



NM Bioscience Authority Update & Request

*Presenting on behalf of the New
Mexico Bioscience Authority:*

November 28, 2023
STTC Presentation

Dale Dekker, AIA

Board of Director's Chair, NM Bioscience Authority
Founder, Dekker/Perich/Sabatini Architects, Engineers, & Planners

Paul Laur

Board Member, NM Bioscience Authority, COO, Mercury Bio

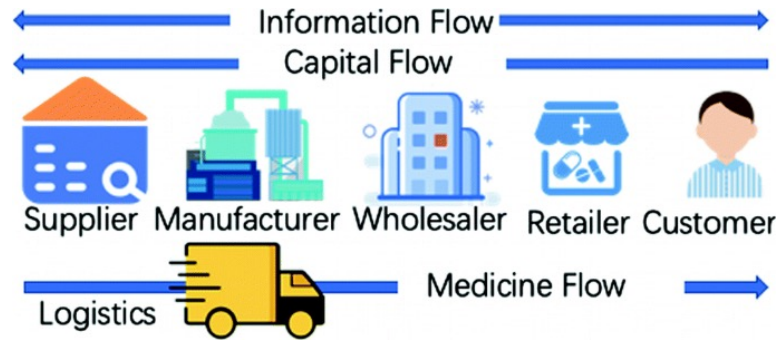
Stephanie Tofighi, MSPP

Executive Director, NM Bioscience Authority





Diversified Economy



Green & Security of U.S. Supply Chain



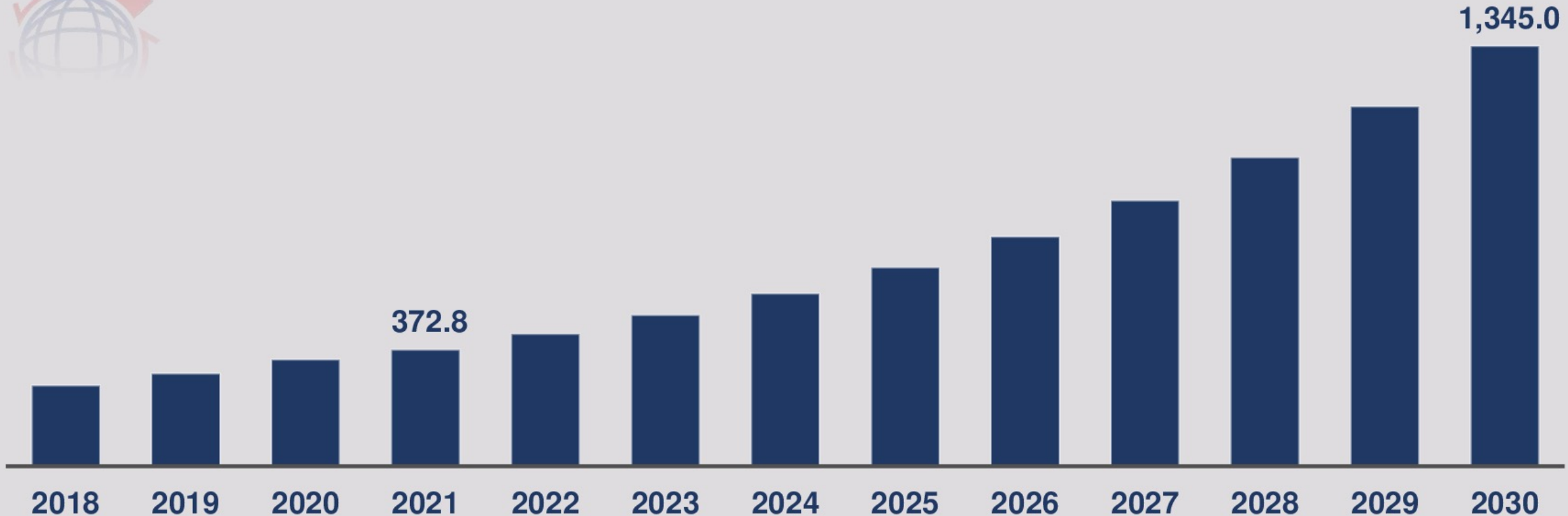
Growing & High Paying Jobs

Biosciences...

A State and Federal Priority



Biotechnology Market, 2018-2030 (USD Billion) CAGR Around 15.5% from 2022-2030



The **Global Biotechnology Market** size is predicted to reach \$1.345 trillion by 2030 with a compound annual growth rate (CAGR) of 15.5% from 2022-2030.

Source: Acumen Research And Consulting

New Mexico Economic Development Clusters

Aerospace & Defense



Biosciences

Sustainable & Value-Added Ag

Renewable & Green Energy

Cyber Security

Global Trade

Intelligent Manufacturing

Federal Initiatives

THE INFLATION REDUCTION ACT:

What this means for the fight against climate change, tax inequality, and extreme health care costs.

\$669B



Presidential Order on Advancing Biotech and Biomanufacturing Innovation

CHIPS & Science Act

America invented the **semiconductor**, but today produces about 10% of the world's supply – and none of the most advanced chips. The new Act – worth nearly \$150 billion – will return manufacturing to the US, lowering costs, creating jobs, and strengthening supply chains.

\$52.7B

for American semiconductor research, development, manufacturing, workforce development

THE ACT INCLUDES

\$39B
Manufacturing incentives

\$13.2B
R&D, workforce development

\$2B
Legacy chips used in automobiles, defense systems

\$1.5B
Promoting, deploying, wireless technologies using open, interoperable radio access networks

\$500M
International information communications technology security and semiconductor supply chain activities

THE ACT AUTHORIZES

\$10B INVESTMENT

in regional innovation, **TECHNOLOGY HUBS** across the country

INVESTMENTS

Expanding geographic, institutional diversity of research institutions and the students, researchers they serve, including supporting **HBCUs and other minority-serving institutions, academic institutions providing opportunities to **HISTORICALLY-UNDER-SERVED STUDENTS**, communities

STEM EDUCATION

New and expanded investments in **SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)** education and training from K-12 to community college, undergraduate, graduate education

\$1B RECOMPETE PILOT PROGRAM

at the Department of Commerce's *EDA, **ALLEVIATING PERSISTENT ECONOMIC DISTRESS**, supporting long-term comprehensive economic development, job creation in the most distressed communities

10 KEY TECHNOLOGIES

\$110B



U.S. DEPARTMENT of STATE

Critical and Emerging Technologies (CET) list:

- Advanced Computing
- Advanced Engineering Materials
- Advanced Gas Turbine Engine Technologies
- Advanced Manufacturing
- Advanced and Networked Sensing and Signature Management
- Artificial Intelligence
- Autonomous Systems and Robotics

Biotechnologies

- Communication and Networking Technologies
- Human-Machine Interfaces
- Networked Sensors and Sensing
- Quantum Information Technologies
- Semiconductors and Microelectronics
- Space Technologies and Systems

5 Newly added CET List:

- Advanced Nuclear Energy Technologies
- Directed Energy
- Financial Technologies
- Hypersonic Capabilities
- Renewable Energy Generation and Storage

What is Bioscience?

