

TOBACCO SETTLEMENT REVENUE OVERSIGHT COMMITTEE

Co-Chaired by:
Senator Gabriel Ramos
Representative Elizabeth “Liz” Thomson



Richard S. Larson, MD, PhD
Executive Vice Chancellor
Vice Chancellor for Research

September 15, 2020



UNM Health Sciences Center
plays a **critical role** in delivering
healthcare services, training of
health professionals, and
contributing
to New Mexico's economy.

Employs over **10,000** individuals

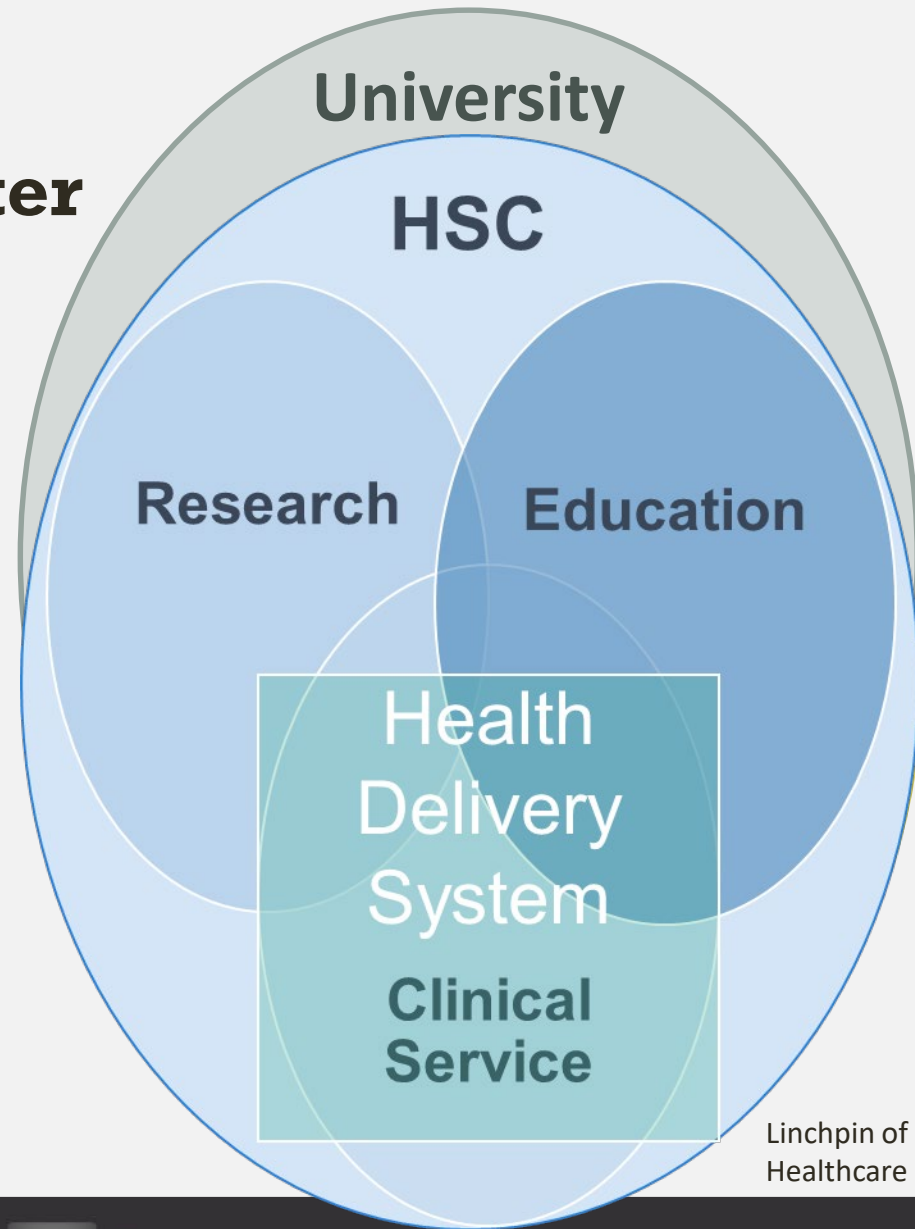
UNM HSC: An Academic Health Center

Neither purely **academic institution**
or **health care providers**

Compete in **health** and **marketplace**

Engage in **biomedical research**

Extensive **educational activities**



UNM HSC: Critical Needs Programs for New Mexico



Patient Care

Delivery of **comprehensive** and **unique** patient care

Education

Growing the **next generation** of Health Care Professionals Workforce

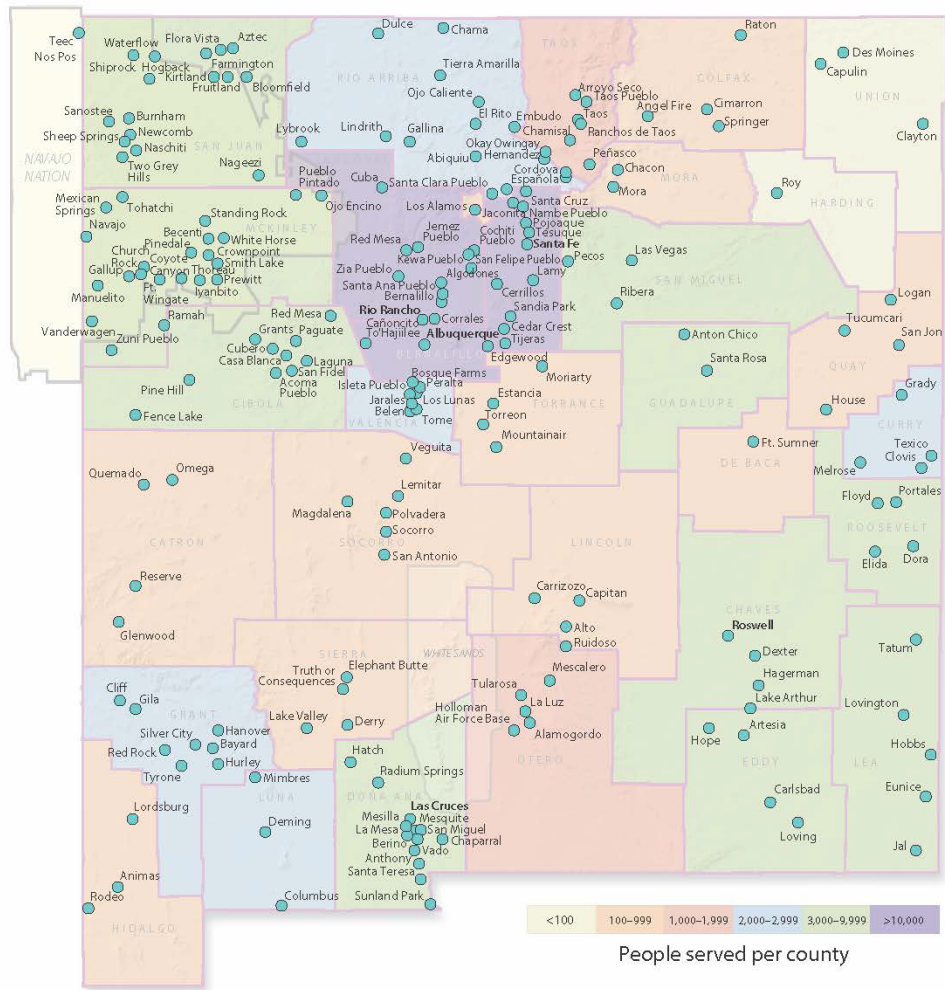


Research

Creating new **knowledge** to increase the **quality of life** for New Mexicans



