that can be grouped by the particular scientific application they utilize, into an industry cluster. For instance, there are a variety of photonics firms in the region that construct a product based on the science of transmission of electromagnetic energy, or upon the properties of transmitted light. Examples are VCSELs, small lasers utilized in fiber-optics telecommunications and solar cells that convert photons to electric energy.

In Central New Mexico, clusters seldom share a particular market or supplier or natural resource, but more commonly share a common scientific basis for a technology, as well as the educated pool of talent that is skilled in developing these applications.

The many and varied research programs previously mentioned in this document highlight the highly scientific orientation of the Central New Mexico clusters. For instance, regional competencies in information technology, such as high performance computing, have accelerated advancements within computationally intensive fields of biology, such as informatics, proteomics and genomics.

In brief, most of the technology industry clusters represented within Central New Mexico are concentrated in science-based disciplines of the laboratory and educational infrastructure. There are some that have been created independent of the institutional core-competencies of the region, as well as those that came about because of it and the large Federal presence, however, the composition of the region's industrial activities is a direct reflection of our scientific infrastructure.

Clusters in Central New Mexico:

- Aerospace & Aviation
- Alternative Energy
- Bioscience
- Digital / Multimedia
- Electronics & Semiconductors
- Government Services
- Information Technology & Software Development
- Microsystems & Nanotechnology
- Optics & Photonics
- General Manufacturing

Industry Clusters

Aerospace and Aviation is an evolving cluster. Originally, activities within the cluster were confined, principally, to avionics, lighting systems, engine components manufacture, and government aerospace contractors, however, the advent of Eclipse Aviation's arrival to New Mexico has changed this landscape, as the arrival of new companies have created a true aviation cluster, with several companies locating their activities in the region, creating need for training programs and supplier links.

Alternative Energy and Environmental Engineering is making a resurgent comeback, after years of neglect and the disappearance of government incentive programs. Albuquerque is at the forefront of this energy revolution, with companies like **Advent Solar**, **Affordable Solar**, **Altela**, and **MIOX**. There are a number of companies engaged in R&D, as well as product development of promising energy technologies, and methods for improving energy efficiency and mitigating the environmental impact of polluting activities.

Bioscience is a billion-dollar a year activity in New Mexico, with extensive research and development occurring within both institutions and small companies alike. The range of activities is expansive, covering computationally-intensive activities such as genomics and proteomics, as well as other forms of disease research, medical device development, and instrument and medical supply manufacture. A large proportion of medical device firms key-off of the optics and image analysis strengths resident in New Mexico, developing products that are measure or quantify based off optical properties. Key examples are **Lumidigm** (biometrics), **VeraLight** (non-invasive glucose measurement), **TruTouch** (non-invasive alcohol measurement), **Sage Sciences** (high through-put flow cytometry) and other companies with innovative forms of spectroscopy and optical measurement.

Digital and Multimedia activities originated from two very different activities: the National Laboratory system historically been engaged in computationally intensive forms of visualization and modeling; additionally New Mexico, with its scenic vistas and diverse geography has been home to movie making for many years. The convergence of these two disciplines has catalyzed new activities within digital media creation. An infusion of capital and targeted incentives has accelerated this growth, creating interest in the region. Without utilizing local incentives, **Albuquerque Studios** has built 6 of the largest purpose-built sound stages in North America in the Mesa del Sol development, immediately south of the Albuquerque Sunport; **Sony Pictures Imageworks** announced in May of 2007 that it would open an office at the facility, in conjunction with dozens of other services providers.

Electronics & Semiconductor manufacturing have a long history in Albuquerque; in addition to manufacturing research, Central New Mexico became home to a number of fabrication sites, with **Intel's** Rio Rancho facility as one of the largest in the world. Other manufacturers, such as **Xilinx** maintain facilities, as well, as do a host of service providers to the local industry.

Government Services is a diverse concentration of service providers that focus upon the Federal government as a key customer and have core competencies in negotiating the processes involved with Federal contracting. Companies offer services ranging from architectural design and construction, to computer information systems, engineering and other forms of technological service provision.

Information Technology and Software Development is a key component and underpinning skill within the region. Much of the activities, historically, within the National Laboratory structure required knowledge of computationally intensive forms of programming and science, which concentrated skills in the region. The result has been the widespread germination of activities within computationally-focused branches of biology, physics, chemistry and financial services.

Microsystems and Nanotechnology are nascent, evolving industries and Central New Mexico has strong capabilities within both. The infrastructure present within the National Laboratory facilities, as well as the University of New Mexico and Central New Mexico Community College provide extensive resources and technical training for the resident companies. New Mexico is consistently recognized as a leading state for activities in "small tech".

Optics and Photonics activities in the region are a direct result of government research, in the past, on projected light. The modern evolution of the industry is commercially focused, with an emphasis on observed optic phenomenon, particularly photonic-based detection systems.

Manufacturing, as in much of the West, represents a smaller segment of over-all employment than in other parts of the country. The manufacturing activities present in the region, tend to be focused on light, high value-added products, such as semiconductors or other microelectronics, with a few exceptions. The advent of aviation manufacturing with **Eclipse Aviation** and American **Utilicraft**, as well as next-generation automotive, with **Tesla Motors'** electric sedan has radically changed the nature of what manufacturing jobs look like in the region.

Aerospace and Aviation

Albuquerque has a mature aerospace industry and a growing new aviation cluster. The aerospace segment includes more than 100 companies with roots in the earliest operations of Kirtland Air Force Base and the nation's space program. They continue to serve both Kirtland in Albuquerque and White Sands Missile Range in southern New Mexico. Aviation manufacturing has grown recently with the addition of **Eclipse Aviation** to long-present **GE Aircraft** and **DeVore Aviation.**

The biggest players are:

- **Eclipse Aviation**, which recently announced that they hired their thousandth employee;
- **Honeywell Inc. Defense Avionics Systems**, which develops and manufactures cockpit avionics and control systems for military aircraft and vehicles;
- **Boeing**, which in 2000 acquired SVS Inc., a local optics company, and has expanded the operation significantly;
- **Goodrich Corp. Space Flight Systems Division**, which manufactures systems and components for space launch vehicles and satellites;
- **GE Aircraft Engines**, which began operations here in 1967 and produces components for commercial and military aircraft engines.

Aviation Technology Manufacturing Center

Eclipse Aviation in 2000 chose Albuquerque for its headquarters and manufacturing plant for production of a six-seat commercial jet, and in late 2006 delivered its first jet.

Economic development incentives were one attraction, but flying weather was an important factor. "We wanted to pick a site that would be attractive to our customers," said **Vern Raburn**, CEO of Eclipse. "People from all over will come here."

American Utilicraft will build an air cargo feeder aircraft.

An aviation manufacturing center is taking shape at the City of Albuquerque's **Double Eagle II Airport**, a general aviation facility on the city's West Side. Recently, having added a control tower and road extensions to the airport, DEII is preparing to handle the anticipated ramp-up of Eclipse's manufacturing operation, which will be situated in the center of the facility.

Eclipse Aviation chose Albuquerque for its headquarters and manufacturing plant for production of an innovative, very light jet.

The company has honed the design of its twin-engine, six-seat commercial jet, at the same time building its company in Albuquerque.

To keep the price low (about $1.5 million), Eclipse has developed production techniques that are novel in the aviation industry and has outsourced certain assemblies, such as tails and wings. And CEO Vern Raburn expects to revolutionize the travel industry.

The company plans to build aircraft at **Aerospace Technology Park**, a manufacturing center emerging at the City's **Double Eagle II Airport**. Currently it operates at Albuquerque International Sunport. The company employed 850 in late 2006 and expects to employ up to 2,000.

"The city has been absolutely exemplary in their support of us," said CEO **Vern Raburn**.

Workforce Training

Central New Mexico Community College plans to provide a training facility on-site at DEII. Additionally CNM, with industry input, has added a new series of associate degrees in aerospace technology. For information see: www.cnm.edu

Aerospace Assets

The **Air Force Research Laboratory** has two of its ten directorates at Kirtland Air Force Base in Albuquerque: Space Vehicles and Directed Energy (laser technology). See www.vs.afrl.af.mil and www.de.afrl.af.mil.

Kirtland Air Force Base in Albuquerque is one of the largest installations in the Air Force Materiel Command, with some 25,500 workers and 200 organizations, including Air Force Operational Test and Evaluation Center, Air Force Safety Center, the DOE and Sandia National Laboratories. See www.kirtland.af.mil

Sandia National Laboratories has a long history of involvement in space sciences and the military space program. It's been a leader in developing new materials, sensors and technologies. See www.sandia.gov.

The **University of New Mexico**'s research and activities parallel New Mexico's long involvement in aerospace. The NASA-funded Center for Intelligent Systems Engineering Studies includes cooperative satellite arrays, cooperative robotics, and diagnostics of turbulent flow. See ise.unm.edu

Contacts:

Professional Aerospace Contractors Association of New Mexico Inc.: www.pacanm.org
Southwest Space Task Force: www.spacenewmexico-taskforce.org.
Albuquerque Economic Development: www.abq.org

Aviation & Aerospace

Company	Product/Business
ACME Worldwide Enterprises, Inc.	Engineering services, aviation and ordinance simulators
AEGIS Technologies Group, Inc.	Engineering Services, modeling / simulation software
Applied Research Associates	R&D, Engineering for national defense, homeland security and commercial customers
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
ARES Corp. (Applied Research & Sciences)	Engineering, Risk Management, Software/IT Project Management
Aspen Avionics	Hazard awareness instruments for General Aviation market
Ball Aerospace	Imaging, communications, information solutions
Boeing-SVS, Inc	Energy Pointing & Tracking systems
Composite Tooling Corporation	Engineering services, mfg aircraft parts/equipment, optical lenses
DeVore Aviation	General Aviation Tail Lighting systems
Eclipse Aviation Corporation Inc	Aircraft manufacture of a Very Light Jet
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Fiore Industries, Inc.	Information Technology, Directed Energy, Instrumentation & data acquisition

Aviation & Aerospace (continued)

Company	Product/Business
GE Fanuc Embedded Systems	Formerly SBS; embedded systems for avionics, single board computers, and other mil-spec I/O products
General Technology Corporation	Electronic manufacturing services
Great River Technology Inc.	Computer & electronic consulting
Honeywell Technology Solutions	Systems engineering, operations & maintenance,
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Jaycor - Applied Technologies Division	Space protection, High power microwaves
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Ktech Corp	Pulsed power research, facilities O&M, engineering R&D, materials, robotic and automated systems integration, electromechanical systems design
La Luz Technologies, Inc.	Proprietary, self-referencing Doppler laser to accurately and affordably measure and report wind speed and direction along the last 2,000 feet of an aircraft's final approach
Management Sciences Inc.	Embedded sensing and reasoning R&D
Mission Research Corporation	Electronic warfare. Modeling & analysis. Directed energy concept dev.
Northrop Grumman Information Technology	High energy lasers design & operation. Large optics design & analysis. Acquisition, pointing & tracking systems, DE simulations, Optical system design
Optomec Advanced Applications Laboratory	Electronics, Biomedical, and Aerospace & Defense
Orion International Technologies	Engineering and information systems services, Nuclear weapons safety
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
Sagebrush Technology, Inc	Designs & mfg precision motion control systems/ components
Sandia Aerospace	Manufacturer of avionics systems and related component
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.
TMC Design	Antenna design and engineering services
URS Corporation	Engineering services
Utilicraft Aerospace Industries, Inc.	Next-generation freight feeder aircraft manufacturer
Vertical Power	Experimental and sport aircraft wiring and electronics automation control hub

Alternative Energy

Renewable energy technologies in New Mexico span a diverse set of technical competencies. New Mexico has a longstanding history in the development of photovoltaics by virtue of the amount of available sunshine and technical knowledge resident in the national laboratories. These competencies are augmented by additional research of hydrogen, geothermal, wind, biomass, solar thermal and others. Because of local technical acumen in large-scale semiconductor manufacturing, as well as R&D gains in design efficiency of photovoltaics, New Mexico is poised to radically exploit the market for next generation photovoltaics that can compete on a cost basis with traditional finite energy materials.

Albuquerque has a long history in alternative energy. It includes pioneering solar research at **Sandia National Laboratories**, home builders who for decades have incorporated active and passive solar features, and some of the oldest alternative energy companies in the nation.

Alternative energy firms include: **Zomeworks**, a leading developer and manufacturer of passive energy products since 1969; **Emcore**, which produces solar cells and fiber-optic products; **UniRac**, which makes mounting systems for solar panels; and **MesoFuel**, which makes devices that provide hydrogen for hydrogen fuel cells. (MesoFuel was acquired in 2004 by Intelligent Energy but remains in Albuquerque.)

Most recently **Advent Solar**, a maker of advanced solar cells, built its international headquarters and principal manufacturing plant at Mesa del Sol.

In 2006 the state Legislature passed a 30 percent tax credit on solar system installation costs for qualified solar thermal and photovoltaic systems, up to a maximum of $9,000.

Sandia National Laboratories in 1973 began investigating solar and wind technology, photovoltaics, enhanced fossil fuels recovery, and fusion. Sandia operates the **National Solar Thermal Test Facility**, which provides engineering data for the design, construction, and operation of components and systems in proposed solar thermal electrical plants.
The facility is available for all users. The lab's photovoltaic program collaborates with the industry and other government agencies to increase use of photovoltaic power systems. Sandia also conducts applied wind energy research

Rusty Schmit successfully partnered with former Sandia scientist **James Gee** to comercialize lab technology and start **Advent Solar** in 2002.
The company, which makes advanced photovoltaic cells, will be in production in 2007 at a new plant in **Mesa del Sol**.

"U.S. Senators Bingaman and Domenici as well as Rep. Wilson have been very helpful. Governor Richardson's leadership in solar has been valuable," Schmit said. He also credited Mayor Martin Chavez and the City of Albuquerque's Economic Development Department for support of both his company and Mesa del Sol.

Advent makes a photovoltaic cell that marries new materials and designs to old. James spent years at Sandia improving the efficiency of solar cells, in the process becoming a world leader in the field.

"New Mexico is a very good state for manufacturing in terms of cost structure, and it has a good quality of life," he says. "One of the attributes of New Mexico is the various incentives, including the high-wage jobs tax credit and the Job Training Incentive Program.

"One of the reasons I'm in New Mexico is I think New Mexico should be a leader in cleaner forms of energy. As Gov. Richardson and Sen. Bingaman have often said, we have all the ingredients to be a leader, and we hope to be a part of that."

to improve wind turbine performance and reduce costs. Contact Cheryl Ghanbari, 505-845-3426 or cghanba@sandia.gov.

