

New Mexico State University (NMSU)
Application for Association of Public Land-grant Universities (APLU)
Innovation and Economic Prosperity (IEP) University
Designation and Awards Program
May 1, 2015

1.0 Process Narrative (word count 2,497)

1.1 Introduction

In 2013 NMSU began reconsidering the organization and operations of its research and economic development functions. NMSU explored economic development and research organization at NMSU's peer institutions, and assessments of best practices at other public universities throughout the country, which led NMSU to the APLU IEP Designation and Award Program. NMSU explored best practices from each of the universities designated in the first IEP cohort, paying particular attention to administrative organization. The culmination of this analysis resulted in the establishment of the Office of the Vice President for Economic Development (OVPED) as a full-time administrative office in early 2014, its first action to apply for the APLU IEP designation.

Previously a part-time unit associated with the College of Business and Arrowhead Center, NMSU's innovative technology commercialization and entrepreneurship incubator, the OVPED embarked on the IEP self-assessment with goals of establishing a baseline understanding of institution wide economic development efforts, internal and external perceptions of NMSU's role in economic engagement, and assessing NMSU's impact on economic prosperity throughout the state. NMSU conducted its self-study and participated in the 2014 APLU IEP cohort, but was not selected to receive the designation. In August of the same year, NMSU joined the 2015 IEP cohort determined to revise and re-submit its application for the APLU IEP designation. As a result of

various self-study processes over the last year, the institution has gained greater perspective of its strengths and weakness, subsequently initiating economic engagement planning efforts, policy changes, and new partnership opportunities impacting economic prosperity throughout the state.

When NMSU began this self-assessment it had a strong grasp of its role in innovation through its Arrowhead Center. Innovation is understood as the process of creating or reimagining novel ideas, processes, products, or services, and moving them into areas of useful application which meet public need. However, the idea of economic prosperity began to change as NMSU simultaneously worked on the Carnegie Community Engagement Classification (CCEC), championed by many of the IEP mentors in 2014. Innovation requires and is requisite to prosperity, but not in the traditional sense of success in material terms and flourishing financially. Combined, economic development and community engagement nurture community prosperity, measured economically, socially, and culturally. Economic prosperity in this way is integrated into [Vision 2020](#), NMSU's strategic plan, realizable through public-private partnerships and the reach of individuals.

1.2 Process Experience

In 2013, resultant of a mixture of administrative changes, strategic planning efforts, and internal assessment, NMSU experienced significant changes in its institutional approach to economic development. For the first time “Economic Development and Community Engagement” were incorporated as institutional strategic goals, and OVPED considered a full time job. The APLU IEP 2014 cohort provided a pathway to conduct a base assessment of institutional economic development efforts and their overall alignment with the goals of Vision 2020.

In January 2014, NMSU convened a Core Team—staff from the OVPED, Arrowhead Center and graduate student researchers—to gather data and draft the APLU IEP application. Concurrently the Core Team was conducting the complementary self-study for the CCEC. The data collection methodology for this application included, distributing CICEP's Assessment Tool, conducting 25

interviews with NMSU faculty, staff, and administration, and holding Economic Dashboard Assessment workshops with external stakeholders.

In collaboration with NMSU's Office of Institutional Analysis (OIA), three open-ended questions regarding perceived roles and responsibilities of NMSU in areas of economic development and community engagement were added to the CICEP Assessment Tool, which was divided into four versions targeting university administration, tenured/tenure track faculty, non-faculty researchers, and external stakeholders. The surveys were distributed internally and externally among 941 stakeholders, with an average response rate of ten percent. Qualitative thematic coding was utilized to extract major themes from the open-ended responses. The remaining survey questions, rated on an agreement scale, were analyzed to identify areas of accomplishment and growth/improvement.

Utilizing aspects of the CCEC template and the New Metrics, 25 interviews were held with representatives from various colleges, departments and units across campus. These face-to-face meetings proved to be an integral part of the self-assessment, and the development of application narrative, providing information about NMSU's collective efforts in community engagement, workforce development, and overall contributions to regional economic and community prosperity.

In November 2014, NMSU hosted an Economic Dashboard assessment workshop. External stakeholders from 20 counties throughout the state attended this two day workshop. The workshop identified regional strengths and areas of improvement for each county in New Mexico and ways in which NMSU can better assist them.

"Economic development" is a curious concept. For some communities it means economic base jobs, for others economic gardening. On campus it is a mix of theory and application. Embedded in this conclusion is the need for mutually beneficial relationships where reciprocity is evident through communication, partnerships, ideas, and innovation. Overall this process has encouraged NMSU to look more broadly at its economic engagement activities.

1.3 Economic Engagement Enterprise

As a land-grant institution, NMSU's people and programs reach across New Mexico's 33 counties, collaboratively incubating economic development initiatives rather than lecturing to communities. NMSU supports a broad array of initiatives, working collectively to address economic opportunity; workforce development; community engagement; business development; low income access to university resources; college affordability; and promotion of NMSU's achievements for the benefit of all stakeholders. Through these activities, unified under Vision 2020 Goal 4, NMSU strives to "*drive economic, social, educational, and community development.*" This goal expresses a broadly-based working definition for economic engagement at NMSU which is principally accomplished through the work of Arrowhead Center, the Cooperative Extension Service (CES), and the OVPEd in collaboration with academic units and external partners.