Five Industries Make Up Bioscience Sector:

1. Agricultural feedstock, ag tech, and industrial biosciences i.e., biofuels & carbon sequestration
2. Bioscience-related distribution
3. Drugs and pharmaceuticals
4. Medical devices and equipment
5. Research, bioinformatics, testing and medical laboratories

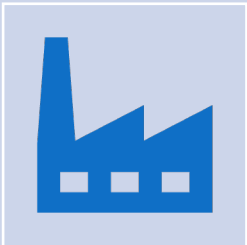




**Why Biosciences...
In New Mexico**



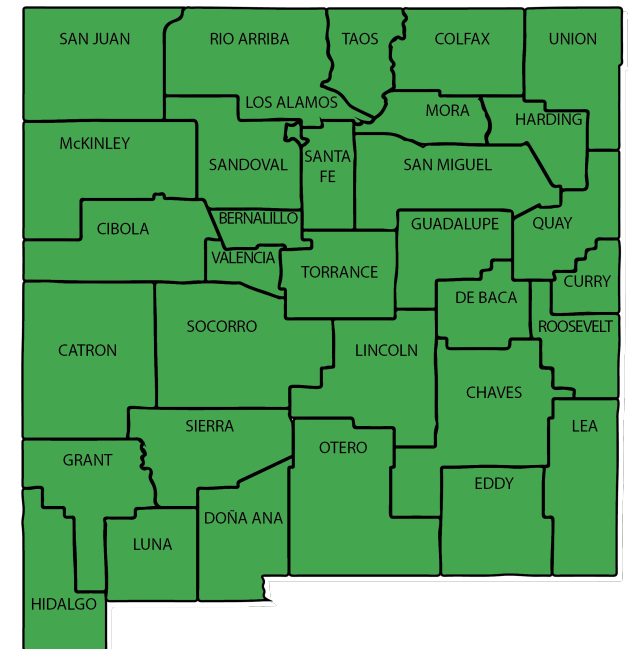
Bioscience Innovation



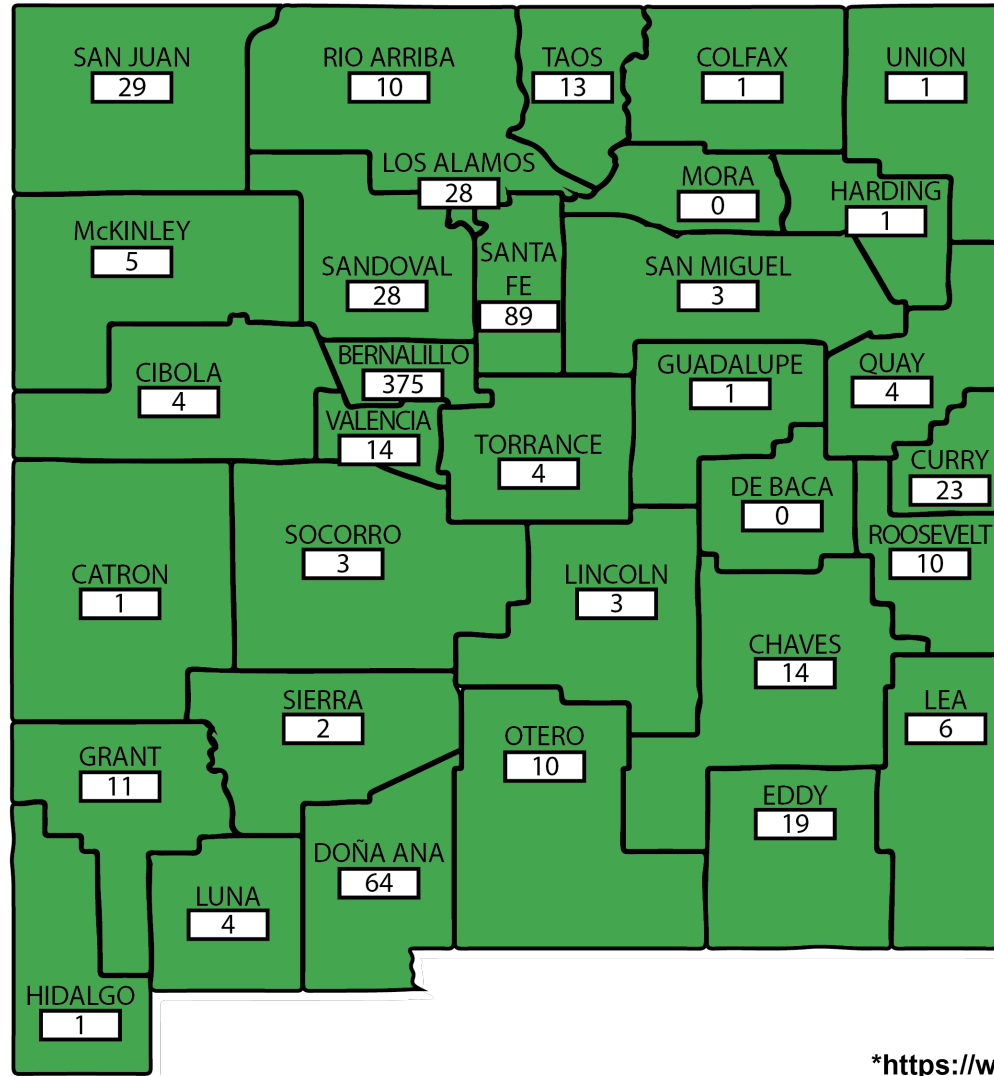
is a catalyst for improving our state's health, productivity, economic diversity, and economic development.

New Mexico is Bioscience Ready!

- We have the foundational elements!
 - University & National Lab research and patents
 - Workforce Generation
 - Existing companies & entrepreneurs
 - Some Venture Capital Financing available
- Creates high paying, green jobs
- Supports the creation of four times the number of direct jobs through indirect (supply chain) and induced (employee spending) impacts



Number of Bioscience Companies in New Mexico*



Legend

Number of Bioscience Companies per County

Key Takeaways

781 Total Companies

32 Companies with more than 50 employees

Relevant NAICS Codes*

- #3391 - Med. Equip & Mfg.
- #3254 - Pharma Mfg.
- #3253 - Agricultural Mfg.
- #3345 - Electromedical Mfg.
- #5417 - Science Res. & Dev.

*<https://www.dnb.com/business-directory.html>

Why Bioscience is Good Industry to Grow in NM

Growth in Bioscience

Research Funding, UNM HSC¹

- 2022 (\$239M)
- 2004 (<\$90M)

Availability of Workforce (NM Graduates in Bioscience-Related Fields, 2011 – 2020)²

- Natural Sciences (6,389)
- Health Professions, excl. BSN (6,551)
- Engineering/Tech/CS (10,051)
- Business (16,369)

70% of NM bioscience graduates leave the state due to lack of jobs.

Employment Index Increase, 2020 – 2030⁴

- Bioscience (17% increase)
- Total Private Sector (7.7% increase)

Bioscience Leads NM Patents, 2011 – 2020³

- Biosciences-related (~ 325)
- Computer/Data science (~ 275)
- Optics (~ 175)
- Electricity (~140)
- Communications (~125)
- Chemicals (~40)



NM is 7th in nation in bioscience patents per capita

Bioscience is a Leader in 2022 NM Salaries⁴

- Engineering (\$107K)
- Computing (\$99K)
- Bioscience (\$93K)
- Aerospace (\$90.1K)
- Mining (\$73.5K)
- Communication (\$65K)



¹UNM HSC Annual Report

²NM HED Annual Report

³USPTO, Google Patents

⁴U.S. Bureau of Labor Statistics

Commercialization of Bioscience

Since 2004, over 75 new bioscience start-up companies have spun out of the University of New Mexico.

Companies focused on drug development, cancer therapies, molecular imaging, medical diagnostics, software development, genetics, and more.





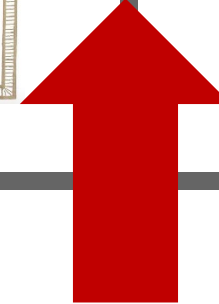
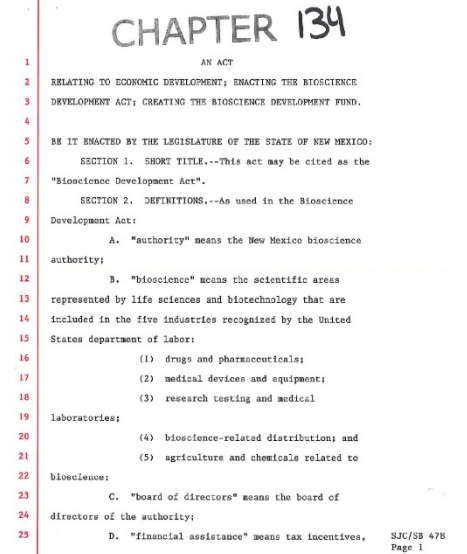
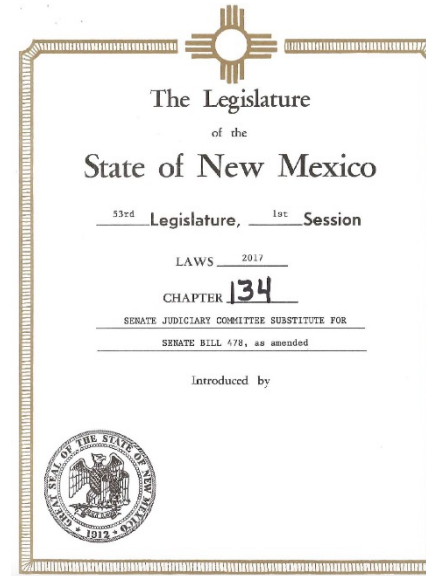
**Why NM
Biosciences
Authority?**

Research Results in Innovation

GrowBio

A PUBLIC-PRIVATE COLLABORATION

GrowBio is a public-private collaboration formed to promote a thriving biotechnology industry in New Mexico using economic incentives that nurture startups and encourage the transfer of new inventions and discoveries into commercial applications.