Activities in New Mexico Counties



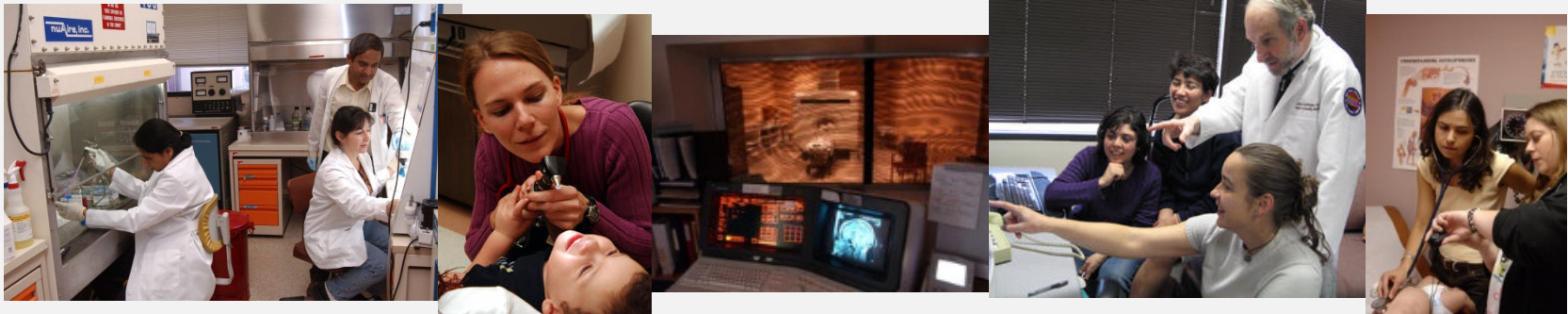
579 Activities in 246 Communities

Activities include:

- Education
- Patient care
- Community research
- Telehealth sites

Tobacco Settlement Statute

- Supports **clinical care, education, and research** into tobacco related illnesses
- Support of **biomedical research** with tobacco settlement funds
- Funded **other needed** health-related programs



Tobacco Pilot Funding



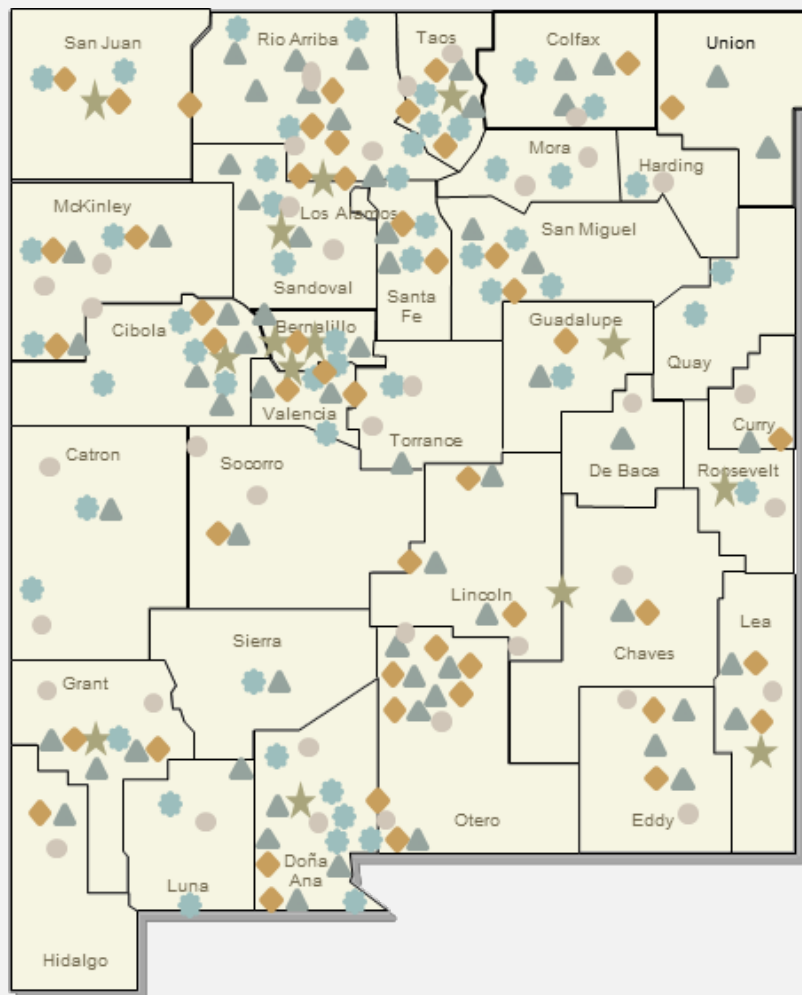
Surojit Paul, PhD



Effect of Prenatal Alcohol Exposure on Cerebral Stroke: Role of Tyrosine Phosphatase STEP

- Exposure to alcohol and smoking in utero has been shown to disrupt neuro-developmental gene expression and lead to abnormal fetal development.
- Found that even mild alcohol consumption or smoking by pregnant females could result in long-lasting effects in the offspring throughout its lifetime and identified the antioxidant system in the offspring as an ideal drug target for interventions to mitigate these adverse consequences.

