

GrowBio: Growing Bioscience in New Mexico

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Economic Challenges

Currently facing the US economy

DECREASED MANUFACTURING

Percentage of Non-Farm Workers Employed by Industry



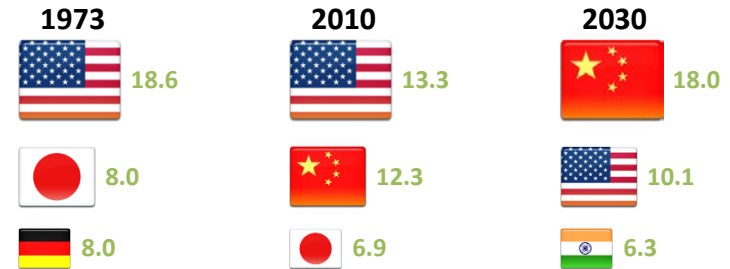
Manufacturing 34% Service 59%



Manufacturing 13% Service 82%

INCREASED GLOBAL COMPETITION

Top 3 Countries by Economic Dominance
(% share of world GDP)



INSECURITY OF JOB GROWTH

Months Required to Recover Job Growth
to Pre-Recession Rates



INSECURITY OF HEALTH CARE & SOCIAL SUPPORT SYSTEMS



Healthcare Costs increased nearly 1.5 times faster than wages between 1999 and 2011

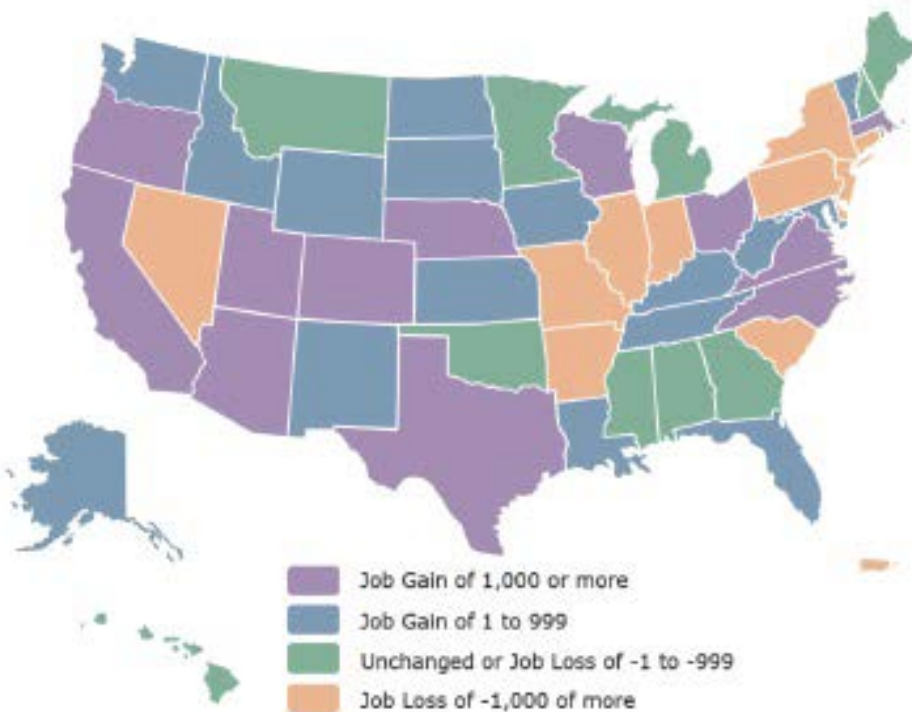
Almost 60% of personal bankruptcies are linked to medical bills



41% of American adults had trouble finding necessary care due to costs in 2011

Robust Promise of Bioscience

Change in Bioscience Employment by State, 2007 - 2012



- Nearly 111,000 new, high-paying jobs have been added over the last decade
- Bioscience has expanded significantly, with 17% growth since 2007
- The industry continues to create high-wage, family-sustaining jobs with average wages 80% greater than the overall private sector and growing at a faster rate

Source: Battelle/BIO (2014) "Battelle/BIO State Biosciences Jobs, Investment and Innovation 2014."
<https://www.bio.org/sites/default/files/Battelle-BIO-2014-Industry.pdf>

