

Minutes from the Joint Board of Regents Meeting with NMSU and UNM

Domenici Hall, El Paso Electric Classroom

New Mexico State University

1:00 p.m.

Saturday, September 20, 2014

The joint meeting of the Boards of Regents (BOR) of New Mexico State University and the University of New Mexico was called to order at 12:50 p.m. by NMSU BOR Chairman Mike Cheney. Both Boards of Regents established a quorum with the following members in attendance:

NMSU Board of Regents

Mike Cheney, Chair

Kari Mitchel, Vice Chair

Jordan Banegas, Student Regent

Ex-Officio Members

Dr. Stuart Munson-McGee, Faculty Senate

Mr. Wesley Jackson, ASNMSU President

Mr. Greg Block, NMSU Employee Council

UNM Board of Regents

Jack L. Fortner, President

Gene Gallegos

Brad Hosmer

Suzanne Quillen

Heidi Overton, Student Regent

Both presidents of the institutions were in attendance. President Garrey Carruthers of NMSU welcomed UNM President Bob Frank. NMSU's Provost and Executive Vice- President Dan Howard was in attendance from NMSU. Executive Vice President, CFO and COO from UNM, David Harris was in attendance representing his institution.

The aforementioned dignitaries were introduced at the beginning of the meeting.

The first agenda item was a presentation by Mr. Davis Lepre for the Council of University Presidents addressing the higher education funding formula. The handout which was distributed to the meeting participants is attached to this document.

The second agenda item was a collaborative presentation by Regent Suzanne Quillen if UNM and Regent Kari Mitchell of NMSU. The presentation addressed higher education topics in New Mexico relating to the employability of our graduates. A handout describing the Employability Partnership in New Mexico

was distributed to meeting participants. Regent Mitchell and Regent Quillen talked about *The Bridge* and the *Early College High School* programs gaining focus in southern New Mexico. A recent early college High school focusing on health recently opened in Las Cruces. Another topic highlighted by Regent Mitchell was the statewide workforce board initiative in New Mexico. Both regents noted the emergence of transformational initiatives in New Mexico and how the state is becoming a player in higher education on the national stage. The handout is attached to this document.

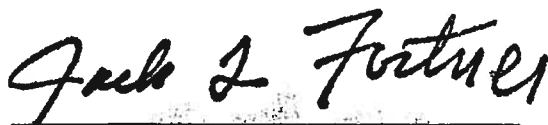
The third agenda item was a presentation on articulation by Deputy NMSU Provost Greg Fant. The focus of articulation is to make sure that all courses taken by students at New Mexico universities and community colleges transfer seamlessly from school to school. One of the components of the course transferability and acceptance relates to common numbering across the institutions of higher learning. One significant point made by Provost Fant was the issue that courses generally transfer, but the issue is that they don't count toward anything in the long run on a student's degree plan. President Fortner asked several of the students present to express their feeling about how the courses are counted. Many shared stories of having started in one major and then changing so the courses really didn't fit. For example if you change from engineering to business, there would be a number of courses that would be electives, but not part of the established degree plan. President Fortner shared his own experiences about choosing to go to law school. He said you need to have an intersection of "talent and passion" in choosing what you want to do. Both president Carruthers and President Frank weighed in on the topic saying that having good advising and in most cases faculty advising is a great benefit to the students.

Provost Fant distributed a handout for the articulation discussion. It is attached to this document.

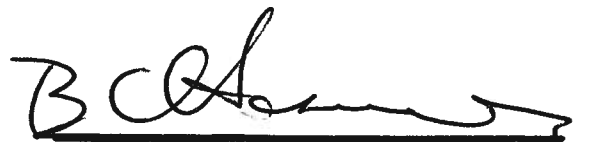
The final agenda item of the day was a joint presentation on cancer research being done collaboratively by Dr. Jeff Arterburn of NMSU and Dr. Eric Prossnitz of UNM. They have been collaborating and publishing for several years. They describe the joint research as being fulfilling and productive for both universities. A discussion with the meeting participants ensued about the need to find more grants to fund the research and how limited the availability of research funding has become.

