Blueprint 2027
New Mexico Tech Leadership Team Retreat
Sept. 23 – 24, 2017, Sevilleta NWR

New Mexico Tech's community of faculty, students and staff have set a vision and plan for the next decade, Blueprint 2027, that will make NMT a vibrant, rural STE^2M university in a growing and thriving community of Socorro. A vision for our university that is not only based in science, engineering and technology but also entrepreneurialism, or STE^2M. We look forward to sharing our vision and planning over the next year, soliciting your input to support Tech's great evolutionary trajectory.

Vision Statement: Pre-eminent, welcoming, vibrant, rural STE^2M research university composed of an exceptionally diverse community of students, scholars and citizens

The retreat goals and associated committees :

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1. **Broaden Research Opportunities – Research centers and academic departments:** Mike Smith (chair), Gina Chavez, Nelia Dunbar, Van Romero, Mike Hargather, Peter Mozley, Jose Martinez, Mike Stanley
2. **Town and Gown and Improve Quality of Life: Sean Standford and Steve Wells, co-chairs; JoAnn Salome, Mike Timmons, Gina Chavez, Scott Scarborough, Mike Stanley, Joe Franklin, Nelia Dunbar, Steve Simpson**
3.
4. **Marketing NMT:** Melissa Jaramillo-Fleming (chair), Peter Anselmo, Dave Manzano, Tony Ortiz, Mike Timmons, Carlos Talamante, Dave Lepre, Lorie Liebrock
5. **Diversify Funding (Tuition Options):** Cleve McDaniel (chair), Colleen Foster, Charles Hendrickson, Sean Standford, Steve Wells, Mike Timmons, Randy Seright, Van Romero, Nelia Dunbar, Bob Balch
6. **Culture of NMT (Student, Faculty, Staff Diversity):** Carlos Romero (co-chair), Carlos Talamante (co-chair), Kyle, Jose, Colleen, Tom Kieft, Mike Hargather;
7. **Program Growth:** Kevin Wedeward, Doug Wells, Melissa Jaramillo-Fleming (chair), Bill Stone, Steve Simpson, Lorie Liebrock, Tom Kieft

8. **Entrepreneurial Campus:** Peter Anselmo (chair), Steve Wells, Carlos Talamante, Sean Standford, Mike Smith, Joe Franklin, Randy S.
9. **Alumni Association and Philanthropic Organization:** Carlos Romero (chair), Dave Manzano, Kevin Wedeward, Tony Ortiz, Mike Timmons, Steve Wells, Nelia Dunbar, Kyle, Colleen, Charles
10. **Data-Driven Approach:** Doug Wells (chair), Mike Smith, Joe Franklin, Cleve, Jose, Peter Mozley and Lorie
11. **Carnegie Research University:** Doug Wells (chair), Mike Hargather, Kevin Wedeward, Lorie, Carlos Romero, Peter Mozley, Bill Stone, Bob Balch, Steve Wells

What makes us unique?

(Numbers in parentheses indicate goals that could address this)

- Our size and ability to learn (All)
- Communication (All)
- Undergrad research (in labs and at conferences) (2 and 3)
- Specialization (both a plus and minus) (All)
- Broaden growth in social sciences and humanities (fits needs for future) (6)
- Diversified research centers (can emphasize more) (2)
- Transdisciplinary (2 and 6)
- Need more to do in community – show how Socorro is unique as a small town (1 and 3)
- Less separation in research divisions (2)
- Leverage research divisions into academic programs (2 and 6)
- We all know why NMT is ranked – need to do a better job on makings rankings known; or capitalizing on these rankings (3)
- Building town collaboration and knowledge (1)
- Accomplishments of faculty (2, 4, 6, and 7)
- Need more outreach through social media – webpage (3)
- Rankings to attract faculty (3)
- Salary and jobs for spouses (1)
- How important is it to keep current ROI for students? (4)
- Academic titles for researchers (1, 2 and 6)
- Electronic processes will enhance efficiency (1)
- Make everyone aware of ranking statistics – help research and enrollment (3)

