MEKETA

Research Findings:

Lab & University Spin-Out Venture Funds

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Prior to joining PCA, Mr. Samson was lead counsel for Echo Health Ventures, the venture investment team of Cambia Health Solutions, and also served as lead counsel for several Cambia portfolio companies. Before that, Mr. Samson practiced corporate law at Stoel Rives LLP, advising both public and private companies on a variety of transactional and securities matters, including M&A, equity and debt financings, and compliance. He began his career as an associate on the corporate strategy team at Deutsche Bank in New York.

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Research Questions

→ **Can New Mexico research labs and higher ed institutions support proprietary spin-out venture funds?**

→ **What are best practices for spin-out venture funds?**

→ **What do ecosystems of commercialization policies, programs and financing look like elsewhere?**

- Snapshot of Stanford University – a leader in spin-out venture creation.
- Public University Approaches – examples from Georgia, Michigan, and North Carolina.
- Regional Snapshot – an overview of mountain and western examples.
- Focus on New Mexico – commercialization capacity.

→ **What resources, beyond financing, do spin-out ventures need to succeed?**

Models for University Technology Transfer & Spin-Outs

→ Universities have a range of approaches to Technology Transfer (TTO), commercializing Intellectual Property (IP), fostering entrepreneurship, and supporting venture equity preparation and funding.

→ Regional and demographic differences support different approaches – no one size fits all approach.

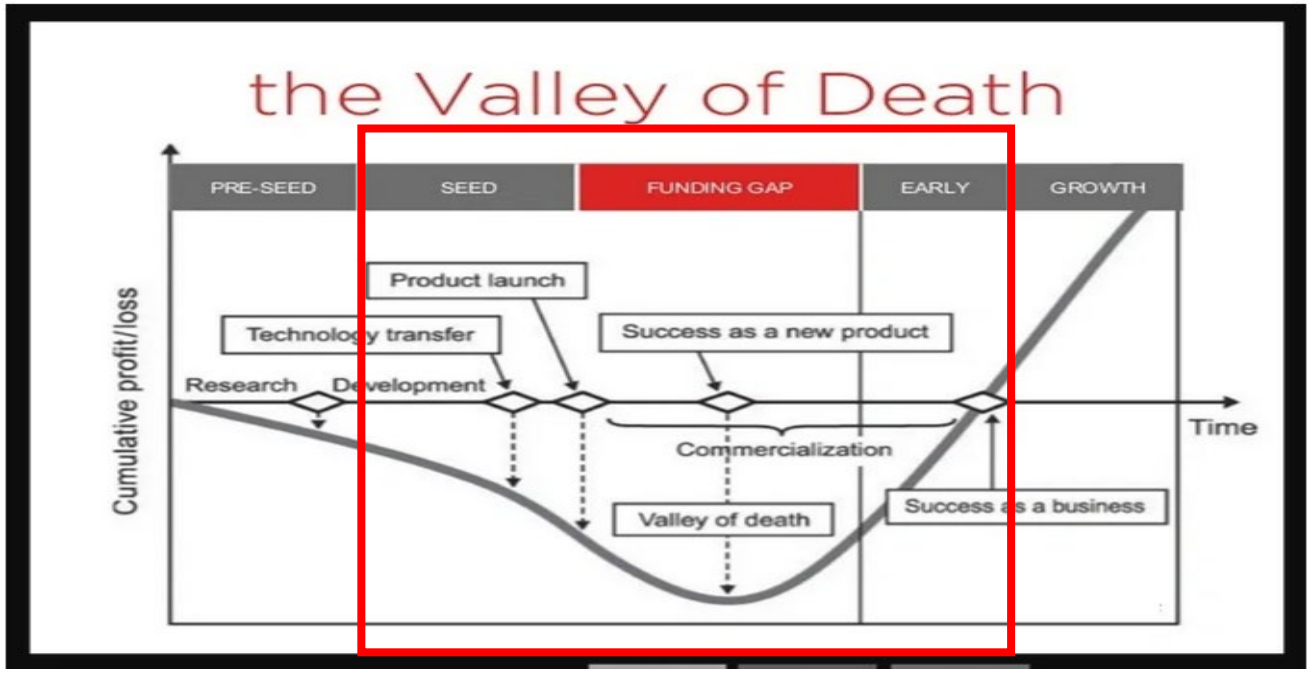
→ Stanford and MIT are leaders in this space with their unique research capabilities, culture of entrepreneurship, and ability to self-manage their own venture funds and partner with external venture capital funds.