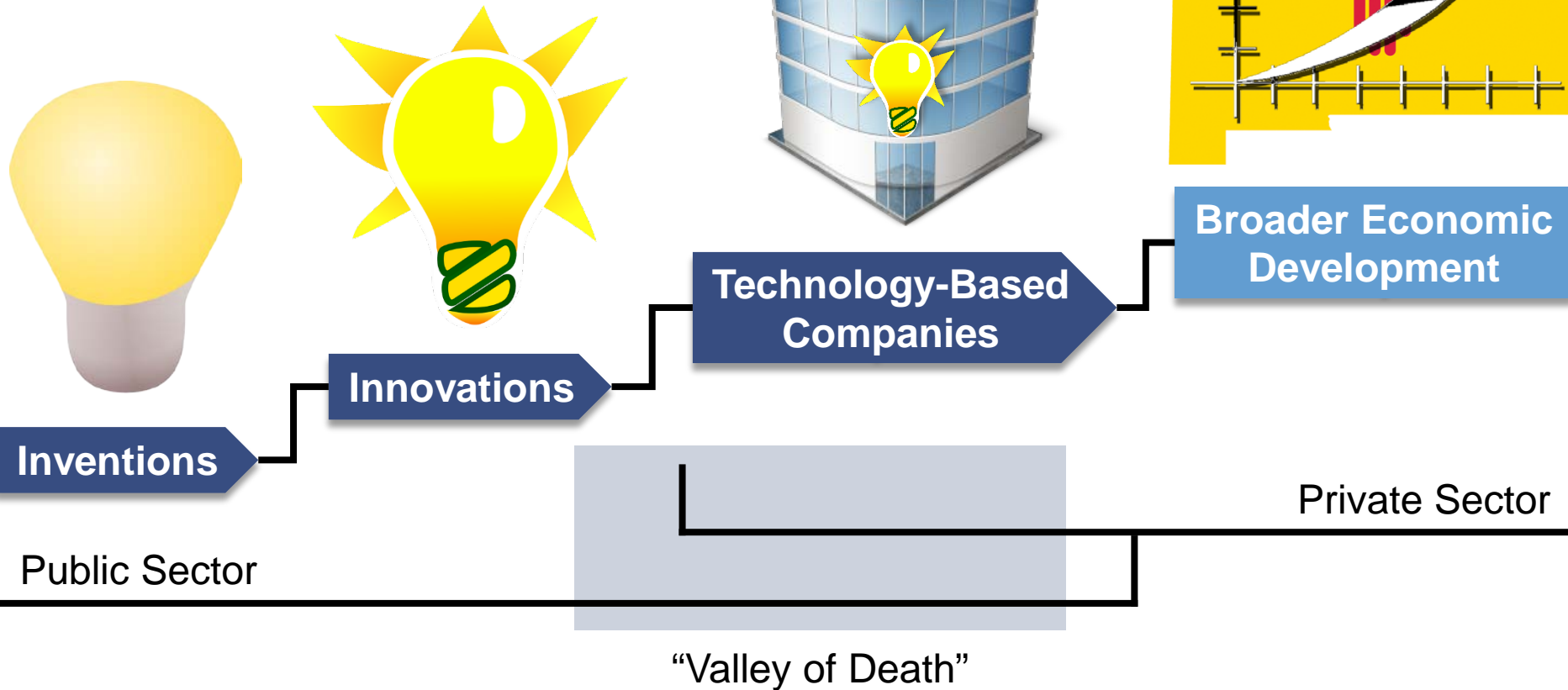
A historical map of the American West, showing the Red River, North River, and various territories and states. The map is partially visible at the top of the slide.

Economic Model

Premises:

1. Scientific progress is key to turning the “wheels”
2. Goal of technology policy is improving quality of life
3. Governmental intervention necessary to prevent underinvestment in R&D

Economic Model



A decorative header image showing a historical map of the American West. The map includes labels for 'Mogollon Mts', 'vaencia', 'Red River', 'North River', 'Arkansas', and 'LITTLE ROCK'. The word 'TERRITORY' is also visible in large letters.