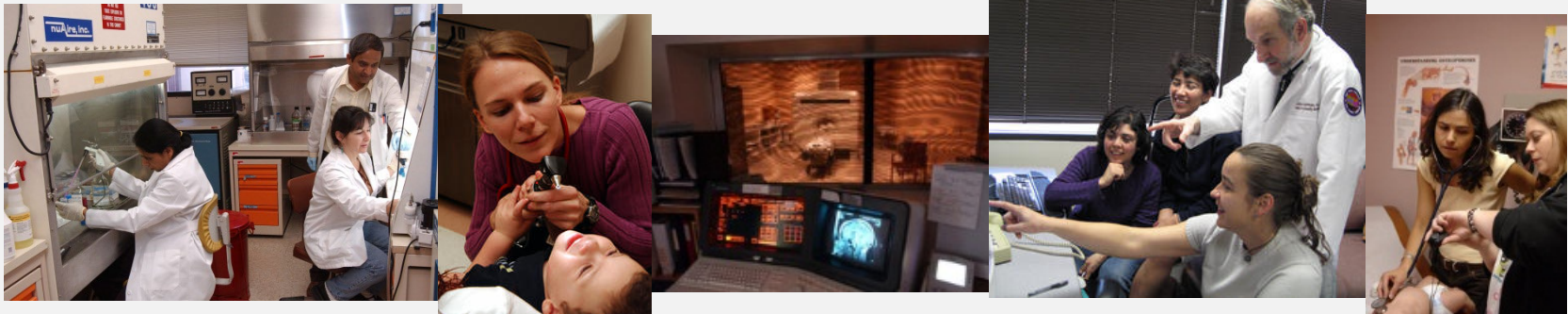
Research in New Mexico Counties



- Provides statewide support services for research
 - ★ Health Extension Rural Offices (HEROs)
 - ◆ Investigator-led community-based programs
- Provides access to other research programs
 - ▲ Project ECHO
 - ✿ Practice-based research network
- Establishing recruitment network
 - CHS/CHW Network

Cigarette Tax vs. Tobacco Settlement

- Tobacco Settlement supports **tobacco-related research and clinical care** at the entire UNM HSC
- Cigarette Tax (0.83%) supports **clinical care, education, and research** at the UNM Cancer Center



Tobacco Related Illnesses

Cancer

- Lung Cancer
- Esophagus Cancer
- Laryngeal Cancer
- Kidney Cancer
- Cervical Cancer
- Colorectal Cancer
- Leukemia/Lymphoma

Brain & Behavioral Illnesses

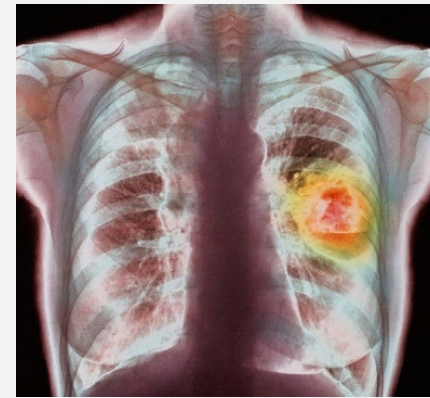
- Addiction
- Fertility in Women
- Impotence in Men
- SIDS
- Toxic Exposures

Infectious Disease and Immunity

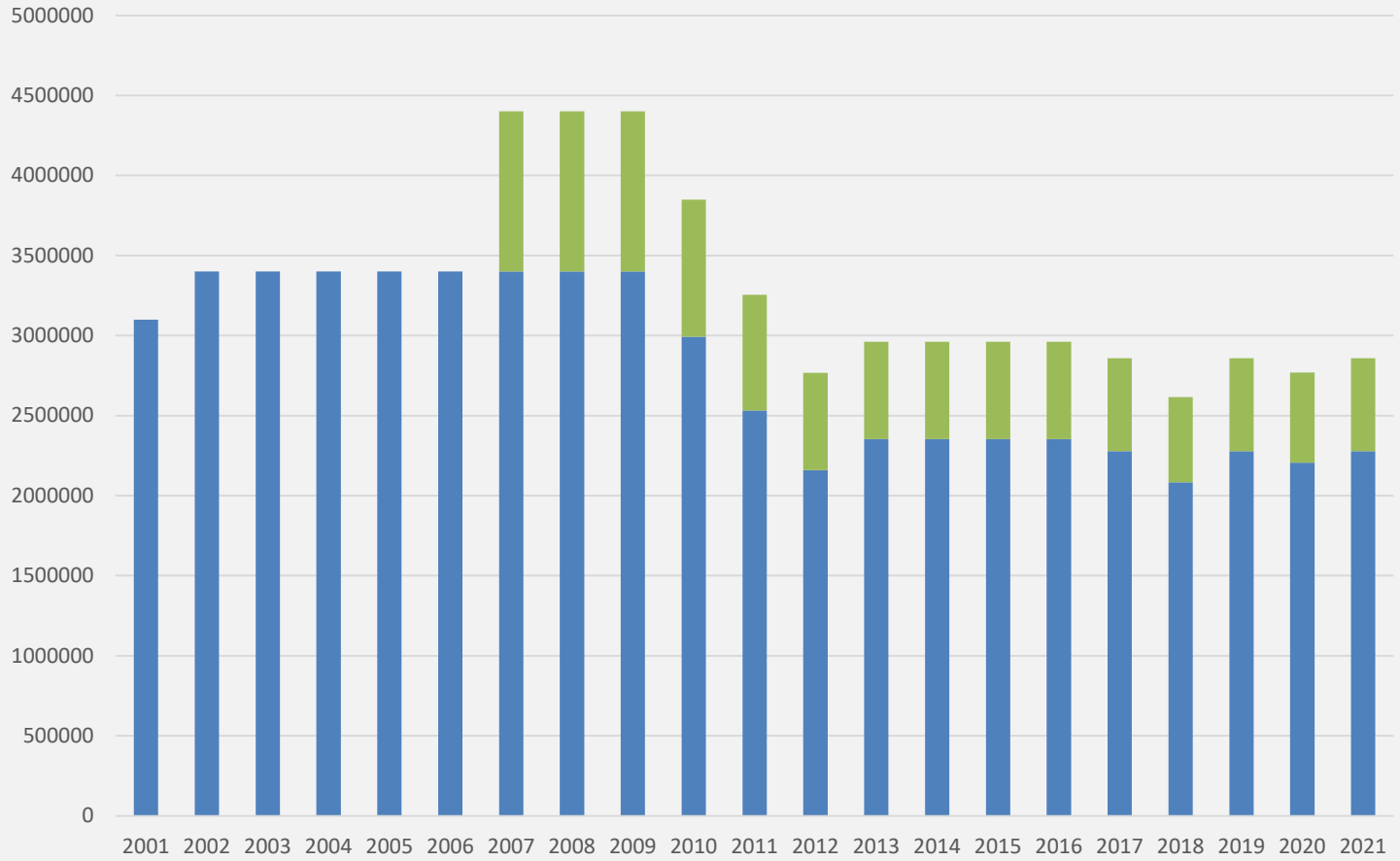
- Osteoporosis
- Delayed wound bleeding
- Palmoplantar pustulosis
- Psoriasis
- Increased incidence of back injury and broken bones

