

**New Mexico Institute of Mining and Technology**  
**Strategic Plan**  
**2015 - 2020**

**Executive Summary**

**Strategic Plan Overview**

A Strategic Plan Committee (SPC) was formed in late 2013, with faculty, staff, students, alumni and community members. The committee met biweekly throughout 2014 to draft vision, mission, and value statements and strategies for continued growth and development of the university. Based on committee discussion and input from the NMT community in town-hall meetings, the committee identified seven strategic priorities with associated goals, objectives, and tasks to pursue over the next five years, as follows (1) streamline communication and business processes; (2) build collaborations as a community of scholars; (3) expand funding opportunities; (4) ensure intentional and planned quality growth; (5) support student success; (6) develop and exploit technology and infrastructure; (7) cultivate transdisciplinary education and research.

**NMT Vision, Mission, Values**

**Vision:** New Mexico Tech aspires to be a preeminent *community of scholars* dedicated to research, education, and innovation – advancing science, technology, engineering, and mathematics – to meet the challenges of tomorrow. We will drive innovation and education through transdisciplinary collaborations.

**Mission:** New Mexico Tech serves the state and beyond through education, research, and service, focused in science, technology, engineering, and mathematics. Involved faculty educate a diverse student body in rigorous and collaborative programs, preparing scientists and engineers for the future. Our innovative and interdisciplinary research expands the reach of humanity’s knowledge and capabilities. Researchers, faculty, and students work together to solve real-world problems. Our economic development and technology transfer benefit the economy of the state and create opportunities for success. We serve the public through applied research, professional development, and teacher education, benefitting the people of New Mexico.

**Values:** New Mexico Tech has defined the following enduring, guiding principles for its continued growth and development as a quality STEM institution of higher education.

**Research:** Groundbreaking transdisciplinary research that generates knowledge and innovative design for science and engineering and solves challenging and complex problems, driven by a relentless commitment and focus by faculty, students, and research staff.

**Integrity:** Maintaining the highest standards of academic and professional ethics, fairness, and honesty in all endeavors, and being responsible members of the NMT community.

**Creativity:** Creativity is integral to all our teaching, research, and business processes and is driven by curiosity, adaptability, and resourcefulness, requiring imagination, vision, risk-taking, and diligence.

**Lifelong Learning:** Lifelong learning skills are developed through a rigorous curriculum, a challenging educational experience with a foundation of critical thinking and problem solving, invigorating research and significant professional development that prepares students, faculty, and staff for continuing individual and career growth.

**Excellence:** High-quality education and research drives excellence in all aspects of our mission.

**Economic Prosperity and Technological Development:** STEM education, research, technical assistance, and technology transfer are drivers of economic prosperity and technological development in the state, nation, and the world; continuous faculty, researcher, and staff professional development programs and outreach initiatives for underrepresented communities to pursue STEM careers are hallmarks for the future.

**Integrated Planning and Decision Making:** Openness, fairness, collaboration, and stakeholder input in university operations are driven by accurate and reliable data made available to the campus community.

**Collegiality and Collaboration:** Positive energy, performance, and support from a collegial and collaborative environment, contributes to the advancement of our students, our colleagues, and our institution.

### **NMT Strategic Priorities and Goals**

The following seven Strategic Priorities provide the focus for New Mexico Tech's Strategic Plan. Tech is committed to addressing the seven priorities in the plan; however, the length of time and extent to which these priorities can be accomplished will be dependent on funding availability and securing administrative and/or Board approval when appropriate.

#### ***Strategic Priority: Streamline Communication and Business Processes***

In order to improve organizational performance and contribute to the success of the strategic plan, the university will streamline internal and external communications and update business processes leading to broad-based participation in decision-making; expanded centralized communications; five-year resource allocation planning; and modernized business practices.

#### ***Strategic Priority: Build Collaborations as a Community of Scholars***

In order to integrate new faculty, researchers, students, and staff into the university community, NMT will support and encourage them to grow, learn, and innovate, and in so doing spread their expertise and ideas through the New Mexico Tech community and outward. Throughout this cycle, individuals will feel they are part of the broader New Mexico Tech family and that their individual success is enhanced by the success of the community as a whole. This priority strives to foster a sense of connection to NMT; develop incentives to innovate and promote excellence; find new opportunities through outreach activities to public organizations and industry; and enhance security measures on the campus.

#### ***Strategic Priority: Expand Funding Opportunities***

During a period where record numbers of students are enrolling in higher education institutions across the country and specifically at NMT, New Mexico state appropriations have followed the national trend with significant funding/revenue cuts, resulting in significant obstacles for the university's growth and development. This priority is focused on supporting the university's teaching and research mission through examining NMT's tuition structure as a key revenue source; expanding the role of the Office of Advancement; expanding funding opportunities for basic and applied research; and building a culture of entrepreneurship.

***Strategic Priority: Ensure Intentional and Planned Quality Growth***

Between 2010 and 2013, NMT enrollment has grown from 1,652 degree-seeking students to 1,886 degree-seeking students, while budgets have remained mostly flat. This priority seeks to grow the institution in an intentional, planned, and controlled way, with appropriate resource allocation and consideration of the needs of the entire campus community focused on growing undergraduate and graduate enrollment, retention, and success; and strengthening and growing sponsored research.

***Strategic Priority: Support Student Success***

Student success is central to the university's mission and vision, requiring continuous improvement and enhancement of student support services focused on improving undergraduate student retention, academic support, and research opportunities; enhancing assessment of student learning and program reviews; and graduate student retention and success.

***Strategic Priority: Develop and Exploit Technology and Infrastructure***

Effective technology planning and organization, as well as utilization of current technology, is critical to advancing the university's mission through improved technology planning and productivity; streamlined and reorganized technology funding; and support for data-driven decision-making.

***Strategic Priority: Cultivate Transdisciplinary Education and Research***

Transdisciplinary education and research integrates the methods, theories, techniques, and perspectives of multiple disciplines to develop new approaches to solve complex, real-world challenges. Embracing a transdisciplinary approach can stimulate creativity and productivity, while still maintaining rigor and strength of individual disciplines, leading to better-prepared students who will be leaders in multi-disciplinary problem solving and research. This priority will be accomplished through increasing transdisciplinary academic programs; increasing transdisciplinary research programs; and developing and sustaining transdisciplinary support mechanisms.

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# Section 1: Introduction

## Overview of New Mexico Tech

New Mexico Tech is a research university specializing in science, engineering and technology. Founded in 1889 as the New Mexico School of Mines, the university opened with one building, two professors and seven students. A handful of local families in Socorro donated land that would become NMT's beautiful campus; these families have been recognized with a campus monument.

The school changed its name to the New Mexico Institute of Mining and Technology in 1951 to reflect the increasingly broad range of academic offerings. NMT has grown from a mining-focused university to a research institution that offers a wide range of STEM degrees, as well as course offerings in social sciences and humanities.

In the fall of 2014, Tech enrolled 1,555 undergraduate students and 550 graduate students. New Mexico Tech is consistently ranked highly by all major national magazines that publish rankings. Tech is the most successful public institution at preparing undergraduates for Ph.D. programs. In 2014, USA Today rated NMT as the 8<sup>th</sup> best school for engineering. Tech graduates also earn more than their peers, according to national studies.

## Context for Strategic Planning

American post-secondary education is in a state of flux, struggling to define its role in an ever-changing global environment of public and private institutions competing for declining student and research dollars. State-supported colleges and universities are further burdened by declining public expenditures on higher education, given changing social priorities and economic conditions. The State of New Mexico has not been alone in confronting these challenges. Further, New Mexico Institute of Mining and Technology has been significantly impacted by the increasing costs of education, changing student demographics, state funding uncertainties, federal mandates, and the state's economy, while striving to maintain its teaching and research excellence. The university is further challenged by its small size and focus on STEM education; NMT is the only such institution in the State of New Mexico. Thus, NMT must compete for funding with other state-supported universities with larger student bodies, significant infrastructure, and broader academic and research missions. The changing demands and declining resources have focused attention on the need for thinking strategically to establish a long term direction for the university. In an effort to plan its own future, the New Mexico Institute of Mining and Technology has undergone an 18-month strategic planning effort to assess its current academic and business processes and practices and identify opportunities for its future growth and development. To address these significant challenges, the university's administration has been proactive and involved in the planning process. The contents of the NMT Strategic Plan are the result of a participative collaborative process involving faculty, students, staff, researchers, alumni, and community members making their collaborative assessment of the university's current condition as well as our priorities for the future. Finally, the strategic plan was developed with both internal and external data that drove the decisions throughout the strategic planning process (See Appendix: Strategic Planning Process).

## **Recent History of NMT Strategic Plans**

New Mexico Tech developed a Strategic Plan in 1999. Since then, we have been working toward achieving the goals of this plan. The original plan plus annual updates on our progress are listed below.

New Mexico Tech issued updates to the Strategic Plan in 2000, 2001, 2003, 2004, and 2006 – and has been operating under the guidance of that plan ever since.

The university president, Dr. Daniel H. López, commissioned a new strategic plan in late 2012, with a committee formed in 2013. The Strategic Planning Committee met every other week throughout 2014 to form a draft plan, which was presented to the campus community for periodic reviews and to the President for review and approval. The results of this extensive planning process are presented in this report.

# Section 2: Strategic Direction

## Vision of the University

New Mexico Tech aspires to be a preeminent *community of scholars* dedicated to research, education, and innovation—advancing science, technology, engineering, and mathematics—to meet the challenges of tomorrow. We will drive innovation and education through transdisciplinary collaborations

## Mission of the University

New Mexico Tech serves the state and beyond through education, research, and service, focused in science, technology, engineering, and mathematics. Involved faculty educate a diverse student body in rigorous and collaborative programs, preparing scientists and engineers for the future. Our innovative and interdisciplinary research expands the reach of humanity’s knowledge and capabilities. Researchers, faculty, and students work together to solve real-world problems. Our economic development and technology transfer benefit the economy of the state and create opportunities for success. We serve the public through applied research, professional development, and teacher education, benefitting the people of New Mexico.

## Values of the University

**Research:** NMT values groundbreaking research that generates knowledge and innovative design concepts to solve challenging science and engineering problems. Success in research requires a relentless commitment and focus by faculty, students, and research staff. Our small size encourages interdisciplinary collaborations to solve problems that are not tractable within a single field. We are dedicated to balancing the demands for education and research productivity and developing the resources and support necessary for globally competitive research that will solve complex problems, discover innovative abilities, and transform our future.

**Integrity:** Integrity is honored as a fundamental value at New Mexico Tech. Dishonesty, cheating, and plagiarism have no place in a respected institution of research and higher education. Real integrity goes further than avoiding these negatives; integrity means having the courage to defend the truth, to act fairly, ethically, and honestly in all our endeavors, and to be responsible members of the community.

**Creativity:** Creativity is integral in all endeavors from learning to business to research. It calls for curiosity, adaptability, resourcefulness, and requires imagination, vision, risk-taking, and diligence. Solving difficult problems often requires non-traditional approaches. Whether a task is being performed by NMT staff, students, faculty, administrators, or regents, our institution encourages and expects creativity.

**Lifelong Learning:** We value learning how to learn. We develop lifelong learning skills through a rigorous curriculum, a challenging educational experience with a foundation of critical thinking and problem-solving, invigorating research, and significant professional development; this foundation prepares students, faculty, and staff for continuing individual and career growth. We intend our faculty-to-student ratio and collegial environment to facilitate mentorship and one-on-one guidance on how to approach difficult concepts and challenging problems. This value strengthens all of our abilities to be independent and highly productive learners and contributors.

**Excellence:** New Mexico Tech is known for the high quality of its education and research; we aspire to excellence in all aspects of our mission.

**Economic Prosperity and Technological Development:** New Mexico Tech values the economic prosperity and technological development of New Mexico and the world. Our professional development programs advance the skill level of the state and national workforce. Our outreach programs attempt to inspire underrepresented communities to pursue STEM careers and participate fully in our economic future. We prepare people of all backgrounds to join the well-educated workforce of tomorrow through academic rigor and practical research experience. As a result of our strengths, we provide strategic support, technical assistance, and technology transfer that bolster public and private sector competitiveness.

**Integrated Planning and Decision Making:** We value openness, fairness, collaboration, and stakeholder input in all aspects of the NMT operation. It is critical that data be a driving factor in important decisions involving university functions. Data is to be shared to the extent possible to detect errors, to assure data quality, and to facilitate stakeholder participation in integrated decision making across organizations. We commit to collecting, sharing, and archiving consistent data and participating in transparent decision making.

**Collegiality and Collaboration:** We value the positive energy, performance, and support that come from a collegial and collaborative environment, where team members actively contribute to the advancement of our students, our colleagues, and our institution.

## Section 3: Strategic Priorities 2015-2020

Our strategic plan started with our current national and state context. The identified strategic priorities respond to this context and the input received from our community during the SWOT analysis. From this foundation, the SPC built a plan that supports our mission and provides a path to our vision. This plan is expressed in terms of the strategic priorities with specific goals and objectives to be met through detailed tasks. This structure was then reinforced with proposed timelines and resource requirements, along with the identification of champions to lead the implementation phase. Here we present the strategic priorities and in the next section we will provide an overview of the draft implementation plan.

Each task force focused on a specific area of strategic priority for NMT's future. In each case, the task force considered the following nine questions:

1. What are the boundaries and intent of each strategic priority that distinguishes it from other priorities?
2. What is the importance of the strategic priority and how does it contribute directly to achieving the university's mission and move NMT forward toward our vision?
3. How is the strategic priority responsive to SWOT analysis themes identified by the university constituency?
4. To what degree does the strategic priority have a reasonable expectation of achievement over the five-year time horizon of the strategic plan?
5. To what degree is the strategic priority an institution-wide initiative as opposed to a department or unit initiative with a limited scope?
6. To what degree does the strategic priority contribute to the university's competitive advantage as a STEM institution to be recognized as a premier research and teaching university?
7. What data and information are available that contribute to our understanding of the current status of the strategic priority and future direction for the university on that priority?
8. What are the goals and objectives for achieving the strategic priority?
9. What are the short-term or "quick fix" projects uncovered during-SPC task force meetings?

Based on data analysis (SWOT analysis, NMT budget and performance data, benchmarking to other institutions), consideration of our current context, and evaluation of the future institute needs, each task force briefly outlined the boundaries and intent of the strategic priority; its importance; and the goals, objectives, and tasks necessary to address the priority. The following sections include these considerations from each task force. Note that the order of priorities is alphabetic. More details (e.g., data analysis from task forces) are included in the appendices.

The champion(s) for each objective, the projected resource requirements, start date, and estimated months of effort required, as well as technical resources, are outlined in the draft implementation plan. Vice Presidents have been appointed as official champions for each objective to leverage NMT's existing administrative organization in advancing our strategic plan.

# Strategic Priority: Streamline Communication and Business Processes

## Strategic Priority – priority boundaries and intent

Planning, resource allocation, communication, and procedures are not directly our mission, but they have an enormous effect on how successful we can be at our mission. We can only move toward our vision with careful planning and execution. Resource allocation frequently defines what we can do and what new paths we can take. Communication is critical to building a community. Procedures may seem to affect only one office, but they also matter to everyone who has dealings with that office, and thus the institute as a whole.

## Importance

Improved communication (internal and external), funding allocation, and a renewed emphasis on processes are crucial to the continued vitality and success of New Mexico Tech.

## Goals and Objectives – including tasks and recommendations

### Goal 1: Establish an ongoing communication process of NMT Strategic Planning

In order for the strategic plan to be a living document, Tech needs to evaluate progress at least annually, as well as consider changes as circumstances change. The initial Strategic Plan Review Team will consist of the chairs of the SPC task forces, with other participants welcome. The Strategic Plan Review Team will work with the Vice Presidents (the champions of the strategic plan) to carry out the annual review and update process, as well as to serve as an advisory committee to provide consultation on the developed plan as needed.

**Objective 1.1:** Perform an annual evaluation of the strategic plan and communicate progress to the NMT community.

**Objective 1.2:** Submit an annual report to NMT administration for review and approval.

Task 1: Form the Strategic Plan Review Team.

Recommendation: An initial Strategic Plan Review Team will consist of the chairs of the SPC task forces, with other participants welcome. The Strategic Plan Review Team will work with the Vice Presidents (the champions of the strategic plan) to carry out the annual review and update process, as well as to serve as an advisory committee to provide consultation on the developed plan as needed.

Task 2: The Strategic Plan Review Team, in consultation with the champions, is to produce an annual report by the beginning of April each year, to be presented to the President and the Faculty Senate. The report will present the metrics and tasks completed, as well as suggest needed amendments.

Task 3: Post the working implementation plan, metrics, status, and tasks completed on the NMT intranet.

Task 4: Post amendments to the strategic plan after approval by the President.

### Goal 2: Establish a five-year resource allocation plan to be updated annually

Requests for budget (including positions) will be made annually, based on a five-year plan that is updated annually. Each department will have a plan, which will be used to set hiring priorities, resource allocation, and as a basis for annual department evaluations. These plans are discussed with the appropriate Vice President and aligned with the NMT Strategic Plan. Priorities are discussed and set by the VP, and then the overall division request is submitted.

Objective 2.1: Develop and review budget requirements with NMT administration and academic and administrative departments on an annual basis to create a five-year budget plan (Depends on five-year strategic plans for departments and requires data from Quality Growth Objective 1.1).

Objective 2.2: Update five-year budget projections on an annual basis and reallocate based on established criteria (Depends on Student Success Objective 2.2).

Task 1: VPA&F will provide a schedule for when all VPs need to have budget requests submitted.

Task 2: Each VP will provide a schedule for their departments to develop and submit budget requests.

Task 3: VPs agree on a standard template for departmental plans.

Task 4: Each department develops a five-year plan, in consultation with the VPs/Deans. These plans will be used to set hiring priorities, resource allocation, and as a basis for annual department evaluation.

Task 5: Each department annually updates their five-year plan, in consultation with the VPs/Deans.

### **Goal 3: Expand broad-based participation in decision-making**

Standing committees of the Faculty Senate will be used for broad input into decisions. Some committees need to have their membership expanded to include staff members.

**Objective 3.1:** Expand standing committee participation from all constituencies to broaden input into decision-making.

Task 1: Standing committees will consider the need for staff representation and report back to the Faculty Senate.

Task 2: Committees invite appropriate staff to join or consult with the committee.

Task 3: Reorganize the Institute Faculty Senate to broaden decision making.

### **Goal 4: Expand the centralized communications functions to increase NMT's visibility and recognition.**

A central office, with adequate staff, will improve and maintain the NMT website, greatly increase and improve our social media presence, expand marketing efforts, liaise with mass media making NMT the go-to school for experts in STEM, as well as provide press releases and Tech news. Internally, this office will also publicize events; maintain a calendar of seminars so we can find out what is going on in other departments; relay congratulations for new grants and other kudos.

**Objective 4.1:** Develop a comprehensive plan for expanding the centralized communication functions of the university.

**Objective 4.2:** Implement the comprehensive plan and evaluate communication progress annually.

Task 1: Organize a Communication Office (possibly mostly by reassigning duties) that will become the focal point for developing and distributing information internally and externally.

Task 2: Improve the NMT website's functionality and appearance for both on-campus and off-campus users.

Task 3: Expand social media presence both internally and externally.

Task 4: Improve the functionality and usability of the all-campus calendar to broaden participation and share information.

### **Goal 5: Develop a university-wide culture of information sharing.**

Tech needs full implementation and access to Banner or an alternative software approach to enable everyone to get the information they need to properly carry out their responsibilities. Information will be more easily available. NMT has an intranet that could be used for things that wouldn't be appropriate on the Internet.

**Objective 5.1:** Evaluate expanded access to Banner that is responsive to user needs and ensure data security.

Task 1: Purchase and install an appropriate module to allow people to be given read-only access to Banner data or select alternative approach to such access.

Task 2: Determine those users who should have Banner access to carry out necessary functions.

Task 3: Extend Banner and/or other data access as needed.

**Objective 5.2:** Evaluate full utilization of the university's intranet to improve internal communications.

Task 1: Vice Presidents will work with their division to determine what information can and should be made more easily available.

Task 2: Publicize information in NMT intranet and update it on a regular basis.

**Goal 6: Modernize NMT business practices.**

Make more procedures paperless and more efficient (e.g., hiring process, purchasing, and travel).

It is important to engage involved community members in the evaluation and design of processes to ensure smooth transition and balanced decision making.

**Objective 6.1:** Evaluate and improve NMT business practices and workflows against established standards and criteria.

Task 1: Offices still using paper forms will develop plans to reduce or eliminate the paper required. Offices must ensure that electronic forms are compatible with all major platforms (Windows, Mac, and Linux).

Task 2: Evaluate the needs and consequences of on-line or workflow procedures. Engage involved community members in the evaluation and design of processes to ensure smooth transition and balanced decision-making. Switch to either on-line or workflow procedures where appropriate.

Task 3: Re-evaluate required approvals as workflows or on-line procedures are established.

**Objective 6.2:** Streamline the human resource functions to include hiring, promotion, career ladders, and performance reviews. In many cases, research staff and faculty salaries are based chiefly on the starting salary \ negotiated. A more systematic approach, recognizing performance as well as market, could be a benefit.

Task 1: Develop a staff path for advancement or progression and an associated salary ladder with levels within a given grade.

Task 2: Develop a faculty salary system proposal, to be submitted to the Faculty Senate.

Task 3: Develop a professional salary system proposal, to be submitted to division directors and professional staff.

Task 4: Revise job descriptions where needed.

Task 5: Develop a regular system of 360-performance reviews, based on job descriptions.

Task 6: Develop a procedure of promotion to new levels in staff path and associated pay raise in the salary ladder, based on performance review.

# Strategic Priority: Build Collaborations as a Community of Scholars

## Strategic Priority – priority boundaries and intent

This strategic priority is defined by the building of community both within the bounds of campus and extending outward toward all parts of the world. NMT is dedicated to building a strong sense of community among our students, but also as one community with all faculty, staff, students, and alumni of the Institute. The goals of this effort are to bring newcomers into the community, to provide a supportive environment for them to grow and innovate within the community, and finally to broaden the circle of community to begin the cycle again. As a diverse and unified community with administrative support for growth and development, we have the greatest possibility of success and spreading the influence of New Mexico Tech.

## Importance

Our continued success as a research and teaching institution relies on our ability to connect with each other and our students, develop them into successful scientists and engineers, and send them into the world, thus increasing the influence of New Mexico Tech.

## Goals and Objectives – including tasks and recommendations

The goals of this priority are to develop a cycle for bringing new faculty, staff, and researchers into our community; supporting and encouraging them to grow, learn, and innovate; and then spreading their ideas to the New Mexico Tech community outward. Throughout this cycle, individuals will feel they are part of the broader New Mexico Tech family and their individual success is enhanced by the success of the community as a whole.

**Goal 1: Develop a formal orientation process to the NMT community, including connection to our natural environment, for new faculty, researchers, and staff to welcome them to the university and enhance their success and contribution to NMT.**

**Objective 1.1:** Develop new training methodologies to introduce new faculty, staff, and researchers to NMT.

Task 1: Develop new methods for training new faculty and staff on Institute policies and procedures. The training will be phased to allow maximum learning potential and to provide multiple opportunities for new hires to interact and build community.

**Objective 1.2:** Provide improved new faculty support to enhance their productivity and impact.

Task 1: New faculty members must be provided with a supportive environment to begin their career and to foster developing research interests. New faculty teaching and research workshops will be held regularly, including participation from senior faculty.

Task 2: Provide opportunities for our new faculty to explore NMT's environment and appreciate our natural setting.

**Objective 1.3:** Enhance student support to improve learning and student success.

Task 1: Enhance the current student orientation process to improve the sense of community from the first moment a student sets foot on campus. Connect first-year students with a student mentor in addition to a faculty advisor. Consider options for incorporating student mentoring into the entry-level classes in each major (ES110, MENG110). Students, faculty, and staff across the Institute should be excited to participate in welcoming the newest students at all levels to the community. Explore options for the best times to hold student orientation and the most effective length of orientation.

Task 2: Investigate methods to allow distance education students to feel more a part of the NMT community.

Task 3: Provide opportunities for our new students to explore NMT's environment and appreciate our natural setting.

**Objective 1.4:** Hold informational meetings to improve understanding of and connection to NMT.

Task 1: Hold informal social or town-hall type meetings regularly to allow interaction among all community members. Schedule these meetings when most of the community is on campus and rotate hosting departments or divisions to enhance participation from all parts of the Institute.

Task 2: Introduce a formal "state of the Institute address" to be delivered annually to the community.

**Objective 1.5:** Develop honor/ethics code for community to guide our community behavior.

Task 1: A formal "honor / ethics code" will be developed to be signed by all employees and students. Establish a common set of goals and expectations among all within the community. The spirit of the honor code and code of ethics will be reflected in each course that is taught and each on-campus activity.

**Goal 2: Develop incentives to innovate to enhance and sustain our environment from our campus to the globe (drive new directions for the community).**

**Objective 2.1:** Reward creativity in the classroom and in all campus activities to drive innovation and effectiveness.

Task 1: Reward creativity within the classroom and across the Institute. Develop a pilot program to allow faculty members to innovate and explore new teaching approaches and transdisciplinary course offerings. Encourage education methodology development and risk-taking to engage more students and improve NMT's unique educational experience. Encourage staff to innovate to improve processes and procedures within their jobs and responsibilities.

**Objective 2.2:** Develop merit-based pay process to motivate and reward excellent performance.

Task 1: Develop a merit-based pay process and competitive starting/base salaries for all members of the New Mexico Tech community. To support this, employees and supervisors will develop annual performance plans, based upon which supervisors will evaluate employee performance. New metrics and holistic approaches to employee evaluations will be developed and implemented to promote individuals who are contributing to and enhancing the community. Consider the need for job descriptions for faculty and department chairs.

**Objective 2.3:** Enhance workshop/training subjects to help our community grow and become more effective.

Task 1: Enhance current workshops offerings. Gear workshops toward helping employees grow within their position and to enhance their value to the Institute. Workshops will also include students. Develop workshops to include professional development and education for the campus community on topics including personal protection, date-rape, social networking, chairing departments, innovation, sustainability, and other topics that are unique and important to college campus communities.

**Objective 2.4:** Develop staff salary ladder / job family scenarios to provide opportunities for staff to advance in departments where they have already developed expertise.

Task 1: Develop a "staff salary ladder" or "job family ladder" with a natural progression or advancement through job ranks. Define baseline skills, qualifications, and workshop participation for promotion and performance evaluation.

**Objective 2.5:** Create innovation center for entire community to drive us to enhanced contributions in STEM to NMT, the state, and beyond.

Task 1: Create more innovation spaces for faculty, staff, and students—places where they can gather to develop new ideas and collaborations. The spaces should be unique, friendly, and exciting and can host regular events and showcases of developments. Explore the possibility of creating new or expanding existing informal social areas and opportunities including the Golf Course Grill and Club Macey.

Task 2: Hold meetings in the community to explore opportunities for innovation and sustainability.

**Goal 3: Broaden the circle of community to enhance the Institute culture and create a problem-solving approach to finding new opportunities.**

**Objective 3.1:** Enhance outreach activities with Socorro community to expand our impact on our local community.

Task 1: Formalize and expand institutional outreach activities with the local Socorro county school districts and communities.

Recommendation: A specific institution office will coordinate, facilitate, and promote institute and community activities. This office will develop regular interactions with the Socorro schools for recruiting, presentations by faculty and students in the Socorro schools, and bring Socorro school students to campus for events. The office created under this objective will include a formal liaison between NMT and Socorro County offices and organizations and will attend Socorro County meetings, Socorro City meetings, and school district events. Evaluate the possibility of reviving the “Consulting Scientist” program. Incorporate existing Bureau of Geology outreach efforts and facilities into the overall NMT efforts.

**Objective 3.2:** Hold NMT-oriented social activities on campus to enhance our sense of community.

Task 1: Enhance the spirit of community across campus with social and Tech-oriented activities. Provide opportunities for the community to gather and celebrate our uniqueness and to enhance and sustain our environment.

**Objective 3.3:** Enhance family-life issues within NMT community to help our community thrive and prosper.

Task 1: Enhance support for individuals within the community by creating formal committees to research and develop policies or recommendations for social issues such as a dual-hiring policy, expanded childcare offerings, and parental leave policies.

**Objective 3.4:** Invite alumni, corporations, government agency participation to ensure we are embracing our full community.

Task 2: Expand opportunities for alumni, corporations, and government employees to participate in the New Mexico Tech community, e.g., 49ers, research symposium, nationwide alumni events, career fair.

**Goal 4: Enhance security measures on the NMT campus to support a safe learning and living environment.**

New Mexico Tech needs to adhere to, and maintain compliance with, multiple changes to federal regulations, e.g., Clery Act, OSHA, EEOC, etc. Other areas of Tech campus where security measures can be enhanced include the addition of video surveillance to areas of risk, enabling keypad entrance capabilities to buildings, and utilizing the voice feature in the fire alarm systems.

**Objective 4.1:** Ensure compliance with Clery Act and other federal regulations in a timely manner.

Task 1: Add new staff to support reporting and compliance for Clery Act. Address other regulations as needed.

**Objective 4.2:** Enhance security and safety on NMT campus to create a safe learning and research environment.

Task 1: Add visual surveillance to at-risk areas, route to central dispatch. Tech will need to add a fulltime officer to the Campus Police staff to support the necessary steps and procedures.

**Objective 4.3:** Strengthen and enhance building, campus, and local security measures to ensure community safety.

Task 1: Improve security of entrances to NMT buildings, i.e., use of keypad, RFID, or other technology.

Task 2: Evaluate ways to enhance local security in collaboration with the community.

**Objective 4.4:** Strengthen and enhance fire alarm security measures to protect our community members.

Task 1: Enable voice/speaker capabilities on fire alarm system.

# Strategic Priority: Expand Funding Opportunities

## Strategic Priority – priority boundaries and intent

During a period when record numbers of students are enrolling across the country and specifically at New Mexico Tech, New Mexico's state appropriations have followed the national trend with significant cuts in Higher Education (HED) funding. Members of the task force evaluated funding/revenue issues as a strategic priority to maintain and sustain the educational operations of the campus. Funding is a crucial resource for all of the strategic priorities and as such will require an Institute-wide effort to improve the financial outlook for New Mexico Tech. Given the costs of attracting and retaining STEM-discipline faculty along with the resources necessary to educate students as scientists and engineers, increased funding is crucial if NMT is expected to remain a premier research and teaching university.

## Importance

It is our consensus that declining funding/revenue remains the single largest challenge facing New Mexico Tech. Declining revenue affects every aspect of the college's mission from academic departments to administrative functions, staffing capability and performance and student access to high-quality education. The tasks outlined here are unique within the strategic plan, as increasing NMT's funding basis is not directly cited in the vision or mission statements. However, the success of the other strategic priorities depends on a firm financial basis. NMT will not achieve its goal of striving to be a preeminent university if its funding basis does not increase in the coming years.

## Goals and Objectives – including tasks and recommendations

### **Goal 1: Examine NMT's tuition structure as a key revenue source in support of the university's educational mission.**

**Objective 1.1:** Develop options for redesigning NMT's tuition structure as a revenue source to build the educational foundation of the university.

Task 1: Investigate in-state/out-of-state tuition revenue sources along with state appropriations.

Task 2: Investigate tuition structure options used by other STEM institutions for their educational missions.

Task 3: Develop a tuition formula in coordination with the Quality Growth Priority to balance tuition costs with expected student enrollment.

Task 4: Explore financial aid/scholarship programs to ease cost burden on low-income students through the NMT Office of Financial Aid.

Task 5: Work with the Faculty/Staff Budget & Analysis Committee to examine tuition and state appropriations relative to operating costs of student instruction.

### **Goal 2: Expand the role of the Office of Advancement to generate revenue through alumni, corporate, and private giving.**

**Objective 2.1** Develop an operational plan for expanding the Office of Advancement to meet key funding goals.

Task 1: Develop five-year revenue goals to support strategic priorities and evaluate resource needs for the Office of Advancement.

Task 2: Conduct a staffing audit to determine the mix of professional/support positions required to meet key funding goals.

Task 3: Continue to improve the contact database for current and potential alumni, corporate, and private donors to the university.

Task 4: Evaluate the communication programs utilized by the Office of Advancement and expand those that yield increased investment in the university (print, social media, radio, video production, and others).

**Objective 2.2** Develop a comprehensive incentive program to increase the number of donors and their level of investment in the university.

Task 1: Acknowledge donors via annual reports and initiate donor-level Recognition in *Gold Pan* or other outlets.

Task 2: Identify and expand opportunities for corporate matching programs.

Task 3: Identify NMT endowment goals to ensure a point of stability and compensation during times of low tuition or state funding appropriations.

Task 4: Explore opportunities for alumni giving and promotion tied to competitive events (sports, academic, or research). A team will need to evaluate the costs, opportunities, and risks associated with such endeavors.

**Goal 3. Expand funding opportunities for basic and applied research in support of the university's research mission.**

**Objective 3.1:** Expand the university's infrastructure to support research funding for faculty, staff, and students.

Task 1: Conduct a study of NMT's experience with grants and contracts and identify trend data on sponsored research and sponsored activities.

Task 2: Develop incentives for faculty and staff research activity, to include increased (soft-money based) salaries, reduced teaching loads, and possibly reduced thesis/dissertation advisement.

Task 3: Utilize PAR reports to incentivize faculty for research productivity.