Contacts:
New Mexico Biomass Clearinghouse: www.emnrd.state.nm.us
New Mexico Solar Energy Association: www.nmsea.org
New Mexico Wind Power Program: www.emnrd.state.nm.us
Email the New Mexico Wind Working Group: mmcdiarmid@state.nm.us

Alternative Energy / Energy Technologies / Environmental Engineering

Company	Product / Business
AAA Solar	Photovoltaic systems distributor
Adherent Technologies, Inc.	Physical research, materials, recycling
Advec Corporation-ADVEC Power Systems, Inc.	Compact nuclear reactors for commercial power generation and for space applications
Advent Solar	Photovoltaic cll manufacturer
Affordable Solar	Nat'l renewable energy online retailer
Altela	Proprietary produced water clean-up technology for oil and natural gas industry
Amec Earth and Environmental	Engineering services
Apogen Technologies	Enterprise Architecture, Software Development & Systems Integration, Energy & Environmental Engineering, Program Management and Spectral Imaging Technology
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
Array Technologies, Inc. / WattSun	Sun-tracking systems for photovoltaic arrays
Avistar, Inc (Affiliate of PNM)	Energy technology
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
CryoPower Associates Inc.	Chalcogenide superconductors
Daniel B. Stephens & Associates, Inc	Business consulting services geosciences consulting services-misc
Dankoff Solar Products, Inc.(acquired by Arise Tech)	Manufactures and distributes solar water pumps, and distributes solar electric power components
Direct Power & Water Corp	Solar support structures and accessories, sys integrator
Eco Sensors, Inc.,	Mfg air quality monitoring instruments
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Fuel Cell Technologies Inc	Nonphysical research
GeoGas Development Corp	Natural gas to diesel/gasoline conversion
InfraSur, LLC	Engineering and technical services for environmental assessment, characterization, and remediation

Alternative Energy/ Energy Technologies/ Environmental Engineering (continued)

Company	Product/Business
Intelligent Energy, UK	On-demand hydrogen generation systems for fuel cells (formerly MesoFuel)
Jackson & Tull	Space qualified manufacturing, space systems engineering services
JSA Photonics, Inc.	Embedded sensors to monitor performance of lead acid batteries.
Kleinfelder Inc.	Professional services firm in natural and built environments
L&M Technologies	Facilities management, information technology, microelectronics R&D
Lasen Inc.	Airborne laser sensors to detect natural gas pipeline leaks
Matrix Solar Technologies, Inc.	Photovoltaic cell manufacturing
MIOX Corp.	Ultraviolet light water purification systems
Providence Technologies, Inc.	Oil & gas exploration
Quasar International, Inc.	Performance-based non-destructive testing
Qynergy Corporation	Radio isotope energy conversion into long-life, low-voltage power sources
Radiant Technologies, Inc.	Integrated ferroelectric circuits
Sacred Power Corp	Solar Energy project developers and implementation
SAIC	Electronic technology assessment, development, test & evaluation.
Schafer Corporation	Systems engineering, analytical services, concept D&E, energy technologies
Shaw Environmental & Infrastructure	Environmental management/engineering services
Solar Automation, Inc.	Design-for-automation photovoltaic manufacturing equipment
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Stolar Horizon Inc.	Mfg measure & control devices business
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.
Tetra Corporation	Electro-hydraulic drilling and mining technology
Titan Technologies	Manufactures and licenses technology to recycle tires
TPL, Inc.	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micro-power
Unirac, Inc.	Photovoltaic mounting systems
URS Corporation	Engineering services
Wellkeeper	Remote monitoring solutions for independent oil and gas operators
Western Technologies Inc.	Material testing; geotechnical engineering
Zomeworks Corp.	Photovoltaic mounting systems

Bioscience

Central New Mexico's history in Bioscience development is lengthy, from early research in respiratory disease in the late 1800s to a modern command of computational biology. The local industry is greatly linked to the activities of local research institutions, as substantial Federal investment dominates the activity landscape. However, a number of innovative companies have developed their own intellectual property and cultivated niche markets in areas outside of Central New Mexico's acknowledged institutional competencies.

Albuquerque boasts a seasoned bioscience cluster of more than 100 companies that produce everything from surgical supplies to non-invasive glucose testing devices for diabetics.

Major commercial players here are **Johnson & Johnson's Ethicon Endosurgery**, which manufactures surgical products in a 230,000-square-foot plant, and **Cardinal Health**, which provides medication management systems to hospitals and acquired homegrown **SP Pharmaceuticals** in 2001. Many of the city's bioscience companies are small and some are spin-offs from **Sandia National Laboratories** and the **University of New Mexico**.

Activities are concentrated in these areas:

1. Manufacture of instruments, devices, and supplies
2. Research and development of medical devices and equipment
3. Bioinformatics
4. Diagnostics

Institutional Competencies

Institution	Cancer Research	Genomics, Proteomics, Bioinformatics	Structural Genetics	Sensors & Instrumentation	Mass Spectrometry	Computational Biology	Infectious Disease	Animal Models for Respiratory Disease Research	Environmental Toxicology
National Center for Genomic Resources (NCGR)	X	X				X			
Los Alamos National Laboratory (LANL)		X	X	X	X	X			
Lovelace Respiratory Research Institute (LRRI)	X						X	X	X
University of New Mexico (UNM)	X[1]		X	X	X		X		X
Sandia National Laboratories (SNL)		X	X	X		X			
Santa Fe Institute (SFI)						X			

[1] UNM Cancer Center added a new, 190,500 sq ft, $90 million facility: http://cancer.unm.edu/

National Center for Genome Resources (NCGR)
The National Center for Genome Resources (NCGR) in Santa Fe, New Mexico, is a non-profit research institution dedicated to improving human health and nutrition through collaborative research at the intersection of Bioscience, computing and mathematics. Their vision is to pioneer the use of software and computation to improve treatment of diseases and nutrition.
www.ncgr.org

Los Alamos National Laboratory (LANL)
Los Alamos National Laboratory a US Department of Energy laboratory, operated by Los Alamos National Security, LLC, located in Los Alamos, NM. A unique partnership — Bechtel National, University of California, BWX Technologies, and Washington Group International—is the new management and operating (M&O) contractor. LANL is focused on physical research and maintains an extensive pathogen database, as well as a myriad of other computationally intensive biology resources, with a focus upon DNA sequencing and proteomics.

Lovelace Respiratory Research Institute (LRRI)

Founded in 1947, the Lovelace Respiratory Research Institute is a private biomedical research institute dedicated to the reduction of the nation's substantial respiratory health burden. With a budget of $38 million, over 70 PhD level scientists, 330 technicians and support staff and 450,000 square feet of facilities, Lovelace is a premier respiratory research facility with extensive capabilities in a number of research areas: Asthma, emphysema, lung cancer, inhalation toxicology, aerosol inhalation drug delivery, bronchitis, and allergies.

The Institute brings a broad range of research capabilities and research alliances to bear on respiratory health issues of concern to government, industry, universities, health advocacy organizations, and the public. They are committed to the cure of respiratory diseases through research aimed at understanding their causes and biological mechanisms, eliminating exposures to causal agents, and developing improved treatments.

See www.lrri.org

Starting your own company isn't the only path to entrepreneurship. You can also acquire a small company and grow it. **Carlos Perea**, with a bachelor's in mechanical engineering from UNM and an MBA from Stanford, formed Entrada Ventures with the goal of acquiring a company. With money they raised here, they acquired the 11-year-old **MIOX Corp**. in 2005.

MIOX technology uses salt and electricity to produce clean, safe drinking water, eliminating the need to transport and store hazardous chemicals. The technology can be scaled up for municipal water systems and scaled down to a modest, hand-held device for backpackers or soldiers.

The company provides products to the military, the U.S. Forest Service (83 systems) and municipalities. MIOX has 1,400 installations in 22 countries, including Mexico, India and China.

MIOX in 2006 moved into a 67,000-square-foot plant.

University of New Mexico (UNM)
The University of New Mexico Health Sciences Center includes a medical school, colleges of nursing and pharmacy, four hospitals and the Cancer Research and Treatment Center. The Health Sciences Center can gather data and understand impacts with relative ease because it has a repository of data on entire populations of patients and access to high-performance parallel computing.
See hsc.unm.edu

Sandia National Laboratories (SNL)

Sandia has a wealth of programs within life sciences, including the Energy and Infrastructure Assurance program. Their goal is to enhance the surety (safety, security, and reliability) of energy and other critical infrastructures. Efforts are focused on the areas of energy research, earth sciences, transportation systems, risk management technologies, environmental stewardship, and nuclear waste management. Sandia is also actively working to improve the nation's critical infrastructure surety. They are focusing on infrastructure elements in the areas of transportation, electric power grid, oil and gas distribution, telecommunications, finance and banking, and vital human services. See www.sandia.gov

Santa Fe Institute (SFI)

The Santa Fe Institute is a private, not-for-profit, independent research and education center founded in 1984 focused upon a multi-disciplinary approach to research of physical, biological, computational, and social sciences. The Institute focuses on understanding complex adaptive systems is critical to addressing key environmental, technological, biological, economic, and political challenges.

Renowned scientists and researchers come to Santa Fe Institute from universities, government agencies, research institutes, and private industry to collaborate in attempts to uncover the mechanisms that underlie the deep simplicity present in our complex world. See www.santafe.edu

Biomedical Research Institute of New Mexico (BRINM)

Biomedical Research Institute of New Mexico is a full service institution that exists to support Veterans Administration research programs to promote advances in medical diagnosis and treatment through research. With a growing number of active research investigators, projects and staff, BRINM employs more than 76 full time and part time individuals and administering more than $5 million annually in funding. See www.brinm.org

Behavioral Health Research Center of the Southwest (BHRCS)

Behavioral Health Research Center of the Southwest was established in 1997 to conduct research on substance abuse and other behavioral health issues. A major research focus is the impact of cultural factors on substance use and abuse. See www.bhrcs.org

Contacts:
New Mexico Biotechnology & Biomedical Association: www.nmbio.org

Bioscience

Company	Product/Business
Acoustic Cytometry Systems	In vivo single molecule photoacoustic flow cytometry
Adaptive Network Solutions Research, Inc. (ANSR)	Life sciences R&D; adaptive / neural networks, applied physics
Agiloptics, Inc. (formerly Intellite)	Deformable optics; laser beam aberration correction
Applied Technology Associates (ATA)	Precision sensing, measurement and controls

Bioscience (continued)

Company	Product/Business
Avanca Medical Devices, Inc.	Reciprocating Syringe that enables operators to aspirate and inject single-handedly
Banyan Trading LLC	Manufacturer of botanicals
Behavioral Research Inc.	Scientific research
BioAssist	FDA Regulatory consulting services
Biomedical Research Institute Of New Mexico	Clinical, pharmaceutical, therapeutic red
Biomoda, Inc.	Cancer diagnostic tools
Bioreason, Inc.	Drug compound development software
Caldera Pharmaceutical Instruments, Inc.	Instrumentation to provide accurate drug-protein reactivity measurements early in the development process
Cardinal Health	Medical products manufacturing, Healthcare supply chain services
Cell Robotics International Inc	Laser-based medical devices manufacturing
CerroSci LLC	Biotech R&D for overexpression and protein isolation
CIVA	Epidemiological modeling and simulation software
CytoDyn Of New Mexico	AIDS research
Cytogenetics Studio, Inc	Cytogenetic analysis
Daylight Chemical Information Systems, Inc.	Chemometric processing software
Decade Optical Systems, Inc	R&D, design, and prototype assembly of advanced high-power laser diode arrays, solid-state laser systems
deCode Genetics (Iceland based)	Infectious disease research; $24 MM grant in conjunction w/UNM
Dosimetrix	Software package-improve dose therapy
Eberline Services, Inc.	Provider of environmental radiological services
Environmental Robots, Inc.	Biomemimetic nanosensors
Ethicon, Inc. (J&J Affiliate)	Surgical products - wound closure & cardiovascular surgery
Exagen Diagnostics Inc	Develops and commercializes genomic marker-based IVD kits that provide diagnostic and prognostic information allowing targeted treatments
Express Scripts (Affiliation)	Pharmaceuticals
Feldmatech, Inc.	Electromagnetic imaging
Flow Science, Inc	Research & development (software & engineering) in computational fluid dynamics
General Technology Corporation (GTC)	Electronic manufacturing services
Genetic Testing Laboratory, Inc.	DNA analysis

Bioscience (continued)

Company	Product/Business
Genzyme Corporation	Medical research/lab
Heel Inc.	Manufacture of homeopathic medicinal/botanical products & pharmaceutical prep
Heffter Research Institute	Bio research
HT Micro	Microsystems fabrication for a variety of industries
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
InfraSur, LLC	Engineering and technical services for environmental assessment, characterization, and remediation
InLight Solutions	Non-invasive blood glucose measurement systems research
Innovative Surgical Technology, Inc.	Surgical and Medical Instrument Manufacturing
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Kestrel Corp	Advanced imaging research and development firm specializing in hyperspectral imaging and wavefront sensing
Kleinfelder Inc.	Professional services firm in natural and built environments
Lap Surgical Systems	Medical supply
LaSys Inc.	Nano-composite materials with enhanced optical properties
Lovelace Biomedical & Environmental Research Institute	Medical toxicology R&D
Lovelace Healthcare Innovations Inc	Medical research
Lovelace Respiratory Research Institute (Aff of under)	Life sciences R&D
Lovelace Scientific Resources Inc	Medical research
Lumidigm, Inc.	Biometric technologies development and manufacture
Maas Biolab, LLC	Biopharmacy
Marpac, Inc.	Medical device
Mesa Analytics & Computing, LLC	Data mining software for
MesoSystems-ICX	Detectors for aerosolized biological agents
MIOX Corp.	Ultraviolet light water purification systems
Monitech, Inc.	Manufacturer of cardio-instruments
New Mexico Software (NMXS)	Information management systems for medical and dental markets, document storage and retrieval

Bioscience (continued)

Company	Product/Business
Nomadics	Pioneering technology for homeland security
Novint Technologies	Haptic software, force-feedback 3-D touch joystick for PC-based game / simulation and other applications
Numerex	Computational physics and engineering R&D; Windows-based simulation software
OpenEye, Scientific Software	Molecular modeling applications
Optical Insights, LLC/Roper Bioscience	Optic imaging
Optomec Advanced Applications Laboratory	Electronics, Biomedical, and Aerospace & Defense
PE Biosystems	Government
Pecos Labs	Clinical research
PhDx Systems Inc.	Clinical data management company providing technology tools, services and consulting to support the clinical and marketing activities of cardiovascular, orthopedic and spine medical products companies and clinical research organizations.
QTL Biosystems, LLC, offices in SF and UK	Drug discovery: assay systems for the detection of proteases, kinases, and phosphatases; BioDetection: develops & markets instrumentation and bioassays for the detection of toxins, bacteria and other bio compounds
Sage Sciences	Solutions for high-throughput Flow Cytometry
Satyrne Biotechnologies, LLC	computer modeling software to make implants to repair skull and facial fractures
SCI Science Center	Nichrome inoculating needles and loops
Science Medicus, Inc.	Physical research
SeiraD, Inc.	DNA analysis
Seraf Therapeutics, Inc.	Inflammatory & autoimmune research
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Sunset Molecular Discovery, LLC	Drug discovery
Tadco, Inc	Sterile blade covers
TCInternational, Inc. (TCI)	Nuclear medicine, diagnostic equipment
The MIND Institute	Mental illness research
The National Center for Genome Resources (NCGR)	Develops bioinformatics and computational biology tools to support genetic analysis and discovery

Bioscience (continued)

Company	Product/Business
The Physical Science Laboratory	Research & development
Theragraphics	Electronic healthcare information management systems
Theranostech, Inc.	Biotech company
Tissue Medical Lasers, Inc.	Dermatological laser
TPL, Inc	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micropower
Tri-Core Reference Laboratories	Medical lab
TruTouch Technologies	Non-invasive blood-alcohol level measurement
VeraLight	Medical devices for early diabetes detection
WaveFront Science	Manufacturer of optical instruments

Electronics/ Semiconductors

Central New Mexico's electronics cluster is fairly diverse. Anchored by Intel, the cluster of about 50 companies includes many lab and university spin-offs and start-ups, as well as satellite operations of larger firms.

