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NEW MEXICO STATE UNIVERSITY

ARROWHEAD CENTER, INC.



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FOR ENTREPRENEURSHIP
AND ECONOMIC
DEVELOPMENT



Message from the President



To compete in today's technology-based world, we must be proactive in increasing economic wealth. To raise the standard of living for all, it is crucial to foster and promote economic growth.

In 2004, Arrowhead Center Inc. was established with one goal in mind – to help turn ideas into jobs and wealth. Today, however, Arrowhead has evolved into a more comprehensive entity, offering services in intellectual property

commercialization, business incubation, entrepreneurship and business assistance, workforce development and policy analysis.

Exciting things are happening at Arrowhead!

The activities and successes of the Center have far exceeded

expectations. Some accomplishments include forming a partnership with the Technology Transfer Division of Los Alamos National Laboratories; spinning off Genetic Testing Laboratories Inc., a for-profit genetic testing lab that has grown dramatically in the past year; helping in the licensing of a chile thinning machine; receiving support from the Legislature and \$3 million in federal funding; continuing K-12 outreach and education; conducting an economic impact study on the spaceport and having more than 150 NMSU students involved in Arrowhead.

As the university's principal vehicle for economic development, Arrowhead also serves as a training facility for the next generation. The directed-learning experience is one of the main reasons the Center was formed, and allows our students to work on real projects that will have real consequences in today's world.

Looking toward the future, we look forward to many new partnerships and endeavors that will help New Mexico – and beyond.

Garrey Carruthers, President
Arrowhead Center, Inc.

A Little Bit About Arrowhead Center, Inc.

The Arrowhead Center has seen new beginnings, new partnerships and new challenges. In March 2004, the New Mexico State University Board of Regents approved the name change and re-organization of the Technology Transfer Corporation to Arrowhead Center, Inc. The original purpose of the Center was to be a national leader in commercializing intellectual property, fostering economic growth by integrating academic, research and business talents. However, the mission of the Center has expanded to include various aspects of sustainable economic development.

Projects undertaken have greatly exceeded most optimistic goals. NMSU took an equity position in a commercial venture spun out from university laboratories. New Mexico Mesa and the Technology Transfer Division of Los Alamos National Lab-

oratory joined in our efforts to commercialize technology and promote entrepreneurship. Arrowhead also has collaborated with and gained the support of many other nationally recognized institutions. It has been featured in a variety of publications, including the *New Mexico Business Journal*, the *Albuquerque Journal* and the *El Paso Times*. Geographically, our project portfolio extends from Farmington to Clayton, from Silver City to Artesia, and from Santa Teresa to Los Alamos.

The Arrowhead Center is now moving to the next level. New Mexico State faculty, staff and students have worked to create a strong foundation, representing what the center is truly about – a better New Mexico.

For more information go to www.arrowheadcenter.org.

Final Thoughts from the CEO . . .



With initial funding of \$72,000 from the Legislature, we have spent the past year endeavoring to maximize the return on investment while meeting the vision described by Chairman Carruthers. Through the efforts of students, faculty, and staff the Arrowhead Center has been successful in this regard. More than thirty faculty members, 100 students (35 supported as graduate students) were involved with projects over the course of the year. Clients included on-

campus as well as off-campus concerns, government, businesses, and communities located across the State. While the on-going collaboration with the Technology Transfer Division of Los Alamos continues to be exciting, so is working with individual entrepreneurs. Two entrepreneurs have been selected as finalists to make presentations at Technology Ventures Corporation upcoming Equity Capital Symposium.

State, municipal, and county projects continue to come our way as well; including policy analysis for the NM Human Services Department, a strategic assessment of the economic return on and market opportunities for the Southwest Regional Spaceport, and various economic impact assessments. New jobs are being created through these and other initiatives, most notably the spin-off of Genetic Testing Laboratory. In a little over 10 months, GTL has gone from a proposition operated by NMSU, to a business success story, tripling its employment of professional staff, providing opportunities for student internships, and doubling the space occupied in the Genesis Center.

From my perspective, it has been a positive year with a positive return, laying the foundation for more success in the future. I hope that you will agree.

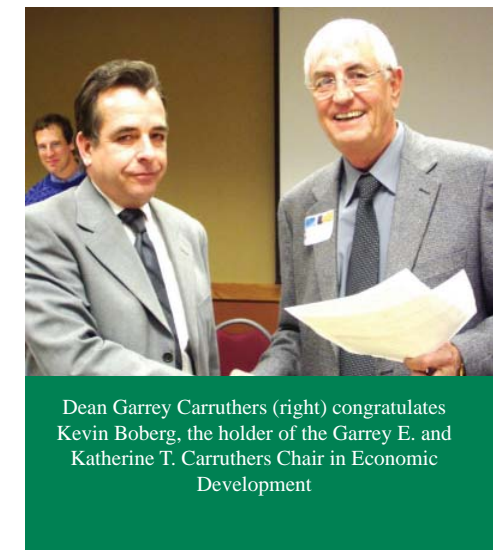
Kevin Boberg
Director and CEO, Arrowhead Center, Inc.