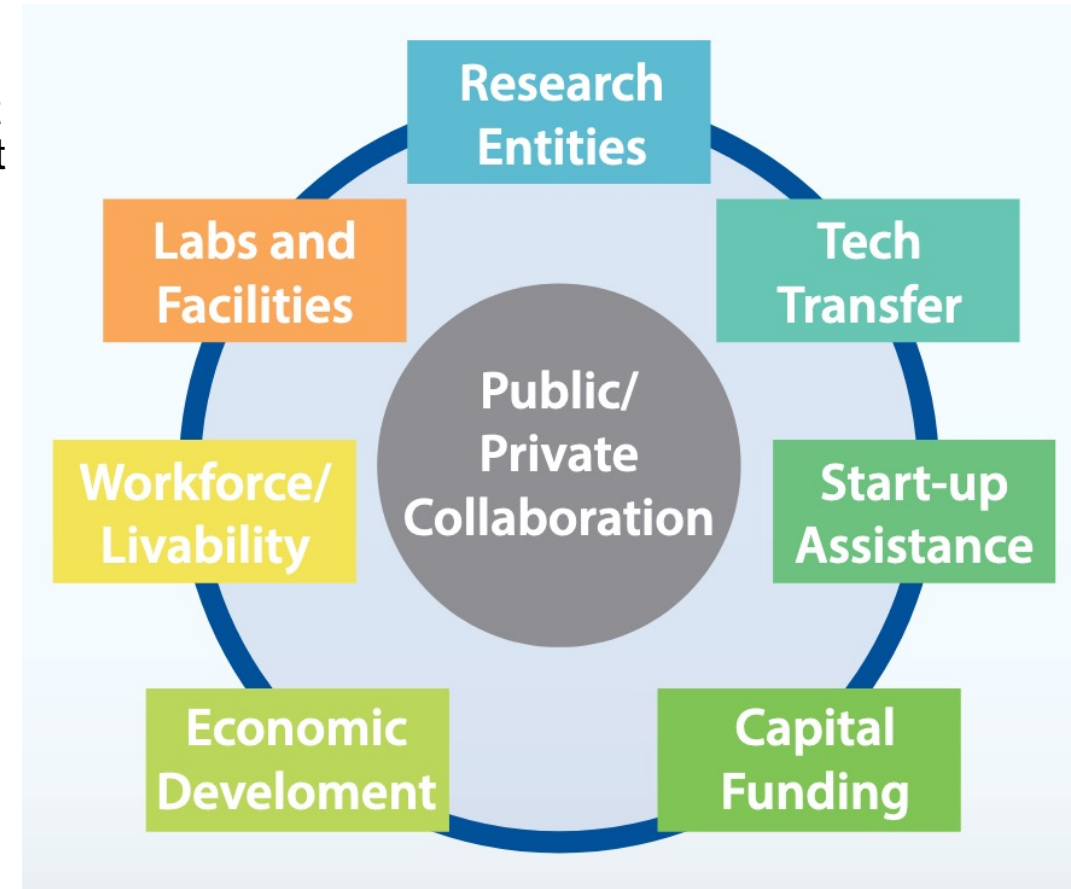
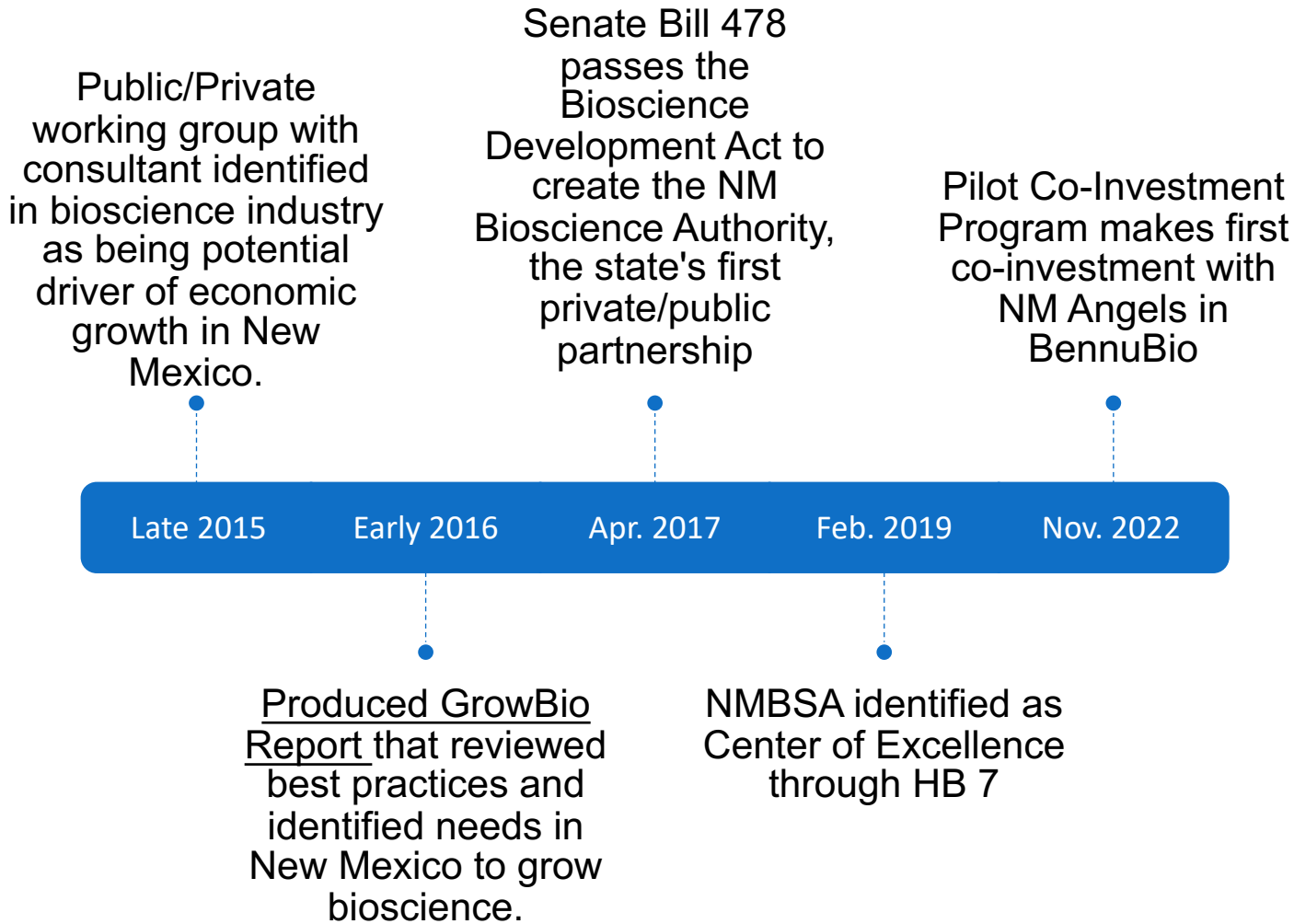
GROWING THE FUTURE

Developing New Mexico's Bioscience Industry

GrowBio

A PUBLIC-PRIVATE COLLABORATION

History of the NM Bioscience Authority (NMBSA)*



*NMBSA Reports annually to STTC (fall), Governor's Office (November), HED (fall)

NMBSA

Mission & Vision

Mission

To increase awareness and support for New Mexico's bioscience sector by attracting capital investors, influencing policy and assisting in infrastructure and business development. The NMBSA connects all necessary elements of: Research & Development, Technology Transfer, Investment and Funding and Workforce.