Activities include the manufacture of computer chips, silicon wafers and electronic components and equipment; development and production of semiconductor measurement tools and training equipment; and electronics fabrication and assembly.

Intel, which began operations here with 50 employees in 1980, now has 5,000 employees, and the operation is the largest of its kind in the world.

Other major manufacturers include:

- **CTS Corp**., which bought a former Motorola plant, and continues to make communications components;
- **Sumco USA Corp**. (formerly Sumitomo Sitix Silicon Inc.), which makes silicon wafers for customers in the United States, Europe, and Asia;
- **Xilinx Inc.**, which designs and develops logic chips and field programmable gate array chips;
- **Sennheiser Electronics GmbH**, which makes wireless headphones and microphones;
- **Lectrosonics**, which similarly makes professional wireless microphones and accessories for TV and film production.

Workforce Training

Electronics training starts in high school with the Advanced Technology Academy at West Mesa High School, which provides a career path to Central New Mexico Community College (CNM) and UNM. CNM's electronics and advanced manufacturing programs, developed with industry input, are well established and offer associate degrees and certificates. CNM worked with Intel and other industry leaders to develop a program in semiconductor manufacturing that was so successful, Intel has replicated it across its operations.

For information see bohr.cnm.edu and bohr.cnm.edu/Electronics_Engineering_Technology

The University Of New Mexico School Of Engineering has degree programs in manufacturing engineering, with a semiconductor and electronics track.

In 1980 **Jim Cramer** wanted to start his own company. His idea was to have a loosely organized group of experts in science and engineering providing services to the federal government. They became **Science and Engineering Associates Inc.**

Initially a small team of scientists shared office space and clerical help; each expert was free to focus on his individual technical area. By 1986, SEA had about 70 employees and annual revenues of $7 million.

The company was doing hard science but began to enter the new world of information technology, beginning by writing software for Sandia. SEA continued to grow and shifted increasingly toward IT for both the government and private industry.

By 2003, revenue reached the $100 million milestone and *Washington Technology Magazine* named SEA one of the 50 fastest growing federal IT contractors. In 2003 SEA merged with ITS Services Inc., a Virginia company. It was a marriage of equals, and the company was renamed **Apogen Technologies**.

Electronics Assets

Sandia National Laboratories is a world leader in the technology required for development, fabrication, and production of microelectronic devices. Sandia's Electronics Quality/Reliability Center is available

to commercial electronics manufacturers and is also used in education and training. See www.sandia.gov.

The **University of New Mexico** offers two unique resources for work in semiconductors and electronics: The **Center for High Technology Materials** has a national reputation for its work in optoelectronics and microelectronics. See www.chtm.unm.edu. The **Manufacturing Training and Technology Center** trains both UNM and CNM students and provides space for startup companies to prototype devices. See www.mep.unm.edu/html/mttc.html.
The University has several endowed chairs within the Electrical and Computer Engineering Department: the Prince of Asturias Endowed Chair in Information Science and Technology; the PNM Endowed Chair in Microsystems, Commercialization and Technology; and the Endowed Chair in Microelectronics and Optoelectronics.

Contacts:
Technology Industries Association of New Mexico: www.tia.nm.org
Center for High Technology Materials: www.chtm.unm.edu

Electronics / Semiconductor Manufacturing

Company	Product/Business
Advanced Optics Electronics	Flat panel displays and billboards
Advent Solar	Photovoltaic cell manufacturer
Apogen Technologies	Network Engineering & Operations
Applied Research Associates	R&D, engineering for homeland security and commercial customers
Array Technologies, Inc. / WattSun	Sun-tracking systems for photovoltaic arrays
Aspen Avionics	Hazard awareness instruments for General Aviation market
AZD Technology, LLC	Manufacture of RF and Microwave equipment
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
CIC Photonics	Analytical instruments: FTIR Spectrometer accessories
Cimarron Computer Engineering, Inc.	Computer hardware & software systems integration
CryoPower Associates Inc.	Chalcogenide superconductors
CVI Laser	Optical components - assembly & mfg
Decade Optical Systems, Inc	R&D and prototype assembly of advanced high-power laser diode arrays, solid-state laser systems
Eco Sensors, Inc.,	Manufacture air quality monitoring instruments
Electro Science Technology	Microwaves, RF & high speed electronics, engineering
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Energy Control Inc.	System integrator and energy service company
EnerPulse	Pulsed plugs for automotive engines

Electronics / Semiconductor Manufacturing (continued)

Company	Product/Business
Envirco Corporation(Aff. Fedders Corporation)	Manufacturer laminar flow products for pharmaceutical, medical device, semiconductor, and micro-electronics industries
Environmental Control Inc Aff. Waste Management of Texas	Waste management
Flow Science, Inc	Research & development (software & engineering) in computational fluid dynamics
GE Fanuc Embedded Systems	Formerly SBS; embedded systems for avionics, single board computers, and other mil-spec I/O products
General Technology Corporation	Electronic manufacturing services
Gratings Inc.	Mfg semiconductors & commercial physical research
Honeywell Technology Solutions Inc.	Systems engineering, Operations & maintenance, logistics & support
HT Micro	Microsystems fabrication for a variety of industries
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
InLight Solutions	Non-invasive blood glucose measurement systems research
Innovasic	Fabless semiconductor company that specializes in producing niche integrated circuits (ICs).
Intel Corporation	Microprocessor, semiconductor manufacturer
Introbotics Corp.	Manufacturer of high frequency PWB test and measurement equipment
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Jaycor - Applied Technologies Division	Space protection, High power microwaves
JSA Photonics, Inc.	Embedded sensors to monitor performance of lead acid batteries.
Kiara Networks	Optical networks component developer
Komtek Communications	Industrial messaging panels
Ktech Corp	Pulsed power research, facilities O&M, engineering R&D, materials, robotic and automated systems integration, electromechanical sys design
L&M Technologies	Facilities management, information technology, microelectronics R&D
La Luz Technologies, Inc.	Proprietary, self-referencing Doppler laser to accurately and affordably measure and report wind speed and direction along the last 2,000 feet of an aircraft's final approach

Electronics / Semiconductor Manufacturing (continued)

Company	Product/Business
Lasen Inc.	Airborne laser sensors to detect natural gas pipeline leaks
Lectrosonics Inc.	Manufacturer of audio/video equipment mfg radio/tv communication equipment
Los Alamos Technical Associates, Inc.	Facilities Support Services & Information Technology Services
Management Sciences Inc.	Embedded sensing and reasoning R&D
Matrix Solar Technologies, Inc.	Photovoltaic cell manufacturing
New Mexico Resonance	Scientific research, gases, materials
Nomadics	Pioneering technology for homeland security
North Star Research Corporation	Manufacture of electrical equipment/supplies Mfg process control Instruments
Northrop Grumman Information Technology	High energy lasers design & operation. Large optics design & analysis. Acquisition, pointing & tracking systems, DE simulations, Optical system design
Optisource, LLC	Manufacturing Lab Apparatus/Optical And Laser Components Wholesale Professional Equipment
Orion International Technologies	Engineering and information systems services, Nuclear weapons safety
Peak Sensor Systems, LLC	Sensor based technology tools for advanced process monitoring and control of semiconductor manufacturing processes
Plasmatronics Inc.	Laser research development
Qynergy Corporation	Radio isotope energy conversion into long-life, low-voltage power sources
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
RediRipe, LLC.	Disposable sensor stickers to measure fruit ripeness
Sacred Power Corp	Solar Energy project developers and implementation
Sage Sciences	Solutions for high-throughput Flow Cytometry
Sagebrush Technology, Inc	Designs & mfg precision motion control systems/ components
SAIC	Pulsed power, Sensor & electronic technology assessment, development, test & evaluation.
Sandia Aerospace	Manufacturer of avionics systems and related component
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D

Electronics / Semiconductor Manufacturing (continued)

Company	Product/Business
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
Sierra Peaks Corp	Manufacturing, and packaging of electromechanical systems
Solar Automation, Inc.	Design-for-automation photovoltaic manufacturing equipment
Sparton Technology, Inc. Aff. Sparton Corporation	Manufacture of intrusion detection systems and sensors
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Stolar Horizon Inc.	Manufacture of measurement & control devices
Sumco USA Corp.	Wafers for CMOS applications;
Surfect	Automated electroplating tools for wafer-scale deposition, processes to apply metal deposits at the wafer level, and high performance interconnect technologies
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.
Thor Technologies Inc.	Research and development for ceramics and electronics
TPL, Inc	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micropower
Veritran	development of variable speed electric motor drives
Vertical Power	Experimental and sport aircraft wiring and electronics automation control hub
Wellkeeper	Remote monitoring solutions for independent oil and gas operators
Xilinx	FPGA - Programmable Logic Device manufacturer
Ztec Instruments	Modular Oscilloscopes

Government Services

Because of the sizable presence of federal government facilities in Albuquerque, the segment of companies contracted to provide goods and services is substantial and well established.

This is one cluster that overlaps with many others. For example, Honeywell Defense Avionics is a member of the aerospace cluster and is also a government contractor.

Other companies offer a variety of services and products to the military and government agencies: **Lockheed Martin Corp**., which manages Sandia National Laboratories for the Department of Energy; **Battelle Memorial Institute**, which provides research services; **Applied Research Associates**, which has provided engineering, science and project management for more than 25 years; **Orion International**, which for 20 years has provided engineering and technical services, IT support, and testing; **Fiore Industries**, a pulsed-power laboratory; **Science Applications International Corp**. (SAIC), which provides technical support; **Applied Technology Associates**, which for 35 years has made sensors used by the military; and **Apogen Technologies**, a provider of engineering services.

Government Services

Company	Product/Business
ACME Worldwide Enterprises	Engineering services, aviation and ordinance simulators
Adherent Technologies, Inc.	Physical research, materials, recycling
AEGIS Technologies Group, Inc.	Engineering Services, modeling / simulation software
Amec Earth and Environmental	Engineering services
ANSR, Inc.	Scientific research technical services
Anteon Corporation	Information Technology Services, Systems Engineering, Computer Network Design & Installation
Apogen Technologies	Enterprise Architecture, Software Development & Systems Integration, Network Engineering & Operations, Energy & Environmental Engineering, Program Management and Spectral Imaging Technology
Applied Research Associates	R&D, Engineering for national defense, homeland security and commercial customers
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
Applied Technology Associates (ATA)	Precision sensing, measurement and controls
ARES Corp. (Applied Research & Sciences)	Engineering, Risk Management, Software/IT Project Management
ASRC Communications, LTD	Test & evaluation, Modeling and simulation, Network services

Government Services

Company	Product/Business
Atomic Inspection Labs Inc.	Testing lab
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
Blackhawk Management Corporation	Engineering, program management
Boeing-SVS, Inc	Energy Pointing & Tracking systems
CH2M Hill	Engineering consulting
Composite Tooling Corporation	Engineering services, mfg aircraft parts/equipment, optical lenses
Daniel B. Stephens & Associates, Inc	Business consulting services
Decade Optical Systems, Inc	R&D, design, and prototype assembly of advanced high-power laser diode arrays, solid-state laser systems
Direct Power & Water Corp	Solar support structures and accessories, systems integrator
EG&G Technical Services	Systems engineering, integration, data acquisition, digital signal processing
Electro Science Technology	Microwaves, RF & high speed electronics, engineering, R&D, consulting, product design and development
ErgoTech Systems, Inc.	Computer systems design custom computer programming
ERM Group	Business consulting services
Esthete Research Inc	Physical research
Euroclydon Industries, Inc.	Information Technology solutions provider
Farr Research Inc.	Engineering services
Fiore Industries, Inc.	Information Technology, Directed Energy, Instrumentation & data acquisition
Flow Science, Inc	Research & development (software & engineering) in computational fluid dynamics
FSMLabs	Software development
Game Production Services	Video game production, animation
Great River Technology Inc.	Computer & electronic consulting
Horton Technical Associates Inc.	Tech consulting operations research sw eng & development
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
Innovasic	Fabless semiconductor company that specializes in producing niche integrated circuits (ICs).
InSync, Inc.	Manufacture of custom optics for X-Ray through IR, KB Mirrors, Bendable, Internally Cooled Mirrors, Side Cooled and Beam Splitters

Government Services (continued)

Company	Product/Business
Integrity Networking Systems Inc.	Computer networking & electronics
Introbotics Corp.	Manufacturer of high frequency PWB test and measurement equipment
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Jandsk, Inc.	Business management & consulting
Jaycor - Applied Technologies Division	Space protection, High power microwaves
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Kemtah	IT Services
Kleinfelder Inc.	Professional services firm in natural and built environments
KSL Services aff. Halliburton Company	Contractor, service provider
Ktech Corp	Pulsed power research, facilities O&M, engineering R&D, materials, robotic and automated systems integration, electromechanical sys design
L&M Technologies	Facilities management, information technology, microelectronics R&D
Lasen Inc.	Airborne laser sensors to detect natural gas pipeline leaks
Lockheed Martin	Engineering support and management
Los Alamos Technical Associates, Inc.	Facilities Support Services & Information Technology Services
Management Sciences Inc.	Embedded sensing and reasoning R&D
Mesa Analytics & Computing, LLC	Data mining software for
Metatech Corporation	Noncommercial research services
Mission Research Corporation	Electronic warfare. Modeling & analysis. Directed energy concept dev.
MSI, Inc.	Engineering services
MZA Associates Corporation	Custom computer simulation, optical design, and data acquisition, processing, and analysis for scientific experiments
New Mexico Resonance	Scientific research, gases, materials
Nomadics	Technology for homeland security
Northrop Grumman Information Technology	High energy lasers design & operation. Large optics design & analysis. Acquisition, pointing & tracking systems, DE simulations, Optical system design
Orion International Technologies	Engineering and information systems services, Nuclear weapons safety
Parsons, Brinckerhoff	Engineering services
Pinnacle Laboratories Inc	Physical research

Government Services (continued)

Company	Product/Business
Plasmatronics Inc.	Laser research development
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
RhinoCorps, Ltd. Co.	Engineering services
Sacred Power Corp	Solar Energy project developers and implementation
SAIC	Pulsed power, Sensor & electronic technology assessment, development, test & evaluation.
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D
Santa Fe Science & Technology, Inc	Physical research
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
Sequoia Technologies Inc.	Engineering services
Sierra Peaks Corp	Manufacturing, and packaging of electromechanical systems
Southwest Sciences Inc	Research in combustion, atmospheric chemistry, imaging, and optical sciences
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Stellar Science	OOP-based software for 3D modeling, image processing, scientific visualization, AI, and numerical optimization
Sun & Son	Software solutions and services for collaborative applications
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.
Tech Source Inc.	Scientific and engineering consulting
Technology Management Co.	Support services for businesses operating in Newly Independent State of the former USSR
Terradigm	Project and information management
Tetra Tech Inc.	Engineering consulting services
TIG	Computational technology installation and service provider
TMC Design	Antenna design and engineering services
TPL, Inc	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micro-power

Government Services (continued)

Company	Product/Business
United International Engineering, Inc.	Technology assessment, Weapon system engineering & test services, technology planning & development
URS Corporation	Engineering services
Voss Scientific	Scientific & engineering consulting
Westech International	Information technology, administration, operations and maintenance, test and evaluation
Western Technologies Inc.	Material Testing/Geotechnical Engineering
Weston Solutions Inc.	Consulting services
Wired Nation, Inc.	Computer consulting

Information Technology and Software

Albuquerque's vibrant information technology and software industry is one of the biggest clusters at more than 300 companies in the metro area.