Diabetes and Vascular Diseases

- Coronary Heart Disease
- High Cholesterol
- Stroke
- Diabetes
- Emphysema
- Asthma
- Atherosclerosis



Changes Over the Last Decade



■ Core Programs ■ I&G

Programs Supported by Tobacco Settlement Funds

Core Projects

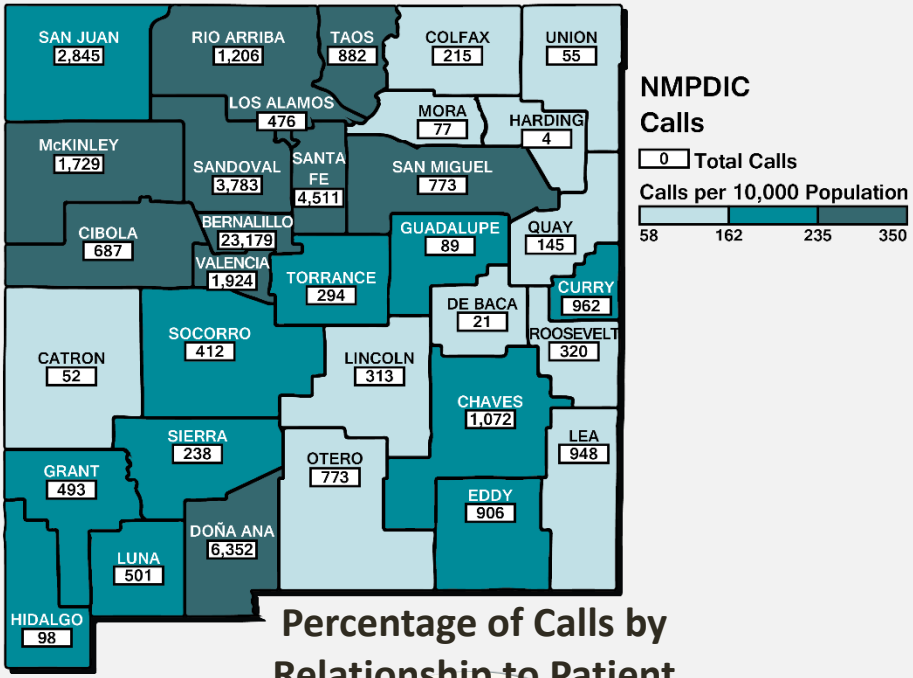
- NM Poison & Drug Information Center (FY22 Request: \$590,200)
- Pediatric Oncology Program (FY22 Request: \$250,000)
- *UNM HSC Biomedical Research (Genomics, Biocomputing & Environmental Health Research)* (FY22 Request: \$937,400)

Instruction & General (I&G) Funds

- *Specialty Education Trauma* (FY22 Request: \$250,000)
- *Specialty Education Pediatrics* (FY22 Request: \$250,000)
- *Instruction and General Line Item (added in 2007)* (FY22 Request: \$581,500)

NM Poison & Drug Information Center

NMPDIC Calls by County, FY20



Benefit

- The *only poison center* in New Mexico
- *Improves New Mexicans' health* by reducing morbidity and mortality associated with poisoning and by encouraging proper use of medications
- *Reduces healthcare costs* by helping citizens identify when to safely be treated at home and by consulting with healthcare teams for hospitalized patients
- Reducing hospitalizations saves over \$35M each year
- Receives more than 23,000 calls per year
- Provides professional education statewide
- *Call volume greatly increased in FY20 due to COVID-19*

Percentage of Calls by Relationship to Patient



23,298 calls/year

Pediatric Oncology Program



Benefit

- The center of excellence for diagnosis & care of children with cancer
- The only provider of tertiary care for children with cancer in New Mexico
- Consults on young adults with pediatric cancers
- Over 450 active patients with 4,900 visits

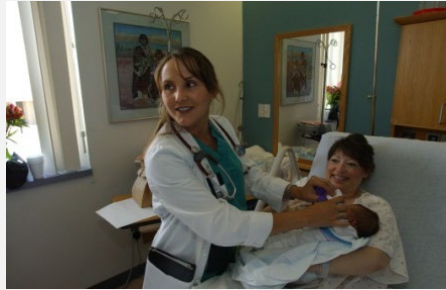
Use of Funds

- Provides support to patients and their families via counseling
- Faculty positions are supported as well



History of I&G Funding from Tobacco Settlement Funds

- Began in 2007
- Legislature funded HSC I&G General Fund requests from TSF
- Supports trauma care, primary care, and faculty retention



With faculty compensation rates below the national average, the School of Medicine (SOM) is having difficulty retaining faculty physicians due to salary compaction. The SOM must be able to hire and retain quality faculty physicians as they are the key to educating our medical students, while simultaneously providing care to New Mexicans.