Arrowhead Center's focus is economic development through technology commercialization, entrepreneurship training, small business creation and development, and economic policy analysis. In 2012, Arrowhead Center was awarded a U.S. Economic Development Administration's (EDA) [i6 Challenge](#) grant, supporting innovative economic development initiatives of universities around the nation. The grant expanded Arrowhead's proof of concept center beyond campus and created the Arrowhead Innovation Network (AIN) a pipeline for moving new technologies to market and creating a vibrant regional innovation ecosystem.

With a presence in every county of the state, CES's [county extension officers](#), in collaboration with community leaders, develop programs specific to the needs of individual communities. CES has played a key role in the implementation of the USDA's [Stronger Economies Together](#) (SET) program in 9 counties throughout the state, engaging rural communities and helping them achieve their economic aspirations through listening, talking, and brokering.

The OVPEd has assumed a leadership role in campus wide strategic planning and advancing major public-private partnerships that significantly affect economic prosperity throughout the

state. Consistent with Vision 2020, the OVPED, CES, and Deans started out to draft an Extension and Outreach, and Service—quickly renamed Community Engagement (CE)—Plan in fall 2014. The CE Plan aligns with each institutional strategic goal, but largely speaks to addressing community needs, and fostering prosperity through reciprocal engagement, as defined by Carnegie and Kellogg. The OVPED bolsters public-private partnerships, most recently in the development of the [Burrell College of Osteopathic Medicine](#) (BCOM), a private school partnering with NMSU to support workforce development and medically underserved communities.

Development through engagement is an ongoing process. NMSU is continually reevaluating and assessing impacts of its economic engagement enterprise. In 2010 the OIA, conducted a survey of NMSU's economic development efforts. A comparative analysis of the surveys conducted in 2010 and 2014 suggests the institution has made progress toward achieving its economic development goals; however, there is always room for growth and improvement.

1.4 Economic Engagement Planning

NMSU's participation in the APLU IEP and CCEC self-assessments influenced fundamental changes to its strategic plan. These changes were spearheaded by the shared vision of university administration to place an emphasis on community centric economic engagement.

NMSU supports economic and workforce development, facilitates community engagement across the institution, and communicates achievements to all stakeholders. These objectives are realized through cross-campus planning efforts aimed at streamlining research commercialization, cultivating partnerships, aligning academic programs with regional economic opportunities, implementing a CE Plan, and implementing a marketing plan. These objectives are changing the institution and align with areas of strength and improvement identified in the IEP self-assessment.

In December 2014 NMSU completed its CE Plan and was recognized with the [CCEC](#). NMSU has embraced community engagement as a tool to facilitate economic prosperity. The CE Plan supports community economic prosperity by increasing scholarly engagement, community based-

research, and work-based-learning opportunities across the institution. The Office of the Provost and Faculty Senate are reconsidering promotion and tenure guidelines to reward faculty engagement. Additionally, an endowment has been funded to annually recognize faculty and staff community engagement accomplishments.

Complimenting these institutional planning efforts, economic development planning is undertaken individually by the OVPED, CES, NMSU's 4 branch campus, and through various academic units. In 2015 NMSU embarked on an institutional system model, incorporating all 4 branch campuses under direct leadership of the NMSU Chancellor. In doing so, the administration identified economic development as a system-wide goal. The OVPED has begun working closely with the NMSU System and various units across campus to align and implement economic development initiatives that cultivate fortified state-wide economic prosperity.

Support for NMSU's economic enterprise is funded through a variety of sources. NMSU invests its own seed capital, transferring funds from Fixed & Administrative recovery. That, plus the outcome of its efforts, attracts attention from the State Legislature. The top priorities for Research & Public Service Project (RPSP) funding requests from the New Mexico legislature for FY 2015 were CES and Arrowhead Center. State funding supports various projects such as CES's rural economic development and financial literacy program, and K-12 STEM education programs run collaboratively through Arrowhead Center, the Colleges of Arts and Sciences and Education. Those funds help meet the ever-increasing matching requirement for federal grants, such as those from the EDA. Perhaps the greatest return on investment does not come from state nor even federal funds, but rather from private foundations likewise committed to development through engagement.

1.5 Promotion and Communication

NMSU must reach two audiences, one on and one off campus. The self-assessment targeted internal (i.e., NMSU administrators, faculty, and staff), and external (e.g., alumni and regional

businesses). The results revealed that communication of economic development initiatives at NMSU was adequate but could improve upon communicating its message of development through engagement. The need to increase effective communication strategies across the institution was echoed in NMSU's [2014 Employee Satisfaction Survey](#). In response, the President's Communication Council (PCC) was founded and a marketing budget committed to developing communication strategies for greater connectivity with internal and external stakeholders. In collaboration with the PCC, the OVPED, and University Communications (UComm) are working to move this initiative forward.

In January, UComm launched an updated [NMSU homepage](#) promoting economic development as one of seven main tabs. The [OVPED](#) and [Arrowhead Center](#), both featured on this tab, are redesigning their websites and increasing social media engagement. Arrowhead Center has also expanded communication through visual media with Arrowhead Productions, utilizing the talent of NMSU's award winning Creative Media faculty to produce [promotional videos](#) for [NMSU, Arrowhead Center, and their entrepreneurial partners](#). Through the Community Engagement Council, the OVPED and UComm are working to develop monthly e-newsletters, a feature in NMSU's annual magazine [Panorama](#), and have secured space in two state newspapers to regularly feature stories on NMSU's engagement activities. For several years CES in collaboration with UComm has developed a monthly report highlighting all extension and outreach stories featured in regional press outlet and distributed to internal stakeholders.