Stay Tuned

Garrey E. and Katherine T. Carruthers Seminar Series in Economic Development

In 2004, Garrey & Kathy Carruthers made a gift of \$500,000 to the College of Business to establish an endowed chair in economic development. The State matched this contribution with \$1 million endowment. In January 2004, Kevin Boberg was named the holder of the Garrey E. and Katherine T. Carruthers Chair in Economic Development.

Part of these funds will be used to launch the Garrey E. and Katherine T. Carruthers Seminar Series in Economic Development, hosted by Arrowhead Center, Inc. Expected to be launched in Fall 2006, this seminar series will be held once a month. The featured speakers will be from NMSU and private industry, including business leaders, entrepreneurs, and venture capital firms. The purpose is to inform the NMSU community and the general public about trends in economic development activities and entrepreneurship opportunities.



Dean Garrey Carruthers (right) congratulates Kevin Boberg, the holder of the Garrey E. and Katherine T. Carruthers Chair in Economic Development

Innovation with Innoventure



This Fall, New Mexico MESA, Innoventure, and the College of Business at NMSU teamed up to hold the fourth annual Innoventure Competition. Middle and high school students from Las Cruces, Deming, Silver City, Socorro, Chaparral, Gadsden, and Santa Teresa competed in this year's competition.

In conjunction with the X Prize Cup, held in October of last year, this year's Innoventure theme was space commercialization and space tourism. Each team was tasked to develop a product that could be used in space by astronauts or space tourists. The invention had to exemplify research in science, engineering, and technology, but also show an emphasis in business. There were several business components, including: a business plan, marketing study, and an "elevator speech."

The College of Business and Arrowhead Center teamed up to mentor the teams on the business aspects of the invention - specifically trying to get the students to think about practical applications, target markets, and methods of promotion and advertising for their product or service. The students were also required to do a patent search and consider ways to commercialize their intellectual property.

The final competition, held February 24, 2006 was a great success. The qualifying teams gathered to present their projects in front of their peers, the judges, and the press. The students gave oral presentations in front of large audiences about their inventions.

The winners went home pleased with their hard work - along with a few great prizes. First place winners, Las Cruces High School and Deming Middle School, took home digital video cameras. Second place winners, Socorro High School and Chaparral Middle School, took home Robo Pets.

This year's competition was a great success and many of the students are looking forward to the challenge next year.



Students competed at the Fourth Annual Innoventure Competition held February 24, 2006.

Arrowhead Center Funding from the DOE and SBA

On November 14, 2005, Garrey Carruthers received news that Arrowhead Center will receive \$2 million in federal appropriations from the Department of Energy (DOE), sponsored by Senator Pete Domenici's office. Senator Domenici has been a long-time advocate of economic development in New Mexico, specifically in the areas of intellectual property commercialization and business development. He has also been a continuous supporter of Arrowhead Center and its strategic initiatives.

In addition to the DOE funding, Arrowhead Center will receive \$1 million from the Small Business Administration. Both sources of funding will be used to meet agency requirements, and where possible, to expand all five strategic business units, further develop Arrowhead's operation structure, and help with outreach and extension services.



A delegation from Arrowhead Center was represented at Las Cruces Day in Santa Fe 2006. The delegation traveled to Santa Fe to promote Arrowhead Center's initiatives to state government. From left: Sara Pirayesh, Dawn Hommer, and Kevin Boberg.

Real World Experience with Real Life Outcomes

Arrowhead Student helps in the Development of a Commercial Product

New Mexico State University graduate student, Madeline Gillette has been involved with a project that could potentially save hundreds of teenage lives.

Gillette, who is working on a master's degree in economics, has been helping the Santa Fe company PaceIgnitions develop a business plan for a Global Positioning System-based device that is a safety and teaching product. According to the company, the device "allows parents to program speed thresholds, allowable time of operation and distance from home thresholds for their teenage driver."

Gillette worked on a market analysis for the product and looked into competitors, market size, barriers in entering this market, reasons why people might want the device and tools consumers might be looking for in this type of product.

One of the most enjoyable and interesting tasks for Gillette was producing an online consumer survey.

"I learned a lot about online surveys and ways they are different from normal surveys," she said. "I also learned about the importance of getting consumer opinion because (the results) didn't come back exactly how I thought (they) would."

Gillette noted that some of the features she thought consumers would want didn't rate as well as she thought they would, but overall she says the responses were positive.

For the survey, 200 parents of teenagers were asked several questions about the product from safety issues to overall feel

of the product.

Gillette also did research on promotions and incentives. For instance, she looked into how to reach different levels of consumers.

The Las Cruces native is not the only student receiving real-world experience.