- Increase joint appointments (2 and 6)
- Have people aware of NMT (3)
- Need more to do in Socorro for students (1)
- Quality of education is key (6)
- Emphasize what is unique about Socorro to recruit faculty (3)
- Why do students not accept NMT (need statistical data) (6)
- Socorro schools a reason for faculty not accepting or staying (living) in Socorro (1)
- Incentivize faculty to increase research awards (1 and 2)
- Creating a culture for NMT ("excellence") (5)
- Increase costs to maintain quality (4)
- Increase awareness of HIS designation (3)
- Need a retirement community to interact with Tech (1)
- Increase graduate tuition (4)
- Leverage what we are doing with the town (1)
- Increase tuition for undergrads – 5 percent per year (4)
- Poll students on what they would like to see in Socorro (activities) (1)
- Become a minority serving institution – faculty too (5)
- Schools and services (medical) in Socorro (1)
- Market outdoor activities available at Tech (3)
- Academic departments working more closely with research centers who are more tuned in to industry needs (2 and 3)
- Professional marketing approach (requires more funding) (3 and 4)
- Target areas – such as women (5)
- Engage locals in Tech through classes, etc. (1)
- Pipeline to Socorro schools (1)
- Advertise reciprocity for Southwest schools (3)
- How can we benefit the town with jobs for students? (1)
- Better salaries for staff (to help town) (1)
- Certificate program for Socorro population – small business, technology, healthcare (pre-nursing) (1)
- Elderhostel summer program (6)
- Programs for visitors and retired (6)
- Strategic partnerships for workforce development (2)
- Soft-money centers funding at risk (2)
- Capital goal – fund raising state/city (4)
- Online courses and degrees (6)
- Local student involvement in research (1 and 2)
- Safe and secure campus (1)

- Tuition should reflect value of university (4)
- 5- 6-year plan on tuition increases (4)
- Holistic approach to faculty/staff services (1)
- Co-op programs for students with research centers (6)
- PRRC leveraging IPs (7)
- Faculty and senior staff access to companies (1, 2 and 7)
- Students working on industry partnerships (2)

Growth (Goal 4)

- Build a Facilities Master Plan
- Balance engineering and science growth—target growth opportunities
- Academic/research program mix
- Design projects with faculty support – what can departments absorb?
- Consider offering BA degree with BS
- Online courses/programs
- Residence halls capacity 750
- Enrollment growth – impact on facilities
- Carnegie goal means more grad students needed
- What/If questions – increased enrollment will have campus-wide impact
- New programs – STEM transdisciplinary programs, PhD granting
- Summer outreach programs
- Research centers integrated with academic departments on senior design projects
- Recruit undergraduate freshmen international students
- Expectations for grad students – thesis/non-thesis students
- DE capacity for grad/undergrad programs
- Differentiated function by program
- Sponsored professional education, executive education
- Industrial short courses lead to more students – work with industry (Ford)
- Market and sell grad programs (resources)
- Grow TA and RA opportunities, support
- Graduation targets for PhDs to reach Carnegie

What are the driving forces for improvement?

- State funding drying up – need other revenue sources
    - A national trend
    - Down 22 percent since 2009
- Decline in state lottery funding
- Competition from overseas
- Need to go after NIH big-time
- Statewide research decline
- From state-supported to state-assisted
- Competing against required services at the state level
- Need to differentiate
- Challenge on acceptance of basic science
- Lack of state focus on economy to provide graduates with jobs
    - Tech has opportunity to drive this
- Competition for gr ants
- Need to leverage IP and work with companies
- Need to sell story of interactive learning
- Non-traditional learning
- Expectations on facilities and student support
- Students expect integration of services
- Offer online prep courses to interest students
- Hybrid programs with labs
- Going after philanthropic organizations
- Relationship with Facebook in Los Lunas
- Pressures on required course credits, gen ed, etc.
- Dependence on supporting workforce – is it available?
- Questioning vast number of higher ed institutions and governance
    - How do we adapt?
- What data should we collect?
    - We have a data collection resource on campus