This segment includes computers, software, telecommunications products and services, the Internet and online services.

Some of the bigger players are **Apogen Technologies**, which in 2005 became a subsidiary of QinetiQ North America, and software developer **Thomson Elite**, which entered Albuquerque with the acquisition of Albuquerque-based **ProLaw** and recently expanded.

Most of the city's IT firms are small. And a number of big operations, such as **Intel**, **Honeywell** and **Northrop Grumman** have sizable populations of IT workers within their local plants.

Albuquerque's IT strengths include: cluster supercomputers, informatics, data mining, graphics animation and visualization, geospatial information, environmental software, educational technologies, multi-media, Internet technologies, cyber-security and encryption and networking technologies.

IT Assets
The **Center for High Performance Computing** at the **University of New Mexico** provides access to supercomputing facilities and digital media research and development. Along with its educational activities, it also makes high-performance computing more accessible to business. Digital Media resources include a mini-dome for the creation of immersive environments. See www.arc.unm.edu.

Sandia National Laboratories has been a leader in virtually every aspect of hardware and software development. It's probably best known in the computer world for massively parallel computing - linking large numbers of desktop computers and getting them to work together. See www.sandia.gov.

Workforce Training
The Academy of Advanced Technology is a four-year program at Albuquerque High School intended to create career pathways to Central New Mexico Community College (CNM), UNM and jobs in IT. CNM offers a large number of IT classes, and the **Department of Computer Science** at UNM has offered advanced degrees in computer science since1973.

Contacts:
New Mexico Information Technology and Software Association: www.nmitsa.org.

Information Technology and Software Development

Company	Product / Business
ABBA Technologies Inc.	Computer consultant & systems integration services
ABC Coding Solutions	Healthcare billing software
ACKNet Technologies	Software to reduce the cost of detecting, analyzing and repairing security breaches.
Acoustic Cytometry Systems, Inc.	In vivo single molecule photoacoustic flow cytometry
Adaptive Network Solutions Research, Inc. (ANSR)	Life sciences R&D; adaptive / neural networks, applied physics
Alternative Link Inc.	Computer related services
Ambitec	Software development
Anteon Corporation	Information Technology Services, Systems Engineering, Computer Network Design & Installation
Apogen Technologies	Enterprise Architecture, Software Development & Systems Integration, Network Engineering & Operations, Energy & Environmental Engineering, Program Management and Spectral Imaging Technology
Applied Research Associates	R&D, Engineering for national defense, homeland security and commercial customers
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
Aquila Technologies Group, Inc.	Wholesale computer/peripheral
ARES Corp. (Applied Research & Sciences)	Engineering, Risk Management, Software/IT Project Management
Aspen Avionics	Hazard awareness instruments for General Aviation market
ASRC Communications, LTD	Test & evaluation, Modeling and simulation, Network services
Asset Performance Technologies (APT)	Economic-based large/heavy equipment maintenance optimization software
Avistar, Inc (Affiliate of PNM)	Energy technology
Ball Aerospace	Imaging, communications, information solutions
Bandelier EFX	Motion picture & television commercial producer
BASIS International LTD	Application development software
Bency & Associates	Custom computer programming
BigByte.cc	Electronic media and document storage, disaster recovery center

Information Technology and Software Development (continued)

Company	Product / Business
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
Bioreason, Inc.	Drug compound development software
Boeing-SVS, Inc	Energy Pointing & Tracking systems
BoomTime dba SpaBoom	Turnkey online gift certificate system for spas
Cautela Inc.	IT services & network support
CerroSci LLC	Biotech R&D for overexpression and protein isolation
CIC Photonics	Analytical instruments: FTIR Spectrometer accessories
Cimarron Computer Engineering, Inc.	Computer hardware & software systems integration
CIVA	Epidemiological modeling and simulation software
Comet Solutions, Inc	Computational modeling toolkits for structural and optronic simulations
CommodiCast, Inc.	Investment advisory service management consulting services
Comnet Consulting	Computer related services computer systems design
Complexica, Inc	Software development & computer consulting
Control Alt Delete, Inc	PC and network solutions
Correlations Co.	Artificial intelligence for E&P studies
CPFD - Arena Flow	Engineering simulation software for industrial particle flows
Cyber Adversary Research Center	Security assessment provider
Dagonet Software	Therapeutic agents for use against HIV
Daylight Chemical Information Systems, Inc.	Chemometric processing software
Deep Web Technologies LLC	Information retrieval services telephone communications
Digital Migration, Inc.	Computer related services
Digital Traffic Systems	Traffic monitoring and commercial nonphysical research
EG&G Technical Services	Systems engineering, integration, data acquisition, digital signal processing
ErgoTech Systems, Inc.	Computer systems design custom computer programming
Euroclydon Industries, Inc.	Information Technology solutions provider
Extreme AI	Digital media and entertainment publisher
Fiore Industries, Inc.	Information Technology, Directed Energy, Instrumentation & data acquisition

Information Technology and Software Development (continued)

Company	Product / Business
FSMLabs	Software development
Game Production Services	Video game production, animation
GE Fanuc Embedded Systems	Formerly SBS; embedded systems for avionics, single board computers, and other mil-spec I/O products
GigaBlast.com	Search Engine
Global Haptics	3D design, VR, web3D, animation, telemanipulation, gaming, or science and technology applications
Great River Technology Inc.	Computer & electronic consulting
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
Info Touch (formerly WorkingWild)	WiFi networks services provider
Inmerge	Custom computer programming
Integrity Networking Systems Inc.	Computer networking & mfg electronic computer & whol peripherals & software
Intel Corporation	Microprocessor, semiconductor manufacturer
InterNetwork Experts	Computer services
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Jobsite Software, Inc.	Prepackaged software services
JSA Photonics, Inc.	Embedded sensors to monitor performance of lead acid batteries.
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Kemtah	IT Services
Kestrel Corp	Advanced imaging research and development firm specializing in hpyerspectral imaging and wavefront sensing
Khoral	Visual dataflow programming language: rapid prototyping and cradle-to-grave software development
Kiara Networks	Optical networks component developer
Komtek Communications	Industrial messaging panels
L&M Technologies	Facilities management, information technology, microelectronics R&D
La Luz Technologies, Inc.	Proprietary, self-referencing Doppler laser to accurately and affordably measure and report wind speed and direction along the last 2,000 feet of an aircraft's final approach

Information Technology and Software Development (continued)

Company	Product / Business
Los Alamos Technical Associates, Inc.	Facilities Support Services & Information Technology Services
Lumidigm, Inc.	Biometric technologies development and manufacture
Management Sciences Inc.	Embedded sensing and reasoning R&D
MesoSystems-ICX	Detectors for aerosolized biological agents
Mission Research Corporation	Electronic warfare. Modeling & analysis. Directed energy concept dev.
Motivity, Inc.	Software that analyzes skills and experience to help executives make personnel decisions
MZA Associates Corporation	Custom computer simulation, optical design, and data acquisition, processing, and analysis for scientific experiments
New Mexico Software (NMXS)	Information management systems for medical and dental markets, document storage and retrieval
Nexicon, Inc.	Internet Security and Billing Services
Nomadics	Pioneering technology for homeland security
Novint Technologies	Haptic software, force-feedback 3-D touch joystick for PC-based game / sim and other applications
Numerex	Computational physics and engineering R&D; Windows-based sim software
One Connect	Voice over internet protocol (voip) service provider
Orion International Technologies	Engineering and information systems services, Nuclear weapons safety
Pay Lynx, Inc.	Software to enable banks to manage international money transfers
Peak Sensor Systems, LLC	Sensor based technology tools for advanced process monitoring and control of semiconductor manufacturing processes
PhDx Systems Inc.	Clinical data management company providing technology tools, services and consulting to support the clinical and marketing activities of cardiovascular, orthopedic and spine medical products companies and clinical research organizations.
QTL Biosystems, LLC, offices in SF and UK	Drug discovery: assay systems for the detection of proteases, kinases, and phosphatases; BioDetection: develops & markets instrumentation and bioassays for the detection of toxins, bacteria and other bio compounds
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation

Information Technology and Software Development (continued)

Company	Product/Business
Redfish	Complex, adaptive systems
RediRipe, LLC.	Disposable sensor stickers to measure fruit ripeness
Retriever Tech	Advanced digital imaging (high-speed, full frame CCD cameras)
Sage Sciences	Solutions for high-throughput Flow Cytometry
Samba	Driver record monitoring network systems
Sandia Aerospace	Manufacturer of avionics systems and related component
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D
SatWest LLC	Satellite telephone and data communications sales and service; project management; satellite hardware and device development
Satyrne Biotechnologies, LLC	computer modeling software to make implants to repair skull and facial fractures
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
Stellar Science	OOP-based software for 3D modeling, image processing, scientific visualization, AI, and numerical optimization
Strategic Analytics Inc.	Prepackaged software services management consulting services
Sun & Son	Software solutions and services for collaborative applications
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.
Technology Integration Group (TIG)	Computing resource design, installation and integration
Technology Management Co.	Support services for businesses operating in Newly Independent State of the former USSR
Terradigm	Project and information management
The National Center for Genome Resources (NCGR)	Develops bioinformatics and computational biology tools to support genetic analysis and discovery
Theragraphics	Electronic healthcare information management systems
TruTouch Technologies	Non-invasive blood-alcohol level measurement
Ultramain Systems Inc.	Integrated maintenance and logistics software
VanDyke Software	Secure access and terminal emulation software

Information Technology and Software Development (continued)

Company	Product / Business
VeraLight	Medical devices for early diabetes detection
Vertical Power	Experimental and sport aircraft wiring and electronics automation control hub
Vista Control Systems, Inc.	Whol computers/peripherals
Wellkeeper	Remote monitoring solutions for independent oil and gas operators
Westech International	Information technology, administration, operations and maintenance, test and evaluation
Wired Nation, Inc.	Computer consulting
Xpresschex Inc (subsidiary of Electronic Clearing House, Inc.)	Software development
Ztec Instruments	Modular Oscilloscopes

Manufacturing

Albuquerque, unlike many parts of the country, has retained a surprising number of manufacturing operations and even attracted new ones.

In 2003 **Tempur-Pedic** chose Albuquerque after an 11-month search. The company considered the quality of labor, costs and economic incentives in 50 Western cities. The company completed its 750,000-square-foot plant late in 2006 and began operations early in 2007 in the largest mattress-making facility in the world.

New Mexico is home to about 1,800 manufacturing firms, ranging from Intel to locally owned machine shops, and they employ 42,000 workers.

Manufacturers are both high tech and low tech. Like government contracting, this cluster overlaps with others. **Intel**'s semiconductor manufacturing is part of the electronics cluster, and **Ethicon**'s surgical product manufacturing is part of the biomedical presence in Albuquerque.

General Mills produces about 100 million boxes of cereal a year in a 180,000-square-foot plant, and **Roses Southwest Papers** makes bags and napkins for the Southwest's largest fast-food restaurants.

Other prominent manufacturers include **Centex American Gypsum**, which makes wallboard; **GE Aircraft Engines**, which makes jet engine components; **TPL Inc**., which turns dismantled artillery shells and other munitions into products; and **Thompson Machine**, a tool and die design and production operation.

A large component of local manufacturing is food processing, and Albuquerque has many highly successful food processors and wineries. Food processors include **Bueno Foods**, **Albuquerque Tortilla**, and **General Mills.**

Manufacturing Assets

Company	Product/Business
Advent Solar	Photovoltaic Cell manufacturer
AZD Technology, LLC	Manufacture of RF and Microwave equipment
Banyan Trading LLC	Manufacturer of botanicals
Bueno Foods	Food processing and packaging
Cabot Superior MicroPowders	Manufacturer of composite and microstructure powders for varied applications
Centex Amerian Gypsum	Gypsum wallboard manufacturer
Composite Tooling Corporation	Engineering services, mfg aircraft parts/equipment, optical lenses
CTS Wireless	Wireless communications components
CVI Laser	Optical components - assembly & mfg
Dankoff Solar Products, Inc.(acquired by Arise Tech)	Manufactures and distributes solar water pumps, and distributes solar electric power components

Manufacturing Assets (continued)

Company	Product/Business
DeVore Aviation	General Aviation Tail Lighting systems
Eclipse Aviation Corporation Inc	Aircraft manufacture of a Very Light Jet
Eco Sensors, Inc.,	Mfg air quality monitoring instruments
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
GE Fanuc Embedded Systems	Formerly SBS; embedded systems for avionics, single board computers, and other mil-spec I/O products
General Mills	Cereal manufacturer
General Technology Corporation (GTC)	Electronic manufacturing services
Gratings Inc.	Mfg semiconductors & commercial physical research
Heel Inc.	Manufacture of homeopathic medicinal/botanical products & pharmaceutical prep
Holochip	Manufactures adaptive polymer lenses that allow focal length to be adjusted without moving the position of the lens
HT Micro	Microsystems fabrication for a variety of industries
Hydrotechnics, Inc.	Manufacture of measuring/controlling devices/vector technology
InSync, Inc.	Manufacture of custom optics for X-Ray through IR, KB Mirros, Bendable, Internally Cooled Miorros, Side Cooled and Beam Splitters
Integrity Networking Systems Inc.	Computer networking & mfg electronic computer & whol peripherals & software
Intel Corporation	Microprocessor, semiconductor manufacturer
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Lectrosonics Inc.	Manufacturer of audio/video equipment mfg radio/tv communication equipment
Matrix Solar Technologies, Inc.	Photovoltaic cell manufacturing
MIOX Corp.	Ultraviolet light water purification systems
Monitech, Inc.	Manufacture of cardio-instruments
North Star Research Corporation	Manufacture of electrical equipment/supplies Mfg process control Instruments
Roses Southwest Papers	Paper products manufacturer
Sagebrush Technology, Inc	Designs & mfg precision motion control systems/ components
Sandia Aerospace	Manufacturer of avionics systems and related component
Sennheiser Electronics	Wireless headphones and microphones

Manufacturing Assets (continued)

Company	Product/Business
Solar Automation, Inc.	Design-for-automation photovoltaic manufacturing equipment
Sparton Technology, Inc. Aff. Sparton Corporation	Manufacture of intrusion detection systems and sensors
Stolar Horizon Inc.	Mfg measure & control devices business consulting svcs mfg search/navigation equip mfg transformers and misc fab wire prdts
Tempur-Pedic	Matress production
Thomas & Betts	Electrical connections manufacture
Thompson Machine	Tool & Die manufacturer
Titan Technologies	Manufactures and licenses technology to recycle tires
Utilicraft Aerospace Industries, Inc.	Next-generation freight feeder aircraft manufacturer
WaveFront Science	Manufacturer of optical instruments
Xilinx	FPGA - Programmable Logic Device manufacturer

Digital / Media Industries

New Mexico's Legislature jump-started the media industry here in 2003, when it began offering film incentives. Since then, the industry has quickly expanded from the occasional production company shooting films to nearly continuous activity. In development is a home-grown industry of production facilities, game developers, and applications of media and gaming technologies for military and medical uses. "New Mexico has led the way in film tax legislation, becoming a model for others to follow," wrote the Hollywood Reporter in 2005.