Funds Committed to I&G Supplement

Benefit

- Support additional faculty positions in pediatrics and trauma medicine
- Ensure that faculty members have sufficient time to continue teaching despite and ever-increasing clinical patient load



Programs

- Specialty Education in Pediatrics
- Specialty Education in Trauma HSC
- I&G Support for Education and Retention

UNM HSC Biomedical Research Genomics & Environmental Health

Benefit

- Pilot funds
- “Core” support
- Accelerating the translation of basic research into clinical practice



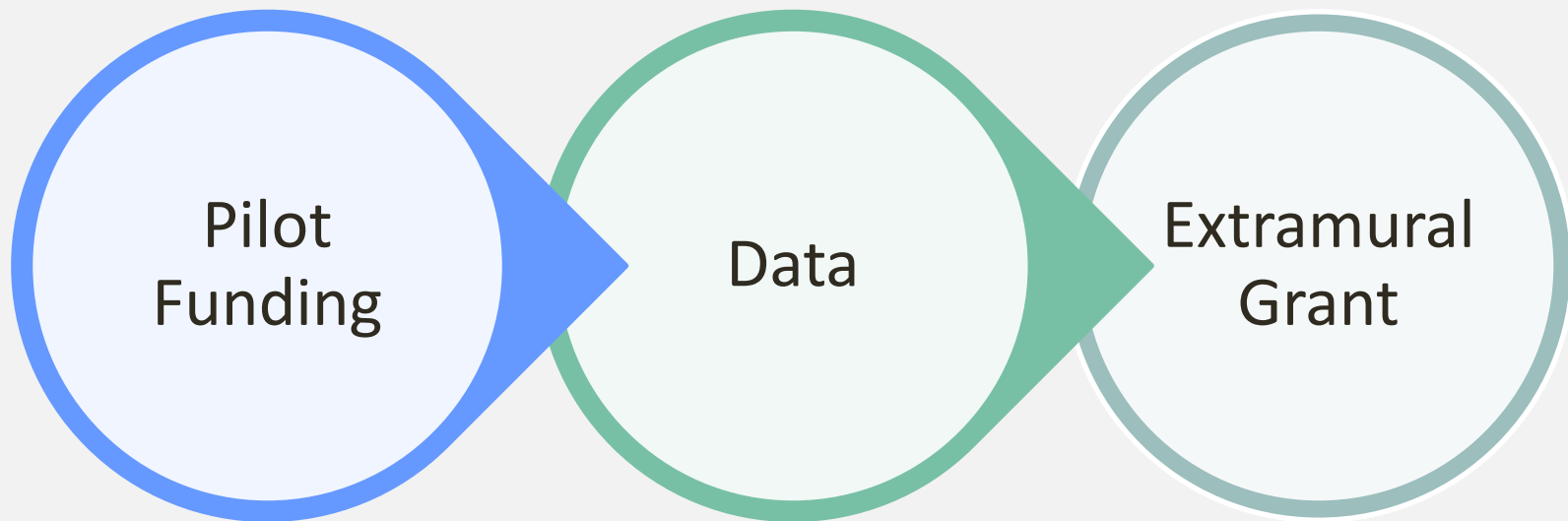
FY21 Amount: \$937,400

FY22 Request: \$937,400

(Now known as UNM Comprehensive Program for Clinical and Basic Research, and Prevention of Tobacco-Related Illnesses in New Mexico)

Pilot Funding

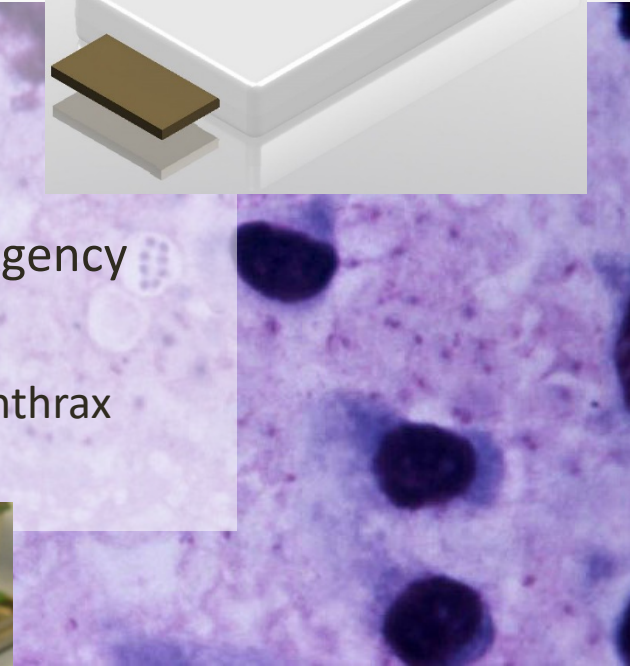
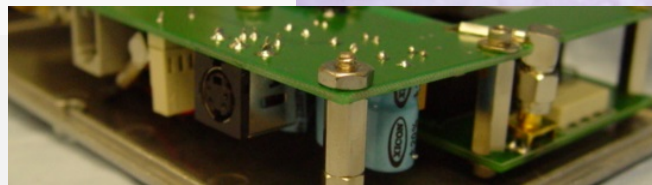
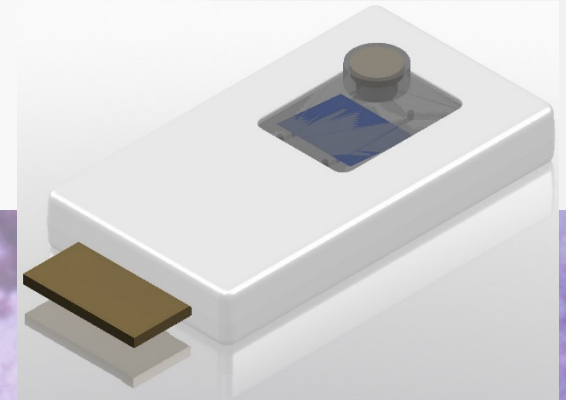
- Pilot funding is the primary mechanism for obtaining federal support