Task 4: Develop a process to notify P.I.'s of new program announcements, e.g., HSI grants, programmatic grants and other funding opportunities.

**Objectives 3.2:** Develop a university-wide education and training program through the Center for Leadership in Technology Commercialization.

Task 1: Create an entrepreneurship certificate program (or a minor) for interested students, staff, and faculty.

Task 2: Create a student-focused work and design space for exploring new ideas and innovations.

**Goal 4. Build a culture of entrepreneurship to generate multiple income streams in support of the university's research and education mission.**

**Objectives 4.1:** Develop a university-wide technology commercialization infrastructure to standardize the process for developing and marketing innovations through the Center for Leadership in Technology Commercialization.

Task 1: Establish policies and procedures for documenting inventions that may lead to new intellectual property, patents, and licensing.

Task 2: Maintain and develop opportunities for venture capitalists and other funding sources to review and support new innovations.

Task 3: Support faculty, students, and staff in navigating the commercialization process.

Task 4: Review the university's faculty and staff consulting policies to provide opportunities for additional research and teaching in support of technology commercialization.

# Strategic Priority: Ensure Intentional and Planned Quality Growth

## Strategic Priority – priority boundaries and intent

The Quality Growth priority addresses how much the Institute will grow, what resources will be needed, and how to ensure that growth does not come at the expense of quality.

## Importance

Since 2010, enrollment has grown from 1,652 degree-seeking students to 1,886 degree-seeking students<sup>1</sup>, while budgets have remained mostly flat. In some areas the quality of academic and student services has decreased to the point of being only reasonably acceptable. The goals and objectives in this section seek to grow the institution in an intentional, planned, and controlled way, with appropriate resource allocation and consideration of the needs of the entire campus community, while ensuring that excellence is maintained and/or reinvigorated.

## Goals and Objectives – including tasks and recommendations

### Goal 1: Grow undergraduate enrollment in an intentional way that maintains quality.

#### Objective 1.1: Evaluate growth potential.

Task 1: Perform a capacity study to determine actual maximum capacity in all aspects of instruction, advising, research, and student life.

Task 2: Receive target number from President and Regents by July 2015.

Task 3: Obtain from each academic department and administrative office its vision and goals for undergraduate growth, including how they see themselves fitting in with the university's target enrollment number, and what infrastructure and resources will be needed to support effective instruction, advising, student services, and research experience at that level.

Task 4: Align department goals with Admission Office recruiting measures to include more focused recruiting for academic departments that have the capacity and desire to grow.

Task 5: Increase recruitment and support of minority, low-income, and first-generation students.

Task 6: Institutionalize the Deans' annual report of faculty and TA needs as a mechanism to organize the distribution of resources.

Task 7: Maximize use of technology to relieve shortages of academic and administrative resources. Such technology may include DE capability, Maple TA, DegreeWorks, Starfish, and Canvas.

Task 8: Employ the Space Allocation & Utilization Committee to manage classroom, office, lab space allocation.

Task 9: Perform a needs analysis of the campus infrastructure, with emphasis on campus safety infrastructure and technology infrastructure.

Task 10: Create an Infrastructure Steering Committee to centralize the planning, development, and management of campus infrastructure.

### Goal 2: Grow graduate enrollment to become PhD-granting institution in 7 to 10 years.

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<sup>1</sup> These numbers do not include non-degree-seeking students.

**Objective 2.1:** Develop new graduate programs.

Task 1: Develop PhD in Mechanical Engineering.

Task 2: Develop PhD programs in Biology and General Engineering.

Task 3: Set up and utilize Center for Graduate Studies Advisory Board.

Task 4: Perform needs analysis for PhDs in industry.

**Objective 2.2:** Increase graduate enrollment.

Task 1: Develop a university-wide strategy to fund graduate students.

Task 2: Expand recruiting, with special focus in PhD areas.

Task 3: Develop additional certificate programs to attract professionals to graduate education.

Task 4: Increase distance education enrollment.

Task 5: Increase Master of Science for Teachers enrollment to better prepare STEM students.

**Objective 2.3:** Decrease time to completion to within 150 percent of required credits.

Task 1: Identify roadblocks to on-time completion.

Task 2: Remediate roadblocks.

**Goal 3: Strengthen / Grow research components.**

**Objective 3.1:** Rebuild research activity to \$100M.

Task 1: Increase transdisciplinary research.

Task 2: Evaluate acquisition of new research divisions.

Task 3: Expand collaboration between research divisions and faculty.

**Recommendations:**

- Share seminar information between faculty and research divisions.
- Provide a central place to look for opportunities for student employment at the research divisions and on campus.

Task 4: Increase faculty research.

**Objective 3.2:** Increase the number of students employed by research.

Task 1: Include research assistantships in startup packages.

Task 2: Develop and fund a research opportunity grant program.

Task 3: Improve communication between advisors and research divisions.

Task 4: Expand support for Research Experience for Undergraduates programs.

**Objective 3.3:** Increase patents and commercialization of intellectual property.

Task 1: Educate faculty/researchers about patent system.

Task 2: Restructure the tenure process to value patenting.

Task 3: Improve the patent process at NMT.

Task 4: Improve/increase industry partnerships.

# Strategic Priority: Support Student Success

## Strategic Priority – priority boundaries and intent

Student success is at the very heart of our academic institution. It is a central focus of both our mission and vision.

Some students may not be ready for Tech's rigorous academics. A program to have them start at a community college will help them succeed when they eventually come. This program needs to incorporate the following:

- build partnerships/articulation agreements
- maintain tracking database
- develop community college course plan for student, including semester schedules and e.t.a. for transfer to Tech
- create cross-enrollment programs to keep students engaged at Tech
- deliver specialty courses to community colleges in DE format
- enhance financial aid packages for transfer into Tech
- invite students to Tech events (e.g., SRS)

Early opportunities to participate in research has been one of our strengths. A program of Research Opportunity Grants will expand on this, and allow students a chance to be mentored by a Tech researcher. Of course, some faculty and researchers will welcome this opportunity to mentor students while others may not. This work must be considered in evaluations of faculty and rewarded.

Transfer, non-traditional, and international students have different needs. Some, particularly those who started community college directly after high school and are now transferring after only a year or two, are probably best treated like a regular first-year student. Non-traditional students, who may have spent years in the work force or military, or who may have families, need other sorts of programs. Getting them involved with research as soon as possible may be a good approach, but they may also need workshops on school/life balance, information about the local schools and day care, or may just need a chance to talk to other 'non-traditional' students about the challenges of returning to school. We need to talk to more transfer and non-traditional students about what they need.

## Importance

Without student success our institution fails in meeting both our mission and vision.

## Goals and Objectives – including tasks and recommendations

### Goal 1: Improve opportunities for undergraduate student retention and success.

Improve opportunities for undergraduate student retention and success through targeted admissions, refining the tuition structure, and providing scholarships and other financial aid in support of the university's educational mission.

**Objective 1.1:** Develop targeted admission criteria to focus on those applicants demonstrating a readiness to succeed.

Task 1: Require placement into Math 103 as a minimum admission requirement for all undergraduate students.

Task 2: Analyze high school GPA as an indicator of student success at NMT, for the possibility of raising the admission requirement.

Task 3: Assist applicants who do not meet admission standards by recommending a community college for preparation to transfer into an NMT program in a later semester.

Recommend incorporating the following:

- build partnerships/articulation agreements
- maintain tracking database
- develop community college course plan for student, including semester schedules and e.t.a. for transfer to Tech
- create cross-enrollment programs to keep students engaged at Tech
- deliver specialty courses to community colleges in DE format
- enhance financial aid packages for transfer into Tech
- invite students to Tech events (e.g., SRS)

Task 4: Lobby NM State Legislature to reward community colleges and four-year universities for successful transfers.

**Goal 2: Improve undergraduate student academic support infrastructure to increase retention and student success.**

**Objective 2.1:** Continue to expand support infrastructure for at-risk students and encourage more faculty participation in these efforts.

Task 1: Expand offerings of the Office of Student Learning.

Task 2: Evaluate advising programs and continue to improve advising process and approaches.

Task 3: Develop recommendations for program improvement.

**Objective 2.2:** Establish a continuous budget cycle to support existing and future initiatives started with federal funding that have demonstrated success.

Task 1: Evaluate academic support functions and develop program and budget recommendations for improvement.

Task2: Analyze academic support budgets and performance.

Task 3: Develop budget and program recommendations to streamline academic support programs.

**Objective 2.3:** Expand and improve support infrastructure for transfer, non-traditional, and international students.

Task 1: Hold a ‘town hall’ for transfer and non-traditional students to identify their special needs.

Recommendation: Transfer, non-traditional, and international students have different needs. Some, particularly those who started community college directly after high school and are now transferring after only a year or two, are probably best treated like a regular first year student. Non-traditional students, who may have spent years in the work force or military, or who may have families, need other sorts of programs. Getting them involved with research as soon as possible may be a good approach, but they may also need workshops on school/life balance, information about the local schools and day care, or may just need a chance to talk to other ‘non-traditional’ students about the challenges of returning to school. Integrate needs of transfer and non-traditional students. Use a town hall to evaluate these ideas.

Task 2: Develop and put on workshops in response to the needs identified in Task 1.

Task 3: Organize social activities aimed at students with families.

**Goal 3: Develop an enhanced advising system for undergraduate students to increase student success and retention.**

**Objective 3.1:** Continue to expand advising services for undergraduate students and improve advising process and strategies.

Task 1: Develop and staff an Advising Center to be the first point of contact for first-year students. Integrate with the efforts already under way in the Office for Student Learning.

Task 2: Start a Student Mentoring program, pairing first-year students with upper-division students.

Task 3: Assign faculty advisors to all students as a part of faculty responsibilities to be considered in annual performance reviews.

Task 4: Develop a system for connecting students to a research supervisor in coordination with Research Opportunity Grants.

Task 5: Develop budget recommendations to address undergraduate student advising program deficiencies.

**Goal 4: Expand opportunities for undergraduate student research in support of the university's research and teaching mission and prepare graduates for the professions.**

**Objective 4.1:** Develop Research Opportunity Grants to expand the university's undergraduate student research opportunities.

Task 1: Expand undergraduate research opportunities by developing unique programs for undergraduate students receiving scholarships who are interested in a research position with a faculty member in conjunction with their tuition scholarship.

Task 2: Improve the interactions of undergraduate students and NMT research divisions.

Recommendation: Coordinate with Task 3, under Objective 3.1, in Community of Scholars.

Task 3: Determine the correlation between participation in undergraduate research and student success at NMT.

Task 4: Seek additional funds to expand Research Opportunity Grants program to all interested undergraduates, similar to work-study provisions.

Task 5: Develop a system for connecting students to a research supervisor through Living Learning Communities (first year) and then Research Opportunity Grants used to develop a continuing research relationship.

Task 6: Seek new research opportunities with emphasis on minority, low-income, and first-generation students.

Task 7: Evaluate the Research Opportunity Grants program with recommendations for improvement.

**Objective 4.2:** Strengthen and grow the career placement system as the ultimate measure of student success.

Task 1: Increase efforts to identify and fill industry needs through networking with industry representatives, recent NMT graduates, professional societies, and industry research.

Task 2: Improve student tracking and measurement of short-term and long-term career placement.

Task 3: Increase coordination between Alumni Office and academic departments to track student placement and career progression.

**Goal 5: Assessment of Student Learning and review of programs needs to continue to be a central part of what we do.**

The institution links its processes for assessment of student learning, evaluation of operations, planning, and budgeting. The associated information is shared through our Integrated Planning Workspace, where it is available for other departments to see proper assessment, and using the results of assessment, will be part of the annual evaluation of academic departments for the departmental merit factor, and consideration for resource and position allocation.

Assessing our programs is also important. Departments will work with their area Dean, and for graduate programs also with the Dean of Graduate Studies, to develop a suitable plan and timetable for reviews. (Plans might include outside advisory boards, professional organizations' standards, surveys of employers and alumni, a formal program review with an evaluation team [possibly one outside reviewer in the program area, one internal faculty member in a different area, one internal professional staff], or others.)

Task 1: Departmental Assessment will be posted in the Integrated Planning Workspace. Each department chair will meet with the Assessment Coordinator (AVPAA) to discuss their assessment plan and how it can be improved.

Task 2: Departmental Assessment reports will also be considered with the annual Departmental Activity Report (DAR).

Task 3: Periodically review the learning outcomes for the General Education requirements.

Task 4: Periodic departmental reviews will be instituted to ensure that departmental outcomes and programs are meeting stakeholders' needs.

**Objective 5.2:** Co-curricular programs, the Community Education Program, as well as all offices and departments will assess Student Learning and Program/Office/Department Activity.

Task 1: All offices and departments will submit a Program/Office/Department Activity Report to the Integrated Planning Workspace for the prior academic year or for the fiscal year, whichever reporting frame works best for their Vice President's review, beginning Fall 2014 on a standardized template draft (currently being finalized and will be reviewed and updated when necessary). The reports will be of two categories:

- (1) Student Learning Evaluation/Assessment Reports, if applicable; and
- (2) Program/Office/Department Activity Report.

Task 2: The SWOT analysis results will be shared with the President's Cabinet so that programmatic and student service needs that are not currently being met can be identified. The student government organizations will be asked to provide an annual report on needs that students feel are not being met. This report will go to the President's Cabinet, Deans, and to the Strategic Plan Review Committee for consideration for action.

**Objective 5.3:** Develop a culture of assessing and using assessment information.

Task 1: Professional development and training in assessment 'best-practices' will be made available and encouraged. Additional information is found in Community of Scholars.

Task 2: Offer workshops to share what different departments are trying and what individuals have learned from conferences and training.

Task 3: The Faculty Senate Student Learning Committee (with the AVPAA *ex officio*) will be aware of all assessment efforts and make suggestions for improvements as needed.

**Goal 6: Enhance graduate student success and retention.**

**Objective 6.1:** Develop graduate advising and mentoring program.

Task 1: Develop and regularly deliver graduate advising and mentoring workshops.

**Objective 6.2:** Address impediments to graduate student success and retention.

Task 1: Evaluate impediments to graduate student success and retention overall and on a per-program basis.

Task 1: Remediate impediments to graduate student success and retention overall and on a per-program basis.

**Objective 6.2:** Develop graduate professional development workshops.

Task 1: Evaluate topical needs for graduate professional development workshops.

Task 1: Develop and regularly deliver graduate professional development workshops.

# Strategic Priority: Build and Exploit Technology and Infrastructure

## Strategic Priority – priority boundaries and intent

Technology is a foundational necessity directly supporting the mission of New Mexico Tech. Technology is an integral part of most of the activities of New Mexico Tech. It was the intent of the Technology Task Force to look at the strategic impact of technology, its planning and effect on the mission, and its contribution to the various constituencies at Tech as they work to achieve the mission of the Institute.

## Importance

Effective technology planning and organization as well as utilization of current technology are critical to advancing the mission of New Mexico Tech. As a school with Technology in its name, it is clear that almost everything done here utilizes technology, visualizes new technology, or shapes the advancement of technology. It is therefore important that the management and planning of technology for our own uses be given serious attention.

## Goals and Objectives – including tasks and recommendations

### **Goal 1. Develop a technology plan that is institution-wide in scope and responsive to institutional constituencies and mission.**

**Objective 1.1:** Establish a Campus Technology Committee (CTC) to guide technology implementation at NMT.

The CTC mission and operation would be based on the following considerations.

- The scope of the CTC will be campus-wide to provide constituent representation on matters of technology. Committee decisions will be viewed as being the consensus of the campus.
- The membership will include representatives from the Faculty Senate Computing on Campus Committee plus members selected by the administration.
- The number of members will be enough to assure campus representation, but not so many that the committee is unwieldy. We suggest at most nine members.
- Each member would be a voting member.
- The CTC would also hear and propose ideas as a forum for the sharing of information related to technology and technological solutions and gather information.

Task 1: Establish a Campus Technology Committee (CTC) based on the considerations listed for the CTC.

Task 2: Hold regular meetings of the CTC to provide advice and recommendations on strategic directions in technology, technology budgeting, and long-term technology and infrastructure planning.

**Objective 1.2:** Consolidate technology services.

The consolidation of technology services will be considered by the CTC to streamline and/or facilitate the delivery of services, to eliminate unneeded duplication, and to save money.

Task 1: Evaluate and implement, as appropriate, consolidation of technology services.

### **Goal 2. Leverage technology resources to increase productivity, streamline processes and increase the competitive advantage of the institution.**

Coordinate with Communication and Process Strategic Priority Goal 6.

**Objective 2.1:** Improve utilization of the existing Enterprise Resource Planning (ERP) system (Banner and associated software).

**Objective 2.2:** Streamline and automate institutional procedures and processes also making them user-friendly.

Task 1: Automate administrative processes.

Task 2: Digitize paper processes.

Recommendation: Consider digitizing all paper processes that are used frequently. Prioritize based on frequency of use and number of users to have the most cost-effective impact.

Task 3: Establish workflows to automate common processes.

Recommendation: Consider workflows for all common processes. Prioritize based on frequency of use and number of users to have the most cost-effective impact. Re-evaluate processes and approvals before developing workflow replacements.

**Objective 2.3:** Create a Management of Electronic Records plan that is approved by the NM state records administrator.

Task 1: Develop electronic presentation of and access to information.

### **Goal 3. Streamline and standardize automated institutional reporting and research in support of strategic planning, research, teaching, and grants and contracts.**

Deliver a method in which data can be extracted, easily and in a standardized fashion, from the institutional databases to perform reporting and institutional research in support of strategic planning, research and grant proposals, and all other decision-making.

**Objective 3.1:** Establish standard metrics and definitions of data so that everyone is working from a common set of definitions and standards.

**Objective 3.2:** Standardize and provide access to ERP data that allows for the creation of meaningful reports by non-technical staff.

Task 1: Provide easy access to data.

Task 2: Support standardized data extraction and reporting.

Task 3: Utilize the ERP to leverage a competitive advantage.

Task 4: Develop an ERP mechanism to support and measure the progress of a student through NMT's academic program and into Alumni and Advancement process.

Task 5: Purchase software that will support the institutional need for reporting, institutional research, and decision making.

### **Goal 4. Streamline and reorganize technology funding.**

**Objective 4.1:** Develop standards and rules for funding commoditized technologies to include software, hardware, and equipment replacement.

**Objective 4.2:** Establish guidelines for grant submissions that include cost recovery for technology.

Technology funding will be based on the following principles:

- Commoditized technologies will be funded at the highest level possible.
- Software licensing will be centralized wherever possible.
- A solution to funding Equipment Renewal & Replacement will be found
- IT projects, large hardware and software purchases and smaller purchases that have campus impact will be reviewed by the CTC for:
  - Adherence to the strategic plan
  - Ensuring that no duplication of effort or resources occurs.
- Grant proposals' technology components will be reviewed by the committee to ensure
  - Adherence to the strategic plan
  - No duplication of effort
  - Post-grant maintenance funding is planned and approved
  - Alignment with existing and planned technologies

Task 1: Develop an annual report with input for technology prioritization and budgeting.

Task 2: Develop guidelines for grant writers that indicate what technologies can be included for cost recovery by grants. This task will require collaboration with Academic Affairs, Research and Economic Development, as well as the Sponsored Project Administration.

Task 3: Develop a rapid-review process for grant proposal to prevent delays in grant submissions due to CTC review.

# Strategic Priority: Cultivate Transdisciplinary Education and Research

## Strategic Priority – priority boundaries and intent

Transdisciplinary research and education integrates the methods, theories, techniques, and perspectives of multiple disciplines to develop new approaches to solve complex, real-world challenges.

## Importance

Based on New Mexico Tech’s history of interdisciplinary research and development and the increased national focus on research involving multiple disciplines, NMT is moving into the challenging arena of transdisciplinary programs. According to McGregor (2011) “the world is facing a polycrisis, a situation where there is no one single big problem—only a series of overlapping, interconnected problems. These interconnected, complex problems cannot be solved by disciplines working alone within the academy using independent, fragmented, disciplinary-focused knowledge.” We must embrace transdisciplinary as a stimulus to creativity and productivity while still maintaining the rigor and strength of our disciplinary efforts. We will craft a transdisciplinary approach in order to better prepare our students to be leaders in multi-disciplinary problem-solving and research. Such broad and crosscutting efforts will contribute positively to the economies of our state, nation, and world.

## Goals and Objectives – including tasks and recommendations

### Goal 1: Increase transdisciplinary academic programs.

Strategy: Develop, promote, and support transdisciplinary certificates and academic degrees to increase the number of well-prepared transdisciplinary researchers that graduate from NMT and are prepared to tackle challenging real-world problems.

**Objective 1.1:** Engage broad NMT community with understanding of and involvement in transdisciplinary development.

Task 1: Develop transdisciplinary research and education web page.

Task 2: Develop transdisciplinary research mini-series of workshops/talks using the Center for Innovative Teaching and Learning and the Center for Graduate Studies.

Recommendation: Consider tying this to the database of transdisciplinary research interests developed as part of Objective 2.1. This will allow leveraging of information about interests and develop potential for setting up teams for proposals.

**Objective 1.2:** Develop graduate Transdisciplinary Research Certificate program.

Task 1: Develop program requirements.

Task 2: Develop transdisciplinary certificate courses.

Task 3: Offer new certificate courses.

Task 4: Establish program formally.

Task 5: Recruit and enroll students.

Task 6: Evaluate impact via assessment.

Task 7: Make certificate program available via distance.

**Objective 1.3:** Develop Biomedical BS program.

Task 1: Complete program specification – Completed October, 2014.

Task 2: Attain formal approval of program – Completed November, 2014 with Board of Regents approval.

Task 3: Enroll students – started December, 2014.

Task 4: Evaluate program impact via assessment

**Objective 1.4:** Establish funding for Transdisciplinary Research Assistantships.

Task 1: Establish three transdisciplinary research assistantships for the first year.

Task 2: Increase transdisciplinary research assistantships with increasing transdisciplinary research funding.

**Objective 1.5:** Strengthen and promote transdisciplinary career opportunities.

**Objective 1.6:** Evaluate transdisciplinary academic areas for development, including assessment of potential risks and benefits of program development and offering both on campus and via distance.

Task 1: Evaluate Renewable energy.

Recommendation: Consider broad applications of renewable energy, which requires or can be applied to mechanical engineering, geology, hydrology, electrical engineering, materials engineering, biology, chemistry, computer science, mathematics, and possibly other disciplines to model, understand, and develop renewable energy sources.

Task 2: Evaluate Nanotechnology.

Recommendation: Consider broad applications of nanotechnology, which requires or can be applied to mechanical engineering, electrical engineering, materials engineering, biology, chemistry, computer science, mathematics, and possibly other disciplines to model, understand, and apply nanotechnology.

Task 3: Evaluate Water resources.

Recommendation: Consider water resources related to energy extraction (water resources are critical to non-conventional drilling techniques, i.e., fracking) or protecting water resources for mineral extraction (i.e., in-situ leaching in uranium extraction). These issues require hydrology, geology, petroleum engineering, mineral engineering, computer science, mathematics, and possibly other disciplines to model and improve processes.

Task 4: Evaluate Explosives.

Recommendation: Consider broad applications of explosives engineering, which requires or can be applied to mechanical engineering, mineral engineering, biology, chemistry, computer science, mathematics, and possibly other disciplines to model and understand explosive materials and their impacts.

Task 5: Evaluate other areas as they are identified.

**Objective 1.7:** Develop additional transdisciplinary programs

Task 1: Organize teams for program development

Recommendation: During exploration of new areas, ensure that invitations to participate are broad rather than limited, to ensure that an inclusive transdisciplinary foundation is possible.

Task 2: Assist with program development and approval

Task 3: Develop assessment plans with programs

**Goal 2: Increase transdisciplinary research to tackle challenging real-world problems.**

Strategy: Develop Transdisciplinary Proposal support to increase the number of and associated funding for transdisciplinary projects.

**Objective 2.1:** Develop Transdisciplinary Proposal Support.

Task 1: Initiate a proposal coordinator by upgrading R&ED position to Proposal Coordinator.

Task 2: Review best practices in grant development support.

Recommendation: Survey other university grant development offices.

Task 3: Add grant writing support.

Recommendation: Standard parts of proposals will be polished and kept in a shared repository to provide basic content for all NMT PIs. In addition, this office will assist with gathering institutional information and writing/proofreading, as well as providing assistance with any shared infrastructure/technology proposals.

Task 4: Add proposal opportunity surveys.

Recommendation: Set up a system to search for grant opportunities relevant to NMT researchers. Ensure that such opportunities are provided to all potential PIs, possibly by posting in a shared system that allows search and browsing by topics, date, or agency.

Task 5: Add grant team development and coordination support.

Recommendation: Set up a system or process that helps groups form organically and be notified of relevant opportunities based on their specific interests. Further, by maintaining a database of research interests, when NMT priority area opportunities arise, contact the group of possibly interested researchers and notify them of the opportunity.

Task 6: Develop transdisciplinary collaborations with industry.

**Objective 2.2:** Increase transdisciplinary research funding proposals.

Task 1: Share transdisciplinary research funding opportunities with transdisciplinary teams.

Task 2: Facilitate transdisciplinary research and proposal development.

Task 3: Assess impact of research proposals.

**Objective 2.3:** Build transdisciplinary research collaborations with industry.

Task 1: Identify areas of potential collaboration.

Task 2: Identify potential partners.

Task 3: Initiate research collaboration.

Task 4: Integrate transdisciplinary representation on Graduate Advisory Board.

Task 5: Repeat the established process with additional areas and industry partners.

**Objective 2.4:** Increase transdisciplinary academic funding proposals.

Task 1: Share transdisciplinary academic funding opportunities with transdisciplinary teams.

Task 2: Facilitate program and proposal development.

Task 3: Assess impact of academic proposals.

**Objective 2.5:** Build transdisciplinary education collaborations with industry.

Task 1: Identify areas of potential collaboration.

Task 2: Identify potential partners.

Task 3: Initiate education collaboration.

Task 4: Integrate transdisciplinary representation on Graduate Advisory Board.

Task 5: Repeat the established process with additional areas and industry partners.

**Goal 3: Develop and sustain transdisciplinary support mechanisms that reflect the importance of transdisciplinary research and education.**

Strategy: Update evaluations to align with transdisciplinary focus and develop a transdisciplinary focus in our community of scholars.

**Objective 3.1:** Update tenure process, annual evaluations, and merit pay process to provide incentives for participating in transdisciplinary teams and projects.

Task 1: Review and update tenure and merit pay processes including consideration of rebalancing teaching and research and rewarding (large grant) productivity.

Task 2: Review and update staff and faculty annual evaluations.

Task 3: Apply annual merit pay every year.

Task 4: Prioritize new faculty positions based on transdisciplinary research productivity in academic departments.

**Objective 3.2:** Develop transdisciplinary collaboration community.

Task 1: Arrange transdisciplinary seminar series.

Task 2: Facilitate informal working groups on transdisciplinary teams.

Task 3: Increase joint appointments between departments and research divisions.

## **Section 4: Strategic Plan Implementation**

Over the course of numerous meetings and after a campus-wide SWOT analysis, the steering committee identified seven areas of emphasis and created task forces for each area. The seven strategic areas, with associated goals and objectives were outlined in the previous section: Communication and Procedures, Community of Scholars, Funding, Quality Growth, Student Success, Technology, and Transdisciplinary Programs.

The champion(s) for each objective, the projected resource requirements, start date, and estimated months of effort required, as well as technical resources are outlined in the draft implementation plan. Vice Presidents have been appointed as official champions for each objective to leverage NMT's existing administrative organization in advancing our strategic plan. In addition to the goals and objectives presented here, the SPC outlined projected tasks that are needed for each objective. Although this implementation plan is in draft form, it represents the SPC's outline of the work to be carried out to address the strategic plan. The SPC expects that, as with the strategic plan itself, the implementation plan will be updated as needed based on the evolving context of the institution, available resources, and changes to the strategic plan. Based on the expected presentation of the full strategic plan to the Board of Regents in the February meeting, the work of the plan is projected to begin in the second quarter of 2015. Further, it is not unexpected that the implementation of some objectives will take longer than projected or, due to resource limitations, be delayed. The updated working version of this implementation plan, including updated tasks and status for each strategic priority, will be posted on NMT's internal network to keep the campus informed on progress.

STRATEGIC PRIORITIES GOALS & OBJECTIVES		Proposed year/quarter to start effort										Technical Resources	Other Resources	Funding	Possible funding Source	Estimated Months of Effort - Notes on Progress		
CHAMPION	PRIORITY	2015 QTR2	2015 QTR3	2015 QTR4	2016 QTR1	2016 QTR2	2016 QTR3	2016 QTR4	2017	2018	2019						2020	
LEGEND: TF01=COMMUNITY OF SCHOLARS; TF02=STUDENT SUCCESS; TF03=QUALITY GROWTH; TF04=TRANSDISCIPLINARY; TF05=FUNDING; TF06=TECHNOLOGY; TF07=COMMUNICATIONS																		
<b>COMMUNITY OF SCHOLARS</b>																		
<b>GOAL 1.0: Orientation to the community</b>																		
Objective 1.1: New Training Methodology	VPAA	P3								X				Director of HR, AVPAA	time	none		3
Objective 1.2: New Faculty Support	VPAA, VPR&ED	P1		X										F/S Faculty Dev. Comm.	time	summer support		12 in progress
Objective 1.3: Enhance Student Support	VPSUR	P2				X									2 FTE	150K	Internal - Must identify funding source before this can commence.	12
Objective 1.4: Informal town hall social gatherings	VPAA	P3							X							none		3
Objective 1.5: Develop honor/ethics code for community.	All VPs	P3							X					Director of HR, Academic and Graduate Deans	time	none		12
<b>GOAL 2.0: Incentives to innovate; drive new directions for community</b>																		
Objective 2.1: Reward creativity in classroom.	VPAA	P3							X					Director of HR, AVPAA	time	External 50K	External preferred; Internal - Must identify funding source before this can commence.	6
Objective 2.2: Develop merit-based pay process.	All VPs	P2						X						Director of HR	time	none		12
Objective 2.3: Enhance workshop/training subjects.	All VPs	P2												Director of HR, Dir. SES	time	none		3
Objective 2.4: Develop Staff Ladder / Job Family scenarios.	All VPs	P2						X						Directors, Academic and Graduate Deans	time	none		12
Objective 2.5: Create innovation center for entire community.	All VPs	P2						X						Space Committee	time	External 25K	External, need to find source and time to raise funding	12
<b>GOAL 3.0: Broadening the circle of community</b>																		
Objective 3.1: Enhance outreach activities with Socorro community.	VPAA	P2						X						Director of HR		5k	External preferred; Internal - Must identify funding source before this can commence.	12
Objective 3.2: Hold Tech-oriented social activities on campus.	VPSUR	P2						X								none		12
Objective 3.3: Enhance family life issues within NMT community.	All VPs	P2						X						Director of HR, Academic and Graduate Deans		200K	External preferred; Internal - Must identify funding source before this can commence.	12
Objective 3.4: Invite alumni, corporations, government agency participation.	VPSUR	P2						X						Dir. Advancement	on going	none		6
<b>GOAL 4.0: Enhance security measures on NMT Campus to support compliance.</b>																		
Objective 4.1: Compliance with Clery Act.	VPAF	P1	X											Director of HR, Chief	on going	1FTE 50K	Dr. Lopez is working on this.	6 in progress
Objective 4.2: Enhance security and safety on NMT Campus.	VPAF	P2						X						Director of ITC, Chief		25k	External preferred; Internal - Must identify funding source before this can commence.	12
Objective 4.3: Strengthen and enhance building security measures.	VPAF	P2						X						Director of ITC, Chief		25k	External preferred; Internal - Must identify funding source before this can commence.	12
Objective 4.4: Strengthen and enhance fire alarm security measures.	VPAF	P2						X						Director of ITC, Chief		25k	External preferred; Internal - Must identify funding source before this can commence.	12
<b>STUDENT SUCCESS</b>																		
<b>GOAL 1.0: Improve opportunities for undergraduate student retention and success</b>																		
Objective 1.1: Develop targeted admission criteria to focus on those applicants demonstrating a readiness to succeed.	President, VPAA, VPSUR	P1	X					X						Academic Standards & Admissions Comm	committee work	none		42
<b>GOAL 2.0: Improve undergraduate student academic support infrastructure to increase retention and student success.</b>																		
Objective 2.1: Continue to expand support infrastructure for minority, low income, and at-risk student and groups and encourage more faculty participation in these efforts.	VPAA, VPSUR	P2						X						Director OSL		1FTE, 100k	Internal - Must identify funding source before this can commence.	12