In recognizing the value of face-to-face meetings conducted during the self-assessment, the OVPED has and will continue to meet with and listen to stakeholders to identify relevant assets for promoting economic engagement and to position the OVPED as a point of entry to services and resources. This information gathering process will also include meetings with various focus groups throughout the state to listen to the needs of the greater community and to design an effective strategy for maintaining economic prosperity and continued growth.

1.6 Advancing University Economic Engagement

NMSU is an engine for economic development. CES holds the longest tradition of economic development with government entities and communities throughout the state, while Arrowhead Center has been working diligently over the last decade with faculty and students on technology commercialization and entrepreneurship training. These units in partnership with the OVPED continue to engage internal and external stakeholders to discover, develop and implement innovative programs supporting economic prosperity throughout the state.

As they expand, NMSU must explore best practices and assess the impacts and progress of its programs. Throughout the IEP and related processes, NMSU frequently looked to its peer institutions, CICEP mentors, and members of the IEP community to learn best practices. Strong working relationships were founded with Auburn and Montana State University, reciprocally sharing information about our collective experiences with the APLU IEP and Carnegie applications, and engagement generally. Beyond those discussions, we gleaned notions from Michigan State and Purdue initially discussed during the IEP community calls. More recently, dialogue with Marquette University is helping the institution develop specialized data collection and reporting methods regarding community and economic engagement using Digital Measures. Collectively, lessons learned allow NMSU to address the need for more inclusive metrics identified in the IEP self-assessment, recommended by the Carnegie Foundation and noted by the Regents as an area for improvement.

There are many areas of accomplishment and adoptable best practices throughout the NMSU System. Among the most prominent are programs from Arrowhead Center, CES's rural extension initiatives, and institutional engagement in public-private partnerships. With the i6 grant Arrowhead Center expanded its innovation network. Arrowhead's reach was extended farther through the EDA University Center program. The New Mexico Regional Commercialization University Center at Arrowhead expands its current offerings for existing and new users across the

state, reaching out to urban and rural communities by providing access to and leveraging NMSU's commercialization assets statewide, utilizing CES and partnerships to bring ideas, talent, and investment together to create commercial enterprises. Furthermore, the newly created position of Economic Development Specialist will span the breach between CES and Arrowhead, taking campus competencies throughout the state.

Globally competitive workforces, fostered by public-private partnerships, are vital for economic development and represent one of the most striking examples of replicable initiatives at NMSU. The Arrowhead Research Park is home to three very unique schools all founded in public-private partnerships. As a collaborative member of the [Bridge of Southern New Mexico](#), a non-profit comprised of 29 community partners, NMSU played a key role in the development of two Early College High Schools (ECHS). These ECHS provide students dual credit and work-based-learning opportunities, support workforce preparedness, and resulted in 100% retention and graduation of their first class. The unique community planning model behind the schools was adopted by the Governor, culminating in a K-to-Gray [Workforce Preparedness](#) initiative and the establishment of 11 ECHS throughout the state. NMSU has also adapted this community planning model to establish the BCOM at NMSU, which will admit its first class in 2016.

2.0 Summary of Accomplishments (word count 1,993)

Goal 4 of Vision 2020 establishes the university's strategic goal for economic development and community engagement. Throughout the self-assessment process the Core Team discovered that NMSU has developed and is implementing innovative programs fostering workforce development, a culture of entrepreneurship, public-private partnerships, and community support through engagement. The Core team identified three areas of economic engagement where NMSU excels. The first area of accomplishment was NMSU's innovation pipeline supporting early stage startups, innovation, and entrepreneurship. The second area of accomplishment was workforce development and forging extensive networks of STEM education programs and partners. The third

area of accomplishment was individualized outreach/professional development through alignment of research assets and regional strengths.

2.1 Arrowhead Center (Innovation)

Since 2004, Arrowhead has served as NMSU's primary economic engine, helping to foster an innovative, entrepreneurial ecosystem for stakeholders on and off-campus. Arrowhead engages NMSU faculty, staff, and students in commercialization and entrepreneurial activities through education and training initiatives, startup venture resources, and competitively-awarded seed funding for the university's most commercially promising emerging technologies. Arrowhead also offers its expertise in business modeling, development, and incubation; youth entrepreneurial programming; and economic and policy analysis to beneficiaries throughout the region and state. Brief summaries of selected programs follow.

The *Launch Proof of Concept Program*, started in early 2011, provides NMSU researchers opportunities for competitive funding for early-stage research with demonstrable commercial potential. The program seeks to expedite the transfer of technologies from campus to market venues by providing researchers and technologists business mentoring, market analyses, demonstration-validation services, and access to investment networks. To date, Launch awards have led to four pending patents and one registered business.

Innoventure is New Mexico's longest running and largest statewide youth entrepreneurship program, designed to foster entrepreneurial interest and skills in middle and high school students. The primary programming consists of a year-long technology, marketing, and business plan development [competition](#) and an entrepreneurship summer camp experience.



Through Innoventure programming, more than 300 students annually have had the opportunity to practice innovation and entrepreneurship.