Economic Model

- Innovation leads technology
- Technology is driver of economic growth

- University is key “public” driver
- Private start-up companies key to advancing technology to commercial purpose

A decorative header image featuring a historical map of the American West. The map shows geographical features like the Red River and various territories, with labels such as 'Mogollon Mts', 'vaencia', 'Red River', 'North', 'F. Smith', 'Waddell', 'ARKA', and 'LITTLE ROCK'.

Effective Public-Private Partnership is Key

- University/Public Sector
 - Their view: Contributes scientists and experts
 - Business perspective: Minimizes technical risk, market risk, and evolving nature of market
- Private Sector
 - Their view: Priority of economic growth and jobs
 - Academic perspective: Societal impact

Commercialization

UNM HSC public-private partnerships

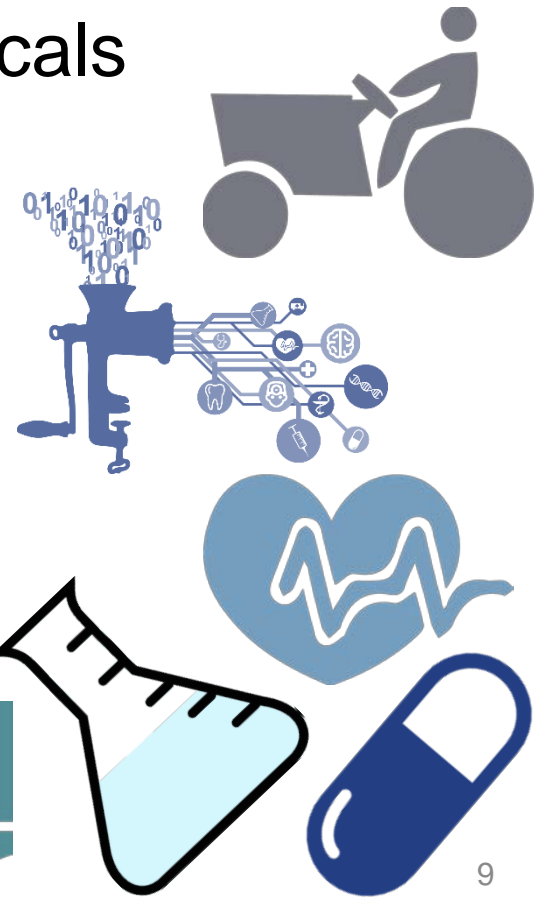
- Since 2004, 38 new private companies were either spun off from the university or used university technology to start up
- Companies focus on drug development, cancer therapies, molecular imaging, medical diagnostics, software development, genetics, and more



What is Bioscience?

Six industries make up the bioscience sector:

1. Agricultural feedstock and chemicals
2. Bioscience-related distribution
3. Drugs and pharmaceuticals
4. Medical devices and equipment
5. Research and bioinformatics
6. Testing and medical laboratories



Why Bioscience in NM?

What we Have

- ✓ Strong bioscience R&D from university
 - ✓ Already a driver of job growth
 - ✓ IP protection
 - ✓ Education and workforce development
- ✓ Access to capital
- ✓ Space, facilities (Innovate ABQ, BioScience, Technology Park)

What is Needed

- Federal, state and municipal incentives
 - Cigarette Tax could be directed to this “Valley of Death”
 - Build university bioscience research
 - Seed start-up companies
 - Attract VC capital