Objective 2.2: Establish a continuous budget cycle to support existing and future initiatives started with federal funding that have demonstrated success. Linked to TF07 2.2	VPAA, VPSUR	P1			X													FTEs and \$ to be determined	Must identify needs and funding source before this can commence.	12	
<b>GOAL 3.0: Develop an enhanced advising system for undergraduate students to increase student success and retention.</b>																					
Objective 3.1: Continue to expand advising services for undergraduate students and improve advising process.	VPAA, VPSUR	P1		X						Director of OSL								1-2 FTEs	Internal - Must identify funding source before this can commence.	12	
<b>GOAL 4.0 Expand opportunities for undergraduate student research in support of the university's research and teaching mission and prepare graduates for the professions.</b>																					
Objective 4.1: Develop Research Opportunity Grants.	VPAA & VPR	P1				X				Dean, A&S, Dir. Fin. Aid								none	Completion of semester reports to research opportunity grants	24	
Objective 4.2: Strengthen and grow the career placement system.	VPSUR	P1	X							Student Services	Collaboration across campus							Interim Director		12	In progress
<b>GOAL 5.0 Assessment of Student Learning and review of programs needs to continue to be a central part of what we do.</b>																					
Objective 5.1: Student Learning assessment data to be collected, shared, and used.	VPAA																				
Objective 5.2: Co-curricular programs, the Community Education Program, as well as all offices and departments should be assessing Student Learning and Program/Office Department Activity	All VPs																				
Objective 5.3: Develop a culture of assessing and using assessment information	All VPs																				
<b>GOAL 6.0: Enhance graduate student success and retention.</b>																					
Objective 6.1: Develop graduate advising and mentoring program.	VPAA	P1		X						Graduate Dean, Faculty Development Committee	Collaboration across campus							Cost of refreshments		6	
Objective 6.2: Address impediments to graduate student success and retention.	VPAA	P1				X				Graduate Dean										36	
Objective 6.3: Develop graduate professional development workshops.	VPAA	P2					X			Graduate Dean, CITL								Cost of refreshments		24	
<b>QUALITY GROWTH</b>																					
<b>GOAL 1.0: Grow undergraduate enrollment</b>																					
Objective 1.1: Evaluate growth potential	VPAA, VPSUR	P1	X								everyone; registrar compilation of data; tool dev. in class either software engineering or snr design							\$1,000	Internal - Must identify funding source for tool development before this can commence.	6 for data + 6 for analysis tool	pending needs and sources for lacking resources are TBD
<b>GOAL 2.0 Grow graduate enrollment to become PhD-granting institution in 7 to 10 years</b>																					
Objective 2.1: Develop new graduate programs	VPAA	P1			X					Graduate Dean	Varies by task							none		24	In progress
Objective 2.2: Increase graduate enrollment	VPAA	P2				X				Graduate Dean, ACT Dir.	President, down							increase as possible	From increasing graduate enrollment, create a pool of funding for new Ras in faculty startup and additional recruiting funding; Requires change in allocation of funding. Find external funding for additional MST scholarships	24, and ongoing	
Objective 2.3: Decrease Time to completion to within 150% of required credits	VPAA	P3					X			Graduate Dean								ongoing; rough estimate - must be	External preferred; Internal - Must identify funding source before this can commence.	TBD	
<b>GOAL 3.0 Strengthen/Grow Research Component</b>																					
Objective 3.1: Rebuild research activity to \$100M	All VPs	P2					X											75,000 ongoing	Internal - Must identify funding source before this can commence.	24	
Objective 3.2: Increase the number of students employed by research	VPAA, VPSUR	P2					X				president							25k*5/year for RAS for new faculty; see growth 2.2 for details + 15-18K / year	From increasing research funding AND increasing graduate enrollment, create a pool of funding for new Ras in faculty startup and additional recruiting funding; Requires change in allocation of funding. Find external funding for additional MST scholarships	24	

Objective 3.3: Increase patents and commercialization of intellectual property	VPR & VPAA	P3							X					CLTC Dir.	CLTC	10,000 / year	External preferred; Internal - Must identify funding source before this can commence.	24	
<b>TRANSDISCIPLINARY</b>																			
<b>GOAL 1: Increase transdisciplinary academic programs</b>																			
Objective 1.1: Engage broad community with understanding of and involvement in transdisciplinary development	VPR & VPAA	P1		X										Graduate Dean		1000 for workshops	Short term Internal funding must be found; continuing funding for this and other professional development in CGS needed - look for external or fundraising	6; ongoing	In progress
Objective 1.2: Develop graduate transdisciplinary research certificate program	VPAA	P2						X						Graduate Dean	faculty time, may happen earlier e.g., if grant funded	external			18
Objective 1.3: Develop Biomedical BS Program	VPAA	P1					X							A&S Dean	already nearly done; 1st enrollment fall 15	none			3 agents approval completed 11/23/17
Objective 1.4: Establish funding for Transdisciplinary Research Assistantships	VPR	P1		X										Graduate Dean	Fall 2016 start	75000 recurring	Headon funding?		12
Objective 1.5: Strengthen and Promote Transdisciplinary Career Opportunities	VPSUR	P2						X						Director of Student Services	have them attend the TD workshop	none			ongoing
Objective 1.6: Evaluate Transdisciplinary Academic Areas	VPAA	P2						X						Graduate, A&S, Eng. Deans	part of the CGS Advisory Board process	none			ongoing
Objective 1.7: Develop additional transdisciplinary programs	VPAA	P2						X						Graduate, A&S, and Eng. Deans	TBD	TBD	External if possible;	ongoing	depends on 1.7
<b>GOAL 2: Increase Transdisciplinary research to tackle challenging real-world problems.</b>																			
Objective 2.1: Develop transdisciplinary proposal support	VPR	P2						X							R&ED position	20000 from institutional support for external proposal writing; replace Dan Walsh with proposal	Internal - Must identify funding source before this can commence.		
Objective 2.2: Increase Transdisciplinary Research Funding Proposal	VPR	P2						X							resources from 2.1	in 2.1			depends on 2.1
Objective 2.3: Build Transdisciplinary Research Collaborations with Industry	VPR	P2												Graduate Dean	part of 2.1 staff members	in 2.1			ongoing
Objective 2.4: Increase Transdisciplinary Academic Funding Proposals	VPA	P2						X							part of 2.1	in 2.1			ongoing
Objective 2.5: Build Transdisciplinary Education Collaborations with Industry	VPA	P2						X						Graduate Dean	Need staff allocated by VPAA	????			ongoing
<b>GOAL 3: Develop and sustain transdisciplinary support mechanisms.</b>																			
Objective 3.1: Update tenure process, annual evaluations, and merit pay process to provide incentives.	All VPs	P1					X								time; VPs, Deans	none			18
Objective 3.2: Develop transdisciplinary collaboration community	VPAA, VPR	P2						X							workshops	10,000 for visitors and workshops; institutional development funds	External preferred Internal - Must identify funding source before this can commence.	ongoing	inter 3.1; after/wit h transd workshops; proposal
<b>FUNDING</b>																			
<b>GOAL 1.0: Examine NMT's tuition structure as a key revenue source.</b>																			
Objective 1.1: Develop options for redesigning NMT's tuition structure.	VPAA	P1	X													none			12
<b>GOAL 2.0: Expand the role of the Office of Advancement to generate revenue.</b>																			
Objective 2.1: Execute operational plan for expanding the Office of Advancement to meet key funding goals.	VPSUR	P1		X										Dir. Advancement	2 FT	no additional	is this already allocated/ done?		3 In progress
<b>GOAL 3.0: Expand funding opportunities for basic and applied research.</b>																			
Objective 3.1: Expand university's infrastructure to support research funding for faculty, staff, and students.	VPR	P2						X							1 FTE	100K	External preferred Internal - Must identify funding source before this can commence.		12
Objective 3.2: Develop university-wide education and training program through the CLTC.	VPR	P1												CLTC Dir.		TBD	External preferred Internal - Must identify funding source before this can commence.		12

<b>GOAL 4.0: Build a culture of entrepreneurship to generate multiple income streams.</b>																		
Objective 4.1: Develop university-wide technology commercialization infrastructure through CLTC.	VPR	P2									X		CLTC Dir.		TBD	External preferred Internal - Must identify funding source before this can commence.	18	TFOS
<b>TECHNOLOGY</b>																		
<b>Goal 1. Develop a technology plan that is institution-wide in scope and responsive to institutional constituencies and mission.</b>																		
Objective 1.1: Establish a campus technology committee (CTC).	VPAF, VPAA	P1	X										ITC Director	Labor from committee members	none		48	Complete
Objective 1.2: Consolidate technology services	VPAF, VPAA	P1	X										ITC Director	Labor for assessment and change plans	Need funding to initiate consolidation. Consolidation should	Internal - Must identify funding source before this can commence.	48	In progress
<b>Goal 2. Leverage technology resources to increase productivity, streamline processes and increase the competitive advantage of the institution.</b>																		
Objective 2.1: Improve utilization of existing Enterprise Resource Planning (ERP) system (Banner and associated software).	VPAF	P3										X		Labor to assess existing business processes and develop methodologies changing those processes so that they maximize the use of the ERP system to leverage ease of use and dollar savings.	Most software is already purchased. Funding will be required to pay contractors for business process assessments.	Internal - Must identify funding source before this can commence.	48	
Objective 2.2: Streamline and automate institutional procedures and processes also making them user-friendly.	VPAF	P3										X		Time entry is fully implemented. It should save the FTE. Needed to provide a Workflow person for the finance side (Student side already has a workflow person)	50K to contract out business process assessments	Internal - Must identify funding source before this can commence.	48	
Objective 2.3: Develop a state-approved Management of Electronic Records plan.	VPAF	P3										X		Appoint to coordinate the establishment of the plan	50K to contract out the creation of the plan	Internal - Must identify funding source before this can commence.	18	
<b>Goal 3. Streamline and standardize automated institutional reporting and research in support of strategic planning, research, teaching, and grants and contracts.</b>																		
Objective 3.1: Establish standard metrics and data definitions.	VPAF	P4											ITC Director	Labor from staff	50K to contract out the creation of data definitions in SQL space	Internal - Must identify funding source before this can commence.	12	
Objective 3.2: Standardize and provide access to ERP data that allows for the creation of meaningful reports by non-technical staff	VPAF	P4										X		Labor from staff to create virtual tables of information for report writers to draw from	50K to contract out the writing of reports on the finance side (Student side has	Internal - Must identify funding source before this can commence.	12	
<b>Goal 4. Streamline and reorganize technology funding.</b>																		
Objective 4.1: Develop standards and rules for funding commoditized technologies to include software, hardware, and equipment replacement.	VPAF	P2											ITC Director	Labor to establish plans and have them reviewed by IT governance, budget and administration	none		24	

Objective 4.2: Establish guidelines for grant submissions that include cost recovery for technology.	VPAF	P2													ITC Director	Labor to establish guidelines working with Restricted Funds accountants, budget, and administration	none			48	
<b>COMMUNICATIONS</b>																					
<b>Goal 1: Establish ongoing communication process for NMT Strategic Planning</b>																					
Objective 1.1: Perform an annual evaluation of the strategic plan and communicate progress to the NMT community.	President	P1														all VPs	none			3	
Objective 1.2: Submit an annual report to NMT administration for review and approval.	President	P1														all VPs	none			3	
<b>Goal 2: Establish a five year resource allocation plan to be updated annually.</b>																					
Objective 2.1: Review budget requirements with NMT administration and academic and administrative departments on an annual basis to create a five-year budget plan. (Note: this requires 5 year strategic plans for departments and data from TF03 Obj:1.1)	All VPs	P2														Budget Comm.	none			12	
Objective 2.2: Update five-year budget projections on an annual basis and reallocate based on established criteria. Depends on TF02 2.2	All VPs	P3														Academic and Graduate Deans, staff	none			24	
<b>Goal 3: Expand broad-based participation in decision-making.</b>																					
Objective 3.1: Expand standing committee participation from all constituencies to broaden input into decision making.	All VPs	P1	X													Senate Exec Comm.	none			3	in progress
<b>Goal 4: Expand the centralized communications functions to increase NMT's visibility and recognition.</b>																					
Objective 4.1: Develop a comprehensive plan for expanding the centralized communication functions of the university.	VPSUR	P2														1 FTE	100k	Internal - need to identify source before can commence		12	
Objective 4.2: Implement the comprehensive plan and evaluate communication progress annually.	VPSUR	P3															none			3	
<b>Goal 5: Develop a university-wide culture of information sharing.</b>																					
Objective 5.1: Evaluate expanded access to Banner that is responsive to user needs and insure data security.	All VPs	P1	X													ITC Director	1 FTE	100k	Internal - Must identify funding source before this can commence.	18	in progress
Objective 5.2: Evaluate full utilization of the university's intranet to improve internal communications	All VPs	P2														ITC Director				12	
<b>Goal 6: Modernize NMT business practices.</b>																					
Objective 6.1: Evaluate and improve NMT business practices and workflows against established standards and criteria.	All VPs	P2														Campus Computing Comm.	no additional			6	
Objective 6.2: Streamline the human resource functions to include hiring, promotion, career ladders, and performance reviews.	VPAF	P1	X													Dir. Human Resources	development + Salary for raise	Internal - Must identify funding source before this can commence.	18	in progress	

# Appendix: Strategic Planning Process

The success of strategic planning is directly tied to the effectiveness of the process to engage all constituencies in discussion, planning, and decision-making. From the outset, New Mexico Tech's approach to developing this strategic plan has been built on a deliberative and collaborative process to engage faculty, staff, researchers, students, alumni, and community representatives in a planning process to afford an opportunity for all voices to be heard. This section of the report documents the strategic planning process from its inception through plan completion, as well as provides guidance for future strategic planning initiatives.

Although there are multiple approaches to developing a strategic plan, the framework for the university's strategic planning process was based on the following documented five phases.

## Phase One: Pre-Planning

Prior to beginning the strategic planning process, a planning team was appointed to lead and facilitate the process and develop a roadmap for plan completion. The University President, Dr. Daniel López, clarified expectations for the process to ensure all constituencies were afforded an opportunity to participate in framing the future direction of New Mexico Tech. During this phase, the organization and structure for the planning process was defined and appointments made to the Strategic Planning Committee whose members actively participated in development of the plan. The following sections document the process.

### **Guidelines for Strategic Planning**

Based on feedback from campus meetings held in Oct-Nov 2013 with faculty, staff, administrators, and students, a process for building an institution-wide strategic plan was developed that identified 'Ten Guidelines' for developing the strategic plan, as follows:

#### *Strategic Planning Needs to be Future-Focused*

The strategic planning process needs to be future-focused to develop a 3-5 year plan that clearly states the university's vision, mission, and goals and which establishes the priorities for the Institute's future growth and development. 'Strategic Planning' is a process by which the senior administration of the university, in consultation with faculty, administrators, managers, employees, students, alumni, and community representatives, collaborate to plan for the future direction of the institution, and develop strategies to achieve that future. Development of the university's future vision, mission, and values are pivotal to the success of the process, as well as to an understanding of the institution's history.

#### *Strategic Planning has a Process Focus*

Although the goal of the strategic planning process is to develop a 3-5 year plan, the emphasis on 'process' should not be lost in the task, as the process builds commitment, trust, buy-in, and collaboration within the university community, which are required for plan development and execution.

The process will aim to increase university participation in meetings and forums and moving constituencies from participation to collaboration.

Senior administration should be present at the kickoff meeting and available to meet with the Strategic Planning Committee periodically during the process.

The process should guarantee protection of confidential and sensitive information presented at meetings.

### *Strategic Planning Requires Organization and Structure*

Responsibility and authority for developing the strategic plan would be delegated to a Strategic Planning Committee (20-22 members) selected by the University President and comprised of representatives from multiple constituencies across the university.

The committee would meet on a regular basis to develop the components of the plan with guidance from the strategic planning facilitators.

A chairperson would be selected to lead committee discussions and present progress to university forums.

The committee may choose to utilize an executive committee and task forces to develop specific initiatives, drawing on subject matter experts and volunteers from the university community.

The Strategic Planning Committee and Task Forces would each have a charter that describes their areas of responsibility and authority and deliverables for their work. (See Appendix: Strategic Planning Participants and Appendix: Task Force Charter.) The Strategic Planning Committee and Task Force memberships are shown in

Appendix: Strategic Planning Participants.

### *Strategic Planning Requires Institution-wide Inclusion*

The strategic planning process should aim for full inclusion of all university constituencies to ensure they have opportunities to participate in the process and voice their perspectives and opinions on the future direction of the university.

Representatives would be drawn from faculty, students, administrators, staff, alumni, research units, community representatives, and advisory councils.

Representatives would be selected to ensure a vertical cut with diverse representation from across the university community.

### *Strategic Planning Requires Process and Information Transparency*

The strategic planning process should aim for transparency in sharing data and information on the Strategic Planning Committee's (and Task Forces) progress toward developing the strategic plan and provide opportunities for feedback.

Ensure communication in and out of Strategic Planning Committee using available technology: project website with progress documents, educational materials, and forum for comments and feedback; periodic live and recorded webinars.

Use a website coordinator working through ISD to host the website.

Hold open town hall and student meetings periodically.

### *Strategic Planning is a Data-Driven Process*

The development of the strategic plan needs to be data driven to collect, analyze, and interpret findings and results.

Assign responsibilities within the Strategic Planning Committee for data and information processing and reporting in support of the committee's work.

Data requirements need to be specific to answer questions from committees, and may include budgets, unit performance, accreditation, faculty and student data, and others as required.

Develop metrics to evaluate the process and progress toward the goal.

### *Strategic Planning Benefits from an Institution-wide, Stakeholder Survey*

The strategic planning process would benefit from an institution-wide, stakeholder survey to collect preliminary information on current and future issues and challenges that need to be addressed by the Strategic Planning Committee in support of a SWOT (strengths, weaknesses, opportunities, and threats) Analysis usually conducted early in the process. (See Appendix: SWOT Analyses).

A survey would be posted on the website for all members of the university community and external stakeholders to identify the strengths, challenges, opportunities, and threats to the university, plus questions on the vision and mission of the university. (See Appendix: NMT Community Survey).

Use available software to aggregate and analyze responses.

Feedback results to the university community and external stakeholders.

### *The Content of the Strategic Plan Requires Ongoing Discussion and Review*

The process for development of the plan document is an important decision that should be discussed early in the process to provide a template for data collection and analysis, and discussion of issues and initiatives.

Early assignment of who will manage development of the content of plan documents is important.

Identify resources required to complete this task from within and outside the committee structure.

### *Strategic Planning Requires Logistics and Marketing*

Logistics and marketing need to be established early in the process, with budgets available for meetings.

Identify when and where meetings take place and their duration.

Plan meetings and committee assignments to avoid participant burnout.

Develop an advanced schedule for committee meetings to maintain momentum.

### *Strategic Planning Requires Attention to Plan Execution*

As a part of the strategic planning process, the execution (implementation) of the plan needs to be discussed and included in the document. Feedback from attendees at public meetings identified this as a major factor in the success of the process and the plan.

By the conclusion of the process, develop guidelines for operational plans to be completed by academic, administrative, and research units of the university.

Develop a process for monitoring and evaluating the university's progress in implementing the plan.

Assign formal responsibility and authority for plan execution.

### **Strategic Planning Committee (SPC) Development**

A team development process was established to enable the SPC to move from individual participation through team collaboration to consensus building. In January 2014, the SPC adopted the following guidelines to ensure the development process remained focused over the ensuing 11 months.

- Maintain a future focus throughout the process.
- Maintain a focus on the process as well as content.
- Maintain a focus on institution-wide inclusion.
- Maintain a focus on information sharing.
- The strategic planning process is a data-driven process.

- Collect data through an institution-wide and stakeholder survey.
- Focus on development of the strategic plan content from the inception of the project.
- Focus on strategic plan execution.
- Develop committee guidelines to maximize discussion and decision-making.

The SPC established procedures for its operations early in its development that culminated in an ‘SPC Charter’ (see Appendix: Strategic Planning Committee Charter) and a monthly meeting schedule to conduct its business, usually twice per month. SPC meetings had specific agendas to focus discussion, although immediate issues and decisions would redirect discussion. Once strategic priorities were identified in May 2014, SPC members led and formed the nucleus of seven Task Forces whose purpose was to develop goals, objectives, and tasks for completing each of the priorities. As the committee developed draft documents, those items were posted on the New Mexico Tech website and the campus community was invited – via email, a news article, social media web pages, as well as personal invitations from committee members – to review and comment.

## Phase Two: Community Education

It was identified early in the process that community education on strategic planning was important for ensuring community participation. The planning team educated the campus community on the strategic planning process and elicited opinions from participants on how to generate ‘buy-in’ to strategic planning. Participant input from campus meetings in Oct-Nov 2013 enabled the planning team to further clarify guidelines for the process. The strategic planning approach discussed at campus meetings is summarized below.

### Purpose and Goals of Strategic Planning

The purpose of a strategic plan is to develop a blueprint for the future direction of the university and develop the necessary strategies and action steps to achieve that future; it is a process by which senior administrators, faculty, researchers, staff, students, alumni, and community representatives collaborate in developing the strategic plan. An effective strategic planning process will result in effective strategic management, in which all members of the university community perform their duties and responsibilities consistent with the plan. Practicing strategic management does not ensure that an organization will meet all challenges successfully, but it does focus attention on those goals and objectives that are important to the university. It is often developed with a time horizon of 3-5 years; a five-year projection enables the institution to collect performance data and adjust the plan responsibly. To paraphrase Tom Peters, author of *Thriving on Chaos*, organizational flexibility is necessary for growth, and even mere survival due to the increased speed of change. The strategic planning process drives decision making by answering the following three basic questions:

**Where are we now as an organization?**

Objective: Assess the present situation.

**Where do we want to be in the future?**

Objective: Determine the desired direction for the future.

**How do we get from where we are now to where we want to be?**

Objective: Define strategies and action steps to achieve the future and conduct an analysis of the financial impact on those actions.

## Phase Three: Data Collection and Analysis

The strategic planning process was data driven, requiring a participative and rigorous process to elicit input from across the campus community. A series of Town Hall meetings were held in Feb-March 2014 to collect perspectives and opinions about the current and future challenges of the institution through a SWOT Analysis:

strengths, weaknesses, opportunities, and threats. The results of Town Hall meetings are documented in Appendix: SWOT Data and Appendix: SWOT Analyses.

### **SWOT Analysis**

A SWOT Analysis is a process by which data and information is collected on the recent performance of the organization from input from its managers, staff, and external representatives and statistical data that reflects the institution's performance. A SWOT Analysis is often used to gather perspectives from managers and staff and external representatives on the organization's internal strengths and weaknesses as well as external threats and opportunities for future development and success. The results of the audit often drive the development of initiatives to be considered during the remainder of the strategic planning process. The SPC reviewed the SWOT Analysis data compiled by students from the Management Department, resulting in development of seven Strategic Priorities, discussed in the main body of this report.

## **Phase Four: Strategy Formulation**

Strategy formulation is the process by which the SPC developed the university's vision, mission, and values and how the SPC intended to pursue completion of the university's seven Strategic Priorities consistent with the vision, mission, and values. This process required definition of the goals, objectives, and tasks to be achieved under each priority and proposed guidelines for their timely completion. In addition, strategy formulation defines how success will be measured and evaluated. Finally, strategy formulation required the SPC to focus their creativity on envisioning the future, resulting in a free-flow of ideas, suggestions, and options, mindful of defined mandates required for the organization, i.e., federal and state compliance, state funding formula, etc.

### **Vision, Mission and Values**

Vision and mission formulation is the driving force behind the strategic planning process and specifically, strategy formulation; vision and mission serve as the benchmark for the content of the plan itself, as all initiatives and recommendations need to support the achievement of the organization's vision and mission. The vision statement is a long-term view of what the organization wants to be in the future and how it wants to be viewed in the world in which it operates. It provides an inspirational message about its 'worldview' as opposed to a measurable set of targets.

Mission formulation results in a clear and concise statement of what business the organization is in and its purpose or function in society or the economy. The mission statement identifies those services or products that make it competent and distinctive among its competitors in the marketplace. In developing a mission statement, the strategic planning process must take into account the organization's history, its distinctive competencies, and its environment. A values audit accompanies formulation of the vision and mission; it is a critical examination of the beliefs and assumptions that guide the operations of the organization. The vision, mission, and values statements are documented in Section 2: Strategic Direction of this report.

### **Strategic Priorities**

Strategic Priorities were the major initiatives developed and articulated in the five-year Strategic Plan (April 1, 2015 through March 31, 2020). The seven Strategic Priorities (see Section 3: Strategic Priorities 2015-2020) were built on the strengths of the university while recognizing the need to improve its operations, programs, and position as a STEM institution. To move the process along, it was suggested that the Strategic Priorities needed to meet the guidelines below be evaluated against the degree to which they contribute to the university's vision and mission; the guidelines were provided as a way to promote consistency and rigor in the development of these priorities and provided direction for the SPC Task Forces. The guidelines were to address each of the following issues:

Degree to which the strategic priority contributes directly to achieving our mission and moves us toward our vision.

Degree to which the strategic priority is responsive to SWOT Analysis themes identified by university constituencies.

Degree to which the strategic priority has a reasonable expectation of achievement over the five-year time horizon of the strategic plan.

Degree to which the strategic priority provides long-term direction for the university as opposed to a tactical or short-term fix for an existing problem.

Degree to which the strategic priority is an institution-wide initiative as opposed to a department or unit initiative with a limited scope.

Degree to which the strategic priority contributes to the university's competitive advantage as a STEM institution and as a premier research and teaching university.

Task Forces prepared draft reports, which included goals, objectives, and tasks and identified 'champions' for each objective. After several revisions and discussions on each report by the SPC, the Task Force reports were presented to the larger campus community for review. The SPC hosted another series of town-hall meetings to gather input on the task force reports. The draft Strategic Plan was then presented to the university President for review. The Mission Statement was presented to the Board of Regents; the board approved the mission statement with one revision.

## **Phase Five: Implementation Planning**

Strategic plan implementation is perhaps the most significant phase of the planning process as it represents the culmination of the SPC's work over the last year for review and buy-in by the greater NMT community. The thoughtful and sometimes painful discussions over the last year have been extremely significant in setting the future directions for the institution; the implementation plan is the operational roadmap that will define how strategic priorities will be achieved with resource needs, timelines, metrics, and people.

Implementation of the strategic plan involves executing strategic goals and objectives defined under the seven Strategic Priorities; the plan recommends actions, resources, timelines, people, and metrics to be implemented over a five-year period. In addition, this process may require developing functional plans for each of the academic and administrative units that contribute to the completion of strategic goals and objectives.

### **Organization and Structure**

The organization and management structure for implementing the strategic plan is focused around designated 'champions' who will take overall responsibility for completion of goals and objectives. The academic and administrative Vice Presidents of the university will serve as the 'champions' for the implementation of the plan and report progress periodically to the university President. In addition, an Advisory Committee comprised of Task Force Chairs or their designees will work with the 'champions' to review progress and recommend modifications to the strategic plan and its implementation based on changing internal and external conditions.

### **Operational Planning**

Strategic plan implementation often leads to the development of operational plans for functional units of the institution. At New Mexico Tech, this process can assist in developing annual Performance Activity Reports (PAR) and Departmental Activity Reports (DAR). The success of the strategic plan is dependent on the degree to which managers and employees use it in their daily work.

# Appendix: Strategic Planning Participants

In the fall of 2013, President Daniel López selected the membership and charged the Strategic Planning Committee with development of a new strategic plan. That committee worked to collect and analyze data, develop strategic priorities, goals, objectives, and tasks, then formulated a draft implementation plan to direct the work to be done to address strategic priorities. The committee was assisted by additional community members on task forces and student assistants specifically in collection and analysis of data and formulation of strategic areas of focus. The membership of these groups is acknowledged here.

## Strategic Planning Committee

The membership of the Strategic Planning Committee, as designated by President López in fall 2013, was as follows. The role for all participants was “member” except where specified.

### Administrative Representatives

Name	University Role	Committee Role
Iver Davidson	Academic Center for Technology, Director	
Joe Franklin	Information Technology & Communications, Director	
Sara Grijalva	Registrar	
Colleen Guengerich	Advancement, Director	
Steven M. Hicks	Property, Director	
Melissa Jaramillo Fleming	Student and University Relations, Vice President	Facilitator
Van Romero	Research & Economic Development, Vice President	
Pat Valentine	Earth & Environmental Science, Administrative Services Coordinator	

### Alumni/Community Representatives

Name	University Role	Committee Role
Don Tripp	Alumni & Community Member	
Delilah Vega-Walsh	Alumni & Community Member	
John Dowdle	Alumni	

### Faculty Representatives

Name	University Role	Committee Role
Tom Engler	Engineering, Dean	
	Petroleum and Chemical Engineering, Professor	
Mike Hargather	Mechanical Engineering, Assistant Professor	
Michael Heagy	Chemistry, Associate Chair & Professor	
Lorie Liebrock	Graduate Studies, Dean	Chair
	Computer Science & Engineering, Professor	
Frank Reinow	Management, Faculty	Facilitator
Snezna Rogelj	Biology, Chair and Professor	
Steve Simpson	Technical Communication, Assistant Professor	
Richard Sonnenfeld	Physics, Associate Professor	
Bill Stone	Arts & Sciences, Dean	
	Mathematics, Professor	
Jolante Van Wijk	Geophysics, Assistant Professor	

## Research Representatives

Name	University Role	Committee Role
Nouradine Benalil	PRRC, Systems & Network Manager	
Bob Bezanson	EMRTC, Senior Program Manager	
Mike Timmons	New Mexico Bureau of Geology and Mineral Resources, Associate Director for Mapping Programs/Deputy Director	

## Student Representatives

Name	University Role	Committee Role
Collin Hellwig	Undergraduate Student	
Gabrielle Miller	Graduate Student	

## Task Forces

The membership of the Strategic Planning Committee was extended on task forces to bring in additional expertise to address issues related to developing strategic priorities. All participants were task force members; chairs are noted under task force role.

## Communication and Processes

Name	University Role	Task Force Role
Gary Axen	Earth & Environmental Science, Associate Professor	
Bob Bezanson	EMRTC, Senior Program Manager	
Melissa Jaramillo Fleming	Student and University Relations, Vice President	Facilitator
Warren Ostergren	Academic Affairs, Vice President	
Frank Reinow	Management, Faculty	Facilitator
Bill Stone	Arts & Sciences, Dean Mathematics, Faculty	Chair
Jolante Van Wijk	Earth & Environmental Science, Faculty	
Delilah Vega-Walsh	Alumni & Community Member	

## Community of Scholars

Name	University Role	Task Force Role
Mike Hargather	Mechanical Engineering, Assistant Professor	Chair
Dale Henneke	Materials Engineering, Associate Professor	
Steven M. Hicks	Property, Director	
Yvonne Manzano-Brown	Facilities Management, Director	
Snezna Rogelj	Biology, Chair and Professor	
JoAnn Salome	Human Resources, Director	
Sharon Sessions	Physics, Associate Professor	
Steve Simpson	Technical Communication, Assistant Professor	
Pat Valentine	Earth & Environmental Science, Administrative Services Coordinator	

## Funding

Name	University Role	Task Force Role
Thomas Engler	Engineering, Dean Petroleum and Chemical Engineering, Professor	
Colleen Guengerich	Advancement, Director	
Michael Heagy	Chemistry, Associate Chair & Professor	Chair
Lorie Liebrock	Graduate Studies, Dean	

Richard Sonnenfeld      Computer Science & Engineering, Professor  
 Physics, Associate Professor

### Quality Growth

Name	University Role	Task Force Role
Iver Davidson	Academic Center for Technology, Director	
Collin Hellwig	Undergraduate Student	
Melissa Jaramillo Fleming	Student and University Relations, Vice President	Facilitator
Sara Grijalva	Registrar	Chair
Lorie Liebrock	Graduate Studies, Dean	
	Computer Science & Engineering, Professor	
Tony Ortiz	Admissions, Director	
Warren Ostergren	Academic Affairs, Vice President	
Don Tripp	Alumni & Community Member	
Andrei Zagrai	Mechanical Engineering, Chair & Associate Professor	

### Student Success

Name	University Role	Task Force Role
Iver Davidson	Academic Center for Technology, Director	
Mary Dezimmer	Academic Affairs, Associate Vice President	
Tom Engler	Engineering, Dean	
	Petroleum and Chemical Engineering, Professor	
Gabrielle Miller	Graduate Student	
Sara Grijalva	Registrar	
Lorie Liebrock	Graduate Studies, Dean	
	Computer Science & Engineering, Professor	
Lisa Majkowski-Taylor	SES, Project Director	
Sally Pias	Chemistry, Assistant Professor	
Snezna Rogelj	Biology, Chair and Professor	
Bill Stone	Arts & Sciences, Dean	Chair
	Mathematics, Faculty	
Scott Teare	Electrical Engineering, Professor	

### Technology

Name	University Role	Task Force Role
Nouradine Benalil	PRRC, Systems & Network Manager	
Brian Borchers	Mathematics, Professor	
Iver Davidson	Academic Center for Technology, Director	
Joe Franklin	Information Technology & Communications, Director	Chair
Colleen Guengerich	Advancement, Director	
Dave Raymond	Physics, Professor	
Steve Simpson	Technical Communication, Assistant Professor	
Melissa Tull	Business Office, Controller	
Jolante Van Wijk	Geophysics, Assistant Professor	

### Transdisciplinary Programs

Name	University Role	Task Force Role
Boston, Penny	Earth & Environmental Science, Chair	
Franklin, Joe	ITC, Director	
Grow, David	Mechanical Engineering, Faculty	
Liebrock, Lorie	Graduate Studies, Dean	Chair
	Computer Science & Engineering, Professor	

Romero, Van  
Mike Timmons

Research & Economic Development, Vice President  
New Mexico Bureau of Geology and Mineral Resources,  
Associate Director for Mapping Programs/Deputy Director

## **Student Data Analysts**

The students who assisted with collection and analysis of data from the Strengths, Weaknesses, Threats, and Opportunities (SWOT) evaluation were as follows.