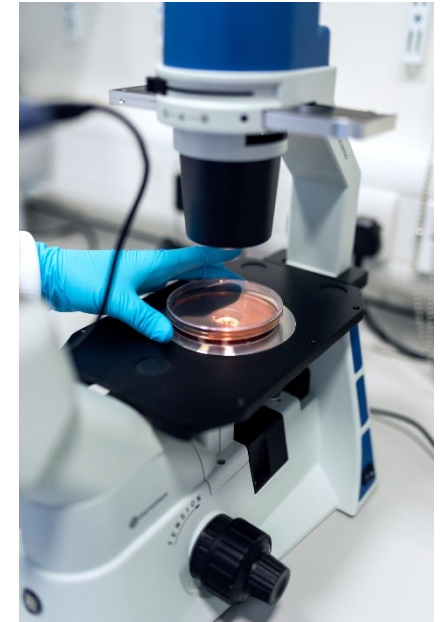
Vision

To grow a robust bioscience industry in New Mexico.



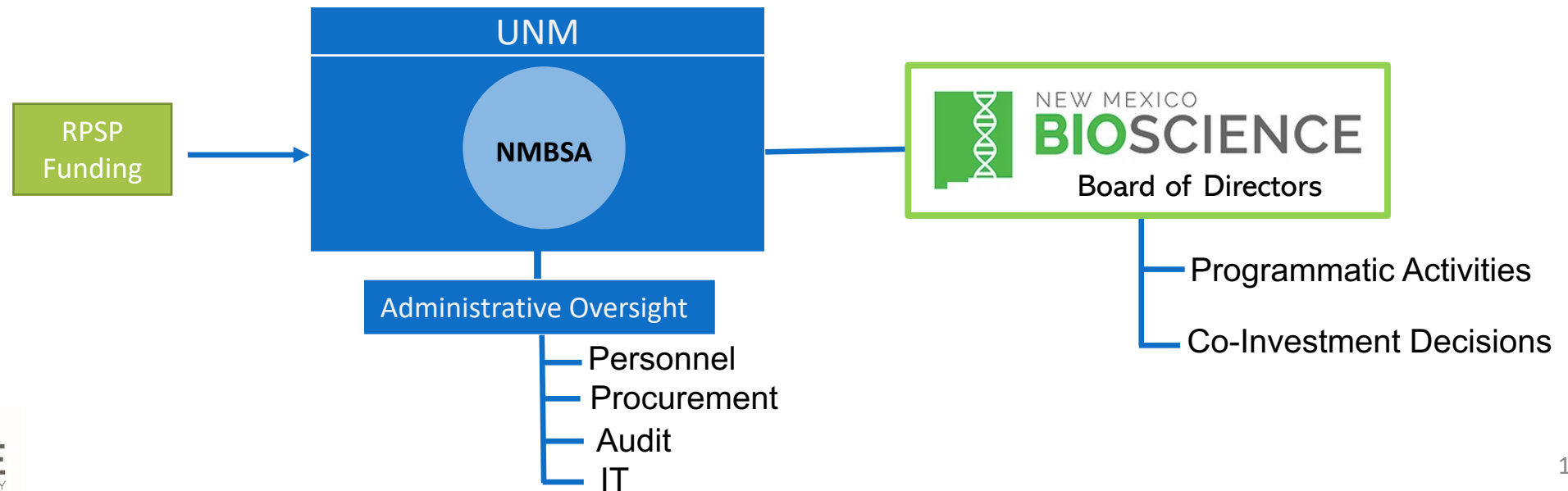
Activities by Statute of NM Bioscience Authority

- **Advise state leadership** on initiatives that may stimulate investment and provide jobs
- **Create programs** to expand bioscience economic opportunities
- Connect New Mexico and representatives of bioscience industries
- **Promote legislation** to grow the bioscience industry
- Produce promotional literature related to explanation and fulfillment of the NMBSA's goals
- Identify science and technology trends and be a clearinghouse for bioscience enterprise issues
- **Co-Investment & Funding**
- Endowment for long-term investment
- **Actively recruit** bioscience businesses to New Mexico



Organization of NM Bioscience Authority

- Public/Private Partnership including UNM Health Sciences, NMSU, NM Tech, NM Economic Development Department, SpacePort Authority, the NM Legislature, and private industry
- 13-person board (appointed by Governor, Speaker of the House, Senate Pro-Tempore, and the three Research University Presidents)
- Per the 2017 SB 478 legislation that created the NM Bioscience Authority, “The authority is administratively attached to and shall be considered an affiliated organization of the UNM Health Science Center” to assure conformity with state procurement rules, statutes, and guidelines and minimize costs.



NM Bioscience Authority Board of Directors



Dale Dekker, AIA, Chair
Reg. Architect & Founder of Dekker/Perich/Sabatini Design



Tanner Schaub, PhD, Vice Chair, Director, Research Cores Program, OVPR, NMSU



David Perkins, MD, PhD, President, Professor of Medicine, Internal Med Dept, UNM HSC



Christos Christodoulou, PhD, Vice President, Director of COSMIAC, ECE Prof., UNM



Francisco Pallares, DED, Secretary, Director of Business Develop., Spaceport America



Greg Byrnes, Board Member, ED at NM Biotechnology & Biomedical Association (NMBio)



Dana Catron, Board Member, Deputy Director, Arrowhead Center, NM State University



Tom Kieft, PhD, Board Member, Microbiologist NM Tech Biology Department



Paul Laur, Board Member, Chief Operating Officer (COO), Mercury Bio



Nora Sackett, Board Member, Director of Office of Science & Technology, NM EDD



Prisca Tiasse, PhD, Board Member, Microbiologist, CEO of The Community Lab



- 2 members appointed by UNM President
- 2 member appointed by NMSU President
- 1 member appointed by NMT President
- Secretary of EDD or Designee
- Executive Director of SpacePort Authority or Designee
- 4 members appointed by Speaker of the House and Senate Pro-Tempore
- 2 members appointed by Governor

NM Bioscience Authority Staff



Stephanie Tofighi, MSPP
Executive Director



Ryan Cangioli, MBA, MACCT
Strategy & Policy Director



Anne-Laure "Anlo" Schmitt-Olivier, MS
Intellectual Property Specialist



Sterling J. Nichols III, BS
Program Specialist



**What are the
Current Initiatives
of the
NMBSA?**

Community Readiness Program

The Path to Make New Mexico Bioscience Ready

What Community Readiness means for New Mexico?

- Attract Bioscience companies and startups
- Foster Bioscience industry growth
- Help municipalities create innovation zones
- Facilitate Bioscience site selection
- Certified sites are currently in Albuquerque, Rio Rancho, Santa Fe, and Las Cruces

Community Readiness Rating:



BRONZE
Local governments have identified sites that are served by utilities and have a process in place to assist bioscience businesses.



SILVER
Local governments have 'shovel ready' sites, have development incentives and have identified point person to assist bioscience businesses through the process.