City of Albuquerque Film Office

The Albuquerque Film Office, a division of the City of Albuquerque Office of Economic Development, offers free dependable assistance to filmmakers. The Film Office will act as a liaison with city agencies and assist in obtaining locations, equipment, and hotel accommodations. Albuquerque has experienced crew, talent and a mix of diverse locations readily available. Generally few permits are needed to film in the Albuquerque area, which makes producing a project here easy and cost-effective. See www.cabq.gov/film.

Workforce Training

In 2004 Gov. Bill Richardson launched the **New Mexico Media Industries Strategy Project** (MISP) to help establish New Mexico as a center of excellence and innovation in media arts and sciences. MISP subsequently awarded $3 million to the University of New Mexico to create the **Art, Research, Technology and Science (ARTS) Laboratory**. The lab's mission is to become a catalyst in education and research. Recently the ARTS Lab started a series of courses on computer games and interactive simulations. See artslab.unm.edu

CNM's Workforce Training Center, in cooperation with the **New Mexico Film Alliance**, has launched a fast-track program in film production designed to give students hands-on training as film crew technicians. The New Mexico Film Alliance includes CNM, the City of Albuquerque Film Office, Digital Filmmaking Institute, International Cinematographer Guild, New Mexico Film Office, and IATSE Local 480. For information, contact dgardner4@CNM.edu.

UNM Continuing Ed offers classes in filmmaking, animation, production, screen writing, many through the new ARTS Lab. For information see dce.unm.edu.

Media Industries Assets

In late 2005 the **UNM ARTS Lab** opened the **Digital Media Garage**, an interdisciplinary space that serves UNM's **Arts Technology Center**, **ARTS Lab** and **Center for High Performance Computing**. The garage includes an experimental multi-projector dome, visualization-perception lab, experimental black-box studio with a full-corner green screen, a motion-capture system, rendering and animation hardware and software, and an advanced lighting system.

Albuquerque has two unique and highly successful media festivals. **DomeFest**, at **LodeStar Astronomy Center** in the New Mexico Museum of Natural History, is the only known festival for immersive digital dome theaters and planetariums, better known as fulldome. See www.domefest.org

The **Duke City Shootout** (formerly DigiFest Southwest), started by Albuquerque's Digital Filmmaking Institute, was the first festival in the world to focus on digital production. Participants must produce, shoot, edit and premiere their film in only seven days. See www.dukecityshootout.com.

Contacts:
Media Industries Strategy Project, altmedianm.org
Digital Artists of America Association, New Mexico chapter, www.da3nm.org
City of Albuquerque Film Office: (505) 768-3283

Digital / Media Industries

Company	Product/Business
Applied Research Associates	R&D, Engineering for national defense, homeland security and commercial customers
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
Asset Performance Technologies (APT)	Economic-based large/heavy equipment maintenance optimization software
Bandelier EFX	Motion picture & television commercial producer
BASIS International LTD	Application development software
BigByte.cc	Electronic media and document storage, disaster recovery center
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
Cirrus Teleproductions	Motion picture/video production
CIVA	Epidemiological modeling and simulation software
CommodiCast, Inc.	Investment advisory service management consulting services
Comnet Consulting	Computer related services computer systems design
Complexica, Inc	Software development & computer consulting
CPFD - Arena Flow	Engineering simulation software for industrial particle flows
Dagonet Software	Therapeutic agents for use against HIV
Daylight Chemical Information Systems, Inc.	Chemometric processing software
Deep Web Technologies LLC	Information retrieval services telephone communications
Digital Migration, Inc.	Computer related services
Digital Traffic Systems	Traffic monitoring and commercial nonphysical research
Extreme AI	Digital media and entertainment publisher
Game Production Services	Video game production, animation
Global Haptics	3D design, VR, web3D, animation, telemanipulation, gaming, or science and technology applications
Inmerge	Custom computer programming
Motivity, Inc.	Software that analyzes skills and experience to help executives make personnel decisions

Digital / Media Industries (continued)

Company	Product/Business
New Mexico Software (NMXS)	Information management systems for medical and dental markets, document storage and retrieval
Nexicon, Inc.	Internet Security and Billing Services
Novint Technologies	Haptic software, force-feedback 3-D touch joystick for PC-based game / sim and other applications
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
Redfish	Complex, adaptive systems
RediRpie, LLC.	Disposable sensor stickers to measure fruit ripeness
Satyrne Biotechnologies, LLC	computer modeling software to make implants to repair skull and facial fractures
Sennheiser Electronics	Wireless headphones and microphones
Strategic Analytics Inc.	Prepackaged software services management consulting services
Technology Integration Group (TIG)	Computing resource design, installation and integration
VanDyke Software	Secure access and terminal emulation software
Vizeon	Computer systems integrator of digital video and animation technology; 3D, MPEG-2 and multimedia
Xpresschex Inc (subsidiary of Electronic Clearing House, Inc.)	Software development

Micro / Nanotechnology

The rapidly evolving micro-nanotech cluster in Albuquerque has captured the attention of *Small Times Magazine* and the **Milken Institute**. Albuquerque is the only community with both **Department of Energy** and **National Institutes of Health** nanotechnology centers.

About 30 companies are either microsystems companies or rely on micro- or nano-technologies. These companies are drawing on Albuquerque's combined assets: Microsystems programs and facilities at **Sandia National Laboratories**, which exceed anything the nation's best academic institutions have to offer, plus innovative training programs.

Microsystems are devices smaller than a human hair and larger than a few human red blood cells that can think, act, sense and communicate. Nanotech describes devices that work at molecular and atomic levels.

In 2003 and 2004 *Small Times* ranked New Mexico third among the "Top 10 Small Tech Hot Spots" in tiny tech. The magazine in 2002 listed Albuquerque among its "Places to Watch," saying, "Albuquerque is a force to be reckoned with."

Microsystems Assets

Sandia National Laboratories is a microsystems pioneer. It has helped develop the technology, built microsystems fabrication and design facilities and provided training. Fortune Magazine called Sandia "one of the dream playgrounds for MEMS research."

Sandia has constructed a $420 million **Microsystems Engineering and Sciences Applications** facility. And Los Alamos National Laboratory and Sandia are building in Albuquerque the **Center for Integrated Nanotechnologies** where lab scientists can collaborate with visitors from universities, other laboratories, and industry. See cint.lanl.gov.

The University of New Mexico has two facilities for microsystems work: The **Center for High Technology Materials**, which features a Crystal Growth Facility to create structures used in advanced semiconductor devices; and the **Manufacturing Training and Technology Center**, which supports manufacturing prototyping.

In 2005 the Nano-Network of New Mexico organized to help commercialize applications developed in the labs. It will be managed by Technology Ventures Corp.

Workforce Training

In 2004 **Central New Mexico Community College** (CNM) received a National Science Foundation grant to set up the **Southwest Center for Microsystems Education** to develop technician-level curriculum in microsystems. CNM previously received a NASA grant to create microsystems courses and offered its first class in 2002.

The **University of New Mexico** boasts the first microsystems chair in the nation, courtesy of a $750,000 endowment from Public Service Company of New Mexico; the **Manufacturing Training and Technology Center** trains engineers from UNM and technicians from CNM; and UNM and Sandia offer a joint program in nano- and microelectronics along with microfabrication.

Contacts:
Nano-Network of New Mexico: katie@wasatchvc.com
Micro and Nanotechnology Commercialization Education Foundation (MANCEF): www.mancef.org

Microsystems, Nanotechnology and related activities

Company	Product / Business
Adherent Technologies, Inc.	Physical research, materials, recycling
Advec Corporation-ADVEC Power Systems, Inc.	Compact nuclear reactors for commercial power generation and for space applications
Advent Solar	Photovoltaic Cell manufacturer
Agiloptics, Inc. (formerly Intellite)	Deformable optics; laser beam aberration correction
APJet	Industrial machinery for low-temperature, highly reactive plasma materials processing applications
Cabot Superior MicroPowders	Manufacturer of composite and microstructure powders for varied applications
CVI Laser	Optical components - assembly & mfg
Eco Sensors, Inc.,	Mfg air quality monitoring instruments
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Environmental Robots, Inc.	Biomemimetic nanosensors
Gratings Inc.	Mfg semiconductors & commercial physical research
Holochip	Manufactures adaptive polymer lenses that allow focal length to be adjusted without moving the position of the lens
HT Micro	Microsystems fabrication for a variety of industries
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
Innovasic	Fabless semiconductor company that specializes in producing niche integrated circuits (ICs).
InSync, Inc.	Manufacture of custom optics for X-Ray through IR, KB Mirrors, Bendable, Internally Cooled mirrors, Side Cooled and Beam Splitters
Intelligent Energy, UK (formerly MesoFuel)	On-demand hydrogen generation systems for fuel cells
LaSys Inc.	Nano-composite materials with enhanced optical properties
Metallicum	Nanostructured metals and alloys
Nanopore	Commercializing high porosity/high surface area materials for a wide range of applications

Microsystems, Nanotechnology and related activities (continued)

Company	Product / Business
Nomadics	Pioneering technology for homeland security
Qynergy Corporation	Radio isotope energy conversion into long-life, low-voltage power sources
Radiant Technologies, Inc.	Integrated ferroelectric circuits
RediRipe, LLC.	Disposable sensor stickers to measure fruit ripeness
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Surfect	Automated electroplating tools for wafer-scale deposition, processes to apply metal deposits at the wafer level, and high performance interconnect technologies
Thor Technologies Inc.	Research and development for ceramics and electronics
TPL, Inc	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micropower

Optics and Photonics

Albuquerque's optics industry grew from decades of research at Kirtland Air Force Base and its laboratories, as well as Sandia National Laboratories and White Sands Missile Range.

Optics is, simply, the use of light. Photonics is the science of generating, manipulating, transporting, detecting and using light information energy. Albuquerque's numerous optics and photonics companies design, develop and manufacture optics systems and components for both the public and private sector. Activities include laser, sensor, component and instrument manufacturing; production of entire systems; design; and supply.

The biggest players are:

- **Boeing-SVS Inc.** (formerly SVS Inc., acquired by Boeing in 2000), which makes electro-optical systems and image-processing for aerospace, defense and commercial customers;
- **CVI Laser Corp**., founded in 1972, a contract manufacturer of laser optics and opto-mechanical assemblies for semiconductor, industrial, and scientific markets;
- **EMCORE Fiber Optics**, a division of EMCORE Corp., which makes optical communications switching equipment;
- **Applied Technology Associates Corp**., which makes precision sensing, measurement and control products and services.

Optics Assets

The **Air Force Research Laboratory** at Kirtland Air Force Base is a national center for high-power lasers and optics. The lab's Directed Energy Directorate is the Air Force center of expertise for lasers, high-energy microwaves, and other directed energy technologies. See www.de.afrl.af.mil

The **Center for High Technology Materials** (CHTM) at UNM has a national reputation for its work in optoelectronics and microelectronics. It's an optoelectronics center for multiple federal agencies. See www.chtm.unm.edu. And UNM is the lead university for the Compact, Portable, Pulsed Power consortium funded by the DOD to shrink pulsed power systems for directed-energy applications. See www.unm.edu.

Sandia National Laboratories has had a long involvement with optics. The Lasers, Optics, Plasma Science, Remote Sensing and Vision Science Department develops technology and operates the **Optical Diagnostics Facility**.

Workforce Training

Albuquerque has a pioneering program, started in 2001, to educate students in optics and photonics from junior high through graduate degrees. The centerpiece is the **Photonics Academy** at West Mesa High School, where they learn high-tech skills sufficient to prepare them for jobs or to continue studies at CNM or UNM.
For information see: bohr.CNM.edu/Programs/Photonics_Technology

Central New Mexico Community College (CNM) has had laser and optics classes since the mid-1970s. In recent years CNM developed its Photonics Technology Program, which offers both certificate and associate degrees. Based on the excellent reputation of that program, the Center for Biophotonics Science and Technology at the University of California/Davis chose CNM to develop a

biophotonics-technician program, the first of its kind in the nation. (Biophotonics is the use of light and radiant energy to understand living cells and tissue.) The **University of New Mexico** has a well known Optical Science and Engineering Program taught by physics and electrical engineering faculty and offers Ph.D. and master's degrees. The university is preparing to develop curriculum for a bachelor's degree in optics.

Contacts:
New Mexico Optics Industry Association: www.nmoptics.org.
Alliance for Photonic Technology: www.de.afrl.af.mil/apt or agun@chtm.unm.edu.