Name	Analysis Drafted
John Friedrich	Weaknesses
Collin Hellwig	Opportunities
L. Lyons	Strengths
Chance Pittard	Threats

# Appendix: Strategic Planning Committee Charter

This charter provided the general structure under which the SPC operated to develop this strategic plan.

## NEW MEXICO INSTITUTE of MINING and TECHNOLOGY STRATEGIC PLANNING PROJECT

### Strategic Planning Committee Charter

#### 1.0 Overview

The intent of the Strategic Planning Committee Charter is to clarify the committee's purpose, membership, roles and responsibilities, and organization and structure in support of the NMT strategic planning process. The Committee will periodically review and reassess the contents of this Charter and modify as required.

#### 2.0 Purpose

The Strategic Planning Committee is established to develop a three to five-year strategic plan with specific recommendations and priorities for the future growth and development of the university. Further, the committee's focus is to develop a university-wide strategic plan that integrates all academic, research, and administrative units beyond the needs and interests of individual units. The strategic plan is to include not only the vision and mission statements, but also a plan for implementation, identification of responsible parties, measurable goals and metrics for measuring progress, a strategic plan implementation timeline, and a mechanism to integrate progress tracking into annual reporting/analysis that is linked to performance evaluations.

#### 3.0 Membership

The membership of the Strategic Planning Committee is selected by the university President from a broad cross-section of the university community, including faculty, researchers, staff, students, alumni, and community representatives. In addition, committee members represent a diverse group of employees based on their tenure, position, and experience in the university.

#### 4.0 Organization and Structure

The President selected a Chairperson to lead committee meetings and work with committee members to develop the strategic plan. The Chairperson will be assisted by process facilitators who will focus on ensuring an open and constructive exchange of ideas and perspectives among committee members with the aim of collaborating and reaching consensus on strategic recommendations and priorities.

The Committee may delegate, as it deems appropriate, its responsibilities and duties to task forces or individual members to complete assigned tasks and report findings back to the full committee. In addition, the committee chairperson, with the concurrence of the committee, may designate additional task force committees composed of committee members and other university representatives to work on specific initiatives developed by the full committee. Finally, the Committee will determine the need for subject matter experts to participate in selected meetings to advise the committee or clarify issues under discussion.

#### 5.0 Roles and Responsibilities

The roles and responsibilities of Strategic Planning Committee members include, but are not limited to, the following:

- Actively participate in committee discussions, ask questions, and share alternative points of view on the issues before the committee.
- Assist in collecting, analyzing, assimilating, and reporting data and information for review by the entire committee.
- Participate on subcommittees and task forces assigned specific tasks by the chairperson.
- Work with other committee members to develop and evaluate alternative strategic options, recommendations, and priorities for review by the Committee and university President.
- Ensure an effective strategic planning process for developing the three to five-year strategic plan, as described in the purpose section, with measurable goals and time targets.
- Assist in developing a process to report Committee progress tied to key indicators of success.
- Help identify critical strategic issues facing the university.
- Assist in analysis of alternative strategic options.

## **6.0 Meetings**

The Committee will meet as often as necessary or appropriate to conduct its business, and make available remote access to meetings for members unable to participate in person. A majority of the members of the Committee will constitute a quorum for voting purposes, should it be necessary. Committee minutes will be taken and transcribed for distribution to members in a timely manner.

## **7.0 Communications**

An active communication process will increase information-sharing both inside the Committee and with the greater university community. To that end, a strategic plan website will be set up to provide updated information on progress and the content of the plan once reviewed and approved by the Committee, as well as a repository for feedback. Committee members will be encouraged to discuss shared information once posted on the website, making sure all confidential and sensitive information not be shared. A separate information exchange for Committee members will be set up in addition to the free access website.

# Appendix: Task Force Charter

This charter was used by each task force to set the stage for priority development in each of the strategic areas. This was especially important specifically for the task force members who were not SPC members.

## NEW MEXICO INSTITUTE of MINING and TECHNOLOGY STRATEGIC PLANNING PROJECT

### SPC Task Forces Charter

#### 1.0 Overview

The intent of the task force Charter is to clarify the purpose, membership, roles and responsibilities, and organization and structure in support of the NMT strategic planning process. The SPC (Strategic Planning Committee) will periodically review and reassess the contents of this Charter and modify as required.

#### 2.0 Purpose

SPC task forces develop the Strategic Priorities that are aligned with the NMT vision and mission and that promote an institution-wide perspective, with specific recommendations and priorities for the future growth and development of the university. SPC task forces will research and analyze alternative strategies for meeting the above purpose and document their findings in a report submitted to the full SPC for review.

#### 3.0 Membership

The membership of SPC task forces is selected by the full SPC from a broad cross-section of the university community, including faculty, researchers, staff, students, alumni, and community representatives with expertise in the specific strategic priority. Each task force is to represent the broad interests of the institution fairly and comprehensibly.

#### 4.0 Organization and Structure

SPC members will chair individual task forces and lead meetings and development of documents for review. Other SPC members will be asked to participate as task force members. Chairpersons will be assisted by SPC process facilitators, as required, who will focus on ensuring an open and constructive exchange of ideas and perspectives among committee members with the aim of collaborating and reaching consensus on strategic recommendations and priorities.

#### 5.0 Roles and Responsibilities

The roles and responsibilities of task force members include, but are not limited to, the following:

1. Actively participate in discussions, ask questions, and share alternative points of view on the issues before the task force.
2. Assist in collecting, analyzing, assimilating, and reporting data and information for review by the task force.
3. Work with other members to develop and evaluate alternative strategic options, recommendations, and priorities for review.

#### 6.0 Meetings

Task forces will meet as often as necessary or appropriate to conduct its business, and make available remote access to meetings for members unable to participate in person. A majority of the task force members will constitute a quorum for voting purposes, should it be necessary. Task force summary minutes will be taken and transcribed for distribution to members in a timely manner.

## **7.0 Communications**

Task forces will periodically meet to exchange information and discuss challenges and problems surfaced during discussions. Task forces will be asked to share progress on the SPC Google Drive to increase information-sharing within the SPC and with the greater university community once posted on the Strategic Planning website. Task force members will be encouraged to discuss shared information once posted on the website, making sure all confidential and sensitive information not be shared

# Appendix: Introduction to SWOT Analysis

This document introduced the SPC to SWOT analysis to prepare the team for collecting and analyzing community input.

## AN INTRODUCTION TO SWOT ANALYSIS

### Purpose:

**SWOT Analysis** is a structured planning technique used to identify and evaluate the internal and external factors that impact an organization’s future success; the technique has been used in a variety of organizations, to include higher education. As applied to the strategic planning process at New Mexico Tech, a **SWOT Analysis** can be used to organize complex data into four major categories, as follows:

**S**trengths: What are the internal characteristics of New Mexico Tech that provide an advantage over other universities?

**W**eaknesses: What are the internal characteristics of New Mexico Tech that place it at a disadvantage relative to other universities?

**O**pportunities: What are the opportunities in the external environment that New Mexico Tech can exploit to its advantage in the future?

**T**hreats: What are the factors in the external environment that can reduce New Mexico Tech’s future success?

**SWOT Analysis** is usually completed with input from multiple constituencies who have knowledge about the organization and often experience working with, and in the organization. As applied to the strategic planning process at New Mexico Tech, several groups will be invited to participate in the SWOT Analysis, to include faculty, staff, students, alumni, and community members. Participation will be available through Town Hall meetings and a Strategic Planning website forum (see <http://www.nmt.edu/spc-home>). The data collected through the SWOT Analysis will be augmented by additional data collected both within and outside the university to provide further clarification on the issues that surface through the exercise. The data will be used to identify the initiatives to be further discussed in the university’s strategic planning process. A sample SWOT Analysis is provided below, with hypothetical input.

STRENGTHS	WEAKNESSES
Financial resources Market competitiveness Proprietary technology Product/service innovations Strong management systems Skilled and committed employees	Outdated technology Outdated policies and procedures Organizational complacency Staff retirements Obsolete facilities and equipment
OPPORTUNITIES	THREATS
New markets or segments Available research dollars Increased emphasis on STEM Complementary services or products Collaborative business partnerships	Slower market growth Adverse government regulations Growing competitive pressures Growing competitive pressures Changing customer needs and tastes Adverse demographic changes

# Appendix: NMT Community Survey

This is a survey that was developed to collect community input.

## NMT Community Survey – Think Strategically!

As part of the university’s strategic planning process, the university community is invited to share their perspectives, observations, and opinions about the current and future direction of New Mexico Tech. The focus of the survey is institution-wide, as opposed to your opinions and perspectives on individual departments or work units. As a faculty member, researcher, student, staff member, alumni, or community member, your input is vital to the success of this process. By answering the survey questions below, your input will be aggregated with others and summarized for review by the Strategic Planning Committee; your individual responses will not be identified.

1. Which of the following categories best describes your perspective in answering the questions below?

- Faculty member
- Student
- Researcher
- Staff member
- Alumni
- Community member

2. What first attracted you to become associated with NMT?

The following five survey questions provide you wide latitude in your responses. You may consider a broad range of topics in addition to your overall experience at and with the university, to include the teaching and learning environment, research environment, administrative support, technology, community involvement, financial support, state and federal compliance, and on-line education.

3. What are the strengths of New Mexico Tech that make it distinctive as an institution of higher learning?
4. What are the weaknesses that place New Mexico Tech at a disadvantage relative to other research universities that need to be addressed now and in the future?
5. What are the opportunities that New Mexico Tech can exploit to its advantage in order to be recognized as a premier research university?
6. What are the factors that can reduce New Mexico Tech’s future success?
7. Finally, what other perspectives, opinions, or observations would you like to share about your experience with New Mexico Tech?

Thank you for your interest and participation in the survey. Look for a report on the results in upcoming postings to the website.

# Appendix: SWOT Data

Each section below contains the data from a SWOT data collection process as described in the heading.

## SWOT for Faculty and Staff: March 4, 2014

NEW MEXICO TECH STRATEGIC PLAN 2015-2018 / SWOT TOWN HALL MEETINGS										
Tuesday, March 4, 2014 - Faculty & Staff										
STRENGTHS										
STAFF	1 - COST	1 - SIZE OF INSTITUTION	1 - CURRICULUM	1 - FACILITIES	2 - OTHER	2 - STUDENT ORIENTED	2 - REPUTATION	3 - COMMUNICATION	3 - COST	3 - REPUTATION
	Great value for tuition. Tuition is low.	We are small and agile. We should work that way.	History of its graduates and fields of study.	Outdoor activities 1. Trails 2. MB website 3. Climbing	Faculty level of expertise.	Good residential life program keeps freshmen on campus and helps them succeed.	Tech is a university known for a quality education.	Open to employee opinion.	Access to education for students from a monetary perspective./Low cost and financial assistance.	Quality of students. High expectations, high standards, exceptional graduates.
		Small Institution. Student Teacher ratio. Small community atmosphere.		Good recreation facilities (golf course, gym, swimming pool)		Low student instructor ratio.  Academic level of entering students.  Small personal university. Students actually know eachother and their advisors.				
	3 - RESEARCH	3 - FOCUS	3 - SIZE	4 - SIZE	4 - REPUTATION	4 - LOW TUITION RATES	5 - EDUCATION AND VALUE	5 - STRUCTURE, COMMUNITY		
	Opportunities to students to begin research early as with SES.	Specialization not trying to be all things to all people/serve all populations.	Our size.	Size of school in regards to specifically maintaining an engineering environment.	Research Opportunities	Reasonable tuition rates. Graduate employment rates.	Cost of education is excellent considering the quality of education.	Tech is small. Makes it easier to change.		

	Easily defined/science engineering research.		The size of the Institution (Admin. ??? Know all students)	Reputation as a Academically rigorous Institution.	Low Tuition Rates.	Reputation is as a rigorous school.	Small tight/knit community.
			NMT is a small institution with limited resources.	Living Learning Community for freshmen.		High level of education offered and received for the amount of money paid for education.	Close family orientated university. We provide a family away from home. Professors/students/staff are involved with activities other than education.
			Small classroom sizes.	Expansion of smart classrooms.		Faculty who are at the top of their fields.	
						Small classes that offer more individualized attention teacher to student ratio. An increase in student enrollment.	
<b>FACULTY</b>	<b>2 - ABILITY TO SOLVE PROBLEMS</b>						
	Involvement in research.						
<b>STUDENT</b>	<b>1 - COST</b>	<b>1 - SIZE OF INSTITUTION</b>	<b>1 - CURRICULUM</b>	<b>1 - SUPPORT STAFF</b>			
	Scholarships	Small Classes	Comprehensive Curriculum	Helpful administrative services (Registrar and Financial Aid)			

	Inexpensive			Great admin support (Registrar, Psychologist, Student Success)				
	Inexpensive							
<b>COMMUNITY</b>	<b>2 - OTHER</b>	<b>2 - STUDENT ORIENTED</b>	<b>2 - REPUTATION</b>	<b>2 - ABILITY TO SOLVE PROBLEMS</b>	<b>3 - REPUTATION</b>	<b>3 - RESEARCH</b>	<b>3 - SIZE</b>	<b>3 - LOCAL COMMUNITY</b>
	CSM gets only 10/15% of funding from state.	Students are very focused on making money/both a strength and a weakness/are we producing thinkers.	Great reputation.	Tech computer students create a better Banner.	Proud of reputation as a premiere university.	Opportunity for owned research in high quality labs as undergrad.	Small size, campus relatively safe.	Influx of opportunity to growth of the surrounding community.
	Lack of faculty and faculty for teaching.							

<b>WEAKNESSES</b>								
<b>STAFF</b>	<b>1 - SIZE</b>	<b>1 - TECHNOLOGY</b>	<b>1 - MANAGEMENT /ADMINISTRATION</b>	<b>2 - STUDENT SERVICES</b>	<b>2 - ACADEMIC</b>	<b>2 - TECHNOLOGY</b>	<b>2 - CLASSROOM SPACE</b>	<b>2 - RECRUITING</b>
	Not enough students. Larger Base.	Technology is desired but unfunded.	To have quality over bells and whistles. Keep our core values	Need for new gym/wellness center.	Lack of flexibility in course work.	Need to keep up with cutting edge technology /No funding and smaller student body to pass costs onto.	Lack of classroom space new building should include classroom component along with new research space.	Lack of diversity in student population.

	Not enough research business around the university/industry.		Salaries (Includes students, staff, faculty)	Lack of mental health resources.	Trend toward basic classes taught by teaching assistants./Teaching assistants we need to hire some faculty specifically dedicated to teaching.	Website development.	Classroom space taken for admin.		
			Too much insider benefits. Leads to have and have notes.		Faculty that is interested in teaching as much as research.	Development of Communication Department. -website -standardized to outside -coherent			
			Age of policy makers. New/Younger						
			Poorly originated across the university.						
<b>3 - RESTRICTED FUNDING</b>	<b>3 - OFFERINGS</b>	<b>3 - COMMUNITY</b>	<b>3 - COMMUNICATION</b>	<b>3 - SIZE</b>	<b>3 - BUDGET</b>	<b>3 - STAFF TRAINING</b>	<b>3 - WEBSITE/WEB MASTER</b>	<b>3 - STAFF HIRING/RETENTION</b>	
Losing staff/professors. Losing grants, funding.	Lack of offerings in specific areas, foreign languages for example.	Lack of community support.	Lack of communication about internal problems.	Focus on increasing enrollment.	Restricted state budget.	Staff and faculty need consistent ongoing training from MS office to Banner.	Tech needs a webmaster staff/department do not have expertise or time to maintain own.	Changing demographics of workforce / Need to enhance staff skill set.	

	Reputation of our research facilities with outside funding agencies. We should never turn down opportunities and don't piss them off.				Transparency in decision making and in where money comes from and goes to.	Policy and procedures very little desk procedures to cover position if vacated suddenly.	Our website and other technology to communicate in ways that follow current trends.	
	<b>4 - Miscellaneous</b>	<b>4 - Miscellaneous</b>	<b>5 - COMMUNITY</b>	<b>5 - BUDGET</b>	<b>5 - FACULTY/EDUCATION</b>	<b>5 - ROLE</b>		
	Student academic space.	Communication.	Nothing for students to do in Socorro.	Lack of transparency in budget process.	Lack of professors for certain majors and inability to keep professors that contribute NMT's research.	Would like to know what strengths or weaknesses are every year. What are working on to improve what did we succeed at.		
	Change.	Pay scales, ability to retain strong academic leadership.	Socorro is not a draw for quality faculty.	Budgeting process is uncertain.	Enshrined departments unwilling to change.	No goals objectives.		
	Attraction/Retention of faculty/staff in direct regard to pay/salaries.	Compartmentalization, lab space, parking.		Hard to keep quality faculty and staff with low salaries.	Classes may only be offered once a year instead of every semester.			
Lab Space.	Student space for extra curricular activities.		Not enough parking.	Lack of communication among faculty, staff and students. Offer assistance, diagram of hierarchy to students to see who they need to go to.				

	NMT is tied to its culture. We have been successful as a result but we resist change and we need to be flexible.	Living Learning not avail all 4 years.			
		Community campus relationships.			
<b>FACULTY</b>	<b>2 - CLASSROOM SPACE</b>	<b>2 - ADMINISTRATION</b>			
	Inadequate number of classrooms.	Slow implementation of decisions. Morale.			
<b>STUDENT</b>	<b>1 - STUDENT SERVICES AND QUALITY OF EDUCATION</b>	<b>1 - TECHNOLOGY</b>	<b>1 - SOCORRO/COMMUNITY</b>	<b>1 - MANAGEMENT/ADMINISTRATION</b>	<b>2 - CLASSROOM SPACE</b>
	Some teachers really don't like teaching.	All technology makes Tech a dull place. No technology in Socorro.	All technology makes Tech a dull place. No technology in Socorro.	Non-entrepreneurial mind set.	Unpopular class times because of shortage of space.
	Hard to get homework back in a timely manner.		High rent.		
	Lack of instructors in certain departments.		Socorro not a college town.		
	Poor for non-traditional students.		No Socorro/school synergy.		
	Quantity (Big workloads) not equal to quality of output.				

	TCC and Library hours. Access to specialized software. Remote access to TCC services.				
<b>COMMUNITY</b>	<b>2 - COMMUNITY</b>	<b>2 - ADMINISTRATION</b>	<b>3 - WEBSITE/WEBMASTER</b>	<b>3 - SPECIAL NEEDS</b>	<b>3 - STAFF HIRING/RETENTION</b>
	Techs lack of involvement in community in which it is the heart and soul of the community.	Arrogance./Depending on state for majority funding.	Need webmaster badly	Lack of accommodations for differently-able students, students who need special services.	Need creative yet organized and well paid staff.

<b>OPPORTUNITIES</b>									
<b>STAFF</b>	<b>1 - ONLINE TECH EDUCATION</b>	<b>1 - INTERNAL EXPANSION</b>	<b>1 - OUTSIDE FACTORS AND ENTITIES</b>	<b>2 - STUDENT</b>	<b>2 - ECONOMIC GROWTH</b>	<b>2 - ACADEMIC INITIATIVES</b>	<b>3 - RESEARCH PARTNERSHIP</b>	<b>3 - STAFF</b>	<b>3 - SIZE</b>
	We have a lot of knowledge. We should leverage that toward our personnel and training.	Nationally recognized by several magazines.	Future branches in other cities around the state.	Expanding on campus housing.	Jobs are available for Tech graduate fields of study.	National transition to online education will allow for higher enrollment.	Further Specialization.	Dedicated research services position to search out new research opportunities.	Keep NMT size small manageable instead of expanding and bursting at seams.
		Develop transfer articulations to bridge more out of state students.	Research companies/businesses around/tied to campus.	Promote faculty interaction with students.		Green technology.	Industry partnerships.		
		Great technology centers in NM (develop relationships)	Different and more degree opportunities.						
	<b>4 - MISCELLANEOUS</b>	<b>5 - FOCUS/PROMOTION</b>	<b>5 - GROWTH</b>						

	Research	National focus on needs of education.	Become accredited for online degrees.
	NMT reputation positions us to be leaders in the state and in the country.	Market student's ideas and designs.	Technology is changing. New ways to learn.
	Increase labs, academic space and equipment for more cutting-edge research.	Become more involved in local schools offering presentations and activities as related to university studies.	Profes are world renowned experts in their field.
	Find new avenues for raising money/funding.	Utilize and promote current projects to obtain and maintain top of mind awareness. An example - MRO, Complete marketing campaign.	Summer REVS to recruit quality students.
	Attracting faculty and retention thereof.	Students have access to research in their area.	Increase outside funding from alumni and grants.
	Competitive salaries for faculty.	Campus wide surveys to determine and highlight strengths, accomplishments, weaknesses to work on next year.	

	Ranking among other Engineering/Research institutions that are well known.						
	Grow student support programs and opportunities.						
	<b>STUDENT</b>	<b>1 - ONLINE TECH EDUCATION</b>	<b>1 - INTERNAL EXPANSION</b>	<b>1 - OUTSIDE FACTORS AND ENTITIES</b>			
	Online	Partnerships with labs and other institutions to expand research and development ops.	Partnerships with labs and other institutions to expand research and development ops.				
	Open up distance to undergrads.	Entrepreneurial center					
	Use internet to bridge geographic distance.	Center for Entrepreneurialship					
<b>COMMUNITY</b>	<b>2 - ECONOMIC GROWTH</b>	<b>2 - ACADEMIC INITIATIVES</b>	<b>3 - WEBSITE</b>	<b>3 - RESEARCH PARTNERSHIP</b>	<b>3 - COMMUNITY</b>	<b>3 - STAFF</b>	<b>3 - SIZE</b>
	Possibility of teaming with industries we serve to bring in additional funding./Increase quality of life.	Work to partner with industry.	Web-based delivery of content & outreach & marketing.	Singular focus on research-based learning.	Work more closely with community for events, community service projects - (cleanup, beautification)	Need agile website management/dashboard ability.	Recruit higher quality students even if tuition increases, the reputation is key.
		Partner with other science and engineering universities to improve our systems.					

## THREATS

STAFF	1 - FUNDING	1 - THE WAY WE DO BUSINESS	1 - LOCATION	1 - VALUE CREATION AND EXTERNAL RANKING	2 - FUNDING	2 - ACADEMIC STUDENT ISSUES				
	Lottery Scholarship uncertainty.	Not focused on core values.	No industry in Socorro. "Brain Drain"	We don't ever fund a webmaster.	Unfunded requirements.	Low graduation rates.				
	Decrease state funding.	Reliance only on research dollars for innovation.	Small community with few private industries.		Loss of faculty and ability to recruit new faculty.					
	Decreased funding from the state legislature.	Using research to find other things besides research.	Remote.		National transition to online education will decrease use of Auxiliary Services, classrooms, etc.					
	Title V grant funding comes to an end/how to sustain these positions and technology.									
	3 - BUDGET	3 - FUNDRAISING	3 - FACULTY RET	3 - MANAGEMENT	3 - STAFF	4 - MISCELLANEOUS	5 - ROLE	5 - BUDGET	5 - OUTSIDE COMMUNITY, SOCIETY	
	Over-dependence on singular government funding stream.	Advancement not enough expertise to effectively raise money for Tech's future.	It will take time to rebuild faculty/repair reputation.	Pressure to provide more (under range) of offerings.	Leadership. If people are placed in leadership role that do not have the confidence of the staff or faculty.	Scholarship money from state. (specifically lottery)	Disgruntled unhappy staff and faculty allows negative with loss of students.	Funding is uncertain.	HS not preparing students for higher ed.	
				Top Down Management.	No Affirmative Action person on campus. Need separation of HR & AA.	Ability to attract and retain educators/faculty /staff.	Not enough DE programs available.	Budget cuts/ reduction in financial aid/funding.	MOOCS - Mass produced "education".	

						The price of education is increasing at a rapid rate, not sustainable.		Depending on waning state funding.		
						How students learn will change in the future. How do we plan for that.		Lack of resources for research & education. Dated equipment and lack of funding.		
								Not enough student jobs.		
STUDENT	1 - LOCATION	1 - VALUE CREATION AND EXTERNAL RANKINGS	1 - EDUCATIONAL DELIVERY							
	No reason to stay here after graduation.	Lack of internal and external marketing.	Mooc's							
	Isolation from world.	Not being able to clearly establish a value to a Tech degree.	Disruptions in higher ed delivery.							
	Socorro not a college town.	Not being seen as a peer of MIT or CALTECH.								
COMMUNITY	2 - FUNDING	2 - ACADEMIC STUDENT ISSUES	3 - INFRA STRUCTURE	3 - FACULTY RETENTION	3 - MANAGEMENT	3 - STAFF				

	<p>One group of people at Tech having over abundance of funding while funding others creating disparity that undermines morale.</p>	<p>A. Students often come to Tech unprepared.  B. Tech has to use resources to bring them up to speed.  C. Why not go back to high schools and partner with them to prepare students.</p>	<p>Sustainability for infrastructure (roads, housing, sewage, etc.) in community.</p>	<p>Fear the reputation will be compromised by the faculty leaving and not being replaced in a timely manner.</p>	<p>Disconnect from the needs and focus of growth.</p>	<p>Need webmaster our face.</p>	
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# SWOT for Faculty and Staff: March 5, 2014

## NEW MEXICO TECH STRATEGIC PLAN 2015-2018 / SWOT TOWN HALL MEETINGS

Wednesday, March 5, 2014 - Faculty & Staff

STRENGTHS										
STAFF	1 - MISCELLANEOUS	2 - CAMPUS LANDSCAPE	2 - DEDICATION BY ALL	2 - QUALITY OF STUDENTS/PROGRAMS	2 - RESEARCH	2 - SMALL COLLEGE/SIZE	2 - COMMUNITY/SERVICES	3 - SIZE	3 - MISCELLANEOUS	
	Skilled IT staff.	Nice work environment. Pretty campus.	Hard workers.	STEM niche.	Undergraduate research opportunities.	Small university. More one on one time with students.	College town makes Socorro so much nicer than similar size town with no college.	Faculty are PhD (excellent) to teach courses and student ration is great.	Most administrative and student services offices have open door policy.	
		Beautiful campus.			Opportunities for hands on work experiences with research and real world entities resident on campus. Research directed faculty. Some excellent faculty and specialized research programs.	Small size.		That we are a small school and can work together.	A general congenial working atmosphere.	
FACULTY	2 - QUALITY OF STUDENTS/PROGRAMS	3 - SIZE	3 - RESEARCH							
	We draw high quality students.	Small institution encourages collaboration.	Research progress gaining international attention potentially to attract more students from abroad.							

STUDENT	1 - MISCELLANEOUS	2 - SMALL CAMPUS/SIZE								
	Nerd Power	The school is small enough to allow students to really interact with research staff and faculty especially in higher numbered courses.								
	To be able to say "I Graduated from Tech" says a lot on paper even if through virtual means.									
COMMUNITY	3 - STUDENT EMPLOYMENT									
	The amount of work and preparation require to be a successful student. Many employers understand this and so are more willing to hire Tech grads.									
RESEARCHERS	2 - DEDICATION BY ALL	2 - RESEARCH								
	Research and regular faculty are mostly smart, dedicated, interesting. Really good undergrads.	Diverse student body. Lots of world views.								

## WEAKNESSES

STAFF	1 - WORKFLOW	1 - RETENTION HIRING WEAKNESS	2 - PHILOSOPHY/ EMPHASIS/VAL UES	2 - SUPPORT SERVICES AND MANAGEMENT DECISIONS	2 - RESEARCH RELATED	2 - IDENTITY/MA RKET POSITION	2 - COMMUNITY AND ENVIRONMENT	2 - MONEY/GENER AL BUDGET	2 - MONEY, SALARIES AND STAFFING PROBLEMS.
	Paper forms.	Paid for AU.	The university rarely practices what it preaches. Why have cutting edge research when the university itself will not implement it.	Lack of traffic planning. Parking is an issue if there are speed problems, knee jerk solutions - stop signs, bumps is used. Pplant vehicles drive all over the side walks etc.	Research facilities, labs, library, access to corporate America.	Don't offer the breath of visual arts offered at other research universities.	A sometimes small town provincial approach in NMT administration and town in how we treat our students and faculty offerings in community.	Not enough money in the budget to higher more staff.	Lack of ways to advance. Short of changing jobs and that is the only way to get a significant raise.
	Needs to be more green "sustainable".	Pay raises.		Management.		Trying to compete as a university when we're not.		Lack of money to buy top notch academics.	Low salaries for comparable work.
		Need more faculty.						The information technology support and funding is low.	
		Student teacher ratio./ Need more faculty.							
		Need more faculty.							
		ISD not enough staff.							
		Need automation.							
		Proper training.							
	3 - UNEXPLOITED AND RESEARCH TEACHING OPPORTUNITIES	3 - STUDENT POPULATION AND DIVERSITY	3 - STUDENT SUCCESS COMPLETION RETENTION	3 - FACULTY CONCERNS					

	Many students seem to hold a moral views about society and the natural world./Social responsibility.	Need to have a multi cultural / diversity department that deals with cultural challenges and strengths for our students (in order to stay diverse.)	Many students do not attend classes particularly introductory classes.	Retaining and attracting faculty having a faculty that students want to come study with.					
	Students unaware of events/trends in outside world.		Need more reaching out and support to freshman students that may go on probation to come back to Tech the 2nd semester.						
			Need to better track transfer out students. Some are successes. / They may change majors or only plan to attend 1st/2nd year transfer.						
FACULTY	1 - WORKFLOW	1 - RETENTION HIRING WEAKNESS	1 - MISCELLANEOUS	2 - QUALITY OF STUDENTS AND INSTRUCTION	2 - PHILOSOPHY/ EMPHASIS/VAL UES	3 - STUDENT REPUTATION AND DIVERSITY	3 - STUDENT COMPLETION AND RETENTION	3 - FACULTY CONCERNS	3 - COMMUNITY CONCERNS

	Lack of collaboration between business units/faculty.	Grant writing support.	Faculty who don't participate. Research teaching service.	Intro course sizes are starting to overwhelm instructors especially in high demand majors.	The focus on the ABET accreditation program distracts from the teaching mission and encourages decisions that look good for accreditation rather than being useful for students.	Resources for international students (ESL and instruction).	It can take students a long time to graduate.	Funding for new faculty and staff.	Socorro is in the middle of nowhere. Students might prefer urban community.
					The focus on funding teaching based on retention rather than success after graduation unfairly lowers the education presented to students.	Communication between faculty administration staff.			Socorro lacks diversity in restaurants, good doctors, or good doctoral ???
<b>STUDENT</b>	<b>2 - MONEY, SALARIES AND STAFFING PROBLEMS.</b>								
	There is not enough highly motivating and well respected faculty.								
<b>COMMUNITY</b>	<b>3 - UNEXPLOITED RESEARCH AND TEACHING OPPORTUNITIES</b>	<b>3 - STUDENT POPULATION AND DIVERSITY</b>	<b>3 - COMMUNITY CONCERNS</b>						

	We have virtually no neuroscience program. This program would be very valuable to psychology, biology, bio engineering students. Almost all other research universities have a neuroscience program.	How to reach out to alumni for events/news/etc. without putting money first on the list.	How to better prepare Socorro High School students to attend Tech.						
	It is not apparent that NMT is positioned to or actually perusing research/development in renewable energy.								
<b>RESEARCHERS</b>	<b>2 - QUALITY OF STUDENTS AND INSTRUCTION</b>								
	Too many foreign students in grad school seem to come from 2nd or 3rd tier universities and are not as good as they seem on paper.	<b>2 - SUPPORT SERVICES AND MANAGEMENT DECISIONS</b>	<b>2 - RESEARCH RELATED</b>	<b>2 - MONEY, SALARIES AND STAFFING PROBLEMS.</b>					
	Lots of obstruction in contracts, department they don't serve they thwart.	There is no focused group on campus that tries to bring in opportunities or route opportunities (like BAA, RFP) to the research centers on campus.	"Leaner/Meaner" mentally puts more work on staff who don't have expertise in all the rules and regs.						

		Terrible IT service. Cumbersome slow hard to use and non-communicative.	No real good channel of communication between other state institutions at research staff levels.
		The information technology support funding for IT/it security is drastically too low.	

OPPORTUNITIES								
STAFF	1 - OFFER MORE VIRTUALLY - SUMMER OTHER CLASSES	2 - COLLABORATION	2 - RESEARCH SPECIALIZATIONS	2 - STUDENTS	2 - MISCELLANEOUS	3 - GLOBAL INTERNATIONAL	3 - POSSIBLE DIRECTIONS OVERALL RESEARCH TECHNOLOGIES	3 - MISCELLANEOUS
	Virtual Learning.	Capitalize and emphasize and integrate our ancillary onsite and local entities. -EMRTC, PRRC, BUREAU, NRAO, BOSQUE SEVILLETA.	Strength in extractive and environmental research puts us at cutting edge of visionary direction of opportunities of USA.	Newly motivated students.	Continue to have lower tuition.	Consider how we need to think more and more along global economic lines.	Teach sustainability.	Establish ongoing collaboration, processes to achieve the vision/mission.
					Working with interested and interesting students.	Reach out to international students, researchers and scholars. Think globally.	Have a larger, wider variety of programs and curriculum to cater to woved needs.	Have a location/lounge/studies space for veterans attending NMT.
						Cater to the needs of the global environment and ??? Needs would be in the future.	I feel like raising the enrollment is not as important to retention/graduation rate.	