[Studio G](#), a business incubator dedicated to NMSU students and recent graduates, was established in 2011 to create a community and provide resources for exploring and launching new businesses. Studio G currently works with more than 20 student/alumni ventures in disciplines ranging from agriculture to software. Studio G residents have access to a range of services, expertise, and experiences, including business modeling and planning, workshops and seminars, one-on-one mentoring relationships with experts in Arrowhead's network, and opportunities to participate in technology and business development competitions and to pitch their projects to regional investors.

Arrowhead serves a pivotal role in creating, maintaining, and leveraging strategic partnerships for NMSU. This mission expanded in 2012, when Arrowhead was chosen for a U.S. Economic Development Administration (EDA) i6 Challenge award. These funds were used to create and launch the *Arrowhead Innovation Network (AIN)*, a closely connected group of partners – inventors, researchers, entrepreneurs, investors, and economic development specialists – building a pipeline for moving new technologies to market and creating a vibrant regional innovation ecosystem. AIN presently has over 550 members and is emerging as a significant player in the regional innovation landscape.

A key to Arrowhead's success is its capacity to cross boundaries both internal within and external to NMSU. Working with partners from a range of colleges, departments, and disciplines at the university, Arrowhead serves and draws upon the expertise of the whole of the university community. With off-campus partners in government, investment, and industry, Arrowhead is able to leverage these connections to ensure the greatest benefit for all. The organization has proved itself as a hub in the region, in terms of economic development, sharing the assets of NMSU with the larger community, and advancing a culture of invention, innovation, and entrepreneurship.

While a number of factors contribute to Arrowhead’s success, three stand out: the support of high-level university leadership for Arrowhead’s initiatives, the cross-disciplinary nature of the organization, and responsiveness to customer concerns. NMSU’s [Office of Intellectual Property](#) is housed in Arrowhead so any NMSU inventor, regardless of discipline, will have contact with Arrowhead when disclosing an invention.

2.2 STEM Outreach Programs (Talent – Workforce Preparedness)

STEM education is vital to the future economic wellbeing of New Mexico and the nation. The demand for skilled workers in STEM has dramatically increased in a more competitive global, information-based, and highly technological society. As a nation, we must find ways to motivate students to enroll and complete programs leading to highly skilled STEM careers. NMSU has been fostering and supporting STEM initiatives for more than 25 years. NMSU STEM outreach programs serve students at all educational levels, families, and teachers and include after-school components, workshops for families, educational resources for STEM major, professional development for teachers, and other initiatives designed to align engagement across the PK-20 pipeline in STEM fields. Details on three of these programs follow.

[STEM Outreach Center](#)



NMSU’s STEM Outreach Center, located in the College of Education, operates the STEM-focused 21st Century Community Learning Centers Afterschool Program, a partnership between the Southern New Mexico Science, Engineering, Mathematics and Aerospace Academy (SE MAA), a NASA program; Digital Media Academy (DiMA), cultivating critical thinking skills through technology; Save the Children, a national reading program; and AfterMath Education, an extension

of classroom curriculum, tied into language arts, social studies, physical education, arts and more. Research demonstrates that children participating in STEM programs test higher in science and math on standardized tests. Students in STEM outreach programs have higher scores on math and science in New Mexico's standardized tests, and approximately 91% of instructors have remained involved in NMSU STEM programs for 14 years.

NMSU, through its STEM outreach programs, also provides professional development opportunities for K-12 teachers throughout the academic year, bringing in NMSU faculty and staff members to enhance the knowledge and skills of teachers. To date, over 800 teachers have participated. NMSU offers summer institutes for teachers, as well as two conferences in the spring integrating the latest in brain research and learning so that the classroom experience reflects current practices for teachers and their students.

[STEM-Focused Early College High School](#)

New Mexico faces significant high school dropout rates. According to U.S. Department of Education 2010-2011 four-year high school graduation rates, New Mexico's graduation rate was a dismal 63 percent. However, Dona Ana County has a 72% high school graduation rate, largely attributed to a bolder vision of community and educational leaders uniting together to devise a plan to improve the high school dropout rate.

In 2007, regional stakeholders came together to address the challenge of the poor high school graduation rates. The group commissioned research, identified best practices, and eventually assisted in the creation New Mexico's first Early College High School (ECHS), a collaboration between the Las Cruces Public Schools (LCPS), Gadsden Independent School District (GISD), Doña Ana Community College, and NMSU. Located in the Arrowhead Park on the NMSU main campus, the ECHS is focused on the STEM disciplines and has become a model for other communities within the state. Students who graduate from the ECHS earn both a high school diploma and an Associate Degree, giving them a two-year jumpstart on a Bachelor's degree. In May

2014, the ECHS graduated its class of 108 students, with a 100% retention rate. Additionally, 87 students received associate's degrees from Dona Ana Community College, and over 70 students are now studying at NMSU.

NMSU's [College Assistance Migrant Program \(CAMP\)](#)



CAMP is a federally-funded program that assists migrant or seasonal farm worker students in Southern New Mexico and West Texas attending college. Active at NMSU for over ten years, CAMP's goal is to ensure each student graduates from NMSU with a bachelor's degree, offering a first line of support for students to succeed during their first year at university. In June 2012, a STEM embedded experience was introduced to CAMP. The STEM component has already proven successful in the first full academic year with over 30 CAMP students majoring in STEM disciplines ranging from Range Science to Aerospace Engineering. CAMP assists approximately 30 students per academic year.