    - Leverage our own capability
- Need to be agile and flexible
- Need to automate and integrate at the same time
- Can also market NMT
- How can we push down decision-making authority?
- How do we keep students here?
- Graduate student demographic different
- Undergraduate demographic has changed
- Target recruitment of ex-military
- Value of hands-on learning at NMT
- Smaller pool of NM students
- State demographics of labs
- Use resources (such as water) and research capability as opportunity
- Climate
- Changes in immigration policy
- Students are consumers
    - How can they get out sooner?

What are restraining forces for improvement?

- Inertia – change is difficult – break down stove pipes
- Apathy – need to engage everyone
- Need to define what programs we need to build or stop
- Risk – which should we take?
- Current incentive structure
- Deciding what we are willing to give up
- Lack of automation and processes
- People not keeping appropriate organizations involved/aware
- Different cultures and expectations of departments
- Make sure we are all pulling in the same direction
- No common measures of success
- Don’t cheer hard enough for each other
- Not getting enough success stories out – publications, contracts, etc.

What should be our primary metrics for improvement?

- Students: retention, persistence, graduation rates
- Peer-reviewed publications
- Quality of publications – judgments?
- Research money, PhD students
- Number of undergrads employed by research and MS, PhD
- Number of faculty with a publication
- Centers of Excellence (potential goal)
- Metrics to measure Academic Affairs and research centers – reward partnerships
- Research centers – reward partnerships
- Research center student support
    - Research money, number of publications, shared data, internal
- Internal research opportunities – book reviews, etc.
- Jobs upon graduation
- Share research data
- Research funding with industry
- Students employed in field of study
- Graduate salaries at early and mid-career
- How to measure quality across campus?
- Number of industrial contacts
- Number industrial research (partnerships?)
- NMT faculty/staff salaries vs state/nation
- Each department should develop a business model
- More visibility for student course evaluations
- Paper citations impact data
- Annual surveys on satisfaction (students, faculty, staff)
- Emphasize on department webpages metrics with the greatest impact
- Measure “apples to apples” and not “apples to pineapples” across NMT
- Students/class and/faculty
- Student publications, patents
- Metrics on national/international impact of Tech research; need trend data

- Post metrics on NMT and department websites
- Customer satisfaction surveys
- Elsevier metrics
- Students doing internships
- Need to use metadata
- Financial performance metrics with education (include budget)
- Third-semester retention rates
- Qualitative approaches
- Data warehouse – common metrics and definitions
- Student applications over time
- How will we use the data? (institution)
- Internal analysis vs meta-analysis
- Visibility of metrics
- Alumni engagement-
- Outreach – number of students involved in communities
- Improving Socorro
    - Entice faculty/staff to live in Socorro
- Grads staying in-state
- Jobs created – number, salaries
- Spinoff companies
- Students/faculty going into Socorro schools
- Economic impact (modeling software)
    - Available on campus
- Grad salaries – available through Communication Office
- Happiness scale for faculty/students – trend analysis
- Increase number of Socorro High School grads entering Techy
- Employees living in Socorro community

Diversify Funding Goal

- Increase research funding
- Reallocate indirect (funds?)
- Campaign (research)
- Increase industry funding
    - Conditions to accepting funding vs federal funding
- Expand standard purchase agreements to do work with labs
- Fundraising for departments
    - Research grants
- Industry consultancy model
- Industry contacts – marketing directly
- Industry-Tech collaborations
- Increase overhead rate with RA
- Raise percentage of funding formula
- Establish contact with alumni from labs, industries, etc., to create pipelines
- Corporate foundations
- Industry partnerships – adopt Tech
- Industry partnerships – student pipeline
- Research opportunity grants – earn scholarships
- Resource centers – share equipment; i.e., machine shop
- NMT solar generation partners/sponsors
- More responsive to industry
- Pursue centers – faculty collaborative culture
- Propose on HIS
- Short courses increase faculty incentives
- 8-A set asides with Native American tribes – partnerships, direct contracts
- Student retention through research
- Donor financing for graduate students
- Student degrees – assess costs
- Create certificate programs with government funding
- Incentives for RAs between academic departments and research centers