							Use PhD to teach freshman courses (the weed out courses vs. TAs)	
FACULTY	1 - MISCELLANEOUS							
	Poor selection/catalog offerings. Improve distance ed offers.							
	Summer course offerings.							
STUDENT	1 - OFFER MORE VIRTUALLY - SUMMER OTHER CLASSES							
	Virtual university.							
	2 - MARKETING	2 - MISCELLANEOUS						
	Capitalize on Tech being a hard school insure that recruiters understand the value in a Tech student who only has a 3.5 GPA.	Use online courses to enrich high school students and prepare them for Tech.						
COMMUNITY	1 - OFFER MORE VIRTUALLY - SUMMER OTHER CLASSES	3 - COMMUNITY OPPORTUNITIES	3 - POSSIBLE DIRECTIONS OVERALL RESEARCH TECHNOLOGIES					

	Leverage state-wide reputation.	How to better assimilate Tech students into Socorro schools.	The animal care facility could be utilized greater than it is.	
		Recruit more Socorro students from middle school to high school.	Could should NMT become a leader in renewable energy.	
			We have most of the facilities and technology needed to start a neuroscience program right now. We just need faculty. It could be a combined effort of psychology, biology and bio engineering.	
RESEARCHERS	2 - COLLABORATION	2 - STUDENTS		
	Working with other institutions in state.	Pay talented students more than competitively to use our student talent as a research asset.		
	Working with other departments.			

THREATS							
STAFF	1 - MISCELLANEOUS	2 - MISSION AND VISION	2 - MANAGEMENT PROBLEMS	2 - MONEY	3 - ADMINISTRATIVE CONCERNS	3 - FACULTY STAFF CONCERNS	3 - MISCELLANEOUS

	Education bubble.	Rise of applied technical degrees that are quick and less cost and geared to job acquisition.	The schism between faculty and administration is really going to be a problem if not resolved.	Salaries perceived as non competitive.	Shutting down education department is/was a mistake. We need more STEM teachers with better background in STEM.	Retrieving, alternating faculty baving of students want to come study with.	Cost of education.
	Funding.	Loss of mission focus to fighting to survive as state funding is in flux.	The use of IT computer network assets to enable bad actors and IP theft.	Funding for students and faculty.	Corporate top down model of operations.	Silo mentalities.	Have a location/lounge/study space for veterans attending NMT. (maybe losing VA population opportunity).
	Retention of good faculty.		Undermining by competing personalities at higher levels.	Not able to attract the best faculty, salaries not competitive.			
	Other virtual schools. WGU.		Annoying the faculty with management details.	Small in a poor state/hard to raise money.			
FACULTY	2 - MISSION AND VISION	3 - FACULTY STAFF CONCERNS					
	Equating growth of the school to the success of the school.	State funding, low faculty, a loss to the state.					
STUDENT	1 - MISCELLANEOUS	2 - STUDENT RETENTION					
	Having to do online courses from other universities.	Over subscribed dependence on foreign instructors.					

	Not enough classes offered/hardly any summer courses offered.	Loss of student interest due to being "turned off" because low level courses are not taught by exciting instructors.	
<b>COMMUNITY</b>	<b>3 - ADMINISTRATIVE CONCERNS</b>	<b>3 - MISCELLANEOUS</b>	
	Undo private sector influence. (ie corporations, wealthy individuals.)	Not having a neuroscience program when most comparable schools have at least some sort of neuroscience program.	
<b>RESEARCHERS</b>	<b>2 - MISSION AND VISION</b>	<b>2 - MONEY</b>	
	Lack of scientific vision/are admin chases the latest thing and fails to support existing strengths.	Funding sources drying up.	
	Too much reliance on good ol' boy or political networking for obtaining funding for new opportunities.	Loss of our cutting edge research base due to being unable to attract or fund top notch talent.	

# SWOT for Students: March 6, 2014

## NEW MEXICO TECH STRATEGIC PLAN 2015-2018 / SWOT TOWN HALL MEETINGS

Thursday, March 6, 2014 - Students

STRENGTHS									
STUDENT	1 - SMALL SCHOOL/CLASSES	1 - RESEARCH	1 - CHEAP	1 - GOOD SUPPORT FROM ADMINISTRATION	2 - MISC	2 - MISC	2 - MISC	2 - MISC	
	Overall a small school.	Research - Undergrad and graduate.	A lower cost to attend.	Departments such as Financial Aid or Registrar are very good at following up and being of assistance.	Jobs on campus.	Weight room is expanding.	Ease to approach professors.	Tech responded to my college application 5 months before any other school.	
	Summer school needs more individual attention from staff.	Our focus on research.		Lack of professional sports teams.	Job opportunities on campus & later.		Class sizes are great at the upper levels.	Fairly cheap tuition & cost of living (offered several scholarships.)	
	Small class sizes.	Professors that are skilled in your field.			Job opportunities after college.		Class sizes agreed!	Cost of tuition.	
	Small class sizes.						Class sizes		
	Small class sizes.						Class size.		
							Easy to talk with professors.		
							Faculty.		
							Quality of education. I feel I know my material better then other people from other colleges.		
	3 - FACULTY	3 - SMALL SIZE	3 - STUDENT RESEARCH	3 - TECHNOLOGY	3 - CAMPUS	3 - DEGREES			
	Excellent faculty.	Faculty to student ratio.	Undergrad research opportunities.	No windows 8.	Beautiful campus.	Difficulty.			

Accessible professors.	Small class sizes. Allows more 1 on 1 time with profs. (need to emphasize this.)	Research opportunities.	Meme humor. :)	Excellent on-campus community?	Research/degree caliber.
Professor to student ratio is excellent.	Class sizes - are small enough that we can talk to our professors.	Lots of hands on labs.			Academic difficulty.
	Small class size.				Degrees are respected.
	More access to scholarships.				Difficult to et degree, so more respected.

WEAKNESSE										
STUDENT	1 - LACK OF SUPPORT FROM TEACHERS	1 - FUNDING	TRANSPARENCY ADMINISTRATION	1 - MARKETING	1 - MISC	2 - MISC	2 - MISC	2 - MISC	2 - MISC	2 - MISC
	Students not encouraged to work in groups.	Funding gets worse each year.	Instructors that abuse power.	Don't advertise well - graduate. Example: I found Tech. Hadn't heard of it before I started doing research.	Lack of food options.	Not enough parking.	Not enough faculty for yearly in coming students.	Tech doesn't observe many holidays. Would be nice to see/observe more.	Bad food/food options.	Communication between admin and students.
	Not tutoring for all classes readily available.	Running out of money - spending it on things that won't help university grow. i.e. paying staff or similar areas more instead of the professors, research Tas or recruitment.	Administration not always having the students best interest in mind.			Never any parking build a car park!!	Not enough faculty.	Career fair is mostly mining and defense.	Fire chartwells, we need better & more food options.	Curriculum is not broad enough. Agreed.

	Missing 4 classes should be an automatic failure. Grades should be dependent on work.	Dropping Lottery scholarship funds should be covered by Tech.	Losing premier faculty, lab, research.				We need better staff/teachers, and better pay for the good staff/teachers.	Focus on studies rather than student general needs out side of studies. Though it's great many students are lost due to this.	Chartwells facility to small for student population especially when firefighters/others are in attendance.	"Mastering" programs.
	It took two months to receive grade audit.	Professor salaries are too low. Some class sizes are too large.	Lack of care in different departments w/ respect to other staff and some times students.				No home ec courses/cooking courses.	No food variety. Same things over and over.	Too much red tape with Registrar.	
		Some classes are too big.					Right now, Tech focuses mostly on studies, but they need to focus on the students. More and better activities, better food. We need fun things to want to stay.			Need better communication (in Tech & out).
							More money to student organizations.			Lack of a graduate student survival guide.
							Should encourage students to be social, not the other way around.			
<b>2 - MISCELLANEOUS</b>	<b>3 - MISCELLANEOUS</b>	<b>3 - FOOD STUFF</b>	<b>3 - FACULTY STUFF</b>	<b>3 - FACILITIES</b>	<b>3 - STUDENT COMPLAINTS</b>	<b>3 - TECHNICAL</b>				
Humanity dept takes themselves too seriously.	Too many girls on campus.	Food options.	Professors and funding.	Parking-I leave 15 min before class and still miss class time because I'm looking for spots.	Omar wants more me.	No online degree evaluation.				

	2 main themes: 1) Faculty - admin problems. 2) Research/Internship opportunities.	No gluten free.	Embarrassing prof salaries.	Parking.	Let in too many freshmen to fail them out and keep their money	Banner.
		Food allergens.	WE lose professors to CNM - pathetic.	Parking on college not okay.	SGA	Moodle.
		Drop burgers on ground and feed to students.	Research divisions don't pay competitive salaries.	Took away awesome parking for horrible monstrosity of a building.	Require English 112 and other gen ed even with AP.	
		Chartwells.	Admin pay is very high compared to other staff and faculty.	Excessive broken sprinklers & lights & pavement.	Entertainment for students is lacking. Need more shows and activities from both schools and community.	
		Lack of on campus food options. (Bad advertising for prospective students.)	Low faculty and staff morale.		Workload for freshmen ridiculous.	
		Water quality.	Low professor salaries.		New Mexico Tech doesn't have as much housing as other campuses.	
		Chartwells.	Students favorite professors leaving Tech.		Seriously though, gender ratio is broken.	
			Antiquated facilities.			
			More opportunities to address admin. Bukowski.			

More administration/student interaction.	More research opportunities offered by off campus companies for majors other than the mechanical department.	Internet.	Pay the administration less.	More places for students to study. E.g. compact shelving in the basement of library to allow more study room.
More funding for research.	Lots of land, bring in companies to help hire students.	Separate networks for campus computers and students in residence halls.	Pay administration less and professors more.	Open up library longer. (extend the hours.)
offer more classes online.	Internships.	Fiber optic.	smaller administration, bigger research department.	24 hours building on campus.
Inter-department projects.	Getting companies to teach classes that would be like an internship then go to real internship.			
Easy transportation from airport to university.	Allowing more student positions for hands on lab jobs.			
	Research - Market.			

THREATS							
STUDENT	1 - MISC	1 - FUNDING	1 - UNHAPPY STAFF	2 - MISC	2 - MISC	2 - MISC	2 - MISC

Broken links on website. (poor first impression)	Lack of funding or spending money on things that aren't important to growth.	Politics within academia/administration.	Faculty salaries is too low, way below US standard.	Not being up to AA standards.	Class side is expanding. Ratio between faculty and students is increasing.	Too much auxiliary and administrators. They do no teaching, no research, we don't need too much service.
	Reliance on Lottery students leading to high drop out rates.	Losing good staff in departments.	Long term and highly experience professors are leaving Tech.	Not having the ADA.		
		Unhappy professors who quit/don't want to work here.	Budget concerns.			
			Computer security issues that threaten the schools federal budget aid.			
3 - MISC	3 - TREATING STAFF AND PROFESSORS SHITTILY	3 - TECH SUCKING AT THINGS	3 - THE GOVERNMENT SUCKING AT THINGS	3 - MISC		
Russia? Thomas peoples.	Funding always "decreasing" administration pay increases. Why?	Not selective enough in admission.	Lack of federal funding for research.	Wow! Many administration much salary such anger. Wow!		
Capitalist pigs-dogs (and other capitalists).	Losing great professors.	Website.		Wow such sarcasm very intelligence so cool wow.		
Microsoft.	Lose professors to CNM - awful.					
	Staffing					
	Low Faculty & Staff morale.					
	Burnt out teachers and professors.					

# SWOT for Rotary: March 19, 2014

## NEW MEXICO TECH STRATEGIC PLAN 2015-2018 / SWOT TOWN HALL MEETINGS

Wednesday, March 19, 2014 - Rotary

### STRENGTHS

COMMUNITY	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS
	Macey Center / Performing Art Series	Availability of internships often learn more from Job than from classes.	Great relations with city and businesses, need to continue this positive market.	World class research	State Science Fair	Proximity & remoteness "close enough" to ABQ "far enough" from home (if ABQ & LC) having the rail reach down to Socorro will open up ABQ & SF to NMT students to visit.	Good scholarships make NMT quite accessible. (I hear rumor that the "patch" funds are gone, and thus scholarships are down.)	I have heard the faculty is very strong.
	State Science Olympiad	Campus/building improvement.	Fireworks					

### WEAKNESSES

COMMUNITY	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS
	College students mentor younger students in science & robotics.	More community college classes, computer stuff, facebook at a cheaper price/NOT for credit. More things open to community - etiquette classes for example.	Closer working with our local school system.	(Personal experience) 100-200 level classes focused on theory rather than foundations of implementation. Thus, students don't know "why" what they are learning is important. Then 300 & 400 level classes require implementation skills that most students don't have foundations for.	Charging rental space for Macey Center for non-profit fundraising events. Accessibility of campus for community.	Minimize night lighting on campus. Some can see the stars.	More work study co-ops.	One-o-one HS students to Tech student mentoring.

	Lack of community involvement. Techies vs. Townies	Part time students or taking a semester off can be a hassle. Making things easier for people to work around their schedules may result in increased attendance.	Some classes are offered only "every other year". This leads to 5 year students (scholarships are 4 year), leading to anxiety about those fields.					
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### OPPORTUNITIES

COMMUNITY	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS	MISCELLANEOUS
	Get involved with First Robotics	When Tech is in session. Its student population is a third of the population of Socorro. In theory then, NMT det's should be a third of participants for events like Relay for Life.	We hear the "boom" from EMRTC often, but few residents have been able to witness a demolition demonstration. Maybe 1 per month open to public viewing?	A summer camp for youngsters (or better advertising if already exists.) (I attended "shuttle camp" (when I was here in elementary) in Alamogordo. I would've loved a computer camp, or electronics camp at NMT).	Distance Education will ovdorff (?)	Manage commercial enterprises that hire students. All I can think off off hand is IT functions such as "Geek squad" to fix computer problems throughout Socorro. I think only the one place on the plaza does IT currently.	Small business advisory services, such as 1) Assistance with writing grant requests. 2) Reviewing HR practices. 3) Review policy writing.	Mail a newsletter to the community.

	Partnering with local organizations to do good in the community.	Some sort of reduced cost for part-time students may allow more people to sign up for 3-6 CR while working full time. May not be viable from admin cost point of view, but may increase enrollment.	Although sports are not a big deal to geeky students (like me), sports do seem important to community interaction and connectivity.	I think most students get into the mindset that they will go out and get a job from a big corp., but have no idea of what other options exist. Big corps tend to not be in NM so encourage NM ventures like making own companies.	Stronger advertising and recognition in New Mexico high schools. (when I was in HS, I had just two math teachers with NMT posters)	Make community college, esp. continuing educations, more attractive to citizens of Socorro. (I am used to the "super spud" program (anti-couch potato) for DACC in Las Cruces).	Tech & high school team up to set up a tutoring program for HS students to receive tutoring from Tech students either by paying Tech students for these services or giving some type of college credit to them for their time & Rotary be asked to help financially.	It would be great if NMT's pre-med program offered a CAN (certified nursing assistant) class and build a partnership with Good Samaritan Society - Socorro, the local nursing homes. Working as a CAN for the largest non-profit provider of senior services in the USA would be a good resume booster for the pre-med students applying for med school. Call me Ryan Mertz, Administrator Good Sam, Socorro
	Increased presence in the local schools.	Buy an ad in the Rotary community calendar.	Reduce costs to student. 1. Tuition free a. Student loans free if graduate. b. Hit alums for \$. c. Take 30% of Van R's research overheads.	Support Puerto Seguro				

### THREATS

COMMUNITY	MISCELLANEOUS
	Too dependent on military & defense for funding. Need to diversify to energy and technology industries.
	Funding

	Apathy (the Socorro classic!)
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# SWOT for Departments/Divisions

## Departmental

Strengths	Weaknesses	Opportunities	Threats
Some superior examples of professionalism in administrative staff (Sarah G and Joanne Salome)	Little Customer Service and Professional Training for administrative staff (particularly cashier's office, student accounts and HR)	Employers value soft skills and technical knowledge, and we can provide both	Increase in BA&Bs at other schools becoming a "corporate university" -- trend toward more vocational and community college education; flight of goos profs and threats against tenure.
Creative non-STEM course offerings	Administration and policy making -- confusing policies, little transparency, little departmental autonomy, teachers often cut out of the loop (especially for things like Starfish)	Possibility of expanding to other degree options (Associates? Bas?) as a way to increase retention and give students more choice	
Faculty -- generous with their time, collegial, enthusiastic about teaching and hands-on education	Inconsistent and confusing policies for Dept. chairs Faculty pay: inconsistencies across departments and entities, unclear criteria for pay, pay not competitive enough to retain faculty	Co-op opportunities abound; we just have to forge the necessary relationships	Pressure from Santa Fe to graduate students early
Students -- reasonably well-prepared, good work ethic	Links from Tech to Jobs -- no co-op program, Career Services seems to bring in the same employers every single time, departments often have to connect students to	Possibility for undergraduate research, ongoing opportunities to work with research organizations on campus and elsewhere	
Cafeteria	Little value placed on non-STEM classes in humanities and social sciences, insufficient number and quality of liberal arts/gen-ed courses		
Small Class sizes, reasonable collaboration across departments	Communication probs between depts and some campus entities and a lot of negativity, "Me first" attitude within and across departments Overall negative attitude toward part-timers, and funding concerns for classes taught by part-time instructors. (we need a bigger budget for this) need to streamline campus software, course platforms,		

## Chemistry

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Good contact with students	Safety training enforcement	Wanting what we have! (and reorganizing out strengths)	Budget
Lots of attention paid to graduate students	Lack of open discussion in department meetings/closed door meetings	NIH INBRE and NSF EPSCOR programs	New Chem/Mater building may be a disappointment for growth/opportunities
Excellent faculty	National recognition	Jobs for students at Tech and after graduation	Long-term instability due to high turnover and personality conflicts
Small dept.; can work with students intimately	Too few graduate students	Lwe can build a healthy program through careful strategizing - assuming institutional support	Unachieved prior NMT Mission/Vision partly responsible for current status; if 2015 NMT Strategic plans not met - where to next?
HIS	Gen chem students too large	Mentoring for new faculty	Stronger Ph.D programs at UNM and NMSU
	Variation in courses	New faculty as half the department	Small Sept.; could easily be reduced to service only
	Limited Ph.D students		
	Small department limited resources		
	High faculty turnover in department		
	Difficulty recruiting strong graduate students		
	Teaching loads high for a Ph.D. program		
	Lack of instrumentation technicians		

## EODI

Strengths	Weakness	Opportunities	Threats
Tech's reputation	Not enough classes available	Special programs for incoming freshman	Lottery scholarship going away
Small enrollment, student-teacher ratio	Poor marketing	Retention measures	Student debt
Attractive campus	Low quality of incoming freshman	Distance enrollments	Competition from other N.M. colleges
Low tuition	Low tuition revenue	More grad programs	High cost of library resources
Close-knit community	Low faculty/staff salaries	Certificate programs	Other universities offering DE courses
Faculty's open-door policy	Not a lot of new faculty	Advances in educational technology	Lack of Tech visibility in S.F.
Student research	Remote location	Albuquerque office	
Tutoring	Lack of resources in Socorro		
Great instructional technology	Weak school system		
Community Education courses	Lack of cooperation with local school system		
Small, able to change more quickly			

# Appendix: SWOT Analyses

## Strengths Analysis

### Summary

#### *Objective and Method*

It is our objective to accurately identify major and minor themes within the SWOT category *Strengths*. The compilation and analysis of this data will provide valuable information to the Strategic Planning Committee and New Mexico Tech leadership now and in the future.

Our team was tasked with the compilation and analysis of all comments categorized as strengths in each of the town halls. Through email correspondence and face-to-face meetings, our team identified major and minor themes present in the data collected. These themes were tallied and the final data are presented within this report.

#### *Assumptions and Constraints*

There were assumptions made in the compilation and analysis of this data, specifically when interpreting the information. When assessing comments, the respondent type and language used were considered before a comment was assigned a specific category. Some comments included areas that pertain to many categories; when this occurred we assigned equal weight to each category represented in the comment.

### Data

In the compilation of the data seven major themes emerged: Collegiality, STEM Strong, Reputation, Affordability, Research, LSDE (Location, Size, Demographics, Environment), and Support Services. These major categories were then split into subcategories when warranted.

#### *Collegiality*

The first major theme identified is Collegiality; this theme represents the perception of the persons that make up the university. Comments pertaining to the accessibility of professors or the preparedness of students are assigned to this category. As one of the highest-scoring categories, this theme is a recognized and valued strength among most constituencies.

Respondent	Faculty	Departments	Students	Leadership	Total
SPC	6	2	1	2	11
Faculty	6	1	2	0	9
Staff	8	0	4	2	14
Student	7	0	1	0	8
Community	2	0	0	0	2
Researcher	1	0	1	0	2
Total	30	3	9	4	46

**Table 1: Strengths Data - Collegiality**

#### *STEM Strong*

A strength that emerged early and often in this process was Tech's focus on STEM. We identified a subcategory of *Curriculum*, since it was mentioned specifically. From the data presented in Table 2, this part of the Tech identity appears to be of greater importance to students as compared to other respondents.

Respondent	Curriculum	General	Total
SPC	2	3	5
Faculty	2	2	4
Staff	1	4	5
Student	4	4	8
Community	0	1	1
Researcher	0	0	0
Total	9	14	23

**Table 2: Strengths Data - STEM Strong**

### *Reputation*

Tech’s reputation was seen as a significant strength by most respondents. This theme was separated into two subcategories—PR or Public Relations and General. PR is meant to represent the opportunities Tech has capitalized on and how these events or programs have positively impacted the reputation of Tech, (e.g., Mythbusters). The general category represents the comments based on the internal and external reputation of the university.

Respondent	PR	General	Total
SPC	2	2	4
Faculty	0	6	6
Staff	1	6	7
Student	0	4	4
Community	0	4	4
Researcher	0	0	0
Total	3	22	25

**Table 3: Strengths Data – Reputation**

### *Affordability*

Affordability was a highly-segmented category with specific aspects identified and others left out, necessitating multiple subcategories. In Table 4, there are four subcategories with Tuition being the most significant. This theme was not as highly represented as some of the other themes.

Respondent	Scholarships	Tuition	Housing	General	Total
SPC	0	4	1	0	5
Faculty	0	0	0	1	1
Staff	0	8	0	0	8
Student	2	4	1	1	8
Community	1	1	0	0	2
Researcher	0	0	0	0	0
Total	3	17	2	2	24

**Table 4: Strengths Data – Affordability**

### *Research Diversity*

Tech as a research-focused university was acknowledged by most respondents, although this perception among students is less than that of Faculty and Staff. This category was split into two subcategories: one that

identified undergraduate opportunities, and the other a general category. Surprisingly, there were only two comments from students identifying undergraduate research as a strength.

Respondent	General	Undergrad	Total
SPC	5	2	7
Faculty	4	2	6
Staff	4	4	8
Student	3	2	5
Community	1	1	2
Researcher	1	0	1
<b>Total</b>	<b>18</b>	<b>11</b>	<b>29</b>

**Table 5: Strengths Data – Research Diversity**

### *Location, Size, Demographics, and Environment (LSDE)*

LSDE is the largest category by far with 73 total comments pertaining to one or many of the subcategories. The size of the university was the largest of the subcategories with respondents commenting on student-to-faculty ratio and small class sizes. Location and Demographics received the fewest comments. The environment, meaning the campus and recreational activities available, received high marks from most respondents.

Respondent	Location	Size	Demographics	Environment	Total
SPC	2	6	1	2	11
Faculty	0	8	0	1	9
Staff	0	20	0	6	26
Student	0	16	0	3	19
Community	1	3	0	3	7
Researcher	0	0	1	0	1
<b>Total</b>	<b>3</b>	<b>53</b>	<b>2</b>	<b>15</b>	<b>73</b>

**Table 6: Strengths Data – Location, Size, Demographics, and Environment**

### *Support Services*

Support Services were separated into four subcategories: Auxiliary Services, Administration, Academic, and Outreach. Auxiliary Services represent all non-administrative services such as recreation facilities and residential life programs. Administration includes all administrative services such as services provided by the Registrar, Financial Aid, and Career Services. Academic Services refer to departments that provide services related to specific academic accessibility such as the distance learning classrooms. Finally, Outreach Services are identified as services or events that are designed to have a positive impact on the community (e.g., fireworks). Based on the data in Table 7 Administrative Services appear to be a significant strength within this category.

Respondent	Aux. Services	Admin	Academic	Outreach	Total
SPC	1	2	1	1	5
Faculty	0	1	0	0	1
Staff	2	4	1	0	7
Student	1	8	0	0	9

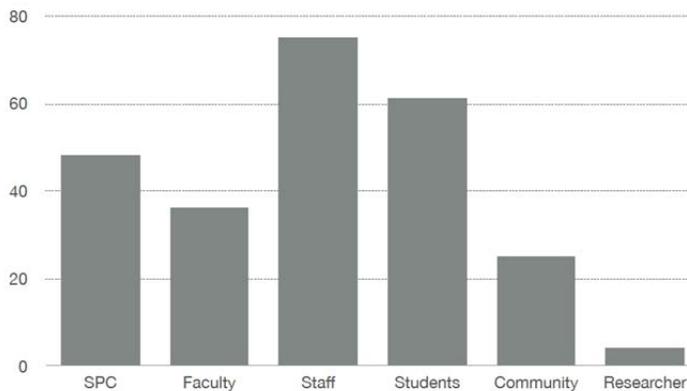
Community	1	3	1	2	7
Researcher	0	0	0	0	0
Total	5	18	3	3	29

**Table 7: Strengths Data – Support Services**

**Analysis – Respondents**

There were a total of 249 qualified comments in the strength category for the SWOT. As represented in Figure 1 of those responses, the majority, 75, were made by staff members. The fewest comments were collected from researchers.

The number of responses from students is relatively high considering we were limited to one town hall. It was observed, during the student town hall, that it might have been beneficial to identify undergraduate and graduate students separately; the difference in how the university is perceived by these two groups is often significant.

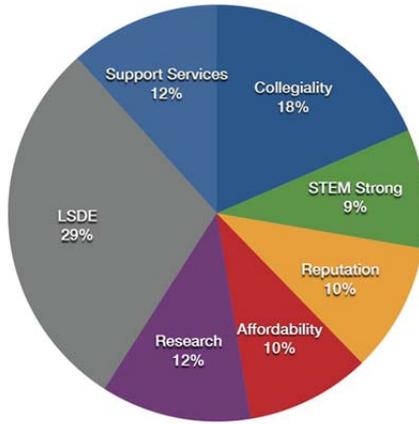


**Figure 1: Strengths - Respondent Distribution**

**Analysis – Categories**

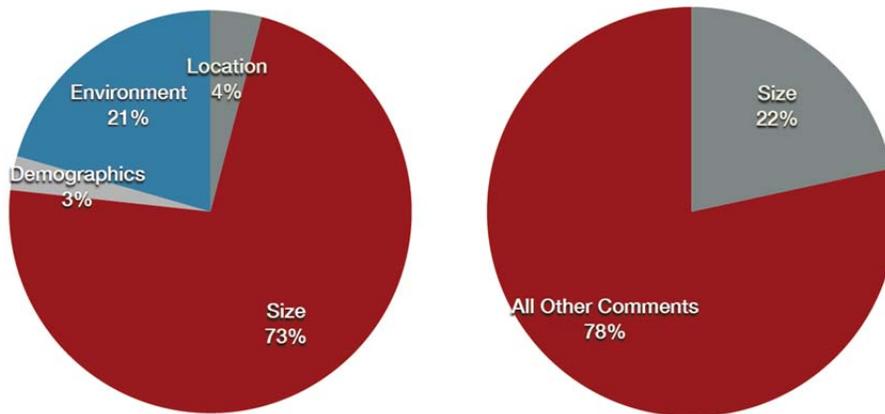
Based on our interpretation of the data, the most significant strength identified is size. This is seen as a strength across all contingencies, with the most responses coming from staff. This may be simply due to a higher number of staff members participating in the town halls. The remaining categories provide insight into how our university is perceived by the sample groups surveyed.

There were four comments that were uncategorized based on their content not meeting either the definition of a strength or our inability to interpret the true meaning of the statement.



**Figure 2: Strengths – Distribution of Major Themes**

Size was determined to be the largest perceived strength at Tech. When compared to all other comments, size still made up 22 percent of all comments submitted.



**Figure 3: Strengths – LSDE – Category (left) and Size – Overall (right)**

## Weaknesses Analysis

### Summary

A Strengths, Weaknesses, Opportunities and Threats (SWOT) survey was conducted by New Mexico Tech’s Strategic Planning Committee in an effort to solicit feedback from key constituent groups identified by the SPC: students, faculty, staff, community members, and researchers. The survey was offered at four different dates: March 4 for faculty and staff, March 5 for faculty and staff, March 6 for students and March 19 for community members. The participants were split up into small groups and situated around tables upon which a large piece of paper divided into four quadrants labeled strengths, weaknesses, opportunities and threats, was placed. Each constituent was given a different color sticky note and was instructed to brainstorm as many ideas

as they could – one per sticky note – and put them in the appropriate quadrant. After the brainstorming session, the constituents were instructed to group the sticky notes together if they could. A discussion followed. Lastly, the group was asked to label the groups of sticky notes by what broad theme they represented. The sheet of paper with sticky notes was saved and transcribed to a Google Docs spreadsheet.

### *Objective and Method*

The “Weaknesses” section of the SWOT is filled with those things that Tech could be doing better right now. Weaknesses are often expressed as complaints, such as the “not enough funding” or “bad food.” It was the job of the Strategic Planning focus group to look through the complaints to find common themes across the constituent groups. Also, they were to consider any conflicts between the groups.

The Strategic Plan “Weaknesses” group met Wednesday, April 16 and consisted of Bill Stone, Lorie Liebrock, Nouraddine Benalil, Patricia Valentine, Delilah Vega-Walsh, Steve Simpson, and John Friedrich (a student in Frank Reinow’s class).

Four major themes were identified by the focus group: 1) lack of transparency in how Tech operates for all its constituents, 2) the retention and attraction of quality people at Tech, including faculty, staff and students, 3) lack of communication within the campus and also community, and 4) the lack of cutting-edge technology at Tech. Also, current irritations that can and should be taken care of ASAP were also identified.

### *Assumptions and Constraints*

The SWOT paper with sticky notes were transcribed to the Google Groups spreadsheet found at

[https://docs.google.com/spreadsheet/ccc?key=0A18zb1Y5PytQdG12U0dGOHdvV2xLMXJtWVJ6MmRPOFE&usp=drive\\_web#gid=0](https://docs.google.com/spreadsheet/ccc?key=0A18zb1Y5PytQdG12U0dGOHdvV2xLMXJtWVJ6MmRPOFE&usp=drive_web#gid=0).

The items in the Weaknesses section were then entered into an Excel table with the following fields: Date, Table, Constituent, Weakness, Theme, and Sticky Note. Pivot tables were then created for the graphs and tables used in this report. Each theme presented below is composed of a description of the theme, some statistics about the theme, and the original sticky notes that were classified as belonging to the theme. Appendix A provides a breakdown of sticky notes by constituent for cross-referencing purposes.

As with any reporting of this nature, interpretation is often required in deciphering what the participants intended when they were posting their sticky notes. Care was taken in considering the meaning of each sticky note, but there is no guarantee that we got it right with all the interpretations that needed to be made. Also, when larger themes are being created it is easy to overlook entries that don’t quite fit any of the categories any longer. Care was taken to minimize this issue.

We will start with a summary of the overall participation for the Weaknesses section. Then we will present the five themes: Current Issues, Communication, Retention, Technology and Transparency.

## **Data**

### **Analysis – Respondents**

During the four SWOT sessions 236 sticky notes were written describing what the constituents felt as weaknesses at Tech –those things that Tech doesn’t do so well right now. As Chart 2 indicates, 96 notes were written by students, an equal amount by staff, 22 by community members, 15 from faculty and 7 from researchers.

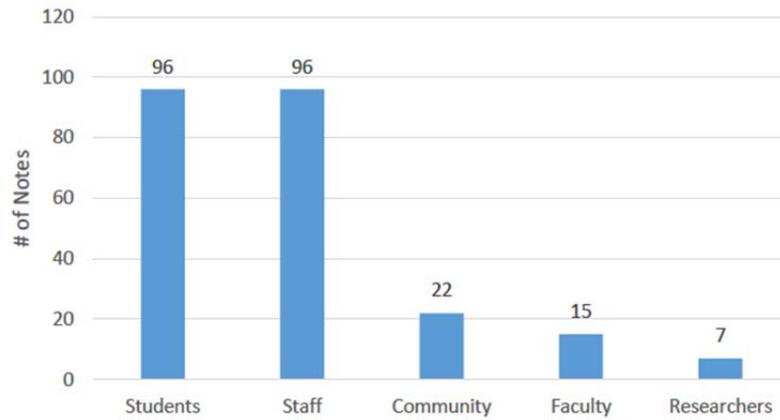


Figure 4: Weaknesses - Respondent Distribution

Table 8 breaks down constituent participation by the major themes: communication, transparency, retention, current issues, and technology.

Constituent	Communication	Transparency	Retention	Current	Technology	Grand Total
Students	21	16	28	29	2	96
Staff	34	22	24	8	8	96
Community	12	4	4	1	1	22
Researchers	3	2			2	7
Faculty	5	5	5			15
<b>Grand Total</b>	<b>75</b>	<b>49</b>	<b>61</b>	<b>38</b>	<b>13</b>	<b>236</b>

Table 8: Weaknesses – Respondents versus Themes

Lastly, Figure 5 illustrates how the weaknesses were distributed on a percentage basis by theme.