2.3 [Applied Educational Development \(Place - Community Support\)](#)

Self-assessment results revealed that internal and external stakeholders perceive NMSU's individualized outreach/professional development through alignment of research assets to meet community workforce needs as strong assets. Information gathered in the self-assessment interviews further highlighted NMSU's extensive efforts in work-based-learning, continuing education and professional development that meet community needs throughout the state. NMSU's greatest asset is its teaching capacity. When addressing economic development it is essential to extend learning opportunities in applied setting. Examples can be found across all colleges and units, and are described below.

Work-Based-Learning

NMSU offers over 200 courses with work-based-learning experiences in the form of practicum, clinical training, internships, service learning, cooperative education, civic engagement, and community service, through 30 departments and university programs. These courses provide students with the experience to apply their degrees, and with on the job training. Individual departments and university programs take an active role in developing programs that meet community needs and connect students with local employers. Many graduate programs place students in private and public sector internships throughout the state and beyond. The College of Education places student teachers in school districts and the College of Health and Social Services places nursing and social work interns in medical and public sector jobs throughout the state.

Continued Learning and Professional Development

NMSU promotes community economic engagement through professional development and continued learning programs. Every college offers professional development programs that address regional and statewide needs. CES also provides extensive continued learning and training programs which are designed to promote economic and community prosperity. Collectively, these programs foster economic sustainability in the state through workforce development. A sample of professional development and continued learning programs sponsored by NMSU are as follows:

[The Center for Public Utilities](#) (CPU) provides training programs and current policy issues conferences for professionals employed at federal and state commissions, utility companies, and other stakeholders in the electricity, natural gas distribution, interstate pipeline, telecommunications and water utility industries. The CPU is endorsed by the National Association of Regulatory Utility Commissioners and is completely self-funded through conference and training program fees and industry sponsorships.

[Manufacturing Technology and Engineering Center](#) (M-TEC) is housed in the College of Engineering and uses the extensive amount of resources in the College of Engineering to help

businesses and entrepreneurs throughout the state. M-TEC has worked with many different individuals, industries, and businesses in New Mexico on a vast array of projects and products providing technical assistance in the form of engineering, design, analysis, and product development, complementary to Arrowhead Center.

[Scientifically Connected Communities](#) (SC2) and [Mathematically Connected Communities](#) (MC2) provide professional development for K-12 educators that promotes and supports scientific and mathematical standards-based inquiry learning in the classroom. SC2 and MC2 programs are run throughout the academic year and host summer institutes. These programs, supported by the Colleges of Education and Arts and Sciences focus on public elementary, middle and high schools in New Mexico that primarily serve minorities and students underrepresented in the science fields. To date, more than 2,000 teachers have participated in these programs.

[Family and Child Welfare Program](#) is a professional development and training program sponsored by the Las Cruces Children, Youth and Families Department (CYFD) and NMSU's Department of Social Work. More than 1,200 regional social workers participate in this program annually. The training is designed to develop and enhance the workers skills to promote permanency, well-being and safety for successfully working with children and families in CYFD.

NMSU's CES strives to provide the people of New Mexico with specialized continued learning programs grounded in practical, research-based knowledge and programs to improve their quality of life. [The New Mexico EDGE](#) (Education Designed to Generate Excellence in the Public Sector) is operated through CES under which the County College, the NM Certified Public Manager® Program, and other continuing education certification programs are administered. EDGE expands specialized training programs beyond county government into the public sector including municipal entities, state agencies and other public-oriented organizations.

Area of Accomplishment	Related Activities, Programs, or Initiatives	Talent, Innovation, Place or Connections	Timeline	Resources	Indicator/Measure of Success
1. Arrowhead Center	1.1 Launch Proof of Concept Program	Technology Commercialization; competitive seed grants for faculty start-ups. (Innovation, Place)	3 years; ongoing	Dedicated staff; change in institutional/organizational philosophy (i.e., from IP management to tech commercialization)	Number of projects selected for award; outcomes of individual projects (e.g., patent applications and licensing agreements); number of NMSU graduate students receiving directed learning experiences through participation in commercialization work
	1.2 Innoventure	Middle and High School compete in prototype and business competition (Talent, Innovation, Place)	8 years; ongoing	NMSU staff, teachers and students throughout the state.	12 awards annually; recruitment for NMSU
	1.3 Directed learning experiences for NMSU students	Students work in interdisciplinary, mentored groups on NMSU IP, other technology-based and/or business development projects; students have the opportunity to identify technologies/products for potential startup businesses. (Talent, Innovation, Place)	10 years; ongoing	Dedicated staff; federal and state funding	Number of NMSU graduate students receiving directed learning experiences; number of projects students move to startup businesses
	1.4 Entrepreneurial Training	Face-to-face workshops, trainings; online resources in entrepreneurship, small business creation and development, (Talent, Place)	10 years; ongoing and expanding	Dedicated staff, mentors; federal and state funding	Number of workshops/trainings offered; number of participants in workshops/trainings
	1.5 Startup venture creation and incubation	Education and mentoring in launching, expanding businesses (Talent, Place)	Long-term; ongoing	Dedicated staff, federal and state funding; physical facilities (Arrowhead Technology Incubator and Studio G student/alumni incubator)	Number of businesses launched or expanded; revenue generated; jobs created; products to market
	1.6 Economic and policy analysis	Economic impact and policy analysis studies for stakeholders throughout the state and region. (Innovation)	Long-term; ongoing	Dedicated staff; federal, state and funding; industry contracts	Number of reports produced; number of articles published; number of conference or public presentations; number of resources available on NMSU website
	1.7 Network development	Maintenance and expansion of regional economic development network of government,	Long-term; ongoing	Dedicated staff; federal and state	Number of members in networks; number of subject matter experts consulting on projects and ventures; number of trainings,