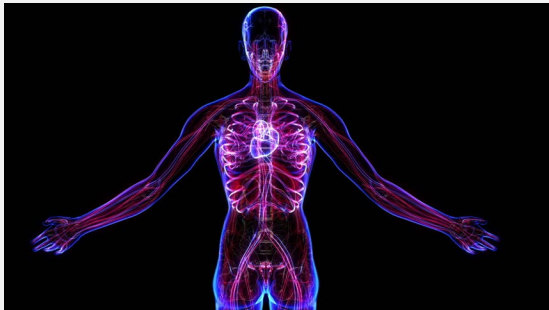
- Pilot funding returns \$8 – \$20 per \$1 invested.

Example of Pilot Funding

- Idea
 - Can we develop a handheld device to rapidly diagnose disease?
- Required Investment
 - \$50K Pilot funds (2003)
 - Core facilities supported by Tobacco Settlement
- Result
 - Initial data obtained with Sandia National Laboratories
 - Grant application (\$1.3M for 8yr; supports 10 jobs/yr)
- Chief Scientist Award from the Defense Intelligence Agency
- Public-Private Partnership
 - Adapted for hepatitis B and C, HIV, sin nombre virus, anthrax
 - Potential to save tens of thousands of lives



Tobacco Pilot Funding

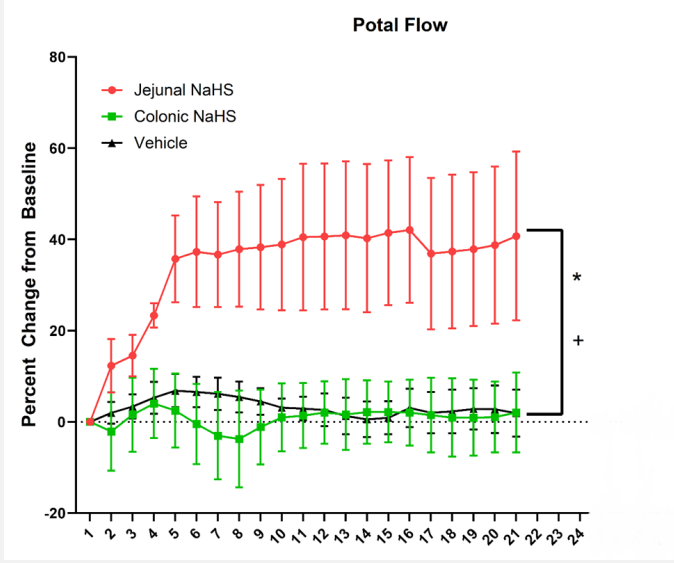


The effects of bacteria-derived hydrogen sulfide on the portal vascular system



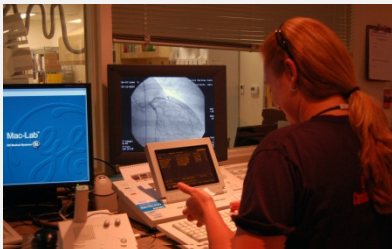
Nancy Kanagy, PhD

- Tobacco use is associated with overgrowth of harmful gut bacteria which produce the chemical hydrogen sulfide in the small intestine.
- Found that Hydrogen sulfide generated by gut bacteria is a new target for therapy to prevent or reverse liver disease.