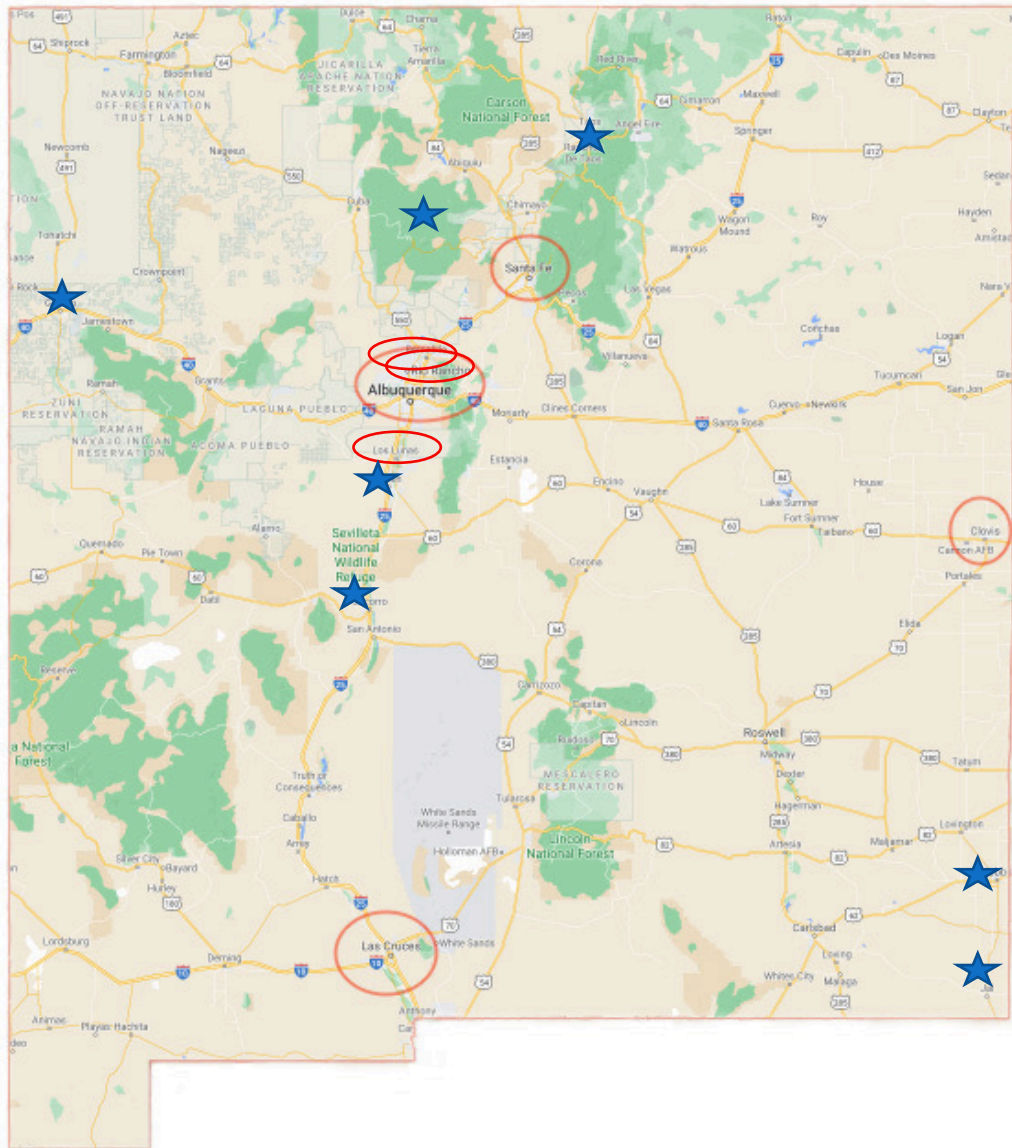
GOLD
Local governments have identified sites within Opportunity and/or tax advantage location, have expedited development processes, have available suitable buildings, have invested in enhanced transportation and logistics infrastructure and are partnering with universities and colleges to train workforce.



PLATINUM
Local governments have an inventory of suitable buildings and sites, sites are pre-permitted for bioscience uses, sites have completed NEPA review, and local governments assist bioscience businesses with identifying funding sources.

Community Readiness Program

Mapping Our Progress



Sites Currently Being Certified (circled)

- **Los Lunas, Santa Ana Pueblo, and Clovis**
 - Currently working on certification process
- **Albuquerque - 8 certified sites**
- **Rio Rancho - 1 certified site**
- **Santa Fe – 2 certified sites**
- **Arrowhead Center – 5 certified sites**
- **Las Cruces – 1 certified site**

Next Steps (starred)

- Developing relationships to start the process in these communities
 - Los Alamos, Socorro, Taos, Gallup, Jalisco, Hobbs, Belen, and Roswell

Centralization of State Resources for Bioscience Businesses

- NM BSA website serves as a conduit to investors, entrepreneurs, and inventors to gain awareness of and direction to state resources and economic development incentives.
- Individual support pages direct these three types of users to resources across the state specific to their needs.



NM Bioscience Authority's Bioscience Business Accelerator

- The BSA's bioscience business accelerator program helps connect researchers and entrepreneurs to support the development of strong bioscience businesses throughout the state.
- Includes grant training, mentoring, workshops, and network facilitation to support the commercialization of bioscience innovation.
- Most recent addition includes UNM hire, Anne-Laure "Anlo" Schmitt-Olivier, an Intellectual Property Specialist who will be working with the NMBSA 30% of her FTE to support the development of bioscience companies.



bennubio®



Development of Rural NM Biotech Ecosystem

NMBSA was awarded Stage 1 and Stage 2 prizes to create an ecosystem that will direct resources to rural communities to support the growth of bioscience companies in the regions and market rural communities to national audience to attract bioscience companies to the regions

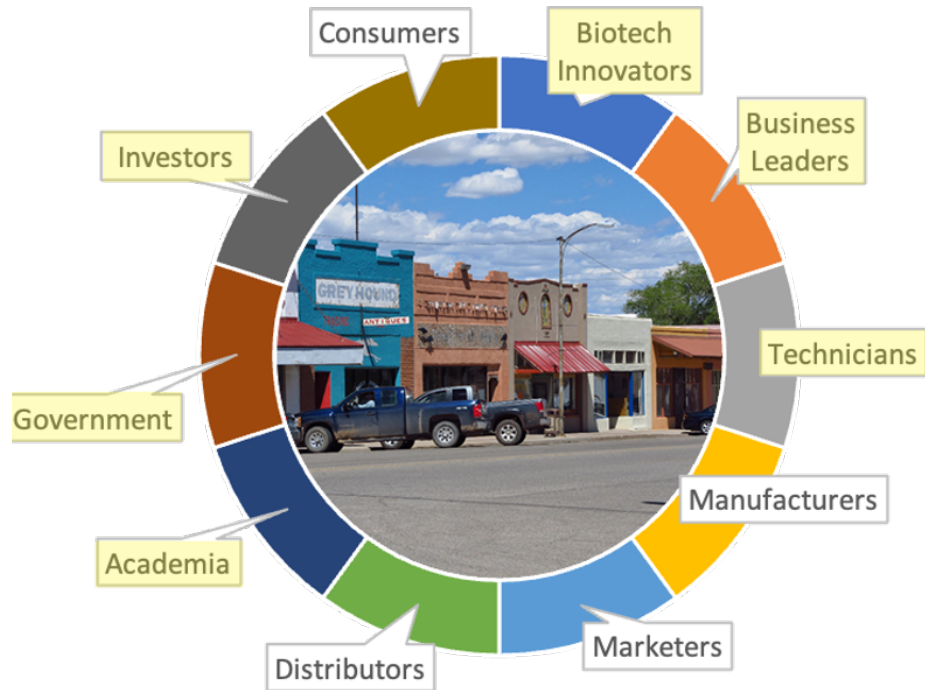
Contracting with EcoMap Technologies to build comprehensive ecomap of state's resources to improve transparency, connectivity, and applicability for all users.

Kickoff Meeting of Ecosystem was November 3rd in Socorro. Next quarterly meeting will take place in February 2024 in Los Alamos with subsequent meetings happening quarterly around the state.



Organization of Rural NM Biotech Ecosystem

Rural Biotech Innovation Ecosystem



- Rural NM includes every region outside Albuquerque/Rio Rancho, Santa Fe, and Las Cruces.
- Original members are below but all entities are invited to join at no cost.
- Workshops, networking, access to the ecomap, business support and mentoring will be available through the prize.
- As the umbrella for the state's bioscience industry sector, the NMBSA is excellently poised to help connect bioscience businesses, innovators, government agencies, and research labs and universities to help develop a successful, robust industry across the state.