From Spin-Out to Investible Spin-Out

→ Research institutions can provide expertise, technical and alumni networks, grant funding and awards, support for prototype development, and host ecosystem events.

→ Research institutions may have their own venture funds or partner with a start-up studio or accelerator.

→ The 'valley of death' is not just about funding; spin-outs require technical experts, management teams, and national networks to build customers and attract follow-on investment.



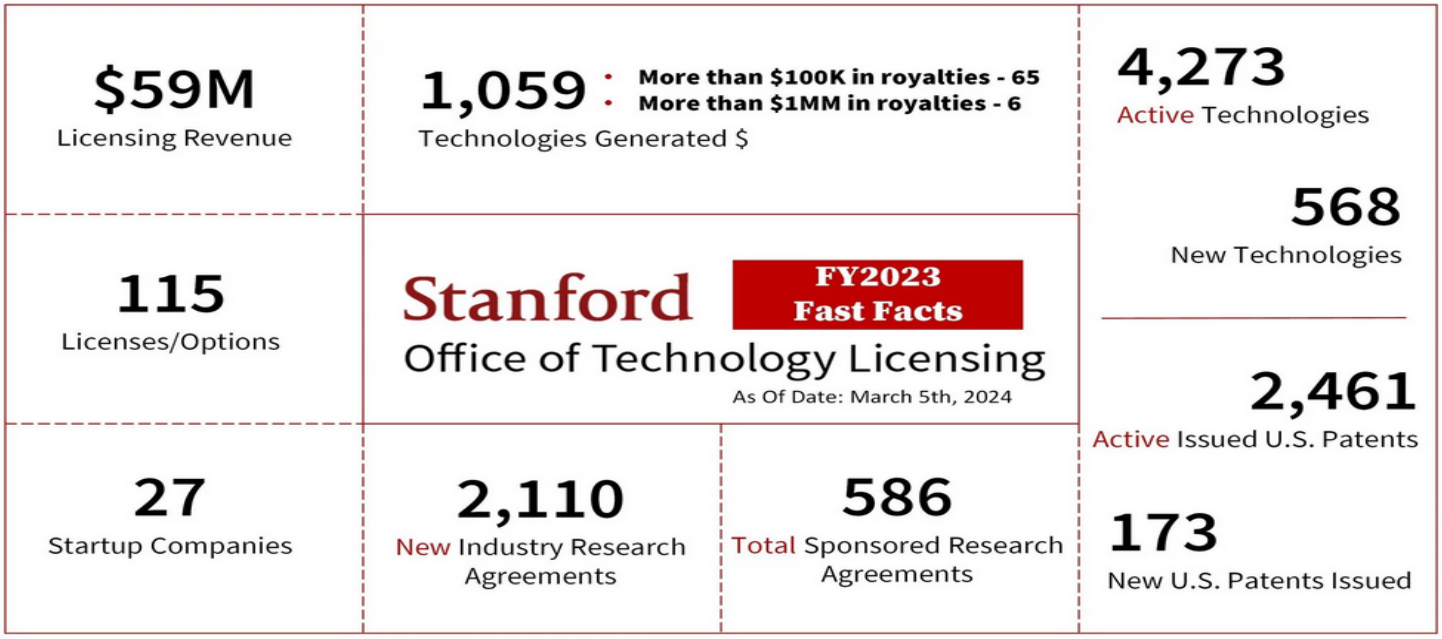
Source: Image from egyptreneur.com.