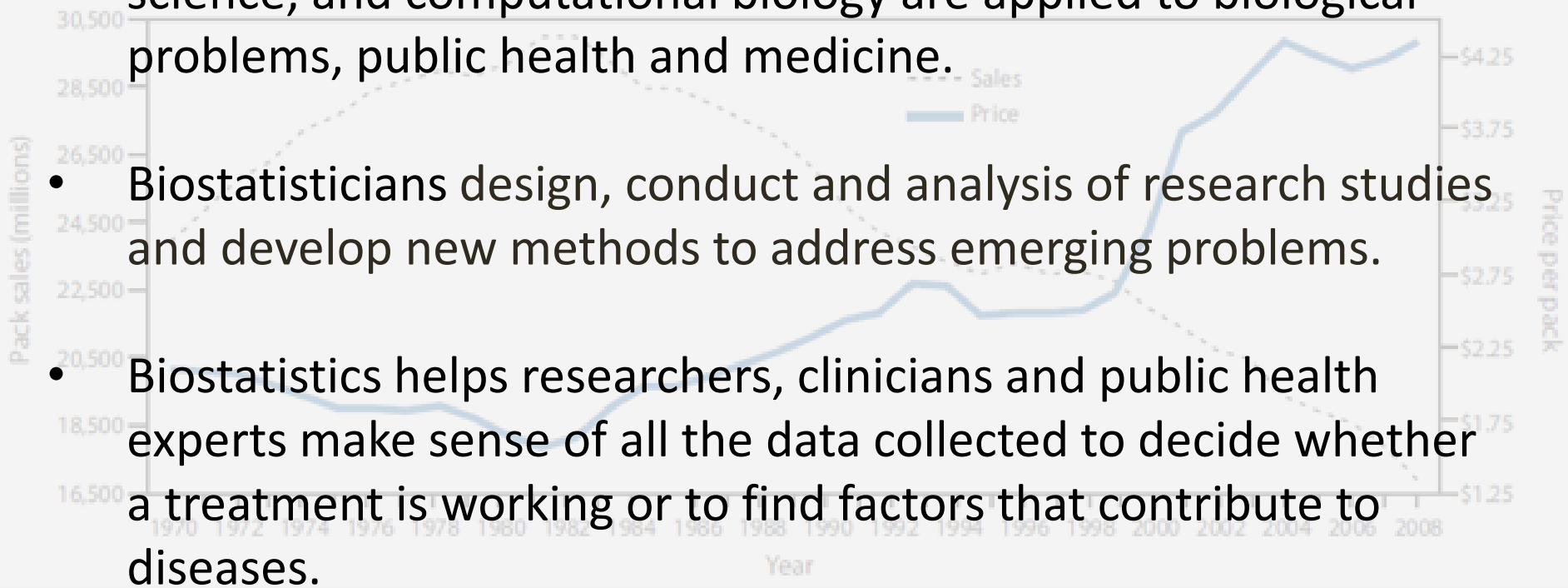
Core Facilities

- Shared facilities that provide service to entire HSC community (genomics and biostatistics)
- Provide access to equipment that is otherwise unavailable
 - **Research that would otherwise be impossible**



Core Facilities: Biostatistics

- Biostatistics is an exciting field where mathematics, computer science, and computational biology are applied to biological problems, public health and medicine.



- Biostatisticians design, conduct and analysis of research studies and develop new methods to address emerging problems.

- Biostatistics helps researchers, clinicians and public health experts make sense of all the data collected to decide whether a treatment is working or to find factors that contribute to diseases.

Clinical and Intervention Trials

- Brings latest treatments and technologies to New Mexico
- **If trial not available, treatment not available in New Mexico**
- Each trial provides new treatment at no cost to patient
- Since 2001 Tobacco settlement funding has provided infrastructure support to 328 trials and 148 investigators



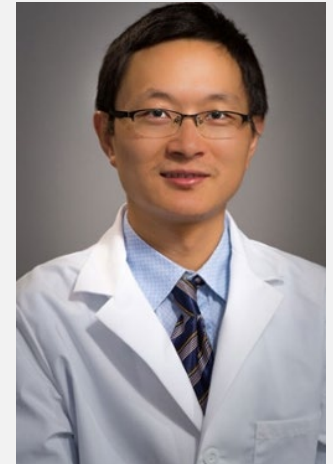
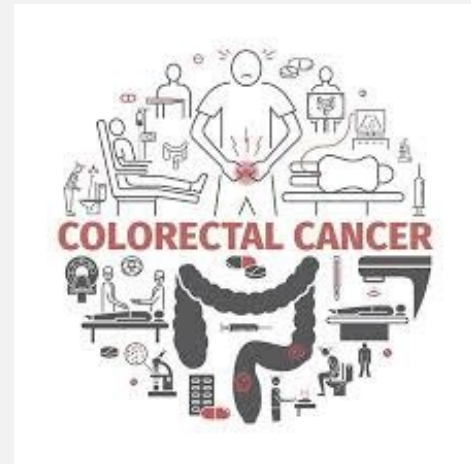
Examples in Clinical Trials Center

- 55 studies involving diabetes
- 35 pediatric and adult pulmonary studies
- 20 studies involving cystic fibrosis
- 12 studies involving MS
- 25 pediatric trials involving kidney disease, obesity, diabetes, hematology, GI conditions, cerebral palsy, infectious disease, neonatal withdraws syndrome
- And studies involving heart disease, eye disease due to diabetes, Autoimmune diseases, orthopedic surgeries, women's health, adult GI conditions and COVID-19 studies.



Tobacco Pilot Funding

The role of hypoxia-inducible factor-3 α in epithelial mesenchymal transition and colorectal cancer metastasis



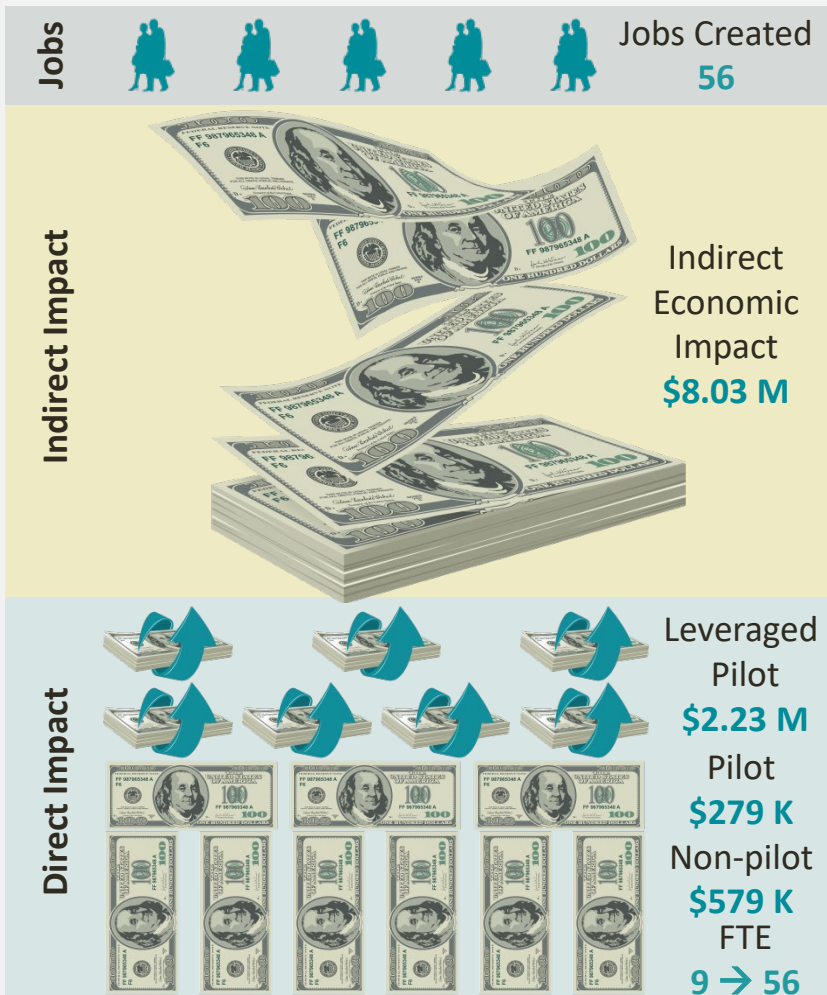
Xiang Xue, PhD

- Found that tobacco smoking is associated with an increased risk of colorectal cancer and this may be related to hypoxia, or low oxygen supply in the tumors.
- Study identified the hypoxia-inducible factor HIF-3 α that is activated in cancer cells and showed colorectal cancer cells that had high HIF-3 α expression showed a dramatic increase in metastatic signature genes and migration ability.