Highlighted partners currently included in ecosystem

\$680K Bioscience Authority Programming Funding Request

- Contract with **Grant Developer** to support bioscience inventors and small business owners to submit funding requests as well as support the BSA's efforts to submit large funding requests to enhance the industry.
- Contract with **Investment Analyst** to advise Authority on co-investment partner agreements and investment business suggestions.
- Hire **Business Accelerator Facilitator** to catalyze networking between bioscience entrepreneurs and inventors and direct users to necessary resources to help build a bioscience coalition throughout the state.
- Provide **internships** and mentoring stipends for students and faculty at all three research universities to work in accelerator program to learn small business practices and support companies and entrepreneurship.
- Costs will support annual salary and fringe of personnel, relevant supplies, travel, and marketing costs to promote the program and New Mexico's bioscience industry.



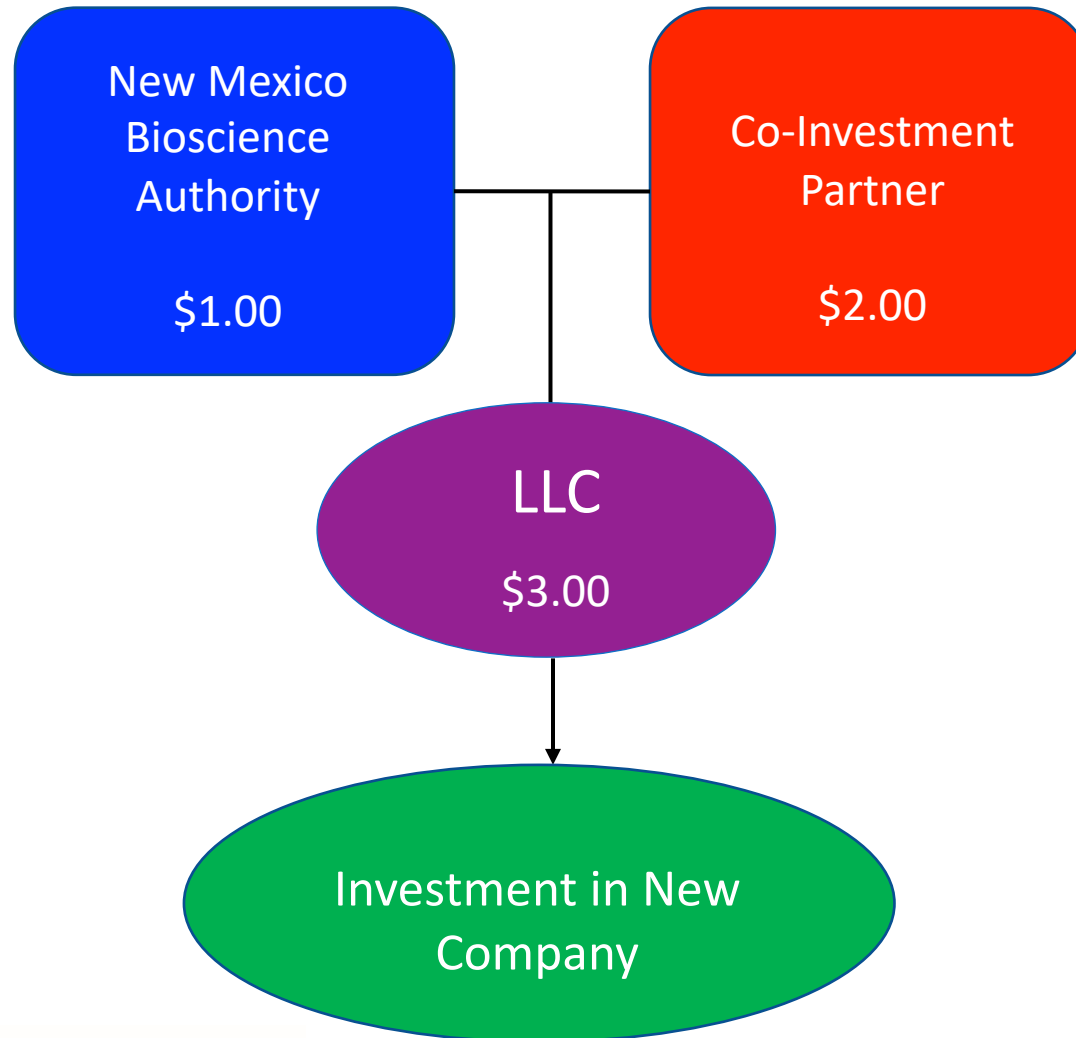


Growing a Sustainable Biotech Industry In New Mexico through Co-Investment

“Biosciences is a nascent and growing industry that has strong potential to become a major high-technology cluster in New Mexico. As such, it is one of 9 priority industries to diversify New Mexico’s economy.”

2021 NM Economic Development Department Strategic Plan

NMBSA Co-Investment Program Organization



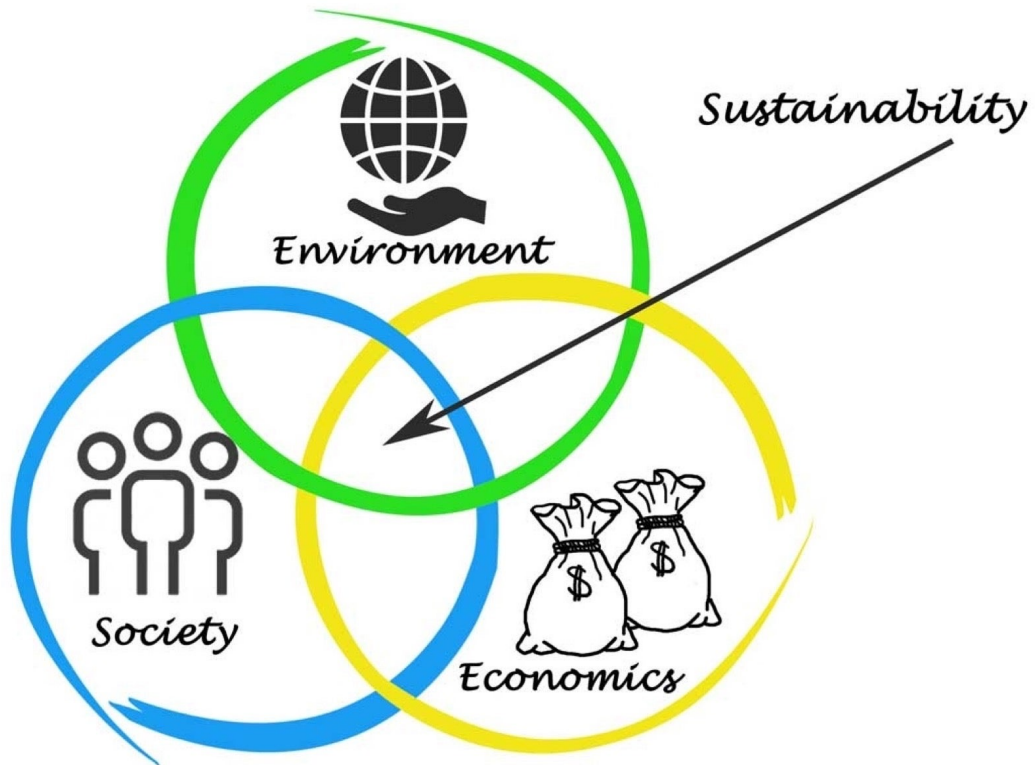
Main Objective

- Create and/or Grow NM Companies & Jobs
- Encourage Investing in NM Bioscience
- Increase capital for investments

Investment Partner Criteria

- **Qualifies to be lead investor**
- Will provide a **2:1 match of funds**
- **Is actively sourcing, vetting and investing in companies**
- **Has investment experience in bio-related industry**
- **Has existing capital for co-investment and is currently investing in bioscience companies**

Co-Investment Program Has Broad Impact and is Self Sustaining



- This is a **new economic development approach** that is different from other agencies in the state.
- **All size municipalities can benefit.**
- Includes Main street businesses, higher tech companies making new drugs or devices, and light manufacturing or distribution shops
- It is **self-sustaining** because capital to **reinvest** will be gained when investments are sold or exited **which will grow a substantial return on investment.**

\$50M Co-Investment Program Request



Will be matched 2:1 by private investors for total \$150M in investments over 5 years



Co-Investment of state and private dollars through LLC to start new companies or recruit companies



Will Invest in all stages of business growth (pre-seed, Series A, B,C; Main Street and high tech)



LLC will invest \$100K to \$1.5M per company



If successful, will return funds so program will be self-renewing and sustainable.