Stanford University: Pioneer of Technology Transfer & Entrepreneurship

→ Stanford Office of Technology Transfer was established in 1970 with support for researchers and entrepreneurs.

→ Stanford has at least six university venture funds including the President's Fund, Athletics Fund, Law School Fund, Engineering School Fund, Medical School Fund, and Graduate School of Business Fund.

→ Formal relationship with Osage University Partners for their entrepreneurial eco-system.



Source: Stanford Office of Technology Licensing website as of July 2024.

Public University TTO Examples

	Traditional TTO & Licensing	Federal, State, & Private Grant Support	Accelerators Venture & Lab Facilities	University Venture Funds (Partner or Proprietary)	Collaboration with Other Higher Ed or Development Organizations	Collaboration w/ State Economic Development Programs
University of Michigan	Yes	Yes, State Start Up Grant programs (MEDC)	Yes - Desai Accelerator – early stage development	Accelerate Blue Fund & Incubator – Innovation Partners	Yes – MTRAC & Michigan University Innovation Capital Fund; T3N start up network	Yes – Consortium of State Higher Education direct state funds
University of Georgia	Yes	Yes, State Start Up Grant programs	Yes – UGA Idea Accelerator, UGA Entrepreneurship	GRA Venture Fund LLC (Public – Private)	Yes – State of Georgia Research Alliance (501c)(3)	Yes – GRA Venture evergreen funds from State of GA
University of North Carolina – Chapel Hill	Yes	Yes	Yes – Launch Chapel Hill, 1789, KickStart Venture Assistance	Carolina Venture Fund with private Hatteras Venture Partners	Yes – Research Triangle; Innovate Carolina	Yes

Sources: Public websites and interviews.

Southwest/Regional Examples

	Traditional TTO & Licensing or Licensing & Equity	Federal, State, & Private Grant Support	Accelerators, Networks, Venture & Lab Facilities	University Venture Funds & Grants (Partner or Proprietary)	Collaboration with Other Higher Ed or Development Organizations	Collaboration w/ State Economic Development Programs
University of Colorado – Boulder	Licensing & Equity Approach	Yes, SBIR/STTR, Research Grants	Yes - Under-Grad and Post Doc Facilities, Sprints	Yes - Alumni Fund & Partner Fund Gold Buff Fund (for profit)	Yes – including Venture Investor Day	Yes
University of Texas	Commercialization and Fundraising	Yes, SBIR/STTR	Proof of Concept Awards, Entrepreneur Programs, Sprints	UT Horizon Fund	Yes – UT System	Yes
University of Utah	Yes	Yes, SBIR/STTR StartUp 360, I-Corps	Lassonde Studios	Multiple seed & grant programs; Student Fund	Yes – Utah Innovation Lab	Yes – Utah Innovate Fund
University of Arizona	Yes	Yes, SBIR/STTR	Arizona Tech Parks Accelerator & The Bridges	Wildcat Philanthropic Seed Fund	Yes- Accelerator	Yes - Informal
University of Oklahoma	Yes	Yes, SBIR/STTR	Idea Lab, Build Accelerator, Venture Incubator & Fabrication Lab	University Growth Fund - grants	Tom Love Innovation Hub	Yes - Informal

Sources: Public websites and interviews.