Private Capital Investment in New Mexico

\$301
Million

Private capital invested
in New Mexico over the
past 5 years

48%

Of this investment went
to bioscience

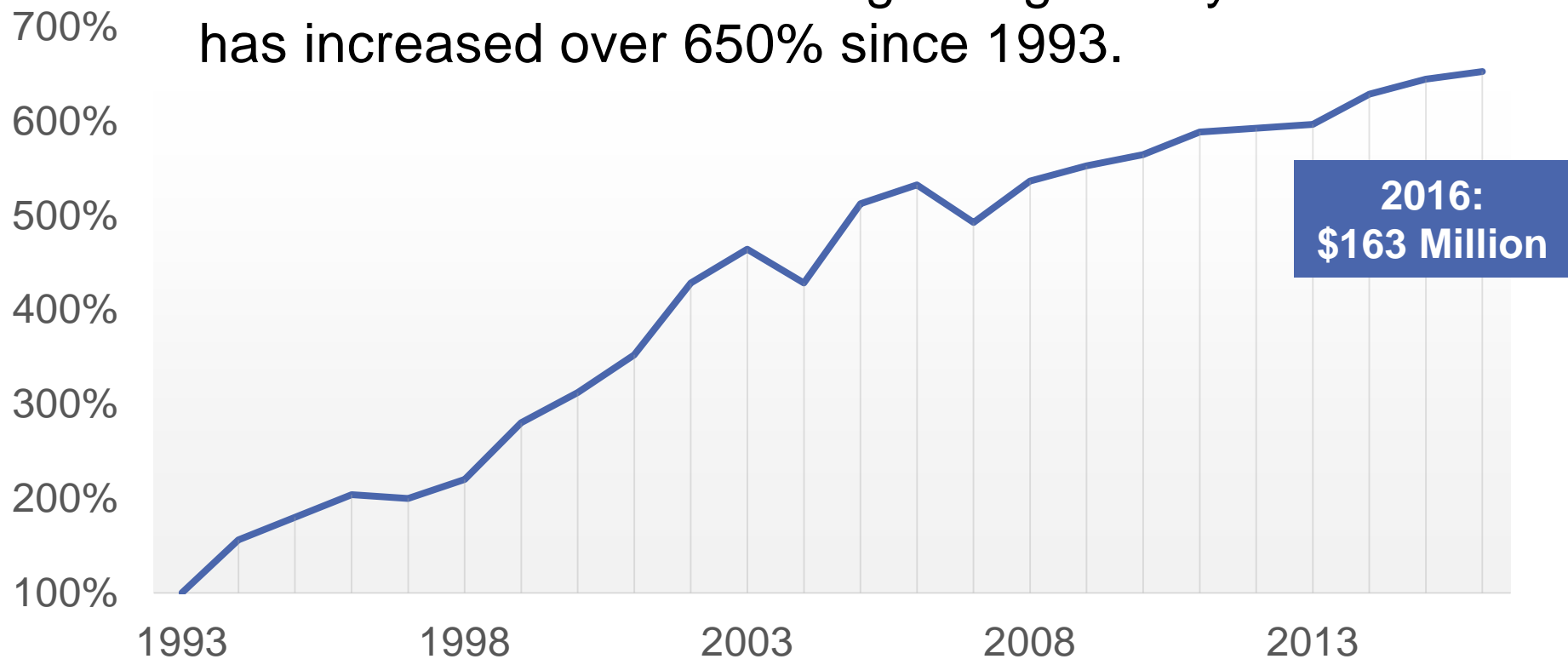
~\$80
Million

Available capital from