		academic, investment, and industry stakeholders (Talent, Innovation, Place)		funding; cross-sector partnerships	networking events, and technology showcases hosted
2. STEM Outreach Programs	2.1 SEMAA (Science, Engineering, Mathematics, and Aerospace Academy)	Encourage underrepresented student participation in STEM fields; engage students with STEM professionals for mentoring; facilitate transitions to HS and post-secondary programs; develop partnerships with parents; provide opportunities for teachers for implementing curriculum.	14 years; ongoing and expanding	NASA Funding, NMSU Colleges of Engineering and Education, Gadsden Independent School District (GISD), Las Cruces Public Schools (LCPS), parents, volunteers	Impact: LCPS, GISD, Hatch, Albuquerque 29,000 students; 3,000 parents each year; 85% Hispanic, 52% female, stipends for 140 instructors; seven weeks of all day summer institutes for students.
	2.2 CAMP (College Assistance Migrant Program)	<ol style="list-style-type: none"> 1. Housing: Students reside in a Living Learning Community in a residence hall on main campus 2. Meal plans: Provided by university dining services 3. Training stipend: For educational expenses that financial aid may not cover 4. Individualized academic advising services: provided by CAMP and NMSU staff 5. Emotional and social support through professional counseling on campus, CAMP leadership training workshops, peer mentoring and CAMP staff. 6. Career Assessments, Exploration and Resume Assistance 	12 years; 1 year with STEM focus	Federal funding from NSF	30 Students in STEM majors in first year.
	2.3 Mathematically-Connected Communities (MC2)	<ol style="list-style-type: none"> 1. Provides professional development in math to teachers and administrators in partner school districts. 2. Provides technical assistance to districts to build student and teacher success in math. 3. Provides leadership training for principals and administrators. 	10 years	NMSU, NM Public Education Department, UNM, WNMU, Los Alamos Math & Science Academy, Northern NM Rural Schools Network, South Valley Academy, Flow-through funding form U.S.	Impact: Professional development for over 1,500 teachers in over 30 districts around the state; improved partner districts mean scores in NM Standards Based Assessments in math over state average.

		4. Provides summer academies and school year follow up for math teachers.		Department of Education	
	2.4 Howard Hughes Medical Institute Program	Expands research opportunities to undergraduate science majors, provides outreach activities to high schools, provides professional development opportunities for high school science teachers, provides graduate students and post-docs with pedagogy tools	8 years; ongoing	College of Arts & Sciences, OVPR, NMSU Biology Department, Howard Hughes Medical Institute,	Number of students participating in program; number of teachers receiving professional development; Number of students visiting mobile lab statewide
3. Applied and Continued Learning	3.1 Service Learning for Educational Distinction (SLED)	Provides students with educational opportunities in community service through placement in government agencies, educational entities, civic organizations, and advocacy groups. Assists faculty in developing service learning components in their courses. (Talent, Place)	5+years; ongoing and expanding	Federal funding, NGO funding and corporate funding	Number of students participating in service learning programs; number of faculty teaching service learning courses; number of College departments participating in service learning
	3.2 Capstone courses	Provides senior-level students with opportunities to apply knowledge learned into community based projects	Long-term; ongoing	All Colleges at NMSU; community participants; faculty	Number of students completing Capstone classes; number of projects represented; number of faculty participating
	3.3 Education Designed to Generate Excellence in the Public Sector (EDGE)	Operated through CES provides continuing education certification programs and specialized training programs for the public sector including municipalities, state government, and other public agencies; NM Certified Public Manager® Program, and other continuing education certification programs	9 year; long-term; ongoing	County College (NM Association of Counties) through CES; NMSU	Number of class units delivered; (over 5,000 to date); number of participants in receiving certificates,
	3.4 Family and Child Welfare Training Project	Serves to increase the number of social work graduates seeking employment with CYFD and to provide training for existing CYFD staff. It provides skill based child welfare training per the Title IV-E regulations as well as supervisory training.	8+ years; long-term; ongoing	State of New Mexico Children, Youth, and Families Department (CYFD), College of Arts & Sciences, School of Social Work	Number of participants; Number of faculty; Increase in number of social work graduates seeking employment with CYFD; Reinforces, strengthens and promotes the work of state agencies dedicated to the protection and advancement of children and their families.

3.0 Growth/Improvement Plan (word count 1628)

The self-assessments revealed a number of areas on which NMSU must focus to improve its performance in economic development and community engagement. One set of these foci is internal to NMSU: the need to design and implement faculty promotion and tenure standards that take into account work dedicated to economic development and community engagement; maintaining a comprehensive, campus-wide tracking mechanism for economic development and community engagement activities; allocating budget to support these activities; effecting more efficient means of communicating about these activities and opportunities within the on-campus community; and further advancing a cross-campus culture of entrepreneurship. The other set of foci involves NMSU's interactions and partnerships with external stakeholders: the need to implement more efficient procedures for securing contracts, licenses, and other agreements with industry partners; communications concerns such as the need to designate an initial point of contact for industry; to develop and maintain user-friendly portals to search NMSU's expertise and research and development facilities; to promote efficient linkages and collaboration between faculty members and companies; to work with the community to identify actionable economic growth and engagement priorities; and to expand NMSU's capacity for commercializing university discoveries and supporting the creation of startup businesses.