New Mexico Higher Ed

	Traditional TTO & Licensing	Federal, State, & Private Grant Support	Accelerators Venture & Lab Facilities	University Venture Funds (Partner or Proprietary)	Collaboration with Other Higher Ed or Development Organizations	Collaboration w/ State Economic Development Programs
University of New Mexico (Rainforest)	Yes	Yes, SBIR/STTR; Gap Fund @UNM; NMSBA	Yes – Rainforest, Cecchi VentureLab	Innosphere Ventures	Yes – Land Grant Universities, Innovate New Mexico	Yes – Innovate ABQ w/ Lobo Dev. Corp.
New Mexico State University (Arrowhead)	Yes	Yes, SBIR/STTR; New Mexico Small Business	Arrowhead Park, Studio G, FIX	Arrowhead Innovation Fund	Innovate New Mexico	Yes – NMSB; NM CERG
New Mexico Tech	Yes	Yes, SBIR/STTR; New Mexico Small Business	Technology Commercialization Center (TCA), Research Park	No	Innovate New Mexico	Yes - NMSBDC for TCA
Central New Mexico CC (CNM Ingenuity)	Yes	Yes, SBIR/STTR; New Mexico Small Business	Activate New Mexico, Ski Lift Pitch, HyperSpace Challenge	CNM Ingenuity Fund	Yes	Yes – Arrowhead

Sources: Public websites and interviews.

New Mexico Research Labs

	Traditional TTO & Licensing	Federal, State, & Private Grant Support	Accelerators Venture & Lab Facilities	Collaboration with Other Higher Ed or Development Organizations	Collaboration w/ State Economic Development Programs
Los Alamos National Labs (LANL)	Feynman Center for Innovation	Department of Defense, Department of Energy	New Mexico Lab Embedded Entrepreneur Programs (NMLEEP); Design Sprints; Energy I-CorpsLite; Entrepreneur Post-Doc Accelerator; Disruptech; R+D100 Awards	Cooperative R&D Agreement (CRADA), Technical Assistance Materteral Agreement (TAMA)	TRGR – Gap Funding NM Govt Tax Credits
Sandia National Lab (SNL)	Center for Collaboration & Commercialization (C3)	Department of Defense, Department of Energy	Sandia Scientific & Technology Park (STTP); Entrepreneur Exploration (EEX); Entrepreneurial Separation to Tech Transfer (ESTT)	Yes	Funding NM Govt Tax Credits
Air Force Research Laboratory (AFRL)		Department of Defense, Department of Energy	The Aerospace Corporation (AFWERX), SPACEWERX, Air Force Office of Scientific Research (AFSOR)	Office of Scientific Research (AFSOR); Minority Leadership Research Collaboration Program	

Sources: Public websites and interviews.

Failure to Launch - Not Just About Finances

→ **Sourcing of venture ready spin-out companies**

- While universities log a large number of innovation disclosures – few meet minimum standards for licensing, patents, and commercialization.
- ***Investible pipeline can be limited and much narrower than the funnel of disclosures and patents.***

→ **Venture/investment readiness**

- Commercialization efforts focus on research, licenses, and entrepreneurship rather than venture capital.
- ***Universities tend toward a focus on impact and grant funding, reflecting a very early stage of potential readiness for investment capital.***

→ **Resources for spin-out development**

- Venture firms provide expertise to founders and start-up teams, which is even more important when founders may be less "business minded" (e.g. research professionals, technical experts).
- The availability of talent can be constrained by geography, making start-up team building challenging.
- University fund structures and governance are not conducive to leveraging private investment.
- ***Spin-out ventures often fail due to a lack of more comprehensive business development resources and professional management.***

Sources: Interviews with stakeholders.

Risks & Considerations

→ Venture requires a lot of ideas and investible companies – risk that local institutions have too few to have enough deal flow for a viable venture fund.

→ Alignment of interest between research institutions and spin-out companies may differ, particularly with respect to technology licensing and royalty agreements, where economics can discourage company creation.

→ Independent funds can leverage support from a wider range of public and private stakeholders and adopt a more optimal GP/fund structure to leverage greater private investment.

→ Difficult to get best VCs to work in a sole lab/university model.

→ Start-ups may find it difficult to build teams if upside is limited by lab/university controls.

→ Research institutions may not have sufficient expertise to properly commercialize and prepare spinouts.

→ Soliciting qualified investors from alumni may be challenging for a fund with limited upside potential.