New Mexico-based VC
Funds



Growing Bioscience Research at the UNM Health Sciences Center

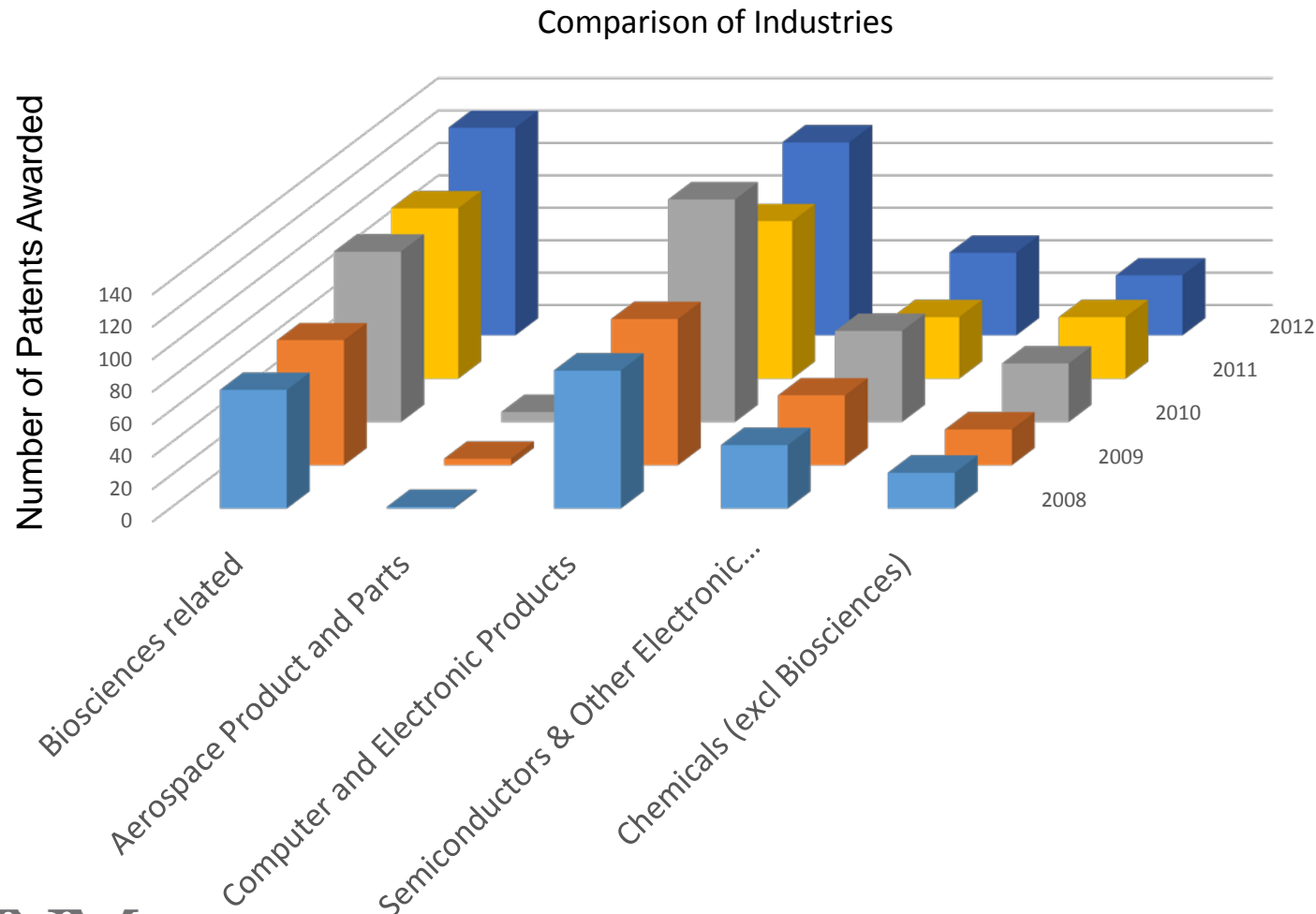
Extramural research funding brought in by UNM HSC has increased over 650% since 1993.