Will build economy throughout state.



How did we get here?

Expert Analysis and Recommendations

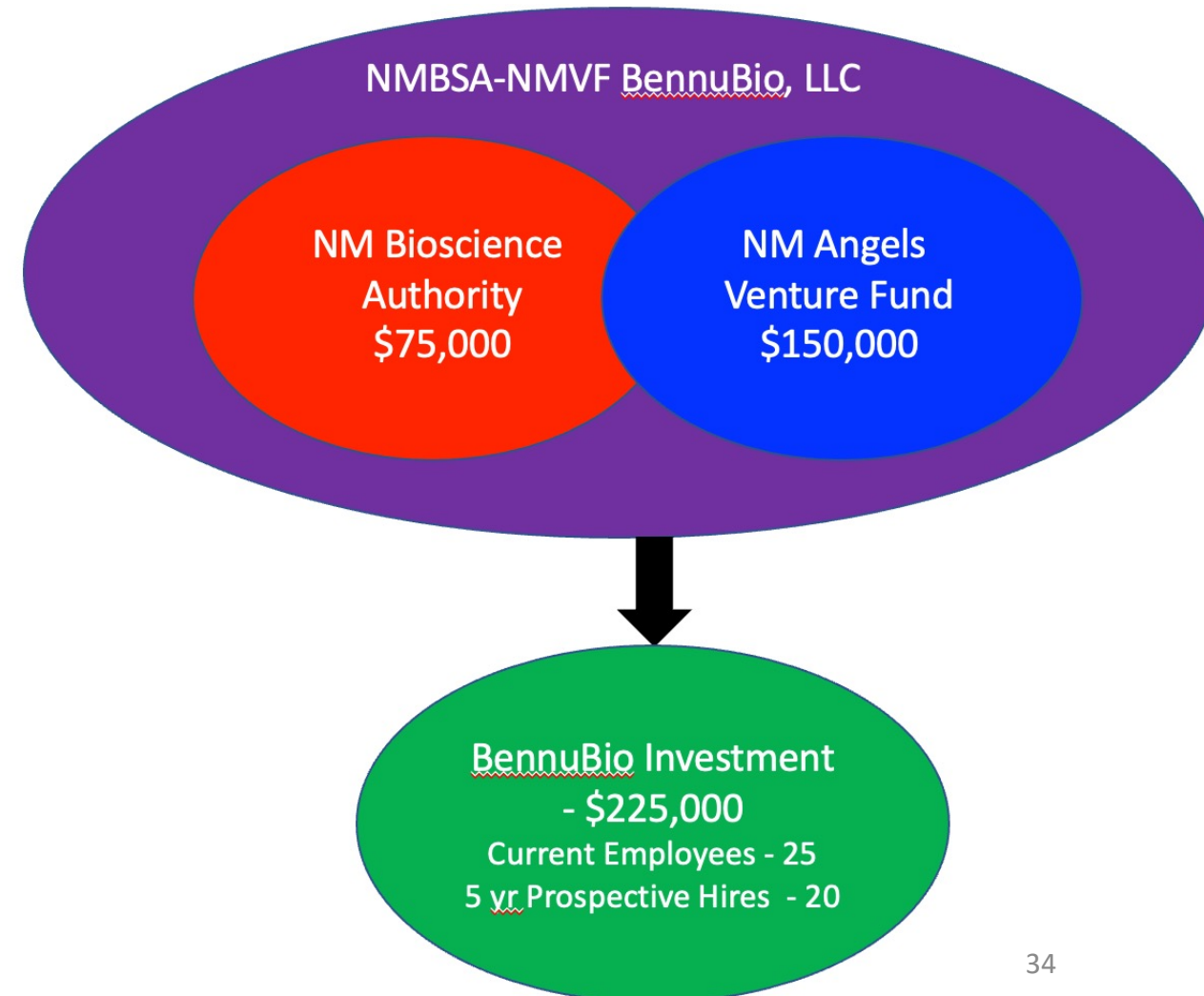
- In 2019, the NMBSA had an analysis done by Econsult Solutions Inc. (ESI) that recommended, based on their evaluation of other states pursuing the advancement of biosciences (AZ, MA, NC), that the best way to grow the bioscience industry in NM was to create a \$25M-\$50M bioscience co-investment fund.
- In response to the ESI report, the STTC legislative committee and the full BOD requested a comprehensive legal opinion by the Modrall Sperling Law Firm to assure 1) that co-investment in NM based bioscience companies by the NMBSA and an investment partner conforms with state law and regulations, and 2) the approach of forming an LLC is legal and appropriate. In 2020, the NMBSA received those opinions that confirmed both.



How did we get here?

Organization of Co-Investment Program

- After receiving the legal affirmation, the BOD voted unanimously to move forward with a pilot version of the co-investment program using \$75,000 in reserved funding to demonstrate the capacity of the fully funded program.
- Following RFP process through UNM Procurement Office in summer 2021, BOD approved partnerships with NM Angels and Anzu Partners.
- BennuBio investment was made with NM Angels' Vintage Fund in December 2022.



Co-Investment Fund Organization

Roles & Responsibilities of Investment Partner

- Seasoned investor with at least 5 years experience investing in bioscience companies
- Not related to anyone on the NMBSA Board of Directors
- Independently vets prospective bioscience companies to invest in and then presents options to NMBSA BOD to agree on decision as part of the 50/50 governance of the LLC
- Contributes 2-1 match of NMBSA funding to bioscience companies

Roles & Responsibilities of NM BSA

- Selects co-investment partner using evaluation criteria approved by UNM Procurement Office following State procurement guidelines
- Enters into a limited partnership or LLC with seasoned investor with equal governance over investment into company to ensure effective oversight of state funding
- Provides \$1 for every \$2 investment partner invests in agreed upon company