Optics and Photonics

Company	Product/Business
Acoustic Cytometry Systems, Inc.	In vivo single molecule photoacoustic flow cytometry
Advanced Optics Electronics	Flat panel displays and billboards
Agiloptics, Inc. (formerly Intellite)	Deformable optics; laser beam aberration correction
Apogen Technologies	Enterprise Architecture, Software Development & Systems Integration, Network Engineering & Operations, Energy & Environmental Engineering, Program Management and Spectral Imaging Technology
Boeing-SVS, Inc	Energy Pointing & Tracking systems
BSC Optics	Provider of new and used optical tooling
Cell Robotics International Inc	Laser-based medical devices manufacturing
CIC Photonics	Analytical instruments: FTIR Spectrometer accessories
CVI Laser	Optical components - assembly & mfg
Decade Optical Systems, Inc	R&D, design, and prototype assembly of advanced high-power laser diode arrays, solid-state laser systems
East Mountain (EM) Optomechanical Inc.	Metrology tools to the semiconductor and microsystems industries
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Fiore Industries, Inc.	Information Technology, Directed Energy, Instrumentation & data acquisition
Holochip	Manufactures adaptive polymer lenses that allow focal length to be adjusted without moving the position of the lens
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
InLight Solutions	Non-invasive blood glucose measurement systems research
InSync, Inc.	Manufacture of custom optics for X-Ray through IR, KB Mirros, Bendable, Internally Cooled Miorros, Side Cooled and Beam Splitters
Intor, Inc.	Optical filters

Optics and Photonics (continued)

Company	Product/Business
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Kestrel Corp	Advanced imaging research and development firm specializing in hpyerspectral imaging and wavefront sensing
Kiara Networks	Optical networks component developer
La Luz Technologies, Inc.	Proprietary, self-referencing Doppler laser to accurately and affordably measure and report wind speed and direction along the last 2,000 feet of an aircraft's final approach
Lasen Inc.	Airborne laser sensors to detect natural gas pipeline leaks
Lumidigm, Inc.	Biometric technologies development and manufacture
MesoSystems-ICX	Detectors for aerosolized biological agents
MIOX Corp.	Ultraviolet light water purification systems
Nomadics	Pioneering technology for homeland security
Northrop Grumman Information Technology	High energy lasers design & operation. Large optics design & analysis. Acquisition, pointing & tracking systems, DE simulations, Optical system design
Optical Insights, LLC/Roper Bioscience	Optical imaging
Optisource, LLC	Manufacturing Lab Apparatus/Optical And Laser Components Wholesale Professional Equipment
Optomec Advanced Applications Laboratory	Electronics, Biomedical, and Aerospace & Defense
Photonic Associates	Management consulting services
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
Retriever Tech	Advanced digital imaging (high-speed, full frame CCD cameras)
Sage Sciences	Solutions for high-throughput Flow Cytometry
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
TruTouch Technologies	Non-invasive blood-alcohol level measurement
VeraLight	Medical devices for early diabetes detection
Vista Photonics Inc.	Technology research development sales
WaveFront Science	Manufacturer of optical instruments

Consolidated Company List

Company	Product / Business
AAA Solar	Photovoltaic systems distributor
ABBA Technologies Inc.	Computer consultant & systems integration services
ABC Coding Solutions	Healthcare billing software
ACKNet Technologies	Software to reduce the cost of detecting, analyzing and repairing security breaches.
ACME Worldwide Enterprises, Inc.	Engineering services, aviation and ordinance simulators
Acoustic Cytometry Systems, Inc.	In vivo single molecule photoacoustic flow cytometry
Adaptive Network Solutions Research, Inc. (ANSR)	Life sciences R&D; adaptive / neural networks, applied physics
Adherent Technologies, Inc.	Physical research, materials, recycling
Advanced Optics Electronics	Flat panel displays and billboards
Advec Corporation-ADVEC Power Systems, Inc.	Compact nuclear reactors for commercial power generation and for space applications
Advent Solar	Photovoltaic Cell manufacturer
AEGIS Technologies Group, Inc.	Engineering Services, modeling / simulation software
Affordable Solar	Nat'l Renewable Energy Products Online retailer
Agiloptics, Inc. (formerly Intellite)	Deformable optics; laser beam aberration correction
Altela	Proprietary water clean-up technology for Produced-Water in oil and natural gas industry
Alternative Link Inc.	Computer related services
Ambitec	Software development
Amec Earth and Environmental	Engineering services
Amparo Corp.	Scientific consultant
ANSR, Inc.	Scientific research technical services
Anteon Corporation	Information Technology Services, Systems Engineering, Computer Network Design & Installation
APJet	Industrial machinery for low-temperature, highly reactive plasma materials processing applications
Apogen Technologies	Enterprise Architecture, Software Development & Systems Integration, Network Engineering & Operations, Energy & Environmental Engineering, Program Management and Spectral Imaging Technology
Applied Research Associates	R&D, Engineering for national defense, homeland security and commercial customers

Consolidated List

Company	Product / Business
Applied Sciences Laboratory, Inc.	Advanced computing, thermal engineering, speech recognition, environmental services, tech transfer
Applied Technology Associates (ATA)	Precision sensing, measurement and controls
Aquila Technologies Group, Inc.	Wholesale computer/peripheral
ARES Corp. (Applied Research & Sciences)	Engineering, Risk Management, Software/IT Project Management
Array Technologies, Inc. / WattSun	Sun-tracking systems for photovoltaic arrays
Aspen Avionics	Hazard awareness instruments for General Aviation market
ASRC Communications, LTD	Test & evaluation, Modeling and simulation, Network services
Asset Performance Technologies (APT)	Economic-based large/heavy equipment maintenance optimization software
Atomic Inspection Labs Inc.	Testing lab
Avanca Medical Devices, Inc.	Reciprocating Syringe that enables operators to aspirate and inject single-handedly
Avistar, Inc (Affiliate of PNM)	Energy technology
AZD Technology, LLC	Manufacture of RF and Microwave equipment
Ball Aerospace	Imaging, communications, information solutions
Bandelier EFX	Motion picture & television commercial producer
Banyan Trading LLC	Manufacturer of botanicals
BASIS International LTD	Application development software
Behavioral Research Inc.	Scientific research
Bency & Associates	Custom computer programming
BigByte.cc	Electronic media and document storage, disaster recovery center
BIL Solutions, Inc.	Detection, monitoring and measurement technologies
BioAssist	FDA Regulatory consulting services
Biomedical Research Institute Of New Mexico	Clinical, pharmaceutical, therapeutic red
Biomoda, Inc.	Cancer diagnostic tools
Bioreason, Inc.	Drug compound development software
Blackhawk Management Corporation	Engineering, program management
Boeing-SVS, Inc	Energy Pointing & Tracking systems
BoomTime dba SpaBoom	Turnkey online gift certificate system for spas

Consolidated List

Company	Product / Business
BSC Optics	Provider of new and used optical tooling
Cabot Superior MicroPowders	Manufacturer of composite and microstructure powders for varied applications
Caldera Pharmaceutical Instruments, Inc.	Instrumentation to provide accurate drug-protein reactivity measurements early in the development process
Cardinal Health	Medical products manufacturing, Healthcare supply chain services
Cautela Inc.	IT services & network support
Cell Robotics International Inc	Laser-based medical devices manufacturing
CerroSci LLC	Biotech R&D for overexpression and protein isolation
CH2M Hill	Engineering consulting
CIC Photonics	Analytical instruments: FTIR Spectrometer accessories
Cimarron Computer Engineering, Inc.	Computer hardware & software systems integration
Cirrus Teleproductions	Motion picture/video production
CIVA	Epidemiological modeling and simulation software
Comet Solutions, Inc	Computational modeling toolkits for structural and optronic simulations
CommodiCast, Inc.	Investment advisory service management consulting services
Comnet Consulting	Computer related services computer systems design
Complexica, Inc	Software development & computer consulting
Composite Tooling Corporation	Engineering services, mfg aircraft parts/equipment, optical lenses
Control Alt Delete, Inc	PC and network solutions
Correlations Co.	Artificial intelligence for E&P studies
CPFD - Arena Flow	Engineering simulation software for industrial particle flows
CRT Holdings, Inc	Physical research
CryoPower Associates Inc.	Chalcogenide superconductors
CTS Wireless	Wireless communications components
CVI Laser	Optical components - assembly & mfg
Cyber Adversary Research Center	Security assessment provider
CytoDyn Of New Mexico	AIDS research
Cytogenetics Studio, Inc	Cytogenetic analysis
Dagonet Software	Therapeutic agents for use against HIV
Daniel B. Stephens & Associates, Inc	Business consulting services geosciences consulting services-misc

Consolidated List

Company	Product / Business
Dankoff Solar Products, Inc.(acquired by Arise Tech)	Manufactures and distributes solar water pumps, and distributes solar electric power components
Daylight Chemical Information Systems, Inc.	Chemometric processing software
Decade Optical Systems, Inc	R&D, design, and prototype assembly of advanced high-power laser diode arrays, solid-state laser systems
deCode Genetics (Iceland based)	Infectious disease research; $24 MM grant in conjunction w/UNM
Deep Web Technologies LLC	Information retrieval services telephone communications
DeVore Aviation	General Aviation Tail Lighting systems
Digital Migration, Inc.	Computer related services
Digital Traffic Systems	Traffic monitoring and commercial nonphysical research
Direct Power & Water Corp	Solar support structures and accessories, sys integrator
East Mountain (EM) Optomechanical Inc.	Metrology tools to the semiconductor and microsystems industries
Eberline Services, Inc.	Provider of environmental radiological services
Eclipse Aviation Corporation Inc	Aircraft manufacture of a Very Light Jet
Eco Sensors, Inc.,	Mfg air quality monitoring instruments
EG&G Technical Services	Systems engineering, integration, data acquisition, digital signal processing
Electro Science Technology	Microwaves, RF & high speed electronics, engineering, R&D, consulting, product design and development
EMCORE Optical Devices	VCSELs, photovoltaics and other communications component manufacture
Energy Control Inc.	System integrator and energy service company
EnerPulse	Pulsed plugs for automotive engines
Envirco Corporation (Aff. Fedders Corporation)	Manufacturer laminar flow products for pharmaceutical, medical device, semiconductor, and micro-electronics industries
Environmental Control Inc Aff. Waste Management of Texas	Waste management
Environmental Robots, Inc.	Biomemimetic nanosensors
ErgoTech Systems, Inc.	Computer systems design custom computer programming
ERM Group	Business consulting services
Esthete Research Inc	Physical research
Ethicon, Inc. (J&J Affiliate)	Surgical products - wound closure & cardiovascular surgery

Consolidated List

Company	Product / Business
Euroclydon Industries, Inc.	Information Technology solutions provider
Exagen Diagnostics Inc	Develops and commercializes genomic marker-based IVD kits that provide diagnostic and prognostic information allowing targeted treatments
Express Scripts (Affiliation)	Pharmaceuticals
Extreme AI	Digital media and entertainment publisher
Farr Research Inc.	Engineering services
Feldmatech, Inc.	Electromagnetic imaging
Fiore Industries, Inc.	Information Technology, Directed Energy, Instrumentation & data acquisition
Flow Science, Inc	Research & development (software & engineering) in computational fluid dynamics
FSMLabs	Software development
Fuel Cell Technologies Inc	Nonphysical research
Game Production Services	Video game production, animation
GE Fanuc Embedded Systems	Formerly SBS; embedded systems for avionics, single board computers, and other mil-spec I/O products
General Technology Corporation (GTC)	Electronic manufacturing services
Genetic Testing Laboratory, Inc.	DNA analysis
Genzyme Corporation	Medical research/lab
GeoGas Development Corp	Natural gas to diesel/gasoline conversion
GigaBlast.com	Search Engine
Global Haptics	3D design, VR, web3D, animation, telemanipulation, gaming, or science and technology applications
Gratings Inc.	Mfg semiconductors & commercial physical research
Great River Technology Inc.	Computer & electronic consulting
Heel Inc.	Manufacture of homeopathic medicinal/botanical products & pharmaceutical prep
Heffter Research Institute	Bio research
Holochip	Manufactures adaptive polymer lenses that allow focal length to be adjusted without moving the position of the lens
Honeywell Technology Solutions Inc.	Systems engineering, Operations & maintenance, Sustainment, Logistics support
Horton Technical Associates Inc.	Tech consulting operations research sw eng & development
HT Micro	Microsystems fabrication for a variety of industries
Hydrotechnics, Inc.	Manufacture of measuring/controlling devices/vector technology

Consolidated List

Company	Product / Business
HyTec, Inc.	2D & 3D computed tomography (CT) X-ray inspection systems, engineering services
Info Touch (formerly WorkingWild)	WiFi networks services provider
InfraSur, LLC	Engineering and technical services for environmental assessment, characterization, and remediation
InLight Solutions	Non-invasive blood glucose measurement systems research
Inmerge	Custom computer programming
Innovasic	Fabless semiconductor company that specializes in producing niche integrated circuits (ICs).
Innovative Surgical Technology, Inc.	Surgical and Medical Instrument Manufacturing
InSync, Inc.	Manufacture of custom optics for X-Ray through IR, KB Mirros, Bendable, Internally Cooled Miorros, Side Cooled and Beam Splitters
Integrity Networking Systems Inc.	Computer networking & mfg electronic computer & whol peripherals & software
Intel Corporation	Microprocessor, semiconductor manufacturer
Intelligent Energy, UK (formerly MesoFuel)	On-demand hydrogen generation systems for fuel cells
InterNetwork Experts	Computer services
Intor, Inc.	Optical filters
Introbotics Corp.	Manufacturer of high frequency PWB test and measurement equipment
Jackson & Tull	Space qualified manufacturing, space systems engineering services
Jandsk, Inc.	Business management & consulting
Jaycor - Applied Technologies Division	Space protection, High power microwaves
Jobsite Software, Inc.	Prepackaged software services
JSA Photonics, Inc.	Embedded sensors to monitor performance of lead acid batteries.
K.L. Steven Company, Inc.	Production of aerospace components, prototyping and manufacture (automotive, medical and semiconductors, as well)
Kemtah	IT Services
Kestrel Corp	Advanced imaging research and development firm specializing in hpyerspectral imaging and wavefront sensing
Khoral	Visual dataflow programming language: rapid prototyping and cradle-to-grave software development

Consolidated List

Company	Product / Business
Kiara Networks	Optical networks component developer
Kleinfelder Inc.	Professional services firm in natural and built environments
Komtek Communications	Industrial messaging panels
KSL Services aff. Halliburton Company	Contractor, service provider
Ktech Corp	Pulsed power research, facilities O&M, engineering R&D, materials, robotic and automated systems integration, electromechanical sys design
L&M Technologies	Facilities management, information technology, microelectronics R&D
La Luz Technologies, Inc.	Proprietary, self-referencing Doppler laser to accurately and affordably measure and report wind speed and direction along the last 2,000 feet of an aircraft's final approach
Lap Surgical Systems	Medical supply
Lasen Inc.	Airborne laser sensors to detect natural gas pipeline leaks
LaSys Inc.	Nano-composite materials with enhanced optical properties
Lectrosonics Inc.	Manufacturer of audio/video equipment mfg radio/tv communication equipment
Los Alamos Technical Associates, Inc.	Facilities Support Services & Information Technology Services
Lovelace Biomedical & Environmental Research Institute	Medical toxicology R&D
Lovelace Healthcare Innovations Inc	Medical research
Lovelace Respiratory Research Institute (Aff of under)	Life sciences R&D
Lovelace Scientific Resources Inc	Medical research
Lumidigm, Inc.	Biometric technologies development and manufacture
Maas Biolab, LLC	Biopharmacy
Management Sciences Inc.	Embedded sensing and reasoning R&D
Marpac, Inc.	Medical device
Matrix Solar Technologies, Inc.	Photovoltaic cell manufacturing
Mesa Analytics & Computing, LLC	Datamining software for
MesoSystems-ICX	Detectors for aerosolized biological agents
Metallicum	Nanostructured metals and alloys
Metatech Corporation	Noncommercial research organization services
MIOX Corp.	Ultraviolet light water purification systems