**2016:
\$163 Million**

Patents Awarded in NM

Cross-Industry Comparison



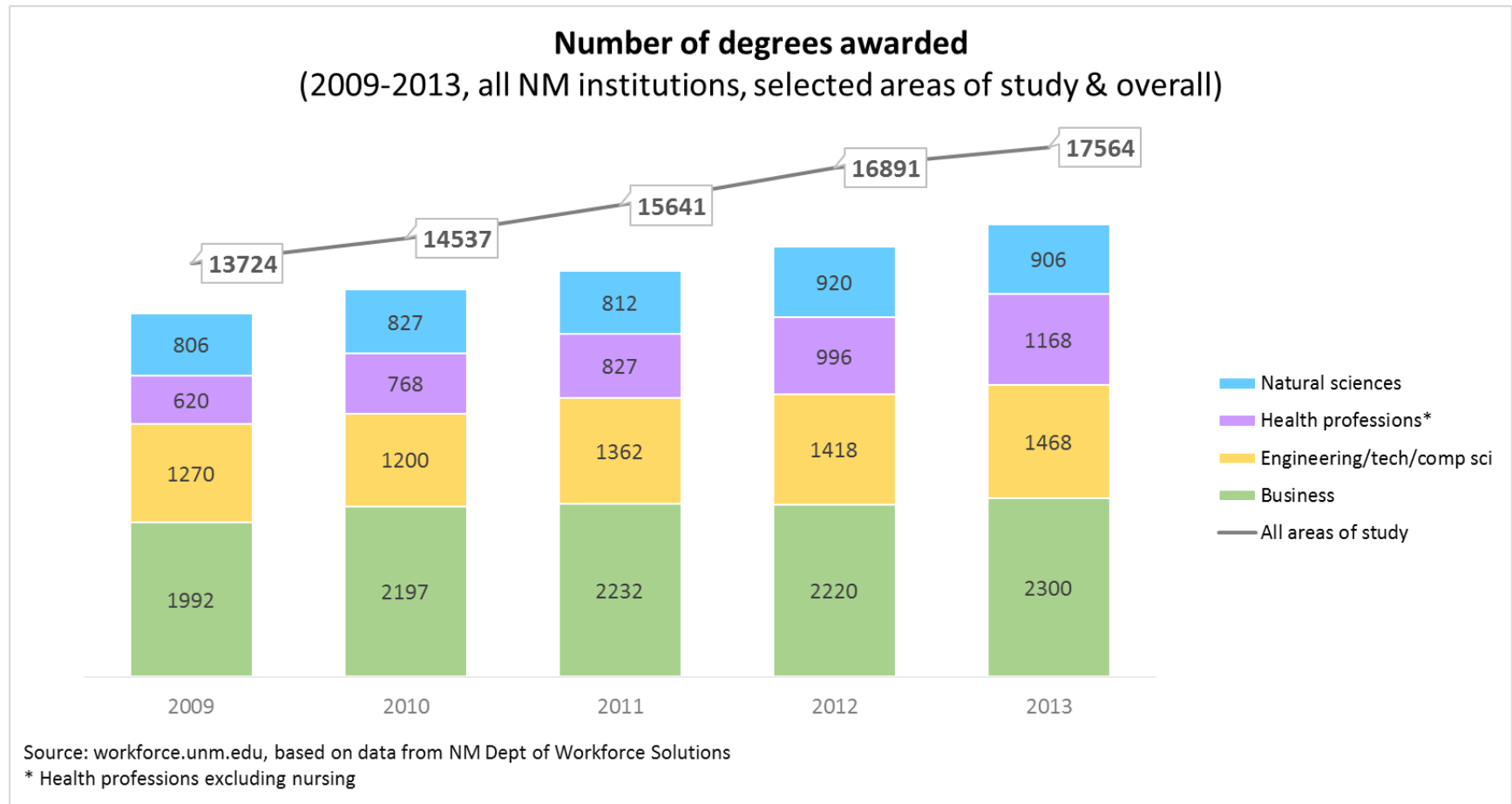


Workforce

- Hundreds of potential bioscience scientists and engineers produced at universities each year
- High wages; “green” jobs
- Declining numbers of population < 30 years of age stay in New Mexico
- Employment growth