3.1 Promote Stronger Partnerships

NMSU maintains productive partnerships with a wide range of constituents, including federal and state agencies. NMSU's relationships with national laboratories, military installations, and other federal entities link NMSU not only to the innovative research emerging from these partnerships, but also connections with the state's largest employers. The self-assessment recognized the need for NMSU to facilitate stronger relationships with its internal counterparts to strengthen and maximize external partnerships. Working

alongside business and community leaders, NMSU can serve in a leadership role to help and identify areas for economic growth and engagement. Establishing stronger partnerships for economic engagement will lead to increased employment, accelerated businesses, and new approaches to innovation.

The self-assessment also recognized a need to find more efficient procedures for working with industry. These include streamlining the procedures for contracts, technology licenses, and other agreements for products or services. NMSU has already created standardized technology license agreements to help fast track the commercialization process.

To improve internal relationships, meetings between OVPED and Colleges will provide the necessary data and information to ensure the best possible use of existing resources. Promoting faculty research and expertise to regional companies will allow for the creation of new partnerships for industry seeking market solutions. This will allow NMSU to establish and capitalize on mutually beneficial relationships with internal and external partners. To begin facilitating this process NMSU has designed a searchable [faculty expertise database](#), showcasing faculty research interest and specialization to promote innovation, collaboration and connectivity across campus and with external stakeholders.

3.2 Improve Communication to Stakeholders

Planning documents and survey instruments identified the need for effective communication with all stakeholders in order to learn about concerns, guide solutions, and identify opportunities for growth. Two-way communication nurtures mutually beneficial relationships that meet the needs of both the university and the larger community. The communication flow needs to begin from the inside-out, communicating in a way that inspires action from others. The OVPED through its Strategic Plan identifies communication as one of several keys to success necessary to meet the goals of economic development at NMSU.

Lines of communication must be opened and maintained with all stakeholders in state economic development, both internal and external partners and others in need of resources and services. Listening to the NMSU community, industry and government representatives, and New Mexico's residents will provide insight into problems and aid in providing solutions from existing and emerging resources. Establishing structured communication mechanisms among NMSU System partners will allow understanding of the ways in which the structure and function of various offices and departments overlap and how best to facilitate communication, share expectations, and define compatible objectives.

Online access through the [OVPEd website](#) provides one means of communication with internal and external stakeholders. A combination of online and face-to-face communication will be utilized for those seeking economic development assistance. Methods of communication will include NMSU county extension agents, listening tours, conferences, and small group interactions with faculty, staff and students, as well as a structure marketing plan as mandated by Vision 2020 and developed through the PCC.

3.3 Directives and Incentives for Innovation

In order to nurture and advance innovation, NMSU must create incentives for changes to curriculum, faculty promotion and tenure, enrollment, retention, graduation rates, and other areas to promote economic prosperity. The self-assessment process revealed that NMSU has organized and operates many incredible programs related to that promote engagement and economic prosperity. However, the process has also revealed that internally NMSU can make more concerted efforts to unify economic engagement efforts across the campus. Currently many of the university's community and economic engagement activities are organized independently by individual colleges, departments or university programs and division. University administration has recognized the need to focus attention on the development of a cross-campus directive of innovation. To achieve this goal, and in conjunction with the findings of the

IEP self-study, the core team has identified four major internal objectives for growth and improvement. Additionally many of these goals align with overall institutional goals introduced by the Provost at Spring Convocation in 2014.

The combined self-assessments of the IPE and CCEC indicated that NMSU is offering an extensive array of courses with experiential learning components that address community needs. However, there is no campus wide system for promoting and tracking the impact of these programs. NMSU will work to set a standardized course number or code designating service or experiential learning opportunities for students. Additionally in an effort to expand Innovative and Entrepreneurial Curriculum the OVPED is working establish an interdisciplinary internship program. This program will combine both graduate and undergraduate students on interdisciplinary teams working on community related projects. This program is designed to inspire innovative problem solving in an open laboratory space that will foster collaborative idea sharing. Through these initiatives NMSU strives to offer the most work-based-learning programs of any institution in the state.

The self-assessment showed on many levels that NMSU needs to address ways to measure and track the impact of its efforts in economic development and community engagement. Measurement and tracking systems must be implemented at many different levels. Coupled with the standardization of experiential learning course numbers, data on enrollment and outcomes will also be collected. The Provost has implemented an annual review of NMSU co-curricular and extracurricular programs that have community engagement/development components. Through the work of the CE Plan, the Community Engagement Council, the Office of the Provost, OIA and the OVPED are developing a system of metrics using of Digital Measures, and data collection from institutional reporting systems, that will capture the volume and impacts of faculty, staff, and student participation in community and economic engagement activities.

To make a lasting impact on NMSU's efforts and focus on economic and community engagement, the institution must provide direct incentive for faculty to participate in these activities. This is specifically done through a revision of NMSU's promotion and tenure (P&T) policies. As the revision of promotion and tenure policies is done through each individual college, the OVEPD has worked with leadership from the Faculty Senate to push forward discussions concerning these types of revisions forward. Since NMSU conducted the IEP self-assessment the Faculty Senate and the Office of the Provost began reconsidering P&T policy. These two units have agreed to consider and explore the integration of community engagement into P&T policy at the institutional level. In furtherance of faculty recognition, the OVPED working with the Office of Advancement, has proposed and secured an endowment for an annual award that recognizes faculty participation in economic and community engagement activities.