→ Audit of venture returns can be complicated with non-profit entities.

→ Labs are more likely to monetize intellectual property through licensing than creating venture companies.

→ Labs allow faculty and staff opportunity to create start-ups with leave, but few take the opportunity.

→ Need to address the gap around professionalization/management to make spin-outs more viable for investors.

Sources: Interviews with stakeholders.

Recent Developments

→ New Mexico ecosystem has seen challenges sourcing investible companies.

  → Mixed experience with the Catalyst Fund, a state-backed fund-of-funds program which invested in local venture funds including three university spin-out funds.

  → Overlapping ownership of the same start-ups and too few investible companies have made deployment of capital challenging.

→ In September 2024 NMSIC committed additional funding ($50 million) to Roadrunner Venture Studios to invest directly in start-ups in New Mexico including research laboratory and university spin-outs.

→ There seems to be general dissatisfaction with the way local Labs/Universities are handling technology transfer.

Conclusions

→ University and Research technology transfer offices do not create enough investible companies to justify the creation of their own investment funds.

→ NMSIC is currently pursuing a dynamic venture studio funding model at scale; other similarly themed but smaller funds would unduly compete at this time.

Appendix

Multi-Lateral New Mexico Technology Initiatives

→ **Innovate New Mexico**

→ **NM-INBRE** – IDeA Networks of Biomedical Research Excellence

→ **NM-EPSCoR** – Established Program to Stimulate Competitive Research

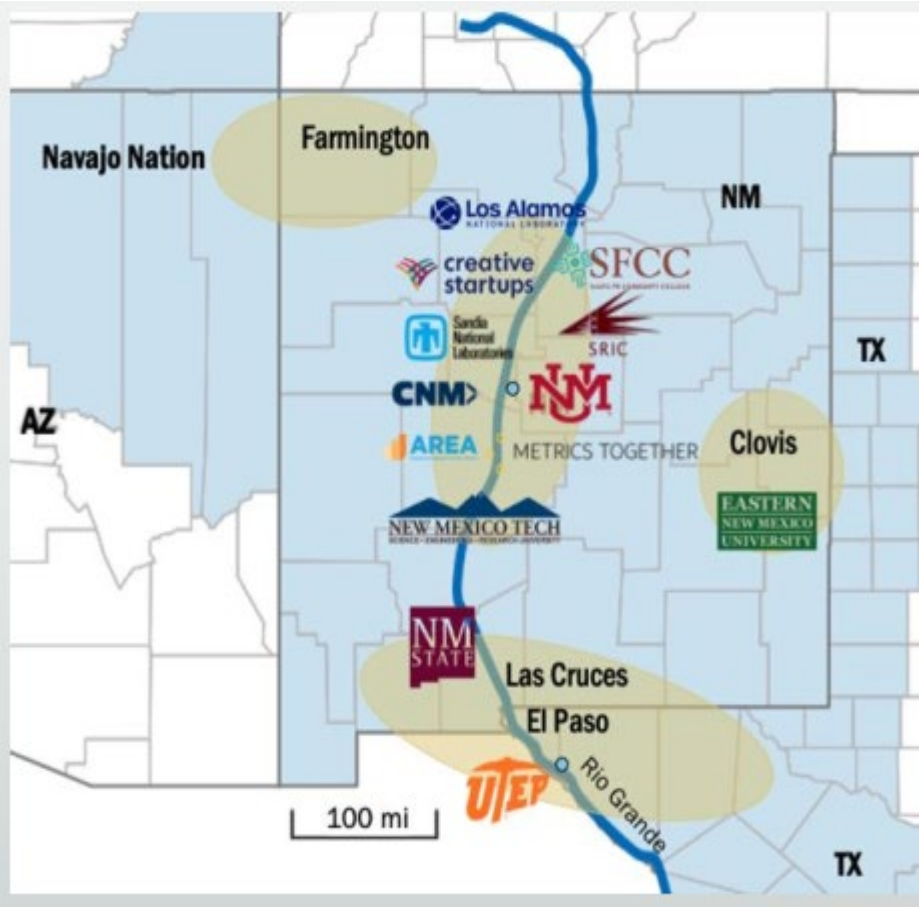
→ **NSF** Regional Innovation Engines; Semi-finalists Type 2 implementation: RALI-WEST (UNM & Partners