Workforce Strengths

Increasing Supply of Business and Science Graduates in NM



NM Bioscience Segments by Key Measures

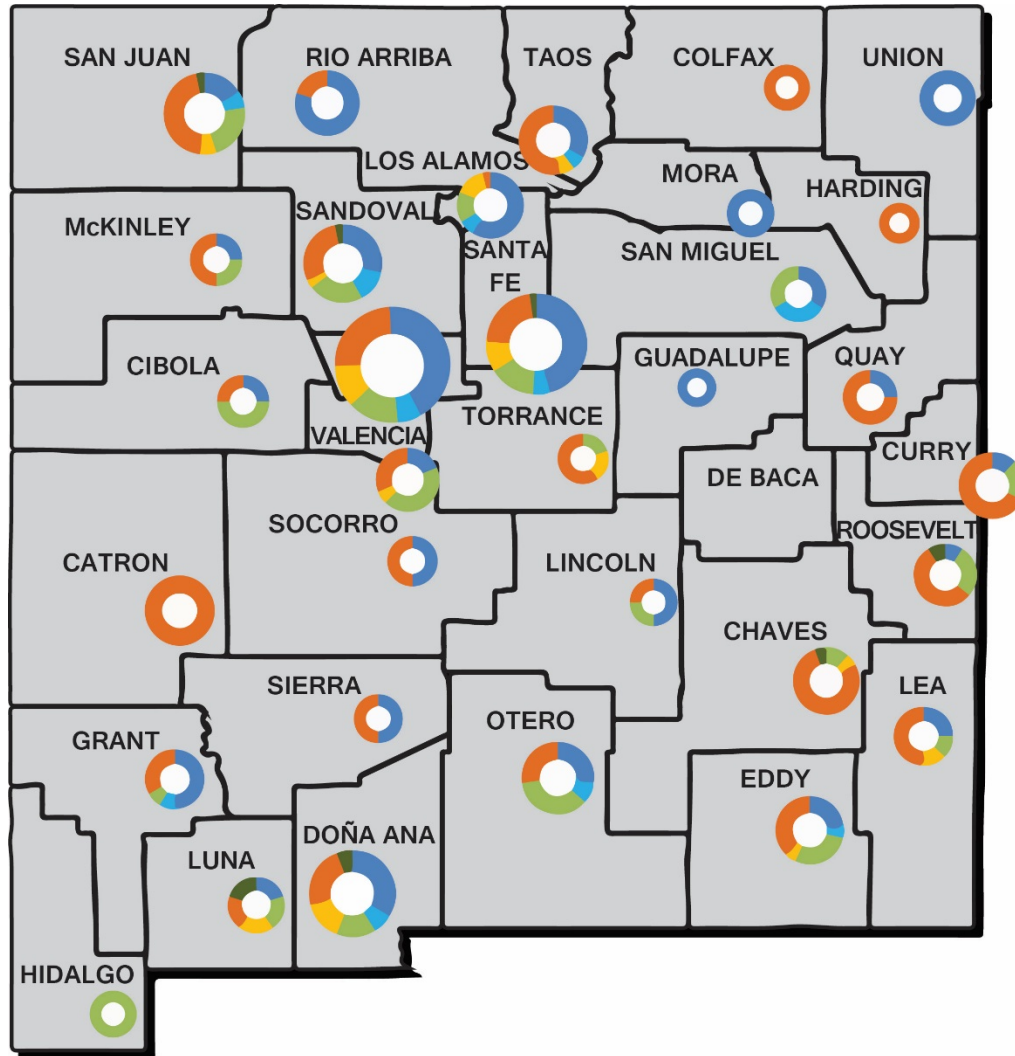
Bioscience Industry Segments	Count	Total Employed	Total Facilities (Sq.Ft.)	Total Revenue (\$ Millions)
Agriculture Feedstock & Chemicals	13	125	102,327	28.58
Bioscience-related Distribution	236	1,322	948,831	161.38
Drugs & Pharmaceuticals	47	964	323,708	144.67
Medical Devices & Equipment	76	1,078	425,882	116.75
Research & Bioinformatics	299	3,145	1,090,264	490.32
Testing & Medical Laboratories	131	2,929	836,575	256.45
Grand Total	802	9,563	3,727,587	1,198

NM Bioscience in Comparison to Other Industries

Industry	Total Employed	Annual Salary
Bioscience ¹	4,990	\$87,387
Computer ¹	14,760	\$74,050
Engineering ¹	21,150	\$85,629
Aerospace ²		\$71,512
Mining ²		\$78,695
Communication ²		\$84,150

Sources: 1. BLS (2015 Data)
2. Salary.com (2016 Data)

Bioscience in NM's Counties



802 Companies statewide
9563 Employed statewide

Bioscience Segments

- Research
- Pharmaceuticals
- Testing Laboratories
- Medical Devices
- Distribution
- Agricultural

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General Incentives

- Workforce training funds
- Economic development initiatives
- Tax credits
- Financing

Workforce Gaps

- Insufficient number of C-level business leaders experienced in bioscience
- Specialized expertise in:
 - Bioscience-related regulatory issues
 - Clinical trials
 - Good Manufacturing Practice (GMP)
- Economic Development staff experienced in bioscience










Workforce Recommendations

- Recruit out-of-state companies (e.g., California) to start or transfer operations to NM to employ our bioscience graduates
- Recruit top-level executives to “retire” in New Mexico
- Enhance the STEM pipeline program with local high schools and community colleges



Additional Recommendations

To Showcase NM's Bioscience Strengths

-  **Increase marketing** by NM's existing funding sources
-  **Raise NM's overall profile** in the national bioscience community by marketing our research, workforce and infrastructure
-  **Raise awareness** nationally about existing incentives in NM
-  Open up **Angel Investment Tax Credit** to include out-of-state investors
-  **Designate one or more funds** tied to NMSIC to invest in bioscience companies
-  Establish public/private **Bioscience Center** to provide facility, staff, and marketing support to early-stage NM bioscience initiatives
-  Establish **NM Research Alliance** to increase collaborative efforts among the state's research entities for more funded programs in state



Questions?

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