Consolidated List

Company	Product / Business
Mission Research Corporation	Electronic warfare. Modeling & analysis. Directed energy concept dev.
Monitech, Inc.	Manufacture of cardio-instruments
Motivity, Inc.	Software that analyzes skills and experience to help executives make personnel decisions
MSI, Inc.	Engineering services consultancy
MZA Associates Corporation	Custom computer simulation, optical design, and data acquisition, processing, and analysis for scientific experiments
Nanopore	Commercializing high porosity/high surface area materials for a wide range of applications
New Mexico Resonance	Scientific research, gases, materials
New Mexico Software (NMXS)	Information management systems for medical and dental markets, document storage and retrieval
Nexicon, Inc.	Internet Security and Billing Services
Nomadics	Pioneering technology for homeland security
North Star Research Corporation	Manufacture of electrical equipment/supplies Mfg process control Instruments
Northrop Grumman Information Technology	High energy lasers design & operation. Large optics design & analysis. Acquisition, pointing & tracking systems, DE simulations, Optical system design
Novint Technologies	Haptic software, force-feedback 3-D touch joystick for PC-based game / sim and other applications
Numerex	Computational physics and engineering R&D; Windows-based sim software
One Connect	Voice over internet protocol (voip) service provider
OpenEye, Scientific Software	Molecular modeling applications
Optical Insights, LLC/Roper Bioscience	Optic imaging
Optisource, LLC	Manufacturing Lab Apparatus/Optical And Laser Components Wholesale Professional Equipment
Optomec Advanced Applications Laboratory	Electronics, Biomedical, and Aerospace & Defense
Orion International Technologies	Engineering and information systems services, Nuclear weapons safety
Parsons, Brinckerhoff	Engineering services
Pay Lynx, Inc.	Software to enable banks to manage international money transfers
PE Biosystems	Government
Peak Sensor Systems, LLC	Sensor based technology tools for advanced process monitoring and control of semiconductor manufacturing processes

Consolidated List

Company	Product / Business
Pecos Labs	Clinical research
PhDx Systems Inc.	Clinical data management company providing technology tools, services and consulting to support the clinical and marketing activities of cardiovascular, orthopedic and spine medical products companies and clinical research organizations.
Photonic Associates	Management consulting services
Pinnacle Laboratories Inc	Physical research
Plasmatronics Inc.	Laser research development
Providence Technologies, Inc	Oil & gas exploration
QTL Biosystems, LLC, offices in SF and UK	Drug discovery: assay systems for the detection of proteases, kinases, and phosphatases; BioDetection: develops & markets instrumentation and bioassays for the detection of toxins, bacteria and other bio compounds
Quasar International, Inc.	Performance-based non-destructive testing
Qynergy Corporation	Radio isotope energy conversion into long-life, low-voltage power sources
Radiant Technologies, Inc.	Integrated ferroelectric circuits
Raytheon Photon Research Associates, Inc.	Applied observables & phenomenology; Electro-optical sensors & systems modeling & simulation
Redfish	Complex, adaptive systems
RediRipe, LLC.	Disposable sensor stickers to measure fruit ripeness
Retriever Tech	Advanced digital imaging (high-speed, full frame CCD cameras)
RhinoCorps, Ltd. Co.	Engineering services
Sacred Power Corp	Solar Energy project developers and implementation
Sage Sciences	Solutions for high-throughput Flow Cytometry
Sagebrush Technology, Inc	Designs & mfg precision motion control systems/ components
SAIC	Pulsed power, Sensor & electronic technology assessment, development, test & evaluation.
Samba	Driver record monitoring network systems
Sandia Aerospace	Manufacturer of avionics systems and related component
Sandia Technologies, Inc./Core Wafer Systems	Semiconductor manufacturing process R&D
Santa Fe Science & Technology, Inc	Physical research

Consolidated List

Company	Product / Business
SatWest LLC	Satellite telephone and data communications sales and service; project management; satellite hardware and device development
Satyrne Biotechnologies, LLC	computer modeling software to make implants to repair skull and facial fractures
Schafer Corporation	Optical products, systems engineering, analytical services, concept D&E, energy technologies and precision machining
SCI Science Center	Nichrome inoculating needles and loops
Science Medicus, Inc.	Physical research
SeiraD, Inc.	DNA analysis
Sennheiser Electronics	Wireless headphones and microphones
Sequoia Technologies Inc.	Engineering services
Seraf Therapeutics, Inc.	Inflammatory & autoimmune research
Shaw Environmental & Infrastructure	Environmental management/engineering services
Sierra Peaks Corp	Manufacturing, and packaging of electromechanical systems
Solar Automation, Inc.	Design-for-automation photovoltaic manufacturing equipment
Southwest Sciences Inc	Research in combustion, atmospheric chemistry, imaging, and optical sciences
Sparton Technology, Inc. Aff. Sparton Corporation	Manufacture of intrusion detection systems and sensors
STAR Cryoelectronics	SQUID control electronics for biomedical, lab instrumentation, non-destructive evaluation and geophysical exploration; foundry and design services
Stellar Science	OOP-based software for 3D modeling, image processing, scientific visualization, AI, and numerical optimization
Stolar Horizon Inc.	Mfg measure & control devices business consulting svcs mfg search/navigation equip mfg transformers and misc fab wire prdts
Strategic Analytics Inc.	Prepackaged software services management consulting services
Sumco USA	Silicon wafers for CMOS applications
Sun & Son	Software solutions and services for collaborative applications
Sunset Molecular Discovery, LLC	Drug discovery
Surfect	Automated electroplating tools for wafer-scale deposition, processes to apply metal deposits at the wafer level, and high performance interconnect technologies
Tadco, Inc	Sterile blade covers
TCInternational, Inc. (TCI)	Nuclear medicine, diagnostic equipment
Team Specialty Products (TSP)	Develops, fabricates, and tests state-of-the-art mechanical and electronic products.

Consolidated List

Company	Product / Business
Tech Source Inc.	Scientific and engineering consulting
Technology Integration Group (TIG)	Computing resource design, installation and integration
Technology Management Co.	Support services for businesses operating in Newly Independent State of the former USSR
Terradigm	Project and information management
Tetra Corporation	Electrohydraulic drilling and mining technology
Tetra Tech Inc.	Engineering consulting services
The MIND Institute	Mental illness research
The National Center for Genome Resources (NCGR)	Develops bioinformatics and computational biology tools to support genetic analysis and discovery
The Physical Science Laboratory	Research & development
Theragraphics	Electronic healthcare information management systems
Theranostech, Inc.	Biotech company
Thor Technologies Inc.	Research and development for ceramics and electronics
Tissue Medical Lasers, Inc.	Dermatological laser
Titan Technologies	Manufactures and licenses technology to recycle tires
TMC Design	Antenna design and engineering services
TPL, Inc	Materials-science based tech development and manufacturing company: Defense, Capacitance, & Micropower
Tri-Core Reference Laboratories	Medical lab
TruTouch Technologies	Non-invasive blood-alcohol level measurement
Ultramain Systems Inc.	Integrated maintenance and logistics software
Unirac, Inc.	Photovoltaic mounting systems
United International Engineering, Inc.	Technology assessment, Weapon system engineering & test services, technology planning & development
URS Corporation	Engineering services
Utilicraft Aerospace Industries, Inc.	Next-generation freight feeder aircraft manufacturer
VanDyke Software	Secure access and terminal emulation software
VeraLight	Medical devices for early diabetes detection
Veritran	Development of variable speed electric motor drives
Vertical Power	Experimental and sport aircraft wiring and electronics automation control hub

Consolidated List

Company	Product / Business
Vista Control Systems, Inc.	Wholesale computers/peripherals
Vista Photonics Inc.	Technology research development sales
Vizeon	Computer systems integrator of digital video and animation technology; 3D, MPEG-2 and multimedia
Voss Scientific	Scientific & engineering consulting
WaveFront Science	Manufacturer of optical instruments
Wellkeeper	Remote monitoring solutions for independent oil and gas operators
Westech International	Information technology, administration, operations and maintenance, test and evaluation
Western Technologies Inc.	Material Tstg Geotechnical Eng
Weston Solutions Inc.	Consulting services
Wired Nation, Inc.	Computer consulting
Xilinx	FPGA - Programmable Logic Device manufacturer
Xpresschex Inc (subsidiary of Electronic Clearing House, Inc.)	Software development
Zomeworks Corp.	Photovoltaic mounting systems
Ztec Instruments	Modular Oscilloscopes

Section 4: Business Resources

- Organizations

ACCION New Mexico
ACCION is a nonprofit organization that makes loans from $200 to $50,000 to self-employed individuals, new entrepreneurs and small businesses with limited or no access to traditional business credit. The organization practices "stepped lending," in which many clients start with a small first-time loan. Once they establish a strong repayment history, they may apply for larger loans. After applying, many clients receive their loans in days. Accion also mentors its clients and provides periodic training.
» Visit www.accionnm.org or call 1-800-508-7624

Albuquerque Economic Development (AED)
Albuquerque Economic Development, Inc. is a private, non-profit organization designed to recruit quality companies to the Albuquerque Metro Area and assists with the retention and expansion of existing industry. AED has been in existence for over 40 years, has recruited more than 200 companies to the Albuquerque area and provides extensive business incentive consulting to existing companies.
» Visit the Albuquerque Economic Development website or call 1-800-451-2933

Bureau of Business and Economic Research (BBER)
BBER at the University of New Mexico conducts economic and demographic research and analysis on the state. The bureau also maintains the Data Bank of census and demographic information and performs contract research.
» Visit the UNM Bureau of Business and Economic Research

City of Albuquerque (CABQ)
The City of Albuquerque maintains a number of online services, including airline flight information, becoming a vendor to the City, information on international trade, filming in Albuquerque, and business incentives.
» Visit the City of Albuquerque website

Community Development Loan Fund (CDLF)
The New Mexico Community Development Loan Fund is a private, non-profit organization that provides loans, training and technical assistance to business owners and non-profit organizations throughout the state and the entire Navajo Nation. Their services support the efforts of low-income individuals and their communities to achieve self-reliance and control over their economic destinies. The Loan Fund has successfully assisted hundreds of small business owners and non-profit organizations over the years.
» Visit the Community Development Loan Fund website

Coronado Ventures Forum
Coronado Ventures Forum (CVF) was founded in 1994 in response to the need in New Mexico to educate investors and entrepreneurs on the process of early-stage, private equity funding, and to provide a gathering point for these two communities to come together and network.
» Visit the Coronado Ventures Forum website

eMercadoNM.com
This web site allows small businesses to post information about their products and services and obtain information about becoming suppliers for state and federal governments. Leading the effort are the Albuquerque Hispano Chamber of Commerce and New Mexico Institute of Mining and Technology, with support from Sandia National Laboratories, the City of Albuquerque, and other agencies and organizations.
» Visit the e-Mercado.com

Enchantment Land Certified Development Co.
This nonprofit corporation administers the SBA 504 Loan Program in New Mexico and provides 20-year, fixed-rate loans with low down payments (10%), for land, buildings and equipment for expanding small businesses. Project sizes range from $120,000 to $8 million. For information call 505-843-9232.

High Tech Consortium of Southern New Mexico (HTCSNM)
Headquartered in Las Cruces, NM High Tech Consortium of Southern New Mexico's vision is to make New Mexico a regional technology leader in the short term and a national center of technical excellence in the long term.
» Visit the High Tech Consortium of Southern New Mexico website

Kirtland Technology Park / Phillips Institute
The Phillips Institute is a government/industry/academia consortium that will be the nation's premier resource for development, analysis, integration, transition, and transfer of advanced space and directed energy technologies. It will operate in close coordination with the Air Force Research Laboratory (AFRL) directorates located at Kirtland Air Force Base. The Phillips Technology Institute will be more than just a "virtual" consortium of member organizations. AFRL and the Kirtland Air Force Base leadership have established the Kirtland Technology Park to enable consortium members and other interested parties to lease land and construct facilities immediately adjacent to the existing AFRL campus. The Kirtland Technology Park is planned to be a 300 acre development located on base property along Gibson Boulevard, one mile east of the Albuquerque International Airport.
» Visit the Phillips Insitute / Kirtland Technology Park website

Metro New Mexico Development Alliance
This is a regional marketing alliance of Central New Mexico communities to support business recruitment and expansion, which maintains an extensive repository of information about communities, available real estate, business and the economy on its web site.
» Visit the Metro New Mexico Development Alliance

New Mexico Angels (formerly New Mexico Private Investors, NMPI)
Inspired by Silicon Valley's Band of Angels, NMPI is a group of private investors and venture capital companies working together to invest in early-stage, New Mexico technology companies with potential for growth.
» Visit the New Mexico Private Investors website

New Mexico Biotechnology & Biomedical Association (NMBBA)
The New Mexico Biotechnology & Biomedical Association (NMBBA) connects regional companies and bioscience organizations with national and international investors, customers and collaborators. NMBBA further serves its membership of over 180 member and 100 device, diagnostics, bioinformatics and pharmaceutical companies by sponsoring key networking events, workshops, and conferences.
» Visit the New Mexico Biotech & Biomed Association website

New Mexico Community Development Loan Fund
This nonprofit, alternative lender makes loans of $5,000 to $100,000 to small-business owners and aspiring business people who may not qualify for conventional financing. The fund also

makes loans to nonprofit organizations. Lending goals are to help low-income people, women and minorities and to provide positive social benefits to the community, such as job creation, affordable housing and services to low-income people. To help clients succeed, NMCDLF also provides technical assistance and training to borrowers and offers regular financial literacy workshops.
» Visit the New Mexico Community Development Loan Fund

New Mexico Economic Development Department (NMEDD)
The Economic Development Department's purpose is to foster a sustained rise in New Mexico's production of goods and services, which in turn raises the standard of living for New Mexicans. Economic Development is a broad area, and everything from job training, to filmmaking, to international trade, to downtown revitalization, and more falls under their umbrella.
» Visit the New Mexico Economic Development Department website

New Mexico Flying 40
This is an annual awards program that recognizes the 40 fastest-growing technology companies headquartered in New Mexico. Together the 40 companies in 2006 had more than $928 million in annual revenues, up 61 percent from $450 million in 2000, and provided nearly 4,900 jobs, up 87 percent from 2,615 in 2000.
» Visit the Technology Ventures Corp. website

New Mexico Manufacturing Extension Partnership
Manufacturers, large and small, can take their problems to New Mexico MEP and find expertise in technology and business practices. The service network addresses efficiency, waste, international certifications, global supply chains. The New Mexico MEP is one of 50 centers in each state linked through the U.S. Department of Commerce National Institute of Standards and Technology (NIST).

MEP project managers include engineers, process specialists, and manufacturing managers. MEP is also associated with a network of laboratories, colleges and universities, and economic development agencies.

MEP specialists can help integrate small suppliers into the resource networks of large customers, prime contractors and OEMs (Original Equipment Manufacturers). The technical staff can help companies qualify under the most rigorous buying criteria; meet quality, delivery, and cost control objectives; and obtain necessary certifications.