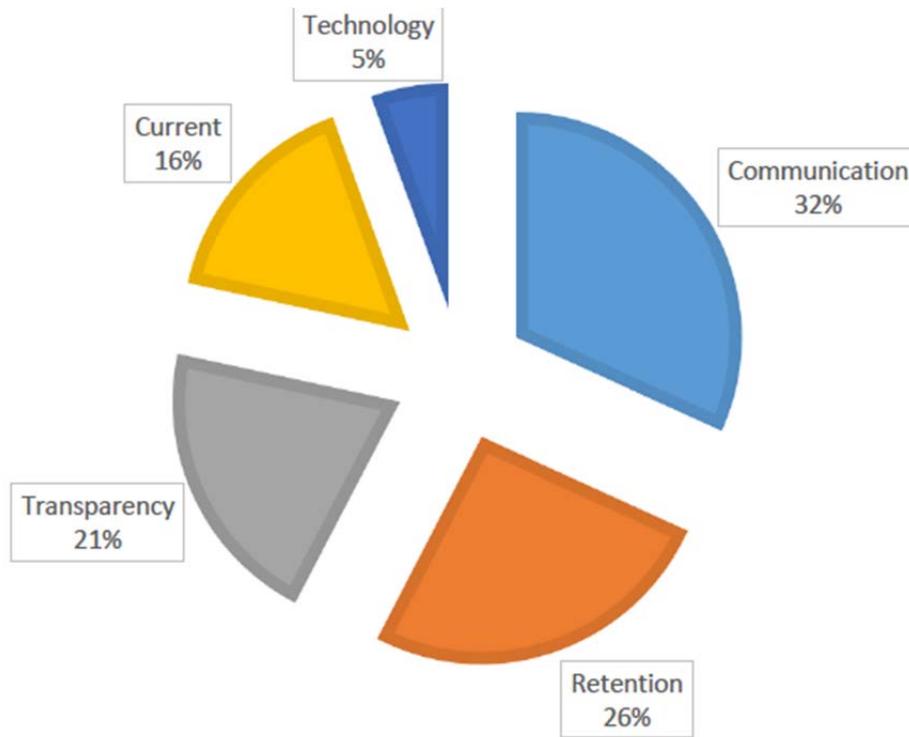


Figure 5: Weaknesses – Distribution of Weaknesses by Theme

## Analysis – Categories

### *Current Issues to fix now*

Many of the comments made in the weaknesses section didn't rise to the level of strategic planning, but rather were day-to-day irritations expressed by the constituency in one form or another. It was the opinion of the focus group that resolving many of the issues was doable immediately and that Tech had the resources to achieve that goal now rather than having to wait for future funds.

As Steve Simpson reports, “We first sorted major ‘weakness’ themes into a general ‘to-do list’ (i.e., repeated items that can and should be addressed quickly without necessarily being part of the Strategic Plan) and a ‘Strategic Priorities’ list.”

The focus group identified the following immediate action items:

- General cafeteria complaints that can be passed along or negotiated into the next contract with Chartwell's. (In particular, students expressed concerns about having more gluten-free options and about food allergens in general).
- Hiring a webmaster.
- Rethinking distribution of classes to make better use of classroom space (e.g., more evening classes), better leveraging distance technology, and making more strategic use of the Albuquerque facility.
- Better advertising mental health options for grad students (and other students).

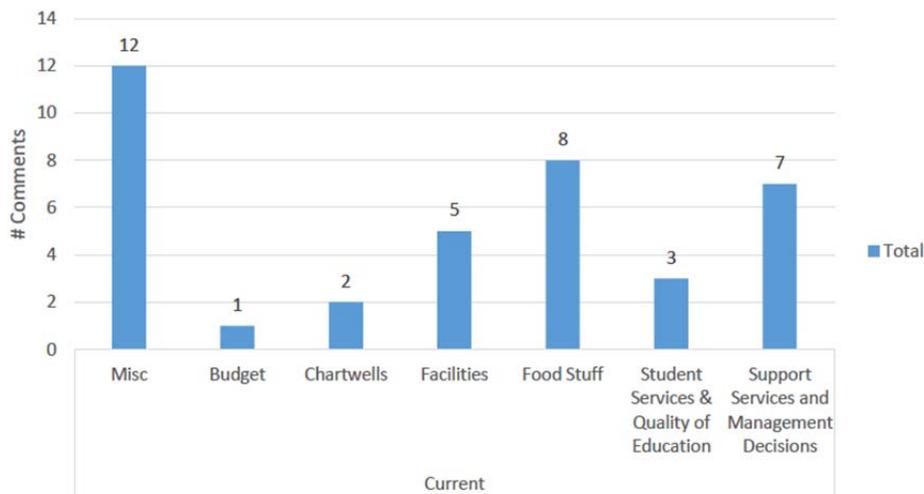
### Statistics

The students were the most vocal in this category. Of the 38 sticky notes categorized as immediately fixable items, 29 were written by students (Table 9).

Count of Sticky Note	
<b>Current Issues</b>	
Staff	8
Students	29
Community	1
<b>Grand Total</b>	<b>38</b>

**Table 9: Weaknesses – Fixes by Constituent Group**

Within that group the major complaints were about the food at Tech (Figure 6). Chartwells received overall terrible reviews from the students who complained about everything from “bad food”, to “understaffed”, to complaints about Chartwell’s staff mishandling food. Other food-related complaints were the lack of gluten-free menu options, food not properly labeled as containing food allergens, and a general lack of variety in the food options available to students. Parking was the second most complained about issue in this category by both staff and students. Each complained about the lack of parking as well as the “knee jerk” solutions to traffic in general around campus. There was no indication of conflict among the constituents regarding these complaints.



**Figure 6: Weaknesses – Current Issue**

Current	
Bad food options	1
Bad food.	1
Better food	1
Better food options	1
Broken sprinklers, lights and pavement	1
Chartwells staff is too small especially when first responders in town	1
Chartwells	2
Chartwells drops food on ground and then serves it to students	1
Drive on walk ways etc.	1
Fire Chartwells	1
Food allergens	1
Food options	1
Knee jerk solutions to speed problems	1
Lack of food options	1
Lack of options for on campus food	1
Lack of traffic planning	1
Minimize the lighting on campus at night so you can see some stars	1
More focus on student lifestyle activities. Need some fun things to want to stay	1
Need access to all specialized software anywhere on campus	1
Need remote access to TCC services	1
Need to expand TCC and Library hours.	1
Never any parking	1
New building took away great parking	1
No food variety	1
No gluten free	1
No home economics classes/cooking etc.	1
Not enough parking	2
Parking	3
Parking is an issue	1
Power plant vehicles a nuisance	1
Speed bumps	1
Stop signs	1
Too many girls on campus	1
Water quality	1
Grand Total	38

**Table 10: Weaknesses Data – Fixes by Weakness**

***Lack of Communication***

Lack of communication was identified as an institution-wide issue. This area includes the choices the school makes at every touch-point about how best to relate the mission of the institution, the resources available to each constituent, the relationship with the town of Socorro as well as with other institutions of higher

learning in the state and nationwide. Lack of communication is related to the transparency weakness, in that bad communication habits can result in the perception that the school is not caring or being indifferent.

The focus group recognized the need to improve communications campus-wide. They suggested that a communications director may be needed to help facilitate these tasks, along with managing the continuous updating of the website. The strategic initiatives that the group identified were as follows:

- **Communication office / Web presence / Social media.** Not only did many respondents indicate the website as a problem, we had a number of respondents who would say, “Tech needs X,” when in fact we already have X. Thus, we concluded that resources at both Tech and in the community could be better communicated through a sleeker and better designed website, better advertising through social media, etc. In addition to better highlighting events at Tech, we could also better highlight current community partnerships (such as the student clubs cooperating to collect 10,000 items for Puerto Seguro and other shelters in Albuquerque).
- **Tech/Community relations.** Many respondents expressed concern with the lack of interaction between Tech and the community (particularly the schools). We discussed the need for a community/school liaison, for more programs for students in Socorro area schools, and more forums for dialogue. We also discussed the need for Tech to help develop the community more (which might help with faculty and student engagement at Tech).

Statistics

Communications generated 75 (Table 11) sticky notes with participation from all constituencies. Staff was most active at 35, followed by students at 21, community at 12, community and researchers at 5 and 3 respectively.

Count of Sticky Notes	
Communication	
Researchers	3
Staff	34
Faculty	5
Students	21
Community	12
Grand Total	75

**Table 11: Weaknesses – Respondents for Communications Theme**

The “Communication Detail” chart (Figure 7) below breaks down the category by the column heading found on the original Google Groups SWOT spreadsheet. A more detailed breakdown including the original sticky note comments is found in Table 12 - Table 14.

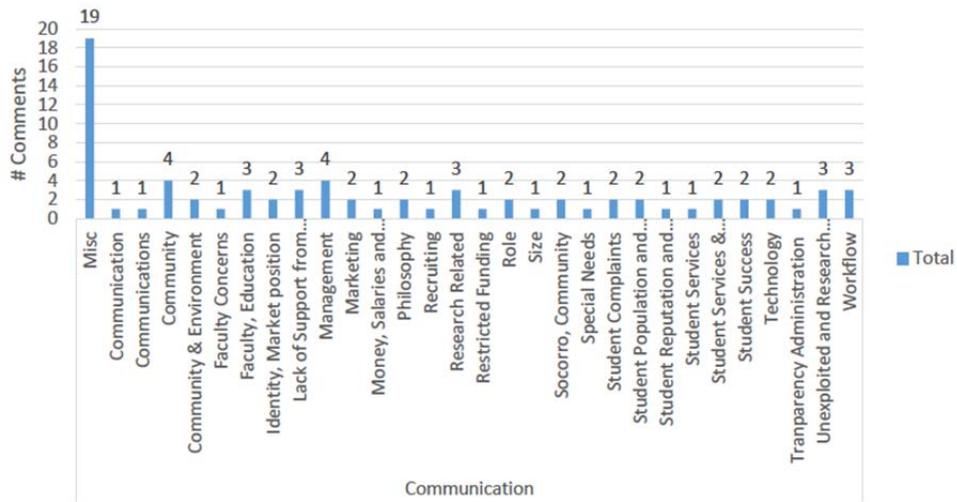


Figure 7: Weaknesses – Communication by Google Group SWOT Headings

<b>Communication</b>	
100-200 level classes focused on theory rather than implementation. Students don't know 'why' what they are learning is important. 300-400 level classes require implementation skills that most students aren't prepared for.	1
1-to-1 HS students to Tech student mentoring	1
A "leaner/meaner" mentally puts more work on staff who don't have expertise in all the rules and regulations.	1
Administration doesn't always have student best interests in mind	1
Age of policy makers. New/Younger	1
Bad advertising for prospective students	1
Bukowski	1
Career fair is limited to defense and mining	1
Change	1
Charging rental space for Macey Center for non-profit fundraising events.	1
College students don't mentor younger kids	1
Communication	2
Community-campus relations	1
Development of Communications Dept. Need website standardized to outside. Needs to be coherent.	1
Don't offer the breadth of visual arts offered at other universities	1
Entertainment options lacking	1
Focus on funding teaching rather than a focus on success after graduation unfairly lowers the education presented to students	1
Focused on studies at the expense of general student needs outside of class. Many students suffer because of this.	1
How to better prepare Socorro high school students to attend Tech	1
Lack of a grad student survival guide.	1
Lack of accessibility to campus for community uses.	1
Lack of accommodations for differently-abled students who need special services	1
Lack of care in different departments in terms of some staff and even students	1
Lack of collaboration between business units and faculty	1
Lack of communication between admin and students	1
Lack of communication between faculty, administration staff.	1
Lack of communication between staff, students and faculty	1
Lack of communications about internal problems	1
Lack of community involvement	1
Lack of community support	1
Lack of diversity in student body	1
Lack of involvement with the community in which it is the heart and soul of the community	1

**Table 12: Weaknesses – Communications Breakdown at the Stick Note Level**

<b>Communication Continued</b>	
Lack of mental health resources	1
Lack of resources for international students (ESL and instruction)	1
Living learning not available all four years	1
More community college classes	1
Need a hierarchy diagram to help students to see who they need to go to.	1
Need better communications in Tech and out	1
Need more reaching out and support for freshmen that may go on probation – so that they may return for the 2nd semester	1
Need to have multi-cultural diversity department that deals with cultural challenges and strengths for our student (to remain diverse)	1
Need way to reach out to alumni for support without hitting them up for money first thing.	1
Need way to track students that transfer out. Some are successful, change majors or only plan to attend 1st and 2nd year then transfer	1
Needs to be more “green” – “sustainable”	1
NMT is tied to its culture. We have been successful as a result but we also resist change and we need to be more flexible.	1
No goals or objectives	1
No good channels of communications between Tech and other universities in the state at the research staff level	1
No online degree	1
No Socorro/Tech synergy	1
Not enough research business around university	1
Not tutoring for all classes readily available	1
Nothing for students to do in Socorro	1
Paper forms.	1
Poorly originated around university	1
Reputation of our research facilities with outside funding agencies. We should never turn down opportunities or piss them off.	1
Research facilities, labs, library, access to corporate America	1
SGA	1
Should encourage students to be more social	1
Small town provincial approach in NMT administration in how we treat students and faculty and offerings in community	1
Social responsibility	1
Socorro is not a typical “college town”. It doesn’t benefit from the college in the way that other college towns benefit from a nearby campus. Westwood-UCLA for instance.	1
Socorro lacks diversity in good restaurants, doctors, or doctoral??	1
Some Tech professors really dislike teaching	1
Students not encouraged to work in groups.	1
Students seem to hold moral views about society and the natural world	1
Students unaware of events and trends in the outside world	1

**Table 13: Weaknesses – Communications Breakdown at the Stick Note Level continued**

Tech doesn't advertise for graduates. I found Tech but hadn't heard about it before I started	1
Tech has a non-entrepreneurial mindset compared to the other STEM schools that it wants	1
Tech lacks a focused group that tries to bring opportunities (like BAA or RFP) to research	1
The emphasis on STEM and only on STEM makes Tech a very DULL place. Lack of	1
The university rarely practices what it preaches. Why have cutting edge research when the	1
Would like to know the SWOT every year. What is Tech working on? What do we need to	1

**Table 14: Weaknesses – Communications Breakdown at the Stick Note Level continued**

**Retention of Quality People**

Lack of retention or the inability to keep quality people at Tech, was identified as a major weakness currently at Tech. This is seen in the difficulty in keeping quality faculty and staff. It is also seen in the attrition rates of students. The majority of complaints contributing to the problem of retention for staff and faculty were low pay, restricted funding and resistance to the idea of having to live in Socorro. Things that force students from Tech range from difficulties communicating with staff, oversized classes, reduced availability of classes, and lack of classrooms. Other retention issues involved the lack of opportunity for advancement at Tech, as well as the lack of employment opportunities in Socorro. This situation creates what one student called a “brain drain.”

The focus group identified the following strategic initiative to help solve the problem of retention:

- Faculty and staff concerns.\* Attracting and retaining quality faculty was a top concern for everyone. Specific concerns included prioritizing faculty hiring, addressing low faculty and staff pay, and providing more employment opportunities for faculty and staff spouses. We also included in this category requests for more professional training for administrative staff, needed updates in outdated administrative processes (e.g., the paper-based application process through Human Resources, which might limit the number of quality applicants we receive for open faculty positions), and rapid turnover in many administrative positions.

**Statistics**

Students were the most vocal in this category (Table 15) followed by staff. Student concerns, interestingly enough, centered on the low pay professors receive at Tech.

Count of Sticky Note	
<b>Retention</b>	
Staff	24
Faculty	5
Students	28
Community	4
<b>Grand Total</b>	<b>61</b>

Table 15: Weaknesses – Retention Note Counts

Comments were heard like, “embarrassingly low salaries for professors” and “we lose professors to CNM. Pathetic!” Figure 8 shows the Retention theme in relation to the original category heading found on the Google Groups SWOT spread sheet. The sticky notes for the theme follow that in Table 16 and Table 17.

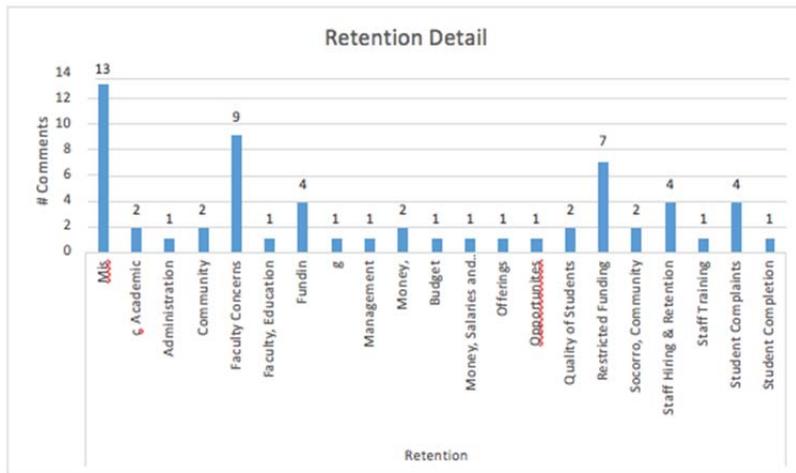


Figure 8: Weaknesses – Retention Comments

<b>Retention</b>	
Attraction/Retention of faculty/staff in direct regard to pay and salaries	1
Better pay for good staff and teachers.	1
Brain drain. Lack of opportunities in Socorro forces students to leave after graduating.	1
Changing demographics of workforce. Need to enhance staff skillsets.	1
Curriculum not broad enough	1
Embarrassing professor salaries	1
Faculty that is interested in teaching as much as research	1
Faculty who don't participate. Research teaching service	1
Gender ratio is broken	1
Hard to get homework back in timely manner	1
Having a faculty that students want to come study with.	1
High rents	1
Intro level course too big especially in high demand majors.	1
It can take students a LONG time to graduate	1
Lack of housing	1
Lack of instructors in certain departments	1
Lack of money to attract top notch academics	1
Lack of offerings in specific academic areas like foreign languages	1
Lack of professors for certain majors. Inability to keep professors that contribute to Tech's research	1
Losing staff. Losing professors. Losing grant money	1
Low faculty and staff morale	1
Low professor salaries	1
Low salaries for comparable work	1
Making things easier for people to work around their schedules could increase enrollments	1
Many students don't attend class – especially introductory ones	1
Morale	1
Need creative yet organized and well paid staff	1
Need more faculty	3
No “mastering” programs	1
Not enough faculty	1
Not enough faculty for yearly incoming students	1
Only way to get a significant raise is to leave	1
Paid for AU	1
Part time students taking a semester off can be a hassle	1

**Table 16: Weaknesses – Retention Notes**

Pay raises	1
Pay scales, the ability to retain strong academic leadership	1
Paying for more staff rather than better professors, research TAs or recruitment	1
Policy and procedures very little desk procedures to cover vacated position suddenly	1
Professor salaries are too low.	1
Professors and funding	1
Require Eng 112 even with AP	1
Research divisions don't pay competitive salaries	1
Retain and attracting faculty	1
Salaries (Includes students, staff and faculty)	1
Socorro is in the middle of nowhere. Students might prefer a more urban community.	1
Socorro is not a draw for quality faculty	1
Some class sizes are too big.	1
Some classes are only offered once every other year leading to 5 year graduation – when scholarships only last 4 years. Anxiety!	1
Some classes are too big	1
Staff and faculty need consistent ongoing training from MS office to Banner	1
Student academic space	1
Students favorite professors leave Tech	1
Tech is not good for non-traditional students	1
Tech's belief in impossible workloads does not equate to quality output. Quantity does not equal quality.	1
There is not enough highly motivated and well respected faculty	1
Trend toward basic classes taught by TAs. Need to hire faculty devoted specifically to teaching	1
We lose professors to CNM! Pathetic	1
We need better teachers and staff and better pay for the good ones	1
Workload for students is ridiculous	1
<b>Grand Total</b>	<b>61</b>

**Table 17: Weaknesses – Retention Notes continued**

**Antiquated Technology**

The lack of cutting-edge technology was identified as a major weakness at Tech. This weakness is seen in everything from Tech's website to the observation that there are too many technologies performing similar functions on campus, to the observation that so much of Tech's administration is still done by paper. Also, the available technology is considered antiquated. Falling behind the technology curve was considered to be a weakness that could become a threat that would eventually put Tech at a disadvantage in its recruitment of faculty and high-caliber students. The focus group identified the following strategic initiative as a result:

- **Technology.** Many faculty and student respondents indicated the need for better technology in general (including Distance Education opportunities) and to bring many of our paper-based administrative procedures into the electronic age. We also discussed the need to continue consolidating technology departments into one IT department.

**Statistics**

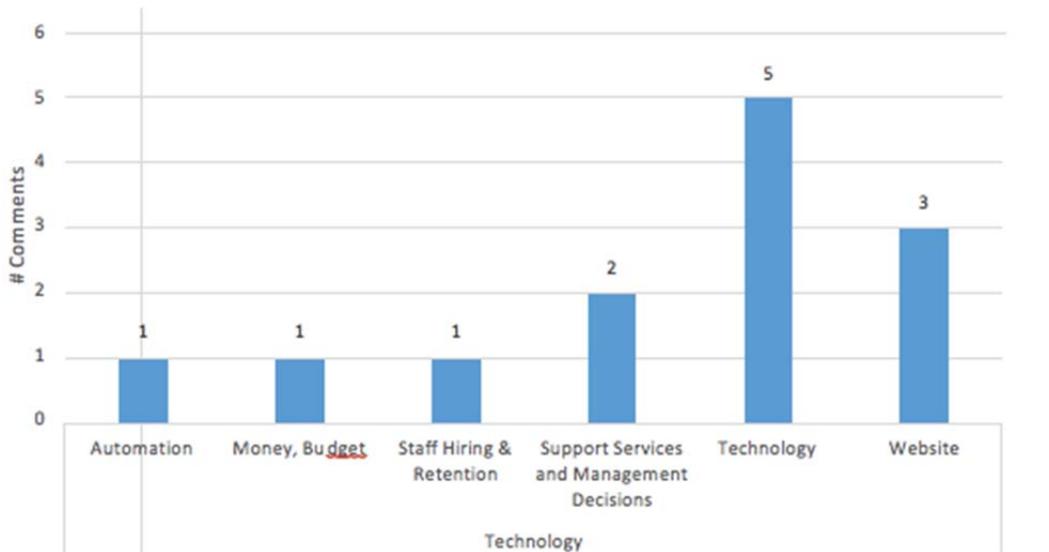
Technology was of major concern to staff in particular and then with students and researchers (Table 18).

**Sticky Notes**

<b>Technology</b>	
Researchers	2
Staff	8
Students	2
Community	1
<b>Grand Total</b>	<b>13</b>

**Table 18: Weaknesses – Technology Note Counts**

Figure 9 provides a breakdown of this theme in relation to the original column heading found in the Google Groups SWOT spread sheet.



**Figure 9: Weaknesses – Technology Comments**

There was no conflict between the constituencies regarding improving technology. One community member observed, “We need a website and technologies to communicate in ways that follow current trends.” Another, “Our website is out of date.” (Table 19)

<b>Technology</b>	
Banner	1
ISD not enough staff	1
IT funding for support and security is dangerously too low.	1
IT support and funding is low	1
Moodle	1
Need automation	1
Need to keep up with cutting edge technology. No funding for this and student body too small to pass costs onto	1
Need webmaster badly	1
Our website is out of date. We need website and technologies to communicate in ways that follow current trends.	1
Tech needs a webmaster. Staff and Departments do not have time to maintain web pages on their own	1
Technology is desired, but not funded	1
Terrible IT services.	1
Website development	1
<b>Grand Total</b>	<b>13</b>

**Table 19: Weaknesses – Technology Notes**

**Lack of Transparency**

Lack of transparency and restricted funding were seen as weaknesses on an institution-wide basis, specifically in the perception of how Tech is administered. As was pointed out during the focus group, what is considered the “administration” is dependent upon which constituent you are referring. For students, administration is seen as interactions with their professors, the Registrar, and perhaps, advisers. Faculty, on the other hand, often sees administration as their dealings with department chairs, academic affairs and Brown Hall. For department heads, it would be Brown Hall. This layering of administrative functionality is common in large organizations. However, it can create a barrier to information for all constituents, which ultimately leads to a sense of frustration and if not dealt with can lead to a sense of futility. Lack of transparency about how money is taken into the university and subsequently, how it is distributed was seen as a weakness particularly with regards to the setting of annual budgets on a departmental level. This problem could be a result of a lack of communication between higher levels of administration and the heads of departments. This issue points out the relationship between greater transparency and improved communications campus-wide.

The focus group identified the following strategic initiative:

- **Administration concerns.** \* We noted that many respondents referred to different entities when expressing concerns about administration (e.g., Academic Affairs, Restricted Funding, etc.). The concerns, however, were the same. We encountered many requests for more transparency about decisions, policies, and budgeting; requests for more “bottom-up” budget-making procedures (or, at least, more information-gathering about budget needs in departments across campus; and better communication across all parts of the university. We also identified concerns about how much of the current budget is available for faculty and staff hiring.

**Statistics**

49 transparency issues were tallied with the majority coming from staff and students as Table 20 below illustrates.

Sticky Notes	
<b>Transparency/Funding</b>	
Researchers	2
Staff	22
Faculty	5
Students	16
Community	4
<b>Grand Total</b>	<b>49</b>

Table 20: Weaknesses – Transparency Note Counts

Figure 10 shows how the original column headings in the Google Groups SWOT spreadsheet were grouped under the theme Transparency. The majority of observations pertained to Administration, Budget, and Funding. The individual sticky notes for the theme follow in Table 21 and Table 22.

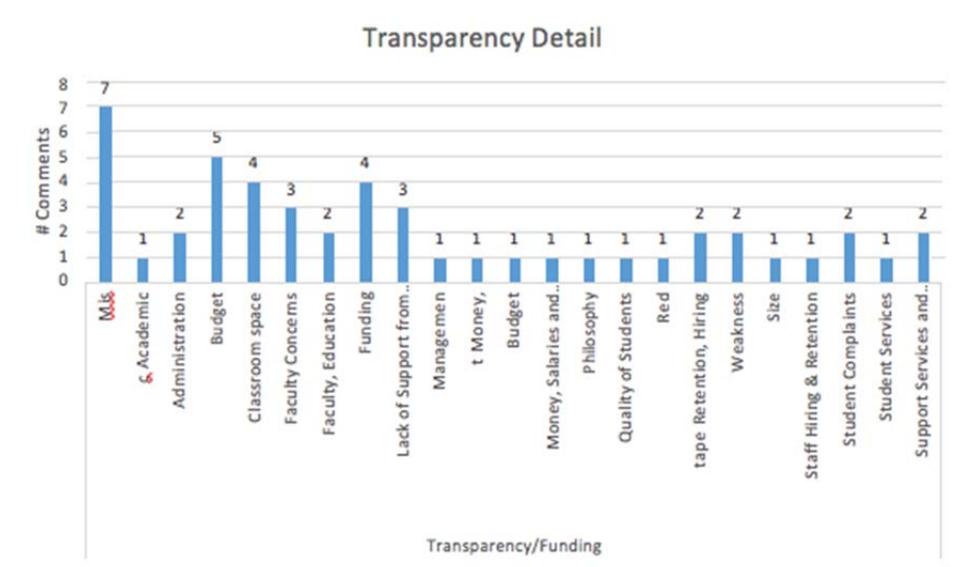


Figure 10: Weaknesses – Transparency Comments

<b>Transparency/Funding</b>	
Admin pay is very high compared to other staff and faculty	1
Antiquated facilities	1
Arrogance. Dependent on State for major funding	1
Budgeting process is uncertain	1
Classes are often only offered once a year instead of each semester	1
Classes are scheduled in conflicting time spots or unpopular time slots due to a lack of classrooms.	1
Classroom space is taken up by administration.	1
Compartmentalization, lab space, parking	1
Dropping lottery scholarships should be covered by Tech	1
Emphasis on ABET accreditation distracts from the teaching mission and encourages decisions that look good for accreditation but don't serve the students	1
Enshrined departments that are unwilling to change	1
Focus on increasing enrollment	1
Funding for new faculty and staff	1
Funding gets worse every year	1
Grant writing support	1
Hard to retain quality faculty and staff with low salaries	1
Humanity dept takes itself too seriously	1
Inadequate number of classrooms	1
Instructors that don't abuse power.	1
It took two months to receive grade audit.	1
Lab space	1
Lack of apparent interest in renewable energy research	1
Lack of classroom space. New construction should include classroom space as well as research space	1
Lack of flexibility in coursework	1
Lack of transparency in budgeting process	1
Lack of ways to advance short of changing jobs	1
Let in too many freshmen only to fail them out to keep their money	1
Losing premier faculty, lab, and research.	1
Lots of obstruction in contracts. Departments don't serve, they thwart.	1
Management.	1
Missing 4 classes should be an automatic F. Grades should be dependent on work.	1
More money to student orgs.	1
More work co-ops	1
Need for new gym, wellness center	1

**Table 21: Weaknesses – Transparency Notes**

Not enough money in budget to hire more staff	1
Not enough students. Larger Base	1
Proper training	1
Restricted state budget	1
Running out of money	1
Slow implementations of decisions	1
Spending on things that don't help Tech grow	1
Student space for extracurricular activities	1
Student-teacher ratio.	1
Tech doesn't observe all holidays.	1
Too many foreign grad students from 2nd and 3rd tier schools. They are not as good as they appear on paper.	1
Too much "red" tape with registrar	1
Too much insider benefits. Leads to haves and have nots	1
Transparency in decision making and in being able to follow where the money comes from and where it goes to	1
We have no neuroscience program. This would help many departments. Most universities have one.	1
<b>Grand Total</b>	<b>49</b>

**Table 22: Weaknesses – Transparency Notes Cont.**

*Weakness Detail by Constituent*

Students

<b>Students</b>	<b>96</b>
<b>Communication</b>	
Administration doesn't always have student best interests in mind	1
Bad advertising for prospective students	1
Bukowski	1
Career fair is limited to defense and mining	1
Entertainment options lacking	1
Focused on studies at the expense of general student needs outside of class. Many students suffer because of this.	1
Lack of a grad student survival guide.	1
Lack of care in different departments in terms of some staff and even students	1
Lack of communication between admin and students	1
Need better communications in Tech and out	1
No online degree	1
No Socorro/Tech synergy	1
Not tutoring for all classes readily available	1
SGA	1
Should encourage students to be more social	1
Socorro is not a typical "college town". It doesn't benefit from the college in the way that other college towns benefit from a nearby campus. Westwood-UCLA for instance.	1
Some Tech professors really dislike teaching	1
Students not encouraged to work in groups.	1
Tech doesn't advertise for graduates. I found Tech but hadn't heard about it before I started doing research.	1
Tech has a non-entrepreneurial mindset compared to the other STEM schools that it wants to be associated with like MIT or Cal Tech.	1
The emphasis on STEM and only on STEM makes Tech a very DULL place. Lack of cultural opportunities.	1
<b>Current</b>	
Bad food options	1
Bad food.	1
Better food	1
Better food options	1
Broken sprinklers, lights and pavement	1
Chartwells staff is too small especially when first responders in town	1
Chartwells	2
Chartwells drops food on ground and then serves it to students	1
Fire Chartwells	1

Food allergens	1
Food options	1
Lack of food options	1
Lack of options for on campus food	1
More focus on student lifestyle activities. Need some fun things to want to stay	1
Need access to all specialized software anywhere on campus	1
Need remote access to TCC services	1
Need to expand TCC and Library hours.	1
Never any parking	1
New building took away great parking	1
No food variety	1
No gluten free	1
No home economics classes/cooking etc.	1
Not enough parking	1
Parking	3
Too many girls on campus	1
Water quality	1
<b>Retention</b>	
Better pay for good staff and teachers.	1
Brain drain. Lack of opportunities in Socorro forces students to leave after graduating.	1
Curriculum not broad enough	1
Embarrassing professor salaries	1
Gender ratio is broken	1
Hard to get homework back in timely manner	1
High rents	1
Lack of housing	1
Lack of instructors in certain departments	1
Low faculty and staff morale	1
Low professor salaries	1
No “mastering” programs	1
Not enough faculty	1
Not enough faculty for yearly incoming students	1
Paying for more staff rather than better professors, research TAs or recruitment	1
Professor salaries are too low.	1
Professors and funding	1
Require Eng 112 even with AP	1
Research divisions don’t pay competitive salaries	1
Some class sizes are too big.	1
Some classes are too big	1
Students favorite professors leave Tech	1
Tech is not good for non-traditional students	1

Techentsionaltsamsor.tituenttes Cont.oes not equate to quality output. Quantity does not	1
There is not enough highly motivated and well respected faculty	1
We lose professors to CNM! Pathetic	1
We need better teachers and staff and better pay for the good ones	1
Workload for students is ridiculous	1
Technology	
Banner	1
Moodle	1
Transparency/Funding	
Admin pay is very high compared to other staff and faculty	1
Antiquated facilities	1
Classes are scheduled in conflicting time spots or unpopular time slots due to a lack of	1
Dropping lottery scholarships should be covered by Tech	1
Funding gets worse every year	1
Humanity dept takes itself too seriously	1
Instructors that donitself too serio l	
It took two months to receive grade audit.	1
Let in too many freshmen only to fail them out to keep their money	1
Losing premier faculty, lab, and research.	1
Missing 4 classes should be an automatic F. Grades should be dependent on work.	1
More money to student orgs.	1
Running out of money	1
Spending on things that don't pending on things l	
Tech doesnn things that donliday.	1
Too much nn things that dongistrar	1
Grand Total	96
<b>Transparency/Funding</b>	
Lots of obstruction in contracts. Departments dons should be dependent o l	
Too many foreign grad students from 2nd and 3rd tier schools. They are not as good as they appear on paper.	1
Grand Total	7