→ **New Mexico Consortium** - Consortium all three NM research institutions and LANL (non-profit)

→ **APLU** – Multi-institutional members on Council on Research (CoR)

→ **Joint Graduate Programs** – Geography & Public Health

→ **Technology Research Collaborative** - EDD SBIR support



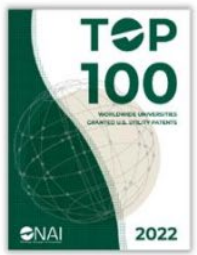
Source: University Research & Development: Impact of New Mexico Technology Enhancement Fund, June 28, 2023. LANL is Los Alamos National Labs. The Technology Enhancement Fund is through the New Mexico State Treasury Department for High Education institutions to upgrade technology capacity.

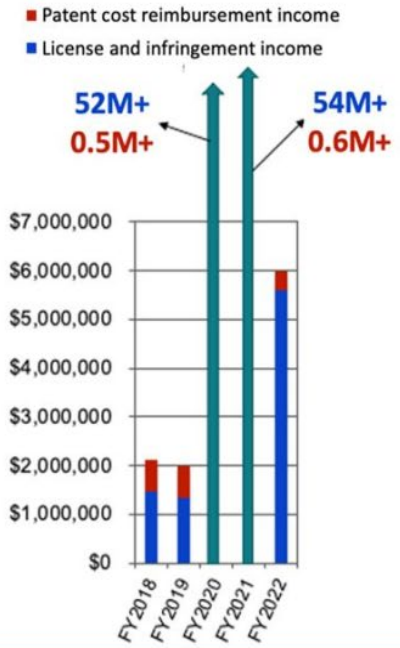
University of New Mexico Snapshot

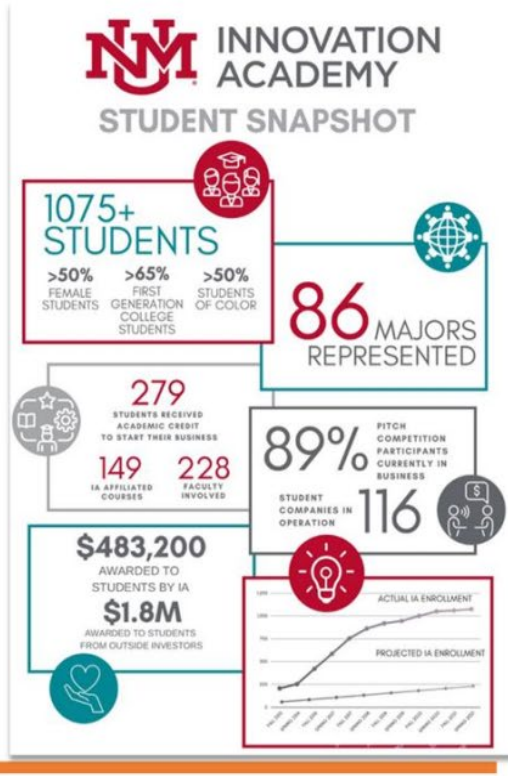
UNM RAINFOREST INNOVATIONS

Supporting Technology Transfer and Catalyzing Economic Development

- Major Programs
  - Rainforest Accelerator
  - Innovate New Mexico
  - EDA University Center
  - Tribal Entrepreneurship Program
- In top 100 worldwide universities with largest number of issued US patents for the seventh year in a row
- *56% of the 162 companies spun out from the University of New Mexico are still in business and active; 48 of these startups are active in New Mexico*