- HS certificate at NMT
- Training on funding formula
- Increase NMT share of funding formula
- Work with City of Socorro and Socorro Electric Cooperative to negotiate lower power rates
- Central organization for short courses – actively market, extra faculty pay
- Leverage faculty buyouts
- Create post-docs
- Summer programs for incoming students
- Short courses – addition to pay for faculty – need to establish process
- Increase tuition reimbursement
- Increase student retention – student success – change culture
- Professional development institute
- Strategic way to allocate research overhead
- International student recruitment plan
    - Mining, Petroleum Engineering, 2 + 2, 3 + 1 program
- Integration of business model
    - International students, monetize process
- Assess income sources for grad funding, RA, TA
- MST scholarships through philanthropic support
- MST capacity – not programmed
- MST grants – graduates given $500 scholarship to Tech to bestow on student of choice
- Educate USA market, international recruitment
- Competitive scholarships with other institutions
- Telemundo marketing
- Admission standards
- Summer classes for incoming freshmen and transfer students
- Summer courses

Go forward approach on goals

- Respectful and inclusive, safe campus – 1,000 residing on campus
- Must address aspirations first
- How does this help HLC requirements?
- Is Strategic Plan vision statement and mission statement adequate or do they need to be changed?
- Add culture of NMT, identify community and alumni
- Rural setting to enhance quality of life
- Goals in form of inspirational statements
- Change vision statement to more outward looking
- Keep it short and to the point – inspiration
- “Empower New Mexico”

What do we want to see in 2027?

(Numbers in parentheses indicate goals that could address this)

- People on campus, including community (1)
- Rural, vibrant college town (1)
- Businesses started at Tech in Socorro (i.e., Socorro Springs) (7)
- Interaction with town vibrant and visible. Neighbors, friends, colleagues (1)
- Welcoming attitude for visitors (5)
- "We should start be welcoming tomorrow." (5)
- More diverse campus (5)
    - Race, gender, etc.
- A Strategic Plan for the town? (1)
- Need signage to make it easier to navigate the campus and its resources (1 and 5)
- Car rental for students (1)
- Interactive screens on campus (1 and 5)
- Campus infrastructure – new and renovated buildings (1)
- Student work spaces (1)
- Better connection between campus and town (coffee shop, river) (1)
- Businesses integrated with campus (2, 6 and 7)
- Constraints on size – golf course, residences surround campus (1)
- Use student cards in Socorro town (1)
- Need to address zoning issues (1)
- Address student needs in community 91)
- Suggested vision statement: Pre-eminent, welcoming, vibrant, rural Ste^{2}m research university composed of an exceptionally diverse community of students, scholars and citizens
- Impact on region and nation (1)
- Research – pipelines in two directions (2)
- Excellence (All)
- Creativity, innovation (7)
- Clarify "community" – no silos – organic organization (5)

- Closeness – small campus (5)
- Known and recognized (3)
- Remain a part of community – alumni (8)
- Tech logo: t-shirt with logo; text under logo can e customized (5)

What might be target numbers for 2027?

- Research dollars (sponsored research): $75 million
- Double academic productivity
- Develop two new “centers”
- 5 percent annual overall growth
- 3,000 undergrads
- 1,000 graduate students
- Dedicated (full-time) fundraiser for sciences and engineering
- Each academic department should have an industry partner
- $4.5 million fundraising goal
- 18 to 19 post-docs
- Unrestricted endowments
- Double infrastructure for students
- Two capital campaigns
- 50/50 gender target
- Include future trend needs for employment
- Grow number of transfer students to 250 undergrads
- 5 percent annual faculty salary boost (goal: 100 percent of those at peer institutions)
- Survey staff salary