Staff

<b>Staff</b>	<b>96</b>
<b>Communication</b>	
Age of policy makers. New/Younger	1
Change	1
Communication	2

Community-campus relations	1
Development of Communications Dept. Need website standardized to outside. Needs to be coherent.	1
Don't offer the breadth of visual arts offered at other universities	1
Lack of communication between staff, students and faculty	1
Lack of communications about internal problems	1
Lack of community support	1
Lack of diversity in student body	1
Lack of mental health resources	1
Living learning not available all four years	1
Need a hierarchy diagram to help students to see who they need to go to.	1
Need more reaching out and support for freshmen that may go on probation – so that they may return for the 2nd semester	1
Need to have multi-cultural diversity department that deals with cultural challenges and strengths for our student (to remain diverse)	1
Need way to track students that transfer out. Some are successful, change majors or only plan to attend 1st and 2nd year then transfer	1
Needs to be more “green” – “sustainable”	1
NMT is tied to its culture. We have been successful as a result but we also resist change and we need to be more flexible.	1
No goals or objectives	1
Not enough research business around university	1
Nothing for students to do in Socorro	1
Paper forms.	1
Poorly originated around university	1
Reputation of our research facilities with outside funding agencies. We should never turn down opportunities or piss them off.	1
Research facilities, labs, library, access to corporate America	1
Small town provincial approach in NMT administration in how we treat students and faculty and offerings in community	1
Social responsibility	1
Students seem to hold moral views about society and the natural world	1
Students unaware of events and trends in the outside world	1
The university rarely practices what it preaches. Why have cutting edge research when the university won't implement it	1
To have quality bells and whistles. Keep our core values.	1
Trying to compete as a university, when Tech isn't one	1
Would like to know the SWOT every year. What is Tech working on? What do we need to improve? What have we succeeded at?	1
<b>Current</b>	
Drive on walk ways etc.	1
Knee jerk solutions to speed problems	1
Lack of traffic planning	1
Not enough parking	1
Parking is an issue	1

Power plant vehicles a nuisance	1
Speed bumps	1
Stop signs	1
Retention	
Attraction/Retention of faculty/staff in direct regard to pay and salaries	1
Changing demographics of workforce. Need to enhance staff skillsets.	1
Faculty that is interested in teaching as much as research	1
Having a faculty that students want to come study with.	1
Lack of money to attract top notch academics	1
Lack of offerings in specific academic areas like foreign languages	1
Lack of professors for certain majors. Inability to keep professors that contribute to	
Losing staff. Losing professors. Losing grant money	1
Low salaries for comparable work	1
Many students doncomparable work any students doncomparable work l	
Need more faculty	3
Only way to get a significant raise is to leave	1
Paid for AU	1
Pay raises	1
Pay scales, the ability to retain strong academic leadership	1
Policy and procedures very little desk procedures to cover vacated position	1
Retain and attracting faculty	1
Salaries (Includes students, staff and faculty)	1
Socorro is not a draw for quality faculty	1
Staff and faculty need consistent ongoing training from MS office to Banner	1
Student academic space	1
Trend toward basic classes taught by TAs. Need to hire faculty devoted specifically	1
Technology	
ISD not enough staff	1
IT support and funding is low	1
Need automation	1
Need to keep up with cutting edge technology. No funding for this and student	1
Our website is out of date. We need website and technologies to communicate in	1
Tech needs a webmaster. Staff and Departments do not have time to maintain web	1
Technology is desired, but not funded	1

Website development	1
<b>Transparency/Funding</b>	
Budgeting process is uncertain	1
Classes are often only offered once a year instead of each semester	1
Classroom space is taken up by administration.	1
Compartmentalization, lab space, parking	1
Enshrined departments that are unwilling to change	1
Focus on increasing enrollment	1
Hard to retain quality faculty and staff with low salaries	1
Lab space	1
Lack of classroom space. New construction should include classroom space as well as research space	1
Lack of flexibility in coursework	1
Lack of transparency in budgeting process	1
Lack of ways to advance short of changing jobs	1
Management.	1
Need for new gym, wellness center	1
Not enough money in budget to hire more staff	1
Not enough students. Larger Base	1
Proper training	1
Restricted state budget	1
Student space for extracurricular activities	1
Student-teacher ratio.	1
Too much insider benefits. Leads to haves and have nots	1
Transparency in decision making and in being able to follow where the money comes from and where it goes to	1
<b>Grand Total</b>	<b>96</b>

Community

<b>Community</b>	<b>22</b>
<b>Communication</b>	
100-200 level classes focused on theory rather than implementation. Students don't know 'why' what they are learning is important. 300-400 level classes require implementation skills that most students aren't prepared for.	1
1-to-1 HS students to Tech student mentoring	1
Charging rental space for Macey Center for non-profit fundraising events.	1
College students don't mentor younger kids	1
How to better prepare Socorro high school students to attend Tech	1
Lack of accessibility to campus for community uses.	1
Lack of accommodations for differently-abled students who need special services	1
Lack of community involvement	1

Lack of involvement with the community in which it is the heart and soul of the community	1
More community college classes	1
Need way to reach out to alumni for support without hitting them up for money first thing.	1
Work closer with local schools	1
<b>Current</b>	
Minimize the lighting on campus at night so you can see some stars	1
<b>Retention</b>	
Making things easier for people to work around their schedules could increase enrollments	1
Need creative yet organized and well paid staff	1
Part time students taking a semester off can be a hassle	1
Some classes are only offered once every other year leading to 5 year graduation – when scholarships only last 4 years. Anxiety!	1
<b>Technology</b>	
Need webmaster badly	1
<b>Transparency/Funding</b>	
Arrogance. Dependent on State for major funding	1
Lack of apparent interest in renewable energy research	1
More work co-ops	1
We have no neuroscience program. This would help many departments. Most universities have one.	1
<b>Grand Total</b>	<b>22</b>

Faculty

<b>Faculty</b>	<b>15</b>
<b>Communication</b>	
Focus on funding teaching rather than a focus on success after graduation unfairly lowers the education presented to students	1
Lack of collaboration between business units and faculty	1
Lack of communication between faculty, administration staff.	1
Lack of resources for international students (ESL and instruction)	1
Socorro lacks diversity in good restaurants, doctors, or doctoral??	1
<b>Retention</b>	
Faculty who don't participate. Research teaching service	1
Intro level course too big especially in high demand majors.	1
It can take students a LONG time to graduate	1
Morale	1
Socorro is in the middle of nowhere. Students might prefer a more urban community.	1
<b>Transparency/Funding</b>	

Emphasis on ABET accreditation distracts from the teaching mission and encourages decisions that look good for accreditation but don't serve the students	1
Funding for new faculty and staff	1
Grant writing support	1
Inadequate number of classrooms	1
Slow implementations of decisions	1
<b>Grand Total</b>	<b>15</b>

Researchers

<b>Researchers</b>	<b>7</b>
<b>Communication</b>	
A "leaner/meaner" mentality puts more work on staff who don't have expertise in all the rules and regulations.	1
No good channels of communications between Tech and other universities in the state at the research staff level	1
Tech lacks a focused group that tries to bring opportunities (like BAA or RFP) to research centers on campus.	1
<b>Technology</b>	
IT funding for support and security is dangerously too low.	1
Terrible IT services.	1

**Table 23: Weaknesses – Transparency Notes Cont.**

# Opportunities Analysis

## Summary

### Method

The data gathered for the SWOT analysis was obtained through town-hall sessions that took place over a week and included a diverse group of participants. These sessions broke individuals up into small groups of 4-6 persons with individuals from specific demographics given specific colored “sticky notes” to track responses. These groups were divided into the following categories: staff, students, faculty, community, and researchers. Unfortunately, there were almost no faculty comments due to conflicts in scheduling. This data was then recorded and analyzed to identify trends among groups.

### Limitations

Most of the sessions to obtain data went well and resulted in varied opinions of the participants which will add to the overall direction New Mexico Tech should take. However, since these groups had such varied perspectives and the data was so varied, they may not have been able to delve deeply into each opportunity, thereby limiting the number of agreeing sticky notes that could be placed. This situation could be due to multiple limitations including time, process, and composition of the groups.

Because the sessions were limited to an hour and were broken down into sub-sections that each group followed, each sub-section only had approximately 15 minutes to run its course. Additionally, this time frame may have forced groups to hastily choose issues that they felt were most important to them rather than taking a broader institutional-wide perspective. By forcing groups to adhere to a time table, they may not have had the time to appreciate others’ opinions and add their sticky note to the others. This issue must be taken into account when assembling and analyzing the data as it could affect the end result.

While the process allowed the group to express their opinions and agreements with others, at one point or another in every group they became stuck. During this time they mainly focused on the portion they sat closest to. Chance had the great idea of having the members of his group switch chairs and as such change their perspectives and their ability to read other comments. This move was highly successful and created even more comments adding more data and more varied opinions to the conversation. This change in process was extremely helpful but was limited to a single group, which is unfortunate. If this change in process could be implemented in future SWOT town halls, then more data could be obtained which would improve the process as a whole.

Finally, the composition of the groups had effects on the overall picture that group painted. As the composition of the groups was varied, certain individuals could be authority figures compared to others. This situation could be due to the facilitators in the room as well, which could affect the way other members answered the questions as shown by the “Hawthorne Effect<sup>2</sup>” whereby if an authority figure was present, productivity increased among individuals. In this case, the authority figures in the room could have affected the way participants responded. This effect could appear in the trends and lead to certain outliers or lack of comments whatsoever.

### Analysis

There were multiple items that seem to be at the top of people’s minds for the opportunities presented to New Mexico Tech in the future. These trends include expanded use of on-line classes, research opportunities for undergraduates, graduates and institutionally, support of students, marketing the school, and community

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<sup>2</sup> McCarney R, Warner J, Iliffe S, van Haselen R, Griffin M, Fisher P (2007). "The Hawthorne Effect: a randomized, controlled trial". *BMC Med Res Methodol* 7: 30. doi:10.1186/1471-2288-7-30. PMC 1936999. PMID 17608932.

outreach. There are other areas that people addressed, but no other groups identified these concerns which can be seen in the compiled data sheet.

There were some interesting trends among groups and the expected responses were supported by the groups you might not expect. For example, the expansion of student support was brought up more by staff than students, which shows that groups have a wide perspective and share concerns among each other, which is a good sign. The one portion where this was not true was the final town hall as there was no diversification in the group and “group think” may have taken hold and caused the participants to focus on their own issues.

### *Outliers*

Certain categories can be defined as outliers, as only one group mentioned the opportunity or few held the same belief. These responses may hold value on their own and were just not identified at the time. These categories include administrator costs, further specialization, job availability, recruiting, and website management.

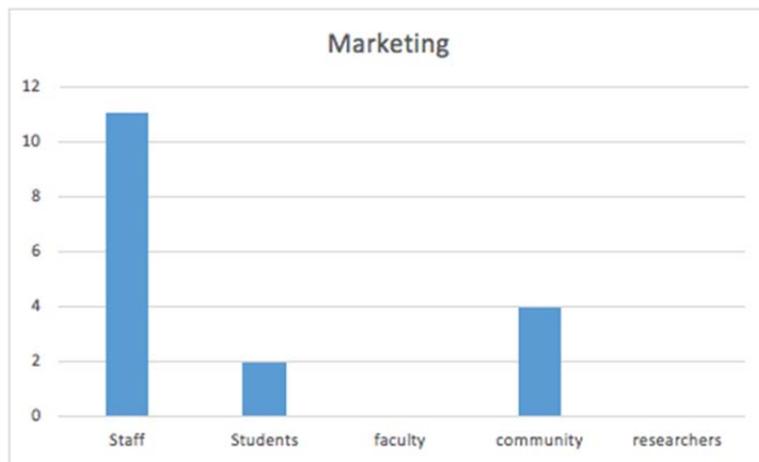
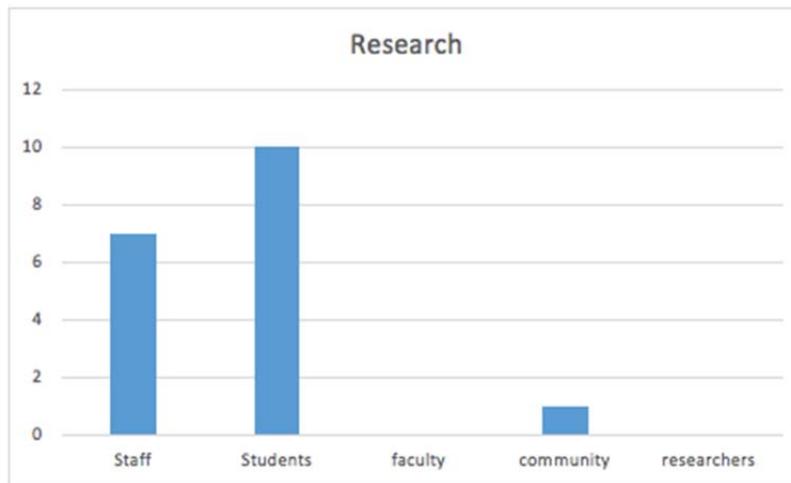
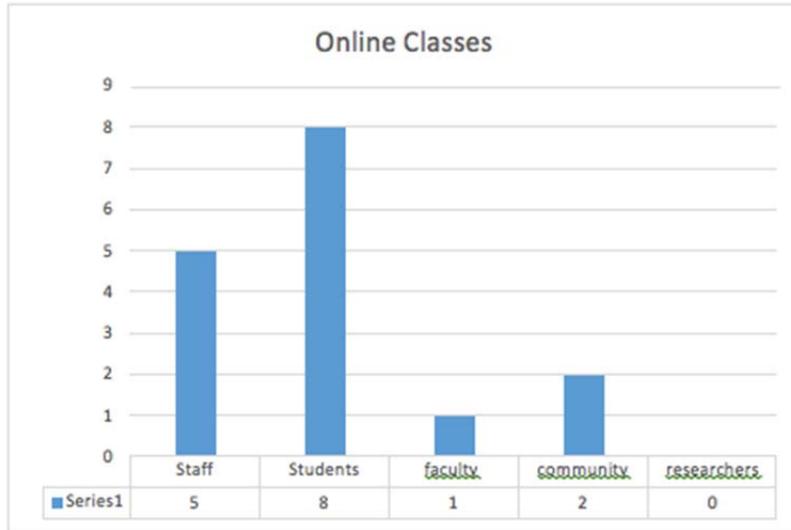
Opportunities	Staff	Students	Faculty	Community	Researchers	Overall
Admin Costs	0	3	0	0	0	3
Further Specialization	1	0	0	0	0	1
Job Availability	1	7	0	0	0	8
Recruiting	3	0	0	0	0	3
Website Management	0	0	0	1	0	1
Community Outreach	2	1	0	19	0	22

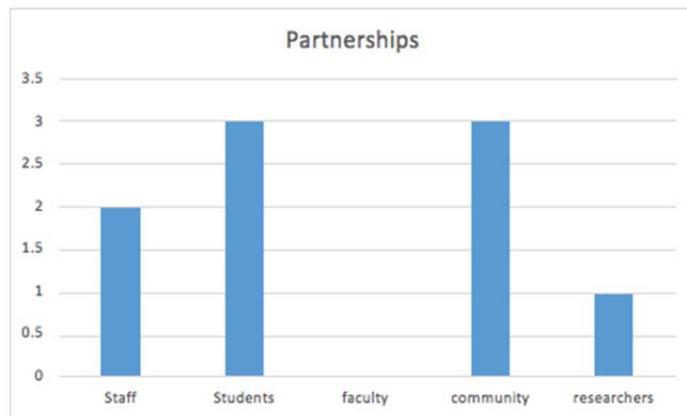
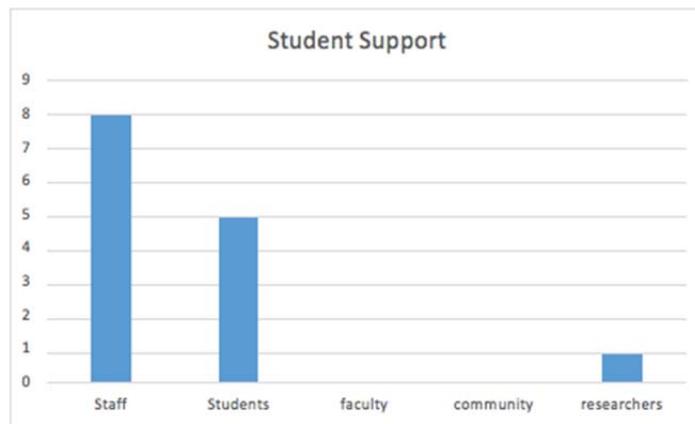
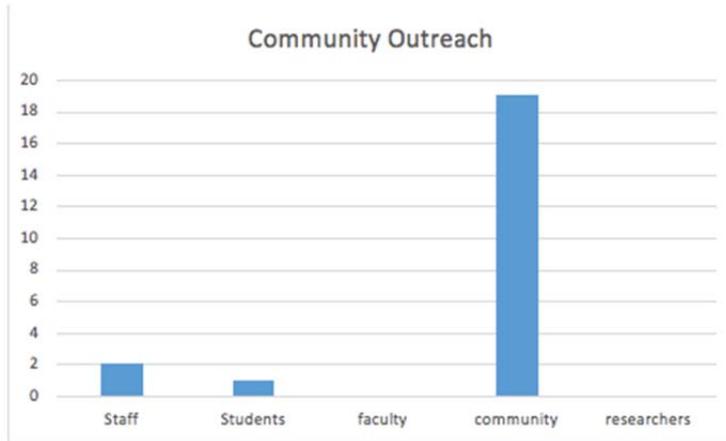
**Table 24: Opportunities – Outliers**

As shown in the table all of these categories only have one or two groups represented within each item, which could be due to the individuals’ concerns within that group taking precedence over a broader institutional-wide perspective. This situation could explain the recruiting and admin costs categories, as these have multiple votes but are limited to only one group. The two categories that only had one vote could be valid concerns that the group just did not have time to address as time was limited which forced the group to focus on other aspects. However, these concerns could very well be worth the time investigating as an opportunity. Job availability had wide agreement as an opportunity among students, but was only brought up by one staff member. This disparity could also be due to time constraints but also due to the concerns of students for employment after graduation.

An interesting outlier is the community outreach opportunity. Community outreach had the highest number of overall votes for but has extremely biased data. This issue is due to the fact that the data came from the Socorro Rotary Club meeting, which involved purely members of the community. This lack of diversification had caused “group think” to take effect and have the members concentrate their effort into what can affect the community.

While this data is needed as the Rotary Club has a different perspective than persons directly connected to the institution, it skews the overall view of the opportunities presented to New Mexico Tech.





## Threats Analysis

Below is an outline of the overall themes found for the Student, Staff and Community demographics during the town hall meetings conducted for New Mexico Tech:

- I. Staff
  - A. Administration & Faculty
    - i. A top-down management approach has caused a decline in faculty retention
    - ii. Loss of focus on university's mission
    - iii. Did not succeed in last strategic plan
  - B. Funding
    - i. A lack or uncertainty of funding
  - C. Academia
    - i. The threat of MOOCS or mass-produced college degrees
    - ii. High schools are not preparing students for college
  - D. External Forces
    - i. Pressure from state government to speed up graduation time
  - E. Location
    - i. Remote town with a lack of industry
- II. Student
  - A. Academia
    - i. The threat of MOOCS or mass-produced college degrees
    - ii. Un-established value for attaining an NMT degree
  - B. Administration & Faculty
    - i. Decline in faculty retention--losing favorite staff and professors
  - C. Funding
    - i. Lack of funding for research
    - ii. Spending funding in wrong areas that are not promoting growth
  - D. Location
    - i. Remote town with a lack of industry
    - ii. Town not supportive of university
- III. Community
  - A. Administration & Faculty
    - i. Decline in faculty retention
    - ii. Not focused on the growth of the university
  - B. Funding
    - i. Funding not allocated across the university—few people deciding where money is spent
  - C. Academia
    - i. High schools are not preparing students for college
  - D. Location
    - i. Lack of college infrastructure in the community

# Appendix: Task Force Materials

## Communication and Processes Task Force Materials

### Data and Analysis for Priority Setting

Not available

### Expected Impact

Improving the efficiency of communication and processes on campus will reduce costs and improve services, which will directly impact NMT's ability to fulfill its mission.

### Short-Term Initiatives and Initial Progress

The Argos software has been purchased for report writing and information sharing. The Human Resources department has begun updating business practices for hiring.

## Community of Scholars Task Force Materials

### Data and Analysis for Priority Setting

The following sources were evaluated in the development of this strategic priority.

- Best Practices for Access and Retention in Higher Education, by Irene Duranczyk, Jeanne Higbee, and Dana Lundell, The Center for Research on Developmental Education and Urban Literacy, 2004.
- Advancing Diversity in STEM, Paul Hill, Rose Shaw, Jan Taylor, and Brittan Hallar, Innovation in Higher Education, 2011.
- What is the Best Way to Achieve Broader Reach of Improved Practices in Higher Education, Adrianna Kezar, Innovation in Higher Education, 2011.
- A Matter of Degrees: Practices to Pathways, Center for Community College Student Engagement, 2014.
- Uncluttering the Pathway to Diploma, Katherine Mangan, The Chronicle of Higher Education, September 18, 2014.
- How Syllabi can Help Combat Sexual Assault, Nadia Dawisha and Karen Dawisha, The Chronicle of Higher Education, September 3, 2014.
- Graduation Rates by First-year GPA, Charlie Tyson, Inside Higher Ed, September 10, 2014.

### Expected Impact

As every member of the NMT community will be impacted by one or more of the objectives in this strategic area, this issue is expected to have a substantial impact on the campus.

### Short-Term Initiatives and Initial Progress

Preliminary efforts on improving new faculty training occurred in the fall of 2014, when new faculty participated in the teaching training conducted by the Center for Graduate Studies. This first training integrating faculty with new teaching assistants was quite successful, but next year's training is expected to be even better with the use of feedback to improve the training.

Clery Act compliance has already had major attention by a group called together to address the concerns for NMT. A new staff position is expected in the near term and policies have been or are being updated to address shortcomings of existing policies.

Preliminary work on keypad entrance to some building and the use of the voice system for fire alarm security has begun.

## Funding Task Force Materials

### Data and Analysis for Priority Setting

In acknowledgment of the Committee's efforts for increased funding at New Mexico Tech, our task force committee provides a brief description from group discussion ideas/suggestions. To obviate overlap, group ideas/suggestions are listed once and are not necessarily unique to a particular group.

#### Group A:

- (1) NMT as an entrepreneurial university
- (2) Focus resources on Office of Advancement
- (3) Creation of Advisory Boards to build industry relationships

#### Group B:

- (1) Increase tuition; small/public/STEM/college model unsustainable.
- (2) Develop technology transfer center
- (3) Give alumni something to cheer about –intercollegiate athletics

#### Group C:

- (1) Grant writing support – red teams
- (2) Broad campus grants
- (3) Expand distance education

The Funding Task Force utilized the above-mentioned themes under consideration and further streamlined these goals/initiatives to four key areas in need of fact-finding and further discussion/planning. In some instances where prioritization/goals required funding to initiate such as grant writing support, creation of advisory boards, expand distance education, these goals are addressed within the four areas listed below.

- Increased role for the Office of Advancement
- Increased Tuition/Expand enrollment
- Development of an Entrepreneurial University
- Intercollegiate Athletics as a potential revenue source

### CASE Study 1: The critical role of the Office of Advancement as perceived by

#### Ohio State University



The Ohio State University's peer set is no longer local or even national; the University competes with institutions around the globe for the best students, faculty, staff, and resources. Differences in cultural values and perspectives influence individuals' communication preferences, engagement interests, and giving behaviors, greatly

impacting the ways Ohio State Advancement must work. As the University becomes more dependent on global partnerships, Advancement requires new strategies and specialized resources to manage complex opportunities and potential risks.

### **Defining Advancement**

As a newer concept within the University, Advancement is ambiguous and understood differently across groups. Clearly defining Advancement, both as an organization and as a movement, is crucial to success. Advancement as a movement requires the seamless integration of communications, alumni relations, and development. Treating these functions as inextricably linked parts of a whole will allow Ohio State to maximize the full spectrum of stakeholder experience from awareness through engagement to giving. As an organization, Advancement leadership and staff must commit to building talent, infrastructure, and culture. With these fundamental priorities influencing our work, Advancement's strategic goals will be achieved as a strong team.

### **Tuition and student debt**

Nationally, the rising cost of tuition has left students and their families with significantly higher levels of personal debt. In the worst cases, students were forced to end their pursuit of a college degree simply because they could not afford it. Ohio State is a public institution committed to providing broad access to quality education. The University has demonstrated its commitment to affordability by recent freezes of in-state tuition, but future increases cannot be ruled out. Therefore, to maintain access to Ohio's flagship university, one of Advancement's fundraising priorities must be financial aid, especially for students with the greatest need.

### **Federal and state support**

Financial support for higher education, health care, and research has been and will continue to be cut at both the federal and state levels. As a research university and medical center, Ohio State faces potential decline unless it can revitalize funding in ways that do not rely on previous sources of public dollars. New partnerships with government and industry are essential to financial stability, and the University is well equipped to maximize opportunities in these areas. Advancement, as the communicating, relationship-building, and fundraising arm of Ohio State, will be important as the University develops innovative financial strategies for sustainability.

### **Giving**



The continued success of Ohio State's students, faculty, and programs relies on the goodwill of its donors, alumni, and friends. Simply put, leadership must expand philanthropic support for the University's vital priorities. Advancement will elevate giving to The Ohio State University through comprehensive fundraising strategies, focused donor relations and stewardship, increased emphasis on major and principal gifts, customized cultivation of gifts from special groups or to specific areas, and a successful \$2.5 billion campaign.

*The key message from The Ohio State University case study is that a highly functional Advancement Office can have a transformative effect on their institution.* To elaborate: The Office of

Advancement at NMT stands ready to take on many of the challenges highlighted by Ohio State and other universities. As demonstrated below in the brief five-year overview, this department averages \$4 raised for every \$1 allotted by the NMT administrative budget. By any measure one chooses, few revenue and funding vehicles work as effectively with as much return on investment (ROI) as this underfunded team. The Task Force recognizes this component to NMT revenue generation as critical and strongly recommends an enhanced strategic position for the Advancement Office in the Strategic Plan.

Year	Funds Raised	Budget	Positive Percent Return on Investment
2009-2010	\$582,045.79	\$203,412	286.14%
2010-2011	\$1,349,579.74	\$437,740	308.31%
2011-2012	\$1,014,738.26	\$343,518	295.40%
2012-2013	\$763,156.21	\$308,497	247.38%
2013-2014	\$2,006,524.53	\$400,778	500.66%
<b>Total</b>	<b>\$5,716,044.53</b>		

**Table 25: Return on Investment**

## 2. Tuition



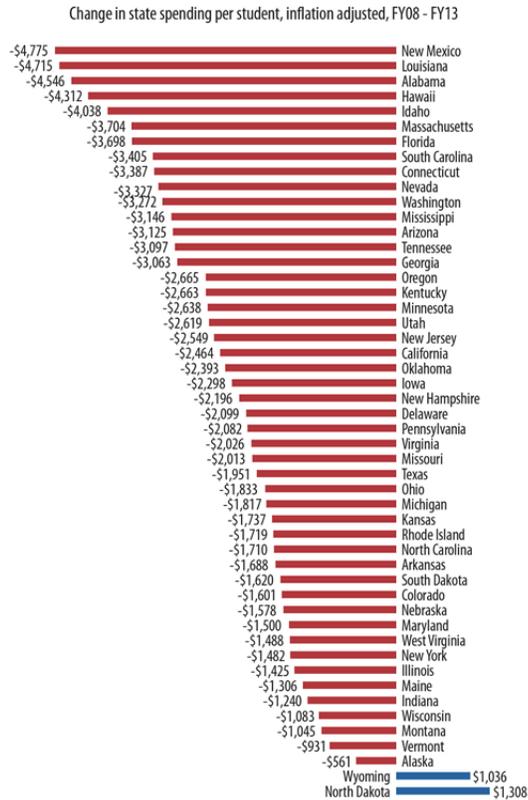
Discussion of tuition increases comes with various entanglements that prove politically unfavorable for college administrators and presidents to promote. However, with rising costs to attract and retain strong faculty, NMT has lost and continues to lose experienced faculty with strong research programs and proven records of competitive funding. As pointed out in “The Future of Universities” (1).

“On one front, a funding crisis has created a shortfall that the universities’ brightest brains are struggling to solve. Institutions’ costs are rising, owing to pricey investments in technology, teachers’ salaries and galloping administrative costs. That comes as governments conclude that they can no longer afford to subsidize universities as generously as they used to. American colleges, in particular, are under pressure: some analysts predict mass bankruptcies within two decades.”

States have cut higher education funding deeply. Comparing current 2013 fiscal year spending with spending in fiscal year 2008, the fiscal year just prior to the recession, and adjusting for enrollment and inflation, we find that:

- State spending nationwide is down \$2,353 or 28 percent.
- The states that made the largest cuts by percentage are Arizona and New Hampshire; however, as shown in Figure 11, in absolute dollars, the single greatest cuts in the nation occurred in New Mexico.
- 96 percent of New Mexico cuts are borne by four-year schools rather than community colleges.
- Furthermore, whereas New Hampshire and Arizona responded to draconian cuts by increasing their tuition by 37 percent and 78 percent, respectively, the tuition at NMT increased by less than 20 percent during this period.

### States Have Cut Higher Education Funding Deeply in Recent Years



**Figure 11: State Higher Education Cuts**

Source: CBPP calculations using data from Illinois State University’s annual Grapevine

## Tuition Has Increased Sharply at Public Colleges and Universities.

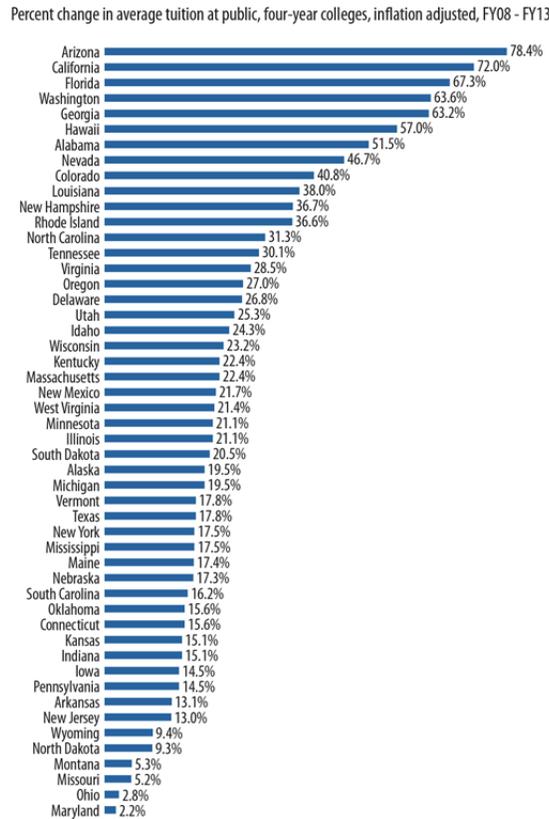


Figure 12: Average Increased State TuitionSource: College Board  
Students Are Shouldering a Larger Share of the Cost of Funding at Public Higher Education

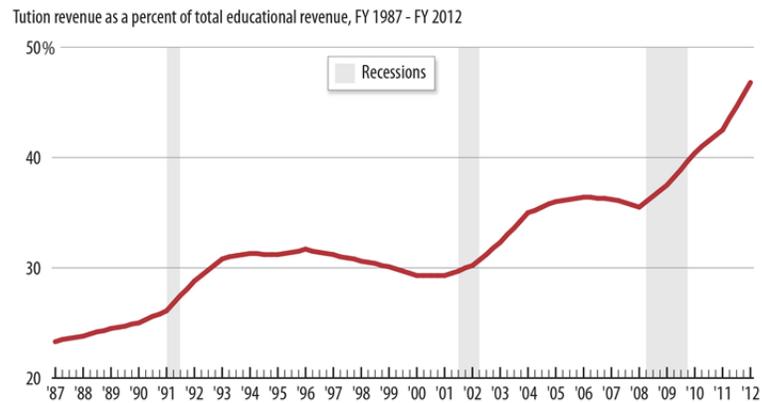


Figure 13: Tuition as Source of Education Funding

Note: Total educational revenue combines net tuition with state and local appropriations for higher education, excluding medical students, and represents the vast majority of instructional funding. Source: State Higher Education Financing FY2012, State Higher Education Executive Officers Association.

## Case Study 2. Drexel University (Private) Philadelphia’s Science and Engineering University

**Ranking:** #97 National University (2014)  
**Undergraduates:** 11,901 (2014)  
**Acceptance rate:** 74.90% (2014)  
**Tuition:** \$37,505 USD (2014)  
**Founder:** Anthony Joseph Drexel

February 24, 2014 □ By Matt Erickson

## **BALANCING DREXEL'S BUDGET: A Q&A WITH HELEN BOWMAN**

Ever had an idea for how to make things run more smoothly and efficiently at Drexel? Well, now's the time to share it.