The self-study process also revealed that the OVPED must focus more attention on leveraging its resources among its internal and external communities. Many of the faculty responded in the opened questions included in the IPE survey that they did not feel well informed about economic engagement opportunities. To increase awareness of economic engagement opportunities, the OVPED has been attempting and continues to inform faculty of economic opportunities by holding a series of lunches with deans and department heads. These lunches not only communicate individual opportunities in economic ventures but also how departmental entrepreneurship can lead to an additional sources of resource stewardship and funding opportunities. The most effective example of departmental entrepreneurship at NMSU is the newly developed College of Education Economic Enterprise Inc. (CEEEI). CEEEI is an economic enterprise run and owned by the College of Education that will transform their research into applicable goods and services through their audiology lab which opened in March 2015. This lab, housed in the new Arrowhead Medical Academy high school, offers experiential

learning in the field of speech pathology and communication disorders, develops and markets its own hearing aids, and provides additional medical service to underserved communities.

NMSU must reach out to underserved communities, underrepresented populations of prospective students, and underperforming current students. Native American peoples are the pinnacle of that list, but not alone. Twenty percent of the population of the state of New Mexico lives below poverty, a third more than the national average. Poverty rates for children, women, and single-parent household are far worse. As an institution, NMSU views these groups as the foundation of a globally competitive workforce with whom it must engage. Of those who begin to make out of the cycle of poverty by graduating from high school and make it to NMSU, only seventy percent will make it past the first year. Forty percent will graduate in 6 years. All the foundation of malaise, both culturally and economically.

NMSU’s vision for, commitment to, and programs that address community engagement and economic development are meant to inhale problems and inhale solutions.

Growth/Improvement Goal	Related Objectives	Activities	Timeline	Resources	Indicator/Measure of Success
Goal 1: Promote stronger partnerships	1.1 Facilitate NMSU internal partnerships	Establish structured mechanisms among internal NMSU offices to identify overlaps and how best to work together	12 months	CES, VPR, Faculty, Colleges, Community Colleges, UCOMM, Provost, Alumni	Increased network of ideas, resources, and teams; increase in faculty and student spin-outs
	1.2 Economic Development and Industry Support Organizations	Engage statewide resources through meetings and information sharing to promote awareness of resources, expertise and services of NMSU	Start July 1, 2014; ongoing; evaluate annually	NM Small Business Development Centers, Mesilla Valley Economic Development Alliance (MVEDA), Association of Commerce & Industry (ACI),	Networked ideas, resources and services, stronger referral network

				Chambers of Commerce	
	1.3 State and Local Government	Advocate for improved business friendly legislation for new and existing entrepreneurs; schedule regular presentations to state and local representatives; advocate for start-up and seed grants funding.	Ongoing	NMSU Government Relations, OVPEd, OVPR, State of NM Departments, City of Las Cruces, Council of Governments, Dona Ana County Commission, Border organizations	New business friendly legislation, increased understanding of NMSU mission in Innovation and Economic Prosperity; new appropriations for start-ups and seed grants.
	1.4 Commercial and Private Industry	Build upon established relationships as introduction to new partnering opportunities; enhance online showcase of licensable technologies	Ongoing	OVPEd, Existing Corporate Partners, Professional organizations, University-Corporate research programs	Increase in sponsored research, increase in licensed technologies,
Goal 2: Improve communication to stakeholders	2.1 Develop communications plan with University Communications (UCOMM), NMSU External Relations, and CES	Create a single portal that provides access to NMSU community and economic development resources.	Ongoing	VPED, UCOMM, CES, other colleges	Increase in number of requests for information and referrals; stronger visibility throughout state.
	2.2 Listen to stakeholders needs	Focus groups; task force; development of customer needs assessment	Quarterly focus groups beginning September 2014	OVPEd, Mesilla Valley Economic Development Alliance, Local Chambers of	Greater participation and visibility throughout state; stronger partnerships and understanding of local and regional needs.
	2.3 Tell more success stories	Press releases, single portal website, online showcase of technologies	Ongoing	OVPEd, OVPR, Colleges, spin-out companies, incubator clients	Number of success stories, number of stories picked up by local and national news.
Goal 3: Promote directives and incentives for innovation	3.1 Develop and implement an extension and outreach, and service plan.	Focus meetings with county extension agents; ongoing cross-department working group.	Start July 2014 and monthly thereafter. Ongoing	OVPEd, CES, Colleges	Improvement in community engagement through extension, outreach and service contacts

	3.2 Engage statewide resources to spark business and community development.	Utilize CES resources as an entry point to promote development	12 months	OVPED, CES, UCOMM, Colleges	Increase in economic prosperity measured by new companies and expansion of existing companies. Retention of people in place.
	3.3 Standardize service learning courses campus wide	Create task force to review and recommend cross-campus processes to implement standardization; align programs with career opportunities	12 months; target Fall 2015	Provost, OVPED, OVPR, Colleges, internship coordinators	As percent of courses, number of faculty, and student credit hours, increase in service learning courses. Increase in number of partners, whether companies and, or communities.
	3.4 Recommend entrepreneurship curricula	Revise policies and develop new incentives for faculty, align programs with career opportunities	12 months; ongoing	Provost, Colleges, Student Affairs & Enrollment Management	Number of cross-listed entrepreneurship curricula; number of faculty teaching classes; number of students