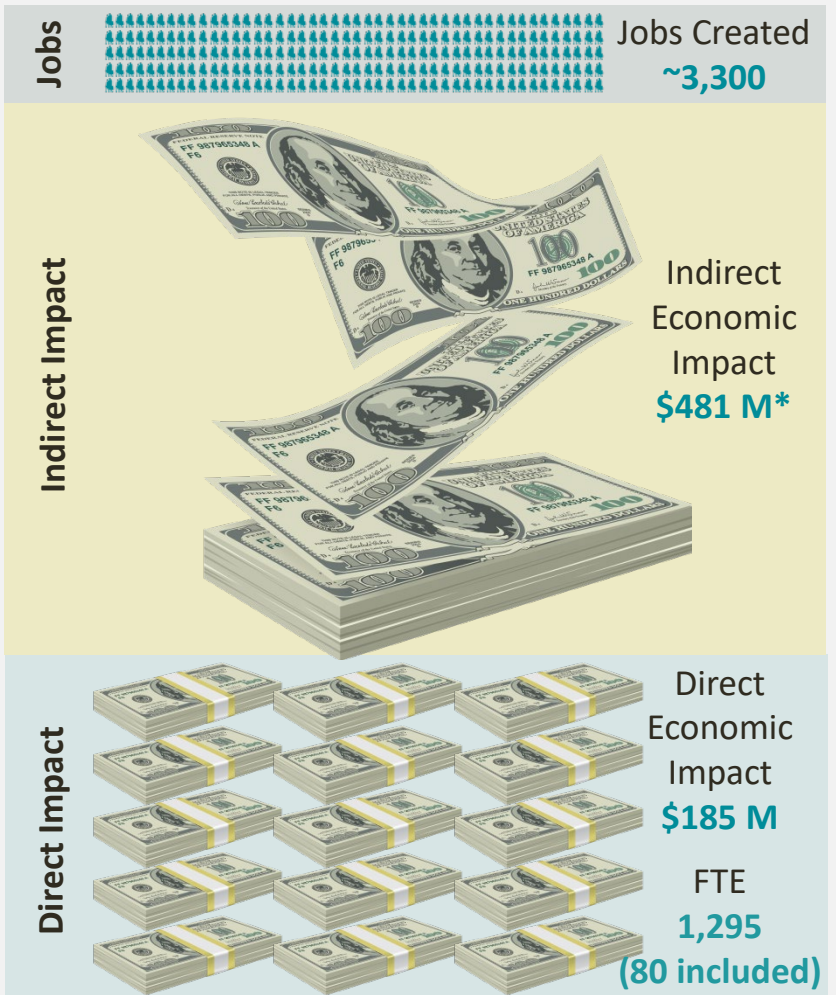


Estimated Economic Impact

Tobacco Settlement Funding



Total Research Funding



*Umbach (2011) *The Economic Impact of Publicly Funded Research Conducted by AAMC-Member Medical Schools and Teaching Hospitals* <https://www.aamc.org/download/265994/data/tripp-umbach-research.pdf>

Avisa Pharma Inc.

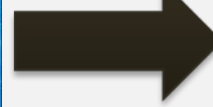
Invention → License → Company



Graham Timmins, PhD
Associate Professor



US Patent 9518972
14/045,856



- \$20 just raised before product launch



- 1.75 million in investments over the last year

Albuquerque Business First

Commercialization

- Since 2004, 60 new private companies were either spun off from the university or used university technology to start up.
- A total of 34 in NM, 24 in other states and 2 abroad



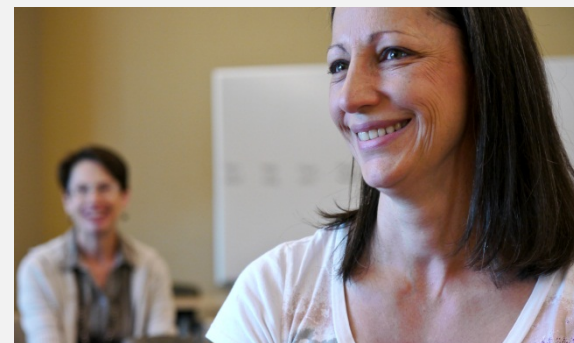
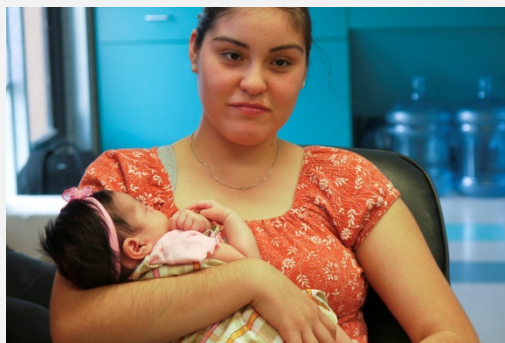
FY22

Tobacco Settlement Request

Tobacco Settlement Funds	FY21 Amount	FY22 Request
HSC Instruction & General	581,500	581,500
Research in Genomics and Environmental Health	937,400	937,400
Pediatric Oncology	250,000	250,000
New Mexico Poison & Drug Information Center	590,200	590,200
Specialty Education in Trauma	250,000	250,000
Specialty Education in Pediatrics	250,000	250,000
Total	2,859,100	2,859,100

What Loss of Tobacco Settlement Means to New Mexico

- Risk of pending arbitration
- Loss of patient care services
- Loss of technology to provide services and conduct research
- Loss of jobs (leveraged)
- Loss of economic activity
- Progressive shift to general fund



Questions?