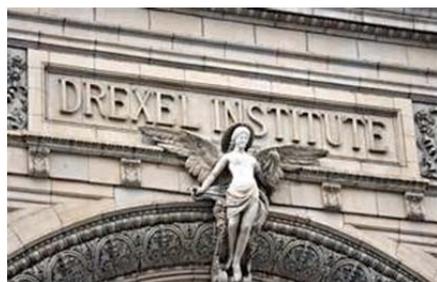
Earlier this month, in a message to faculty and professional staff, President John Fry asked for ideas for reducing the University's expenses or increasing its revenue.

Receiving those suggestions is Helen Bowman, Drexel's senior vice president for finance. *DrexelNow* talked with Bowman to address some questions that faculty and professional staff may have.

**Why are you asking for these ideas?** Drexel must maintain its momentum and implement the priorities outlined in its [strategic plan](#). **But we can't continue to raise tuition and fees at historical levels, as we are already one of the country's most expensive universities. And our moderately sized endowment makes us virtually dependent on tuition revenue.**

**All that means is that by fiscal year 2015, we need to close a sizable projected gap in the budget. That can be accomplished through a combination of increased revenues and reduced expenses.** And the best people to help us accomplish that are the colleagues most familiar with the University's programs and operations: our faculty and professional staff.

**What kinds of suggestions are you asking for?**



**We want ideas of all sizes, big or small, from every corner of Drexel. We want our faculty and professional staff to be involved with this process, and we will welcome any suggestions for cutting costs or boosting revenue.**

The [on-line form](#) is completely anonymous, and suggestions will be seen only by me, so there's no need to hold back on sharing bold ideas. But small suggestions are welcome, too. If we can tackle this issue collaboratively, with a broad base of input — as we've done successfully in many areas in recent years — we can produce innovative ideas to help us meet this challenge and keep Drexel on the road to continued success.

According to the Drexel Strategic Plan, this university sees its way out of financial difficulty by increased enrollment, expansion of the curricula from STEM to STEAM whereby Arts and Music degrees may well become integrated. An expanded on-line program is also envisioned as a revenue generating strategy.

Our bullet-point message from the Drexel University case in comparison to NMT is that Drexel University has very little price elasticity in its tuition, whereas NMT has plenty of elasticity in its value to turn “the tuition” lever dramatically before reaching a point of diminishing marginal returns. This fact brings us to a fundamental question:

**What kind of College is New Mexico Tech?**

Why does NMT offer tuition at a lower cost than UNM and NMSU? Especially when the cost to provide STEM degrees is higher than for Humanities and Social Science degrees?

NMT is consistently rated as a “Best Buy” in Kiplinger’s Reports. However, Kiplinger has two figures, cost and quality. NMT has quality, but we traditionally sell ourselves on cost. This is an unsustainable model given the cuts in state funding. The state reduction in funding at a time when enrollment was increasing has put NMT quality in jeopardy.



By Newsweek Staff

		ACT 25th-75th percentile	SAT 25th-75th percentile	% ACCEPTED	YIELD*
1	COOPER UNION, NY	27-31	1260-1490	9	73%
2	POMONA COLLEGE, CA	30-34	1390-1560	16	39%
3	CALIFORNIA INSTITUTE OF TECHNOLOGY	33-35	1470-1560	17	34%
4	WILLIAMS COLLEGE, MA	29-33	1320-1520	17	42%
5	AMHERST COLLEGE, MA	29-33	1320-1520	15	38%
6	BOWDOIN COLLEGE, ME	29-33	1300-1510	19	44%
7	CLAREMONT MCKENNA COLLEGE, CA	N/A	1300-1500	19	40%
8	SWARTHMORE COLLEGE, PA	28-33	1350-1520	16	39%
9	MIDDLEBURY COLLEGE, VT	29-33	1300-1490	21	44%
10	COLLEGE OF THE OZARKS, MO	20-25	970-1210	12	87%
11	WASHINGTON AND LEE UNIVERSITY, VA	28-31	1320-1480	17	42%
12	HARVEY MUDD COLLEGE, CA	N/A	1430-1560	28	28%
13	HAVERFORD COLLEGE, PA	N/A	1300-1480	27	37%
14	DAVIDSON COLLEGE, NC	28-32	1270-1458	26	43%
15	VASSAR COLLEGE, NY	29-32	1300-1460	25	35%
16	BEREA COLLEGE, KY	21-25	970-1210	22	78%
17	WELLESLEY COLLEGE, MA	28-32	1270-1465	36	41%
18	CARLETON COLLEGE, MN	29-33	1310-1490	27	36%
19	NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY	23-29	1080-1340	35	77%
20	BARNARD COLLEGE, NY	28-31	1250-1440	28	47%
21	COLORADO COLLEGE	28-32	1230-1400	26	40%
22	HAMILTON COLLEGE, NY	28-31	1300-1450	28	32%
23	COLBY COLLEGE, ME	28-31	1280-1430	31	32%
24	SOKA UNIVERSITY OF AMERICA, CA	N/A	956-1378	52	47%
25	GRINNELL COLLEGE, IA	28-32	1230-1450	43	34%

\*PERCENTAGE OF ACCEPTED STUDENTS WHO ENROLL

**Figure 14: 25 Most Desirable Small Schools**

**The take-away message:** The company we keep shows us in the top 25 most desirable small schools and makes NO MENTION of cost. However, NMT’s position remains in jeopardy; we cannot sustain the past level of performance on ever-decreasing budgets.

### Budget & Revenue Comparisons

Let's look at the numbers and compare NMT's overall revenue budget with in-state research universities along with comparably sized smaller colleges and STEM-focused universities. As shown in Figure 15, NMT's tuition revenue comprises 6 percent of the overall budget. The 15 percent state appropriations represents a declining figure as prior years show support upwards of 20 percent or better. Is a 6 percent tuition revenue component a sustainable revenue model for NMT? Given its smaller enrollment and 13:1 student to faculty ratio, the college is in closer alignment to a smaller liberal arts college where 8:1 ratios typically occur.

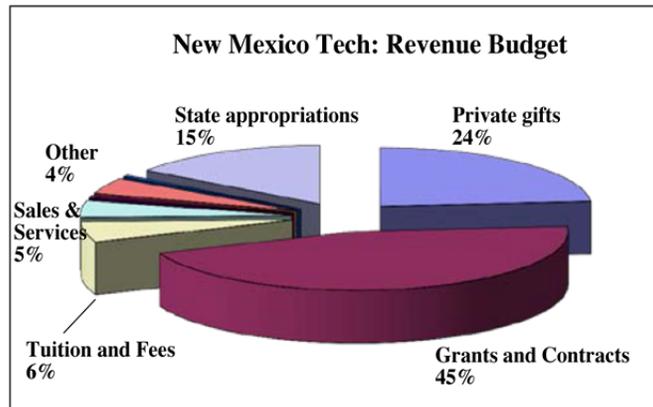
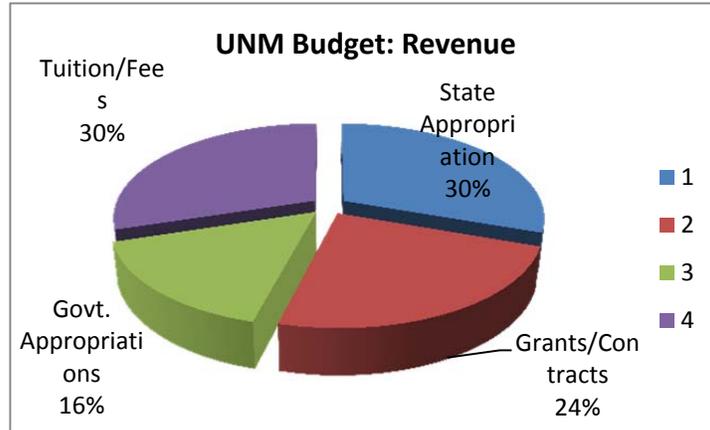


Figure 15: NMT Revenue Budget

**Tuition:** in-state \$5,714 / out-of-state \$17,073 (2014)

- Student: Faculty ratio 13:1 (2014)
- Student: Faculty ratio 12:1 (2013)
- Student: Faculty ratio 11:1 (2012)
- Student: Faculty ratio 11:1 (2011)
- Student: Faculty ratio 11:1 (2010)
- Student: Faculty ratio 11:1 (2009)
- Student: Faculty ratio 11:1 (2008)
- Student: Faculty ratio 12:1 (2007)
- Student: Faculty ratio 11:1 (2006)
- Student: Faculty ratio 12:1 (2005)
- Student: Faculty ratio 12:1 (2004)
- Student: Faculty ratio 11:1 (2003)

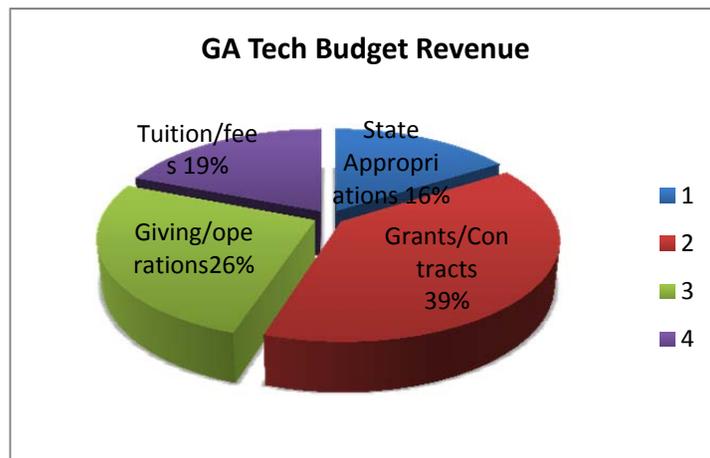
Whereas UNM displays a match between tuition and state appropriations, colleges such as Colorado School of Mines (CSM) derive 71 percent of its revenue from tuition. Michigan Tech a comparably sized STEM institution also draws 71 percent of its revenue from tuition. Also, Michigan Tech derives three times the state revenue from tuition, while CSM derives a miniscule reaction (less than 3 -percent) from the state of Colorado. **Why does NMT derive less than half as much revenue from tuition as from NM State appropriations?** A Case study of CSM and its challenges with Colorado HED and ultimate success in overcoming the state financial crisis is presented below.



**Figure 16: UNM Revenue Budget**

Tuition: in-state \$7,274 / out-of-state \$11,568 (2014)

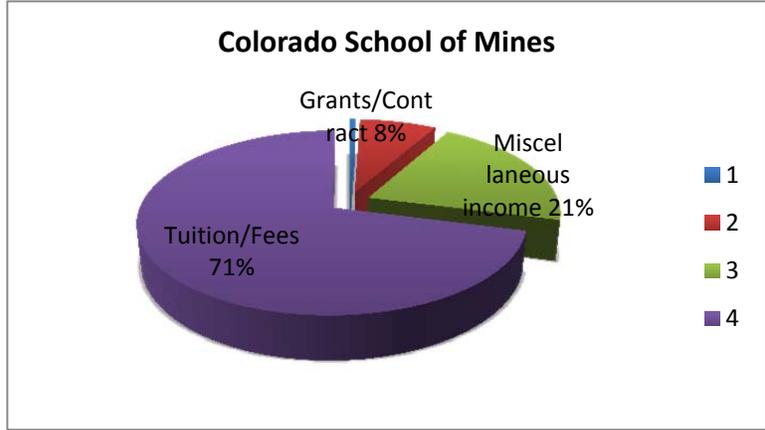
Student: Faculty ratio **23:1**



**Figure 17: GA Tech Revenue Budget**

**Tuition:** in-state \$10,650 / out-of-state \$29,954 (2014)

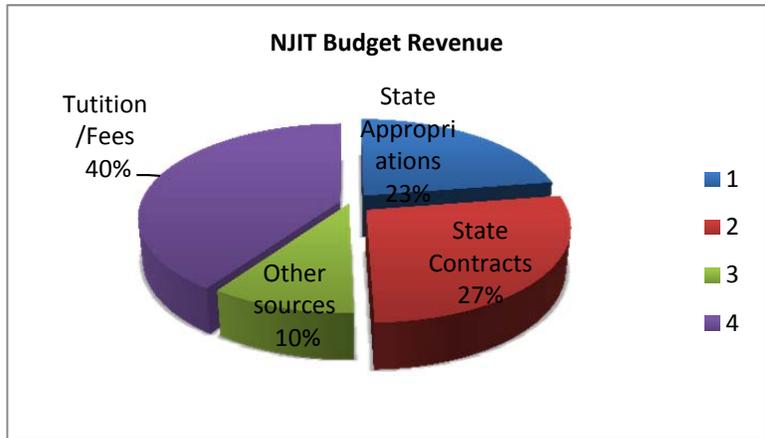
Student: Faculty ratio **24:1**



**Figure 18: Colorado School of Mines Revenue Budget**

**Tuition:** in-state \$16,485 / out-of-state \$32,415 (2014)

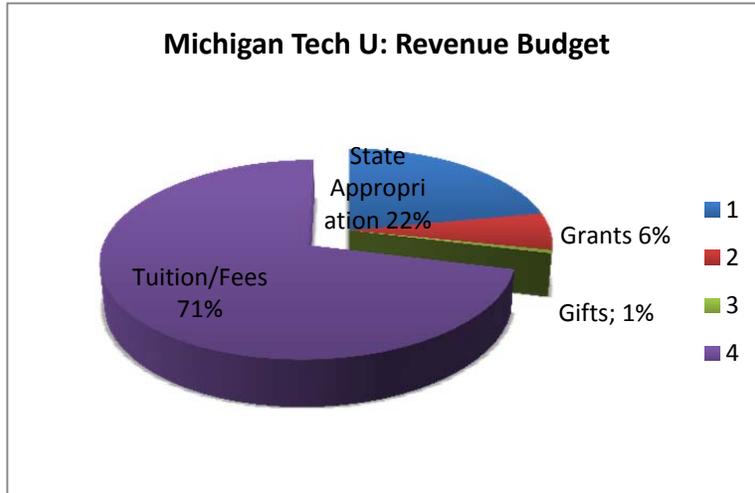
Student: Faculty ratio **19:1**



**Figure 19: NJIT Revenue Budget**

**Tuition:** in-state \$15,140 / out-of-state \$27,840 (2014)

Student: Faculty ratio **19:1**



**Figure 20: MTU Revenue Budget**

**Tuition:** in-state \$13,728 / out-of-state \$28,608 (2014)

Student: Faculty ratio **13:1**

### **Case Study 3. Colorado School of Mines and Declining State Appropriations**

#### **Subject - Fiscal Year 2011 Operating Budget**

“With the national economy beginning to show signs of stress in early 2008, many states quickly began forecasting their own financial pressures. Colorado’s economists reflected Colorado’s first sign of economic stress in December 2008. As with many states, throughout 2009 and continuing today, Colorado’s economic projections reflect a loss of state revenue, primarily from loss of personal income tax and capital gains tax. With higher education in Colorado being one of only a few unrestricted budgets for the state (in addition to the department of corrections and health care), higher education was and continues to be a source of funds to resolve the state’s budget deficit.

In fiscal year 2009, the state initially funded all higher education institutions in the amount of \$706 million. With the looming budget deficit, the higher education budget was reduced in fiscal year 2009 and again in 2010. The state has used, however, federal State Fiscal Stabilization Funds (SFSF) to “keep higher education whole” for those two years. The state’s use of SFSF for higher education will run out in fiscal year 2011, which will leave only state general fund to support higher education. However, the state is required pursuant to the SFSF rules, to keep higher education funded at the fiscal year 2006 level through fiscal year 2011.

With a current projected state budget deficit of over \$1.5 billion in fiscal year 2012, the state is anticipating further higher education cuts in fiscal year 2012 by at least \$300 million from the fiscal year 2011 level.



**The Colorado School of Mines' portion of the overall budget is approximately 3%.** For the fiscal year that we are just ending, fiscal year 2010, we are being funded with both state funds and SFSF at a level of \$23.3 million. With SFSF being removed next year, we anticipate to be funded by the state in fiscal year 2011 at \$18.8 million. ***IF*** the state projections remain, likely best-case scenario for the School would be a reduction of another \$13.2 million in fiscal year 2012 to \$5.5 million. Below is a chart that depicts state (and SFSF) funding for Mines over the past ten years and what is predicted over the next few years”

Since 2011, CSM implemented 10 percent tuition increases on an annual basis. Revenue increases for 2011 alone resulted in \$7.8 million, due to the tuition increases and assumes an incoming class of freshman and transfers of 950 students and 58 new graduate students. As a result of this annual increase, CMS finds itself in good financial shape with a growing student body and new faculty hires to accommodate the increased demand in degrees offered.

**The take-away message:** At least in part due to a history of New Mexico cutting state support by an amount equal to any tuition increases exceeding a state-specified limit, NMT has feared dramatic tuition increases. The data above shows that we are very low in tuition by various measures and we must consider increasing tuition dramatically to sustain our quality as we grow. Tuition increases worked for CSM, they can work for NMT.

#### **MOOC Discussion:**

The threat of MOOCs is real. If one considers a generic freshman physics/chemistry or mathematics course, there is little reason not to take such a course as a distance offering from a more prestigious institution than Tech (e.g., Stanford, MIT, Harvard). We again reference the quote by Jim Lerman:

**The most vulnerable, according to Jim Lerman of Kean University in New Jersey, are the “middle-tier institutions, which produce America’s teachers, middle managers and administrators”. They could be replaced in greater part by on-line courses, he suggests....”**

Please note: the quote above does NOT mention that lab sciences and STEM research are at risk. The threat of MOOCs in higher education is analogous to the threat of off-shoring in industry. If a job can be done as well or better off-shore, American industries cannot compete. However the fix for American industry and the fix for New Mexico Tech are similar. We need to offer something that CANNOT be offered via distance education, and we already do. What Tech offers to all students is meaningful, hands-on, research. To the extent that we can protect and strengthen our research (and advanced laboratory coursework) we can protect ourselves from MOOCs, and we can provide a product that students are willing to pay for. In fact, we can leverage MOOCs and use them to provide pure academic content from other institutions, while our faculty focus on the hands-on course components.

### Expected Impact

Effective budget planning affects all institutions and making funding one of our strategic priorities ensures that we properly raise and allocate funding to carry out our mission and make our vision achievable.

### Short Term Initiatives and Initial Progress

The Center for Leadership in Technology Commercialization has already begun to integrate faculty and students in commercialization.

## Quality Growth Task Force Materials

### Data and Analysis for Priority Setting

The intention of the Quality Growth priority is to address how much the institution should grow, what resources will be needed, and to ensure that growth does not come at the expense of quality. This priority is closely aligned with the other priorities, particularly Transdisciplinary (which is a primary strategy for growth of the graduate program), Technology and Funding (these contribute largely to solving the resource problem), and Student Success (which includes key objectives for growth and improvement of the undergraduate program).

Growth in and of itself will be a natural occurrence as we fulfill our vision and mission to advance science, drive innovation, increase transdisciplinary collaborations, expand humanity's knowledge, and advance economic development. However, growth that is unplanned or under-resourced will be directly contrary to NMT's vision and mission, as it diminishes the quality of education we provide, shifts resources away from research, and strains our sense of community.

The Quality Growth priority is an institution-wide priority. While the goals focus primarily on the areas of enrollment and research, we recognize that essentially all departments from all divisions will be affected as these two areas grow. This strategic priority seeks to address the subsequent needs and issues that will arise campus-wide from the projected growth.

It is largely accepted that Tech is a premier research and teaching university with a competitive advantage in STEM. Feedback from the initial Town Hall SWOT Analysis indicated a wide-spread concern that Tech's undergraduate enrollment growth is compromising the quality of education and pulling resources away from our research mission. Since 2010, enrollment has grown from 1,642 degree-seeking students to 1,886 degree-seeking students, and Fall 2014 enrollment is an all-time high of 2,127 students. In 2010, the size of the freshman class shot up by an unexpected 30 percent and has hovered at that level ever since. Since 2011 NMT's freshmen retention rate (78.8 percent) has increased by more than 2 percent per year and is the highest it's been in 30 years. If this trend continues the retention rate will be 83 percent in three years.

During this growth, budgets have remained mostly flat. In some areas the quality of academic and student services has decreased to the point of being only reasonably acceptable. Specific issues such as large class sizes and insufficient advising support were mentioned in the Town Hall forums. As the SPC sifted through the comments, it became clear that the campus community would support this type of enrollment growth *only as long as it did not come at the expense of quality*. The human and fiscal resources to support the growth will be absolutely necessary as we go forward. The strategic priority of Quality Growth was established to capture the institution's growth goals for the next three to five years

while documenting and planning for the resources that will be required at every level to support that growth.

### **Expected Impact**

By focusing on growing intentionally, we expect to better balance budget requirements with incoming student population and the need for resources to support their success.

### **Short-Term Initiatives and Initial Progress**

The Mechanical Engineering Department has been working on its PhD program proposal and the Biology Department has been discussing the requirements for its proposal.

In collaboration with EducationUSA, the Center for Graduate Studies recruited in seven Central American countries (Guatemala, Honduras, El Salvador, Costa Rica, Nicaragua, Panama, Dominican Republic) this fall, where funding is available for students to come and study for graduate degrees. The CGS is in the process of negotiating an MOU with HonduFuturo, the national funding agency for the Honduras, to be a preferred school for students wanting graduate degrees and qualifying for HonduFuturo funding. After that agreement is completed, the CGS will pursue other such agreements.

## Appendix: Student Success Task Force Materials

### **Data and Analysis for Priority Setting**

The student success task force considered the impact that recent education-oriented grants have had on student success. In addition, the requirements for ABET and HLC accreditation were considered to set goals and objectives.

### **Expected Impact**

This priority will have significant impact on students, which are central to our mission and vision, which makes this essential to our future.

### **Short-Term Initiatives and Initial Progress**

Some of the initiatives described in this strategic priority are already under way, e.g., updating assessment and evaluation of integration of successful, grant-related developments in our normal operations.

The Office for Student Success has already provided the following advising services: new/transfer students are supported through their first registration, student in the Living Learning Community program are supported through their first year and beyond, making Banner changes of advisor, minor, and major. The advising support through the Living Learning Community program is currently supporting approximately 125 students.

## **Technology Task Force Materials**

### **Data and Analysis for Priority Setting**

The Technology Task Force evaluated the goals as developed by the Strategic Planning Committee as well as other issues brought forth by various constituencies through the SWOT analysis.

Members of the task force evaluated technology issues specific to technology as a strategic priority as well as technology as a catalyst to the efforts of other strategic priorities. This effort required some members of this task force to be members of the other task forces.

Clearly identified by many constituencies in the SWOT analysis was the need to address technology. Those needs that were strategically centered on the foundational aspects of technology are covered by the Technology Task Force. Those technology needs that arose out of other strategic priorities are included in the scope of other task forces.

The technology priority has a large institution-wide groundswell of support directed toward consolidation, streamlining and reordering the technology model as practiced. Acted on in an orderly fashion should lead toward the attainment of the technology goals within the five-year time horizon of the strategic plan.

The technology priorities are institution-wide both in implementation and ramification and the proper application of technology is instrumental in creating a competitive advantage

Currently, the application of technology is very decentralized. That approach creates a large number of diffuse initiatives, each of which consumes funding, does not integrate into a unified whole and reduces effectiveness. A more centralized approach, with goals established at the institution-level can focus resources and generate the kind of infrastructure that can be utilized by all for a defined Institute mission.

However, the strategic application of technology for the advancement of the mission of New Mexico Tech is not a static endeavor. It is important that an Institute-wide group oversees the task of bringing technology challenges forward, processing those challenges and producing concrete solutions. The general mission of the group is to provide the appropriate technological planning to a constituency to forward the mission.

### **Expected Impact**

The integration and Institute-wide prioritization and funding of technology will reduce costs, while increasing effectiveness and productivity.

### **Short Term Initiatives and Initial Progress**

The CTC has already been initiated.

## **Transdisciplinary Programs Task Force Materials**

Our transdisciplinary program analysis started with the historical interdisciplinary research that has been carried out on campus. From there we analyzed the current and likely future trends for funding and research challenges. This led us to the transdisciplinary focus with the analysis presented here.

### **Data and Analysis for Priority Setting**

#### *Current Situation: Topical Analysis*

Based on discussion of the challenges and issues related to developing transdisciplinary education and research programs, the task force recognized the following areas for exploration, data collection, and development. Each of these has been explored and is briefly outlined below.

- Market analysis for transdisciplinary certificates/degrees (ug & grad)

- Grant funding for inter/transdisciplinary research
- Grant support offices
- Existing templates for academic programs

Each of these areas was considered, with data collected as appropriate for each topic.

### Program Requirements Analysis

#### Data and analysis

From Johns Hopkins' B.S. in Biomedical Engineering, we have adapted the following requirements for transdisciplinary education programs. By completion, students will demonstrate the ability to:

- Apply knowledge of mathematics, science, and engineering.
- Design and conduct experiments, as well as to analyze and interpret data.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Function on multidisciplinary teams.
- Identify, formulate, and solve science and/or engineering problems.
- Display an understanding of professional and ethical responsibility.
- Communicate effectively.
- Acquire the broad education necessary to understand the impact of science and engineering solutions in a global, economic, environmental, and societal context.
- Recognize the need for, and an ability to engage in life-long learning.
- Exhibit knowledge of contemporary issues.
- Use the techniques, skills and modern science and engineering tools necessary for professional practice.

### Grant Funding

Many funding opportunities that can support transdisciplinary research and education are available under headings or keywords including interdisciplinary, multidisciplinary, cross-cutting, collaborative, integrative, and synthesis.

Funding opportunities for interdisciplinary research has been growing. The National Science Foundation (NSF) has added numerous opportunities for interdisciplinary research including funding for CAREER awards and Major Research Instrumentation. Indeed, NSF has added Interdisciplinary Research as a high priority with a number of specific solicitations. The NSF has integrated this support even inside of disciplines. For example, the Division of Physics has a program called "Education and Interdisciplinary Research" and the Social, Behavioral, and Economic Sciences has a program called "Interdisciplinary Research in Hazards and Disasters."

In addition, in 2012 NSF added a crosscutting, NSF-wide program called "Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)", but it is not clear whether this is being funded in 2014. Finally, NSF's site on Interdisciplinary Research lists the following mechanisms for funding: solicited interdisciplinary programs, areas of national importance, center competitions, unsolicited interdisciplinary proposals, education and training, and workshops/ conferences/ symposiums.

The NSF's self-proclaimed flagship interdisciplinary training program is the "Integrative Graduate Education and Research Traineeship" (IGERT). In addition to the many interdisciplinary opportunities, NSF also has many pages of listings that include transdisciplinary in the description, e.g., in the Division of Chemistry the "EPS/NSF Networks for Characterizing Chemical Life Cycle". Finally, NSF lists one explicitly transdisciplinary funding opportunity in the Division of Integrative Organismal Systems.

The Department of Education also has funding opportunities for transdisciplinary education including the "Predoctoral Interdisciplinary Research Training Program in the Education Science"; indeed our experience with Department of Education has been across multiple disciplines.

The Grants.gov site currently lists 1,984 open funding opportunities with "interdisciplinary" as a keyword from agencies including the Bureau of Reclamation, Bureau of Land Management, Fish and Wildlife Service, International Narcotics and Law Enforcement Affairs, National Institutes of Health, National Institute of Standards and Technology, Department of the Army - Corps of Engineers, on just the first page of opportunities. When we add the restriction to include "graduate" as well, we still have 114 open opportunities. Under "multidisciplinary" we find another 182 opportunities including National Institutes of Health, Department of the Army, National Science Foundation, and National Park Service. The number that is explicitly "transdisciplinary" is much smaller (9), but there are opportunities from the National Institutes of Health and from the National Institute of Food and Agriculture.

Some private foundations focus on crosscutting themes. For example, the Morris Family Foundation focuses on innovation in interdisciplinary education, and the James S. McDonnell Foundation supports interdisciplinary science approaches to a select list of topics.

#### Grant Support

Some institutions provide grant proposal development support, e.g., Michigan Tech's Sponsored Program Office advertises that they will assist with proposal development to create competitive proposals.

A few practices with specific support that should be considered for advancing the development of grant funding are:

- San Jose State University provides "programs and resources designed to assist them (faculty) in honing their research interests, in finding collaborators and in crafting proposals."
- The University of Iowa's Grant and Research Services Center assists with identifying funding sources, provides workshops on grant-related topics, and provides support services for the development, implementation, and utilization of grants.
- The University of Arizona Cancer Center's Research Grant Support and Resources provides support for grant applications, assists with assessment and reporting, assists with setting up customized funding reports, and coordinates best practices for grants.

The Organizational Communication Inc. provides a method to analyze best practices in grant proposal processes (<http://www.ociwins.com/Proposal-Group-Management/how-do-your-proposal-processes-compare-with-qbest-practicesq.html>). Further, they provide seven principles that should guide proposal processes (<http://www.ociwins.com/Proposal-Group-Management/7-principals-that-should-guide-your-proposal-process.html>). University of Washington also provides guidance on complex proposal development ([http://coenv.washington.edu/wp-content/uploads/2014/01/1-Complex-Proposal-Development-Best-Practices\\_112113.pdf](http://coenv.washington.edu/wp-content/uploads/2014/01/1-Complex-Proposal-Development-Best-Practices_112113.pdf)). Such guides for best practices in grant support should be considered at NMT.

## Academic Program Models

### Data and analysis

There are many academic programs that are either interdisciplinary or transdisciplinary, both in the U.S. and internationally. There are three general approaches for such programs.

- Transdisciplinary (or Interdisciplinary) degrees - in these programs the title does not reflect any disciplinary or research area; it is generic, e.g., the Transdisciplinary Program at Claremont Graduate University (<http://www.cgu.edu/transdisciplinary>). The advantage for this type of program is that NMT would create one program and it could be used to do any transdisciplinary academic program at the same level. The task force is concerned that such degrees are difficult to evaluate for acceptance. Given that we specifically want our degrees to generate outstanding opportunities for students, the task force decided this approach should not be pursued currently.
- Transdisciplinary (or Interdisciplinary) Topical degrees - in these programs the title of the degree is specific to a particular topic or research problem; it is specific, e.g., Transdisciplinary Graduate Education in Media Arts and Science Ph.D. at Arizona State University (<http://ame.asu.edu/education/degrees/masphd.php>). In this case, each topic or research area proposes, creates, and supports a particular transdisciplinary degree with an appropriate name. The advantage here is that the name can provide some disciplinary or topical specificity that may assist with acceptance of the degree. However, it appears that NMT does not have the necessary size and resources to generate a significant number of such degree programs.
- Add on Transdisciplinary Certificate - in these programs the student earns a certificate in transdisciplinary research or a transdisciplinary topic, typically while earning a specific discipline degree, e.g., the Graduate Certificate in Engineering Technology (Transdisciplinary Engineering) at University of Southern Queensland (<http://www.usq.edu.au/study/degrees/graduate-certificate-in-engineering-technology/transdisciplinary-engineering>). This option has the advantage that we initiate one certificate program and use that to specifically develop and acknowledge the transdisciplinary capabilities of students across all disciplines, which is the approach that the task force thinks fits NMT best.

### Expected Impact

This strategic priority will impact primarily students, faculty, and researchers, but will also affect staff as changes to support mechanisms for those engaged in transdisciplinary programs are developed and implemented. This, along with other strategic priorities, will require the entire campus culture to change the way that we value the work that we do so that transdisciplinary work is valued and supported as much as traditional, discipline-focused work. Note: this priority does not disparage discipline-focused work as that work provides an essential foundation for transdisciplinary work.

As is supported by the Data and Analysis Priority Setting section for this priority, more funding and challenging problems are being identified as requiring deep education and research from multiple disciplines. By actively moving NMT to strengthen transdisciplinary education and research programs, we will advance New Mexico Tech's ability to compete for excellent students and research support and New Mexico Tech's reputation as a premier institution of both education and research.

### Short Term Initiatives and Initial Progress

During the strategic planning process, we have made progress on projects that are part of this strategic priority. Briefly, those projects and their current status are as follows.

Biomedical Sciences Bachelor's Degree: The degree requirements have been fully specified and the program for the Bachelor of Science degree in Biomedical Sciences have been presented and approved by the Council of Chairs, Faculty Senate, and Board of Regents. This program will officially appear in the 2015-2016 Catalog and students will be allowed to enroll in the program beginning in Spring 2015.

NRT-DESE: Transdisciplinary Data Science (NRT-TDS): This National Science Foundation project, for \$2.999M, will prepare graduate students for a range of STEM careers and integrate theory, methods, and tools from communication, mathematics, statistics, computer science, and ethics with their training in their respective disciplines.

S-STEM Transdisciplinary Research: This National Science Foundation project, for \$638K, will prepare graduate students for a range of STEM careers and integrate theory, methods, and tools from multiple disciplines with communication, entrepreneurship, and ethics. Armed with transdisciplinary research skills and knowledge, they will be prepared to advance research in academia, industry, and government service.

MST Scholarships for NM Teachers: Working with the New Mexico Public Education Department we secured \$50,000 for scholarships for New Mexico teachers for the MST program for Spring 2014. We continue to work with NM PED to make this an annual allocation to improve teachers' ability to prepare our mid- and high-school teachers.