New Mexico State University graduate student Madeline Gillette has been involved with the development of a device that monitors, controls and governs teenage drivers.

"(PaceIgnitions) is one of several projects undertaken by the Arrowhead Center through student research assistants and students participating in the MBA capstone class," said Kevin Boberg, director of the university's Arrowhead Center, Inc. "On average, we work on 20 projects per semester, involving in excess of 40 students."

Boberg added: "Madeline has done an exceptionally thorough analysis, including secondary research, surveys and expert interviews. I think her client would attest that her contributions have significantly contributed to the potential commercialization of the product."

Gillette, who has a bachelor's degree in environmental studies from New College in Florida and a master's in social work from NMSU, has been with Arrowhead for about a year.

"(This program) helped me learn more about the business environment in general, about entrepreneurship, about writing business plans and doing market analyses," Gillette says. "It has been an interesting learning experience."

Courtesy of Jeany Llorente-Ontiveros

PaceIgnitions has been chosen to participate in the 2006 Equity Capital Symposium hosted by Technology Ventures Corporation.

Business Opportunities at the Arrowhead Research Park

Located on the main campus of New Mexico State University (NMSU), the Arrowhead Research Park offers private and public organizations immediate access to nationally recognized academic and technical on-site resources. NMSU is recognized as a top research university with nearly \$150 million in research grants and contracts.

The Park offers prospective tenants many benefits:

- Intellectual and infrastructure resources of a research university
- An on-site, world-class telecommunications network
- Easy access to Interstate 10 and 25
- High speed internet connectivity
- Business incubation services

Access to university resources provides prospective tenants with many opportunities: collaboration with faculty and staff; employment of students; use of specialized facilities and equipment; reciprocal purchase/exchange of services and knowledge; partnerships with NMSU in pursuit of grants and contracts; availability of business assistance programs offered by Arrowhead Center and the New Mexico Small Business Development Centers; and development of customized training courses.

The Park encompasses approximately 257 acres, at the confluence of Interstates 10 & 25 in Las Cruces, New Mexico. The area of current development consists of 15 acres with all advanced infrastructure in place, including a state of the art telecommunications network that is secure, flexible and scal-



able to meet tenant demand.

One of the most recent spin-off businesses developed from university research is the Genetics Testing Laboratory (GTL), a New Mexico corporation located at the Genesis Center, a business incubator building at the Park. GTL offers a variety of DNA testing services and is supported by expertise offered by the faculty and staff of NMSU.

Research and development companies are sought that can benefit from proximity to and a relationship with NMSU, with its strong research programs, including space and aerospace, natural resources, information security, and the southern U.S. border. Currently, several spaceport-related businesses, such as the Rocket Racing League, have expressed interest in locating their research and development headquarters at the Park.



Arrowhead Students Help with the Groundwork of the Spaceport

During the summer of 2005, NMSU graduate students were part of a team tasked with designing an economic development plan for the Southwest Regional Spaceport to be built in Upham, NM.

The students - Andrew Dorsey, Peter Dearing, Rodolfo Acosta, Craig Naramore, Jason Cowden, Clinton Turner, and Robert Vickrey - helped researchers study a variety of issues ranging from infrastructure to community development for the New Mexico Economic Development Department through NMSU's Arrowhead Center.

Dorsey studied spaceport infrastructure, working with Jeffrey Teich, a professor of management.

"Spaceports need their own medical facilities, fire departments, police departments, security and meteorological support, among other things," said Dorsey, who is now working with the team assisting project manager Pam Wood to help New Mexico communities develop business plans so they, too, can be a part of the new industry.

For example, Alamogordo has asked for help in developing a strategic plan so it might one day provide training facilities. Peter Dearing, an MBA student, tackled liability working with department head of finance Lizbeth Ellis. Dearing said there are numerous legal hurdles in licensing a spaceport.

"The average third-party liability insurance premium ranges from \$100,000 to \$400,000," Dearing said. "If New Mexico wants to get this going as a viable commercial enterprise they need to do something to help the insurance aspect of this, either through legislation to limit liability or through some other mechanism."



Graduate Students Andy Dorsey, Peter Dearing, Professor Jim Peach, Professor Rich Fortin, Kathy Hansen, and Professor Tony Popp discuss the Spaceport Feasibility Study and Business Plan.

Rodolfo Acosta, an MBA student, worked with Tony Popp, a professor of economics. He researched potential competitors and customers. "I had no idea the amount of people who wanted to go into space and how much they are willing to pay," he said.

Kevin Boberg, associate dean of the College of Business and the director of Arrowhead, said students must be involved in these serious projects to keep them engaged and to retain them. One of three reasons why the Arrowhead Center exists is to provide students with directed learning experiences.

"They are absolutely critical," he said. "The project would be impossible without them."

Courtesy of Jeany Llorente-Ontiveros

One of Arrowhead's founding philosophies is to provide students with directed learning experiences.