Good for Business = Good for New Mexico

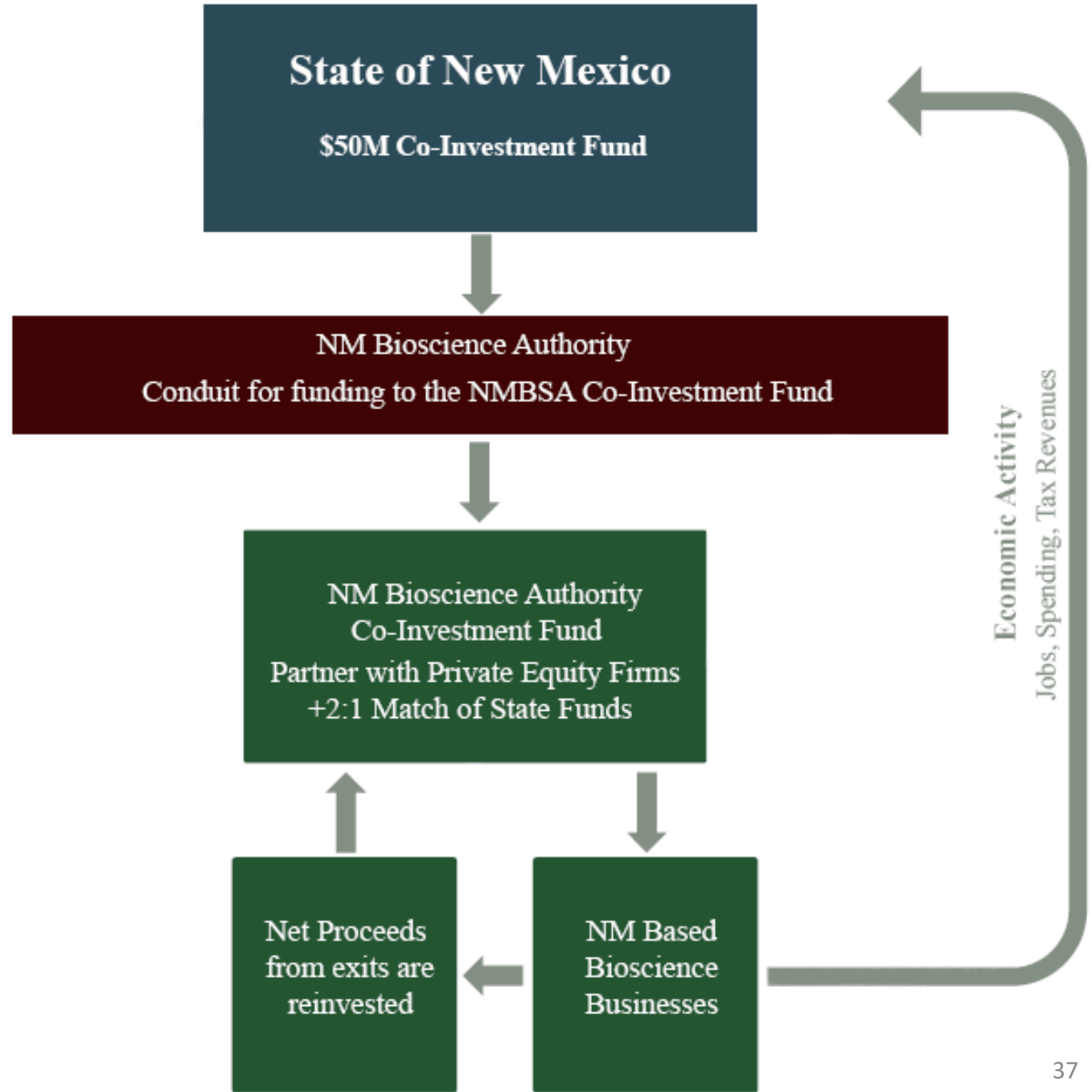
Return on Investment (ROI) for New Mexicans

- For each bioscience job, four more jobs are spun out because of supply chain and impacts
- For every dollar put in by state of NM funds, there will be a \$2 match by our co-investment partner
- Selection process will be transparent and qualifications-based following state procurement rules
- Companies supported must be based in New Mexico
- Will support all municipalities and counties in NM

Funding Source for Co-Investment Fund

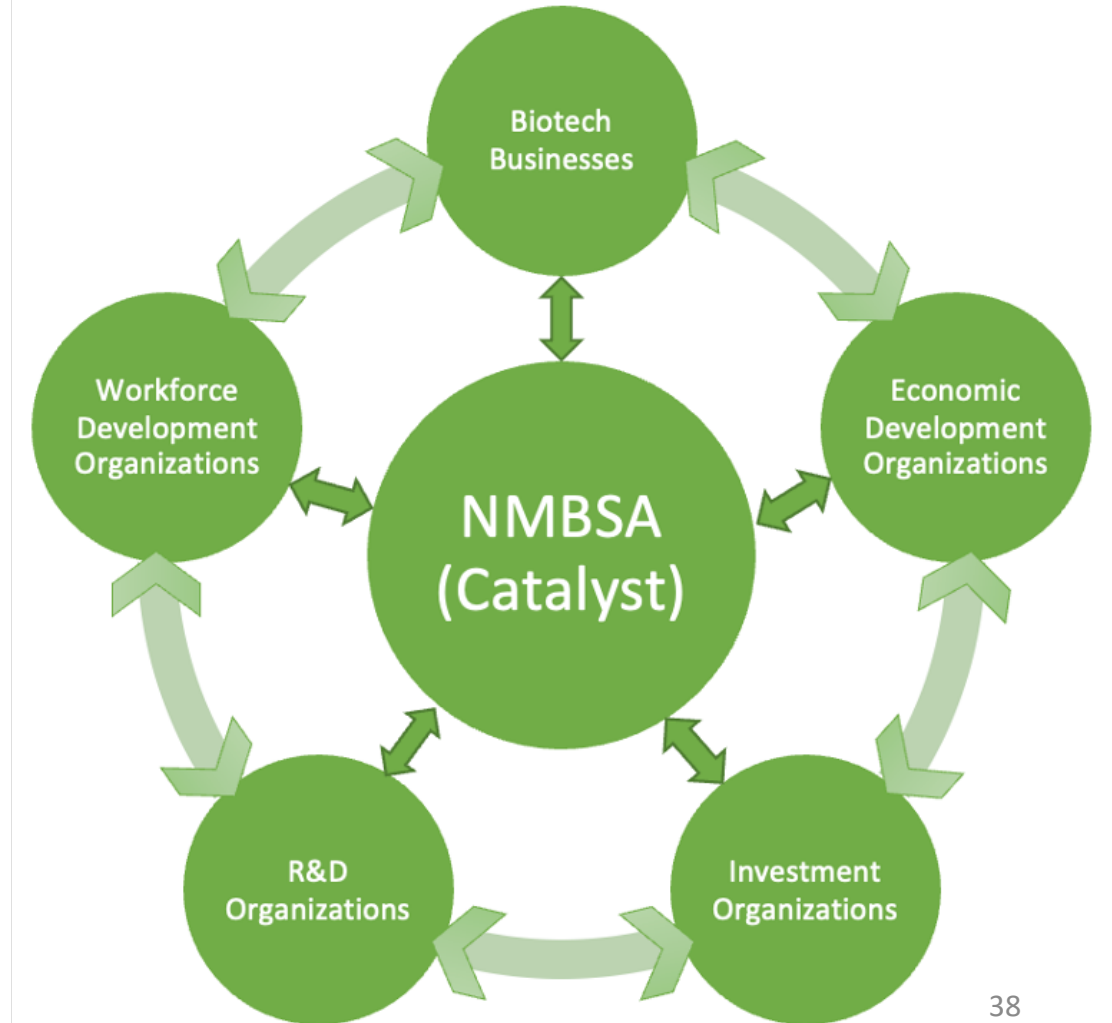
- General Fund funding through the State budget
- Strategic Investment in a growing industry
- Diversify the economy
- Attract more bioscience jobs to NM
- Create a sustainable source of funding
 - Accumulate additional funds through investment company exits and growth

Proposed Co-Investment Funding Model for NM Bioscience Authority



Why Should the NMBSA Lead the Co-Investment Fund?

- The New Mexico Bioscience Authority is the industry sector's champion. We are the catalyst that can support the connectivity for all the players throughout the state within this domain.
- Not only can we make valuable investments in collaboration with private investment organizations, but we are also able to provide the support to growing companies necessary for them to succeed beyond the monetary investment
- Internships, workforce development, research and technical support, marketing and customer discovery support are all part of what we envision as our role as the catalyst of a thriving bioscience ecosystem.





Summary of Request

- \$50 Million for Co-Investment Program
- \$680,000 for Bioscience Authority Programming Funding Request



Next Steps of the NMBSA



1. Oversee development, launch, and training for **Bioscience Ecomap** in line with SBA GAFC Prize with EcoMap Technologies.
2. Keep expanding **Community Readiness Certification Program** to identify zones throughout NM that are suitable to host bioscience businesses
3. Continue to develop **Co-Investment partnerships** with selected firms and invest in businesses that meet NMBSA evaluation criteria
4. Hire **NMBSA Bioscience Authority Programming Personnel** to facilitate necessary programming throughout the state
5. Continue to enhance **NMBSA website** making it more user friendly for inventors, entrepreneurs, and investors
6. Enhance communication – **newsletter & social media**

Questions?

Dale Dekker, daled@dpsdesign.org

Paul Laur, p.laur@mercurybio.com

Stephanie Tofighi, stofighi@salud.unm.edu

Ryan Cangiolosi, rcangiolosi@salud.unm.edu

<https://www.nmbioscience.org/>