UNM | Rainforest Innovations

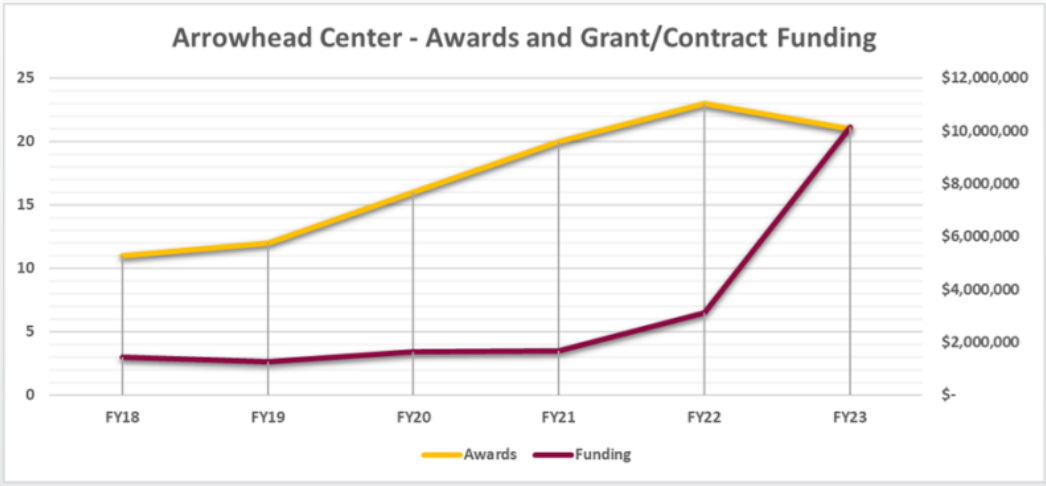
Source: University Research & Development: Impact of New Mexico Technology Enhancement Fund, June 28, 2023. LANL is Los Alamos National Labs. The Technology Enhancement Fund is through the New Mexico State Treasury Department for High Education institutions to upgrade technology capacity.

New Mexico State University Snapshot

Emerging Collaborations in Research Driven Economic Development

- Economic Diversification
- Leveraging Existing Strengths
- Economic Development and Employment Generation
- Collaborative Innovation and Global Leadership
- Funding and Investment Opportunities
- Workforce Transition Support

ARROWHEAD CENTER | NM STATE



- Infrastructure for Media, Healthcare, and Aerospace Clusters
- NSF I-Corps Southwest Region Hub
- EDA Economic Adjustment Assistance (Building Resilience and Entrepreneurship in a Coal Community [BRECC])
- EDA Venture Challenge (Scale Up New Mexico)

Source: University Research & Development: Impact of New Mexico Technology Enhancement Fund, June 28, 2023. LANL is Los Alamos National Labs. The Technology Enhancement Fund is through the New Mexico State Treasury Department for High Education institutions to upgrade technology capacity.

New Mexico Tech Snapshot

NMT Office of Innovation Commercialization

Current Initiatives

- NSF Advancing Research Translation
- NSF ENGINES projects
- EDA TechHubs

Intellectual Property and Commercialization Highlights

- Desalination of produced and brackish water
- Tin Whiskering Solution for electronic infrastructure resilience
- SuperAlloy for additive manufacturing

Impact

- New sources of potable water
- Dramatically extend the useful life of electronic components
- Enable 3D printing of machine components for high-temperature environments
  - Such as turbine blades

Source: University Research & Development: Impact of New Mexico Technology Enhancement Fund, June 28, 2023. LANL is Los Alamos National Labs. The Technology Enhancement Fund is through the New Mexico State Treasury Department for High Education institutions to upgrade technology capacity.

CNM Ingenuity, Inc.

CNM Ingenuity exists as the Enterprise Arm of CNM

As such, we seek to create new pathways for our community to access CNM, its programming, its resources and its almost infinite capabilities.

Source: CNM Ingenuity 2022-2023 Impact Report.

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