Services include business planning, product development, supply chain development, lean manufacturing, process improvement, quality assurance, information technology management, and international business development.
» Visit the New Mexico Manufacturing Extension Partnership

New Mexico Media Industries Association (NMMIA)
NMMIA was formed to guide NM's media industries development over the short, intermediate, and long-term, which ultimately created the New Mexico Media Industries Association. Derived from the Governor's Media Industries Strategy Plan, MISP envisions New Mexico as a globally recognized center of excellence and innovation in the emerging media arts and sciences. The plan's tangible goal is to create a viable, sustainable media industries cluster.
» Visit the Media Industries Strategy Project website

New Mexico Native American Business Development Center
The center provides management and technical assistance to qualified Native Americans to start businesses or improve existing businesses in such areas as business development, capital development, marketing, procurement and contracting, accounting systems and organizational development, and business information systems. A financial analyst can also help clients understand financing, budgeting, and financial statements.

The center also has such online services as F.W. Dodge Reports, Commerce Business Daily, ECRC and GBIS Demographic Software.
» Visit the New Mexico Native American Business Development Center

New Mexico Open Source Users Group (NMOSUG)
New Mexico Open Source Users Group is a special interest group for users of open-source software. It is a community resource, a place to find answers, and a place to share your knowledge and experience with others. Join the NMOSUG mailman listserve to stay on top of trends, meetings and other activities.
» Visit the New Mexico Open Source Users Group - NMOSUG website

New Mexico Optics Industry Association (NMOIA)
New Mexico has long been a world leader in optical technologies and the industry is thriving with new and expanding companies. New Mexico Optics Industry Association (NMOIA) is dedicated to bringing together optics-related businesses, institutions, and professionals to foster the growth of this very important industry in New Mexico.
» Visit the New Mexico Optics Industry Association website

New Mexico Small Business Development Center (SBDC)
Whether you already own a small business or are thinking about becoming an entrepreneur, the New Mexico Small Business Development Center Network can help you climb the ladder of success. The 18 SBDC offices in New Mexico offer FREE management assistance, training courses, and small business resources.
» Visit the New Mexico Small Business Development Center website

Regional Development Corp. (RDC)
The Regional Development Corp. assists Northern New Mexico communities and industry in managing their economic development projects and renewable energy initiatives.
In addition, the RDC hosts the local affiliate of SATOP, the Space Alliance and Technology Outreach Program (SATOP), which provides free technical assistance to small businesses (see entry under Space Alliance and Technology Outreach Program). The RDC is also part of a network of service providers which provides business related support to entrepreneurs and small/start-up businesses
» Visit the Regional Development Corp. website
» Visit the SATOP website

Sandia National Laboratories, Small Business Assistance Program
Scientists will help a business with up to 500 employees solve short-term technical problems. For assistance with a maximum value of $5,000 there is no charge; they can provide additional help on a fee basis. Sandia also has a variety of formal partnerships with industry, including Cooperative Research and Development Agreements and licensing agreements.
» Visit the Sandia National Laboratories Small Business Assistance Program website

Sandia Science & Technology Park (SSTP)
The Sandia Science & Tech Park is a 200+ acre technology community in located adjacent to Sandia National Laboratories in Albuquerque. Tenants have access to Sandia's world-class technologies, state-of-the-art facilities, and internationally recognized scientists and engineers. The Park is a pedestrian-oriented, campus-style development with redundant electrical power and a cutting edge fiber optic infrastructure. All property is zoned industrial, and companies can benefit from an accelerated City of Albuquerque approval process for construction. A credit union and daycare center are available as amenities for companies. The Park is managed by full-time, customer-focused staff. Visit here, for a complete list of tenants.
» Visit the Sandia Science & Tech Park website

SCORE (Service Corp of Retired Executives)
The Albuquerque chapter of SCORE, a program of the US Small Business Administration, provides free expertise to small businesses by volunteer counselors. More than 300 counselors have helped more than 10,000 clients in start-up or existing businesses in Albuquerque. You can email a SCORE counselor at mailto:counseling@abqscore.org. SCORE also presents a monthly workshop, "Essentials for Starting A New Business," which covers business plans, management, marketing, tax considerations, insurance, financing, law, record keeping and the SBA. SCORE also offers low-cost business training workshops and seminars on such subjects as writing a business plant, e-commerce and marketing.
» Visit the Service Corp of Retired Executives website

Small Business Administration Business Information Center:
Located in the Albuquerque Hispano Chamber of Commerce complex at 1309 Fourth Street SW, Suite A, the center has on-site counseling by members of the Service Corps of Retired Executives (SCORE) as well as information accessible by computer, plus an extensive small-business reference library of books, periodicals and video tapes. Entrepreneurs can use these resources to plan their businesses, expand an existing business or venture into new business areas.
» Visit the Small Business Administration Business Information Center website or call 505 346-7830.

Small Business Development Centers
The Albuquerque Small Business Development Center is a source of free, confidential information to small business people and aspiring business owners. It's one of 18 around the state sponsored by the U.S. Small Business Administration, the state of New Mexico and the New Mexico Association of Community Colleges.

Albuquerque has two SBDCs – one at 2501 Yale Blvd SE Ste 302 in Albuquerque and another in the South Valley, located at 1309 4th Street Suite A SW. They offer individual counseling in business start-up or acquisition, accounting, business liquidation or sale, government procurement, marketing and sales, sources of capital, financial analysis, research and development and international trade.

The center offers training in business planning, market research, basic bookkeeping, cash-flow analysis and financial statements. The SBDC doesn't make loans, but it does work closely with lenders, the SBA and other programs and can help small businesses identify sources of financing and develop proposals.

The center also has a business resource library, which includes sample business plans, textbooks, industry guides, periodicals, handouts and online resources.
» Visit the Small Business Development Center website

Small Business Institute
The Small Business Institute at the University of New Mexico provides free management consulting to Albuquerque area businesses by graduate and undergraduate students enrolled in business management courses at the Anderson Schools of Management.

The program gives students some experience working with small businesses and provides management assistance, expertise and guidance to small businesses. Since 1978, the Institute has served more than 600 businesses.

Clients include start-ups, entrepreneurs, expanding businesses, nonprofits, and family businesses in service, technology, retail, and wholesale sectors.
» Visit the Small Business Institute website

Space Alliance Technology Outreach Program
SATOP helps small businesses apply the technical expertise derived from the U.S. Space Program by offering up to 40 hours of free engineering assistance. Volunteers within space-related industries and organizations, such as White Sands Test Facility in New Mexico, offer their time and expertise to solve problems of small businesses. SATOP has helped companies with such issues as machine design, process engineering and materials selection. SATOP, located in Santa Fe at Regional Development Corp., is a cooperative program between the states of New Mexico, Florida, New York, and Texas.
» Visit the SATOP website

State Investment Council
This agency administers trust funds for the state of New Mexico. And it's also authorized to make loans and investments to further economic development in the state.
For a company relocating or expanding in New Mexico, the State Investment Council can participate up to 80 percent in loans of $250,000 to $2 million originated by New Mexico financial institutions and secured by a first mortgage with real property as collateral. Proceeds must be used to buy land and buildings or to refinance debt of an expanding company.

The SIC can buy up to $20 million of investment-grade bonds, notes, debentures or debts (but not commercial paper) when proceeds are used to establish or expand businesses in New Mexico.

The SIC can invest in qualified venture capital funds with a New Mexico headquarters or office. The funds must target investments to New Mexico companies.

And the SIC can invest directly in a New Mexico company with the potential to create or add good jobs, as long as a qualified co-investor, such as a venture-capital fund, also invests. The council can invest in out-of-state companies that move to New Mexico. The state can't own more than half of a company, and no more than 10 percent of the program's funds can be invested in any one company.
» Visit the State Investment Council website

Technology Ventures Corporation (TVC)
Technology Ventures Corporation is a not-for-profit, 501(c)3 private foundation, founded by Lockheed Martin in 1993, and funded by both Lockheed Martin and the Department of Energy's National Nuclear Security Administration (NNSA). The mission of Technology Ventures Corporation is to help startup companies that are developing technology from the national laboratories in California, Nevada and New Mexico.
» Visit the Technology Ventures Corp. website

University of New Mexico Science & Technology Corporation (STC@UNM)
Science & Technology Corporation @ UNM (STC) is a nonprofit corporation formed by and owned entirely by the University of New Mexico (UNM) in 1995 by the Regents of UNM to protect and transfer its faculty inventions to the commercial marketplace. STC licenses innovative technology developed at UNM, including optics, microfluidics, and high performance materials as well as therapeutics, diagnostics, medical devices, and drug discovery tools.
» Visit the UNM STC website

University of New Mexico Science & Technology Park (STP@UNM)

The Science & Technology Park @ UNM is owned and managed by the University of New Mexico. The Park is comprised of 163 acres, 41 of which were developed in Phase 1. Phase 2 has commenced with the development of an additional 42 acres, while future phases will encompass approximately 80 acres.

The Park's 360,000 square feet of existing research and development space currently houses a number of start-up companies, several of which are the creation of the Science @ Technology Corporation (STC), as well as the University's training and community clean room, the Manufacturing Training and Technologies Center, which features a six inch process tool line for start-up companies to utilize for prototyping and development, in addition to the Universities teaching mission. For more information about the MTTC please visit the MTTC.
» Visit the UNM STP website

U.S. Small Business Administration

The SBA provides a number of loan-guarantee programs that allow small businesses to gain bank loans. See www.sba.gov or in Albuquerque call (505) 766-1870.
Through the SBA Business Information Center, information is accessible by computer and a reference library of books, periodicals and videotapes.
» Visit the US Small Business Administration website

WESST Corp (Women's Economic Self-Sufficiency Team)

WESST Corp is a statewide, nonprofit economic development organization that primarily helps women and minorities start and grow businesses, although services – business consulting, business training and loans -- are available to any New Mexico resident.

In 2008 WESST Corp plans to open a small-business incubator in the downtown area. Funded by the City of Albuquerque, the State of New Mexico and the U.S. Economic Development Administration, with private-industry partners, the incubator will lease space at modest fees for up to three years to about 30 small businesses. It will also provide training rooms, technical assistance and light manufacturing space. A primary focus will be on digital media production and artisan manufacturing. Other targeted businesses will be light manufacturing, and professional, technical and service businesses.

WESST Corp also operates MARKETLINK, a sales and marketing training program that helps carefully screened artisan entrepreneurs with viable products gain access to larger markets. MARKETLINK's website, www.WesstArtisans.com helps New Mexico artisans sell their products.

Other special initiatives serve such targeted groups as residents of public housing, political refugees, and TANF (Temporary Assistance for Needy Families) recipients. In 2003, WESST Corp initiated an Individual Development Account program for low-income residents of Bernalillo County.

WESST Corp operates a revolving loan fund that makes small business loans to people who can't get conventional loans. Loans range from $200 to $5,000 for start-ups and $200 to $35,000 for established businesses. Rates vary from 5 to 10 percent. Clients work with WESST Corp for the duration of the loan and receive training. And WESST Corp is an SBA Approved Intermediary; staff members can help clients with SBA or other loans.
» Visit the WESSTCorp website

Section 5: Reference

The Albuquerque region has benefited from a variety of strategic assessments of our strengths in different technological aptitudes. A number of these reports were used in the creation of this document, but because of their size and scope it is impossible to replicate them in their entirety. Most of the recent and notable reports are cited below with a brief abstract.

Initiative: Access-2-Capital
Sponsor: New Mexico Community Capital
Completed: Q2 2007 (est)
New Mexico Community Capital has assumed the role of publishing the New Mexico Access-2-Capital reference document; the publication is quarterly and will commence Q2 of 2007. Contained are references for difference sources of funding and advice for entrepreneurs where to look and who to contact.
Please visit www.nmccap.org

Initiative: Bioscience Report
Sponsor: NextGen
Completed: 2003
Next Generation Economy, Inc. commissioned Argus Insights, a premier technology research firm, to complete an exhaustive study of the Bioscience economy in New Mexico. Vast in scope and detail, the report confirms long-held suspicions about the local concentration of biotechnical, biomedical and related industry activities. The complete report is available at www.cabq.gov/econdev

Initiative: BioTeP (the Governor's Biotechnology Partnership)
Sponsor: State of New Mexico
Completed: 2005
The New Mexico BioTeP Initiative Task Force was created to build upon the existing infrastructure of the Biotechnology and Biomedical Industry, including genomic, bioinformatics, and many other areas of concentration with the purpose of increasing the number of related jobs in the State. BioTeP will work with cutting-edge companies, universities, colleges, national laboratories, non-profits, and technology transfer organizations to create new jobs and stimulate economic activity in communities throughout New Mexico. The full report is available at www.cabq.gov/econdev

Initiative: Report: "Microsystems Cluster Project"
Sponsor: NextGen
Completed: 2003
The report presents the results of work by C2V on the Microsystems Cluster project for the benefit of economic development in Central New Mexico. The project involves the support and usage of Microsystems product development and manufacturing resources from Sandia National Laboratories, the University of New Mexico, and their respective affiliates. Next Generation Economy, Inc. required C2V to formulate a task for determining the type of equipment necessary for a service providing MST clean room facility for the University of New Mexico area. The full report is available at www.cabq.gov/econdev

Initiative: Central NM Regional Competitiveness Initiative
Sponsor: Economic Development Administration
Completed: 2003
Funded by a grant from the Economic Development Administration, the Council on Competitiveness performed a six-month assessment of the regional economy's strengths, weaknesses, opportunities and threats, essentially updating the original study that created the framework for NextGen. The Council on Competitiveness is a nonpartisan, nonprofit organization of CEOs, university presidents and labor leaders joined in promoting U.S. economic growth, success in global markets and prosperity for all Americans. Central New Mexico is one of three regions the council has chosen for focus, along with northeastern Ohio and Delaware. The full report is available at www.cabq.gov/econdev

Initiative: The Next Generation Economy Initiative
Sponsor: Department of Energy, City of Albuquerque
Completed: 2000
The overarching goal of the Next Generation Economy Initiative (NGEI) was to strengthen Central New Mexico's ability to create more high quality, private sector jobs in more competitive industries. Because many informed leaders believe that the federal government will continue to reduce spending in the region, a closely related goal of the NGEI was to permanently reduce Central New Mexico's economic dependency on federal spending. Achieving these outcomes will require building a more diversified and dynamic economy—one that can be a stronger competitor in global and domestic markets. Through the NGEI, new strategies for developing the economy resulted in a more prosperous Central New Mexico economy. A more prosperous economy is the path to higher incomes and higher standards of living for people—the ultimate goal of economic development. The full report is available at www.cabq.gov/econdev

Initiative: Battelle Technology Partnership Practice & State Science & Technology Institute 2006 State Bioscience Initiatives: New Mexico

Sponsor: BIO – Biotechnology Industry Organization

Completed: 2006

Prepared in conjunction with Battelle, SSTI and NMBBA and the State of New Mexico Economic Development Department's Office of Science & Technology, this report details the current state government initiatives in Bioscience in New Mexico, as well as the basic metrics of the local industry. BIO assesses workforce and company demographics, as well as research expenditures.

The full report is available at www.cabq.gov/econdev