The meeting was adjourned at 3:00 p.m. by NMSU Board of Regents Chairman Mike Cheney.

Minutes prepared by Dr. Janet Green, Special Advisor to the NMSU Board of Regents,
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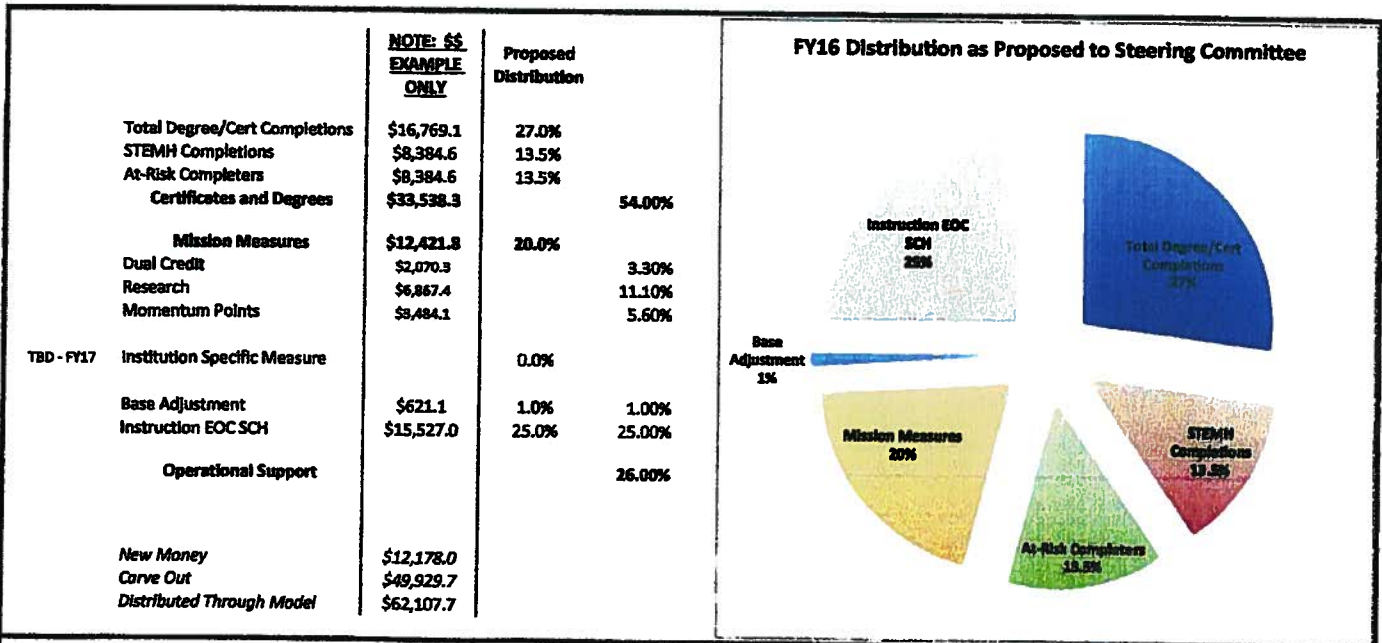
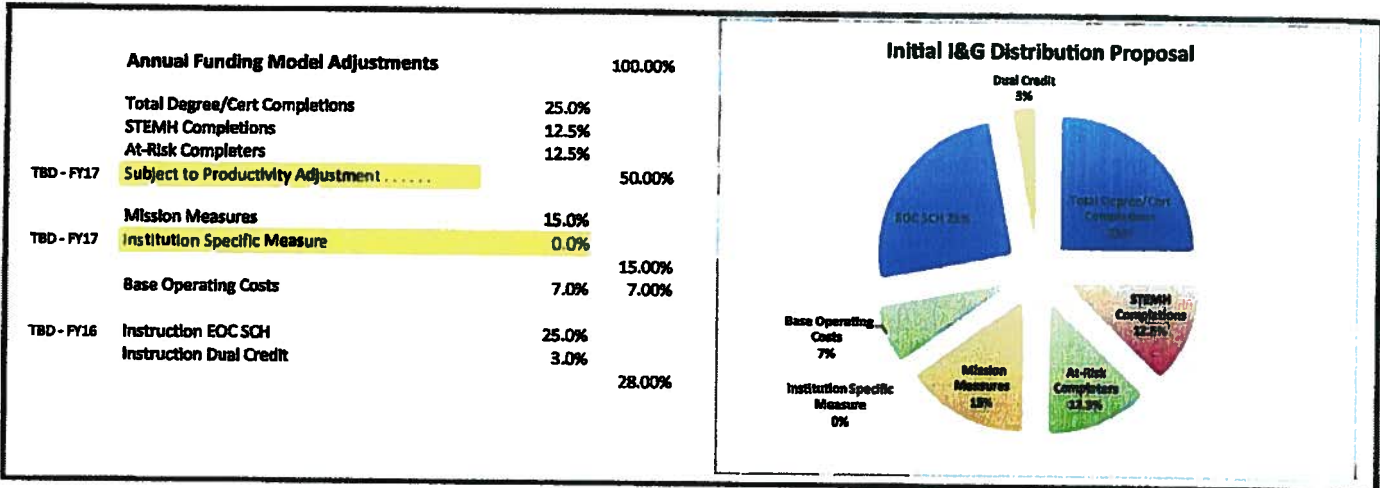
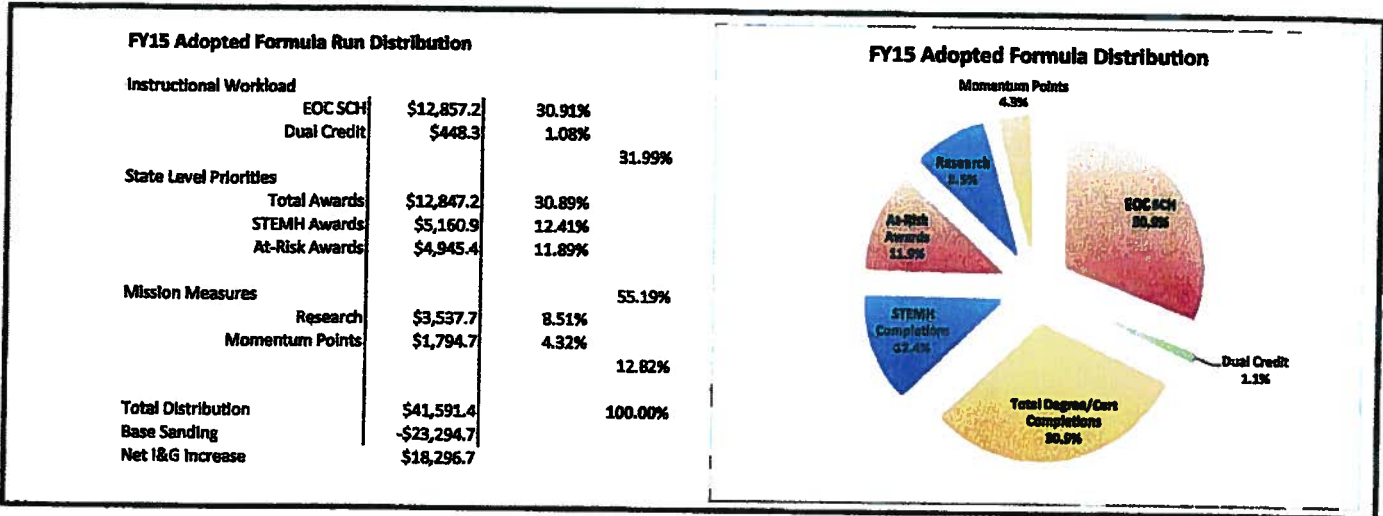


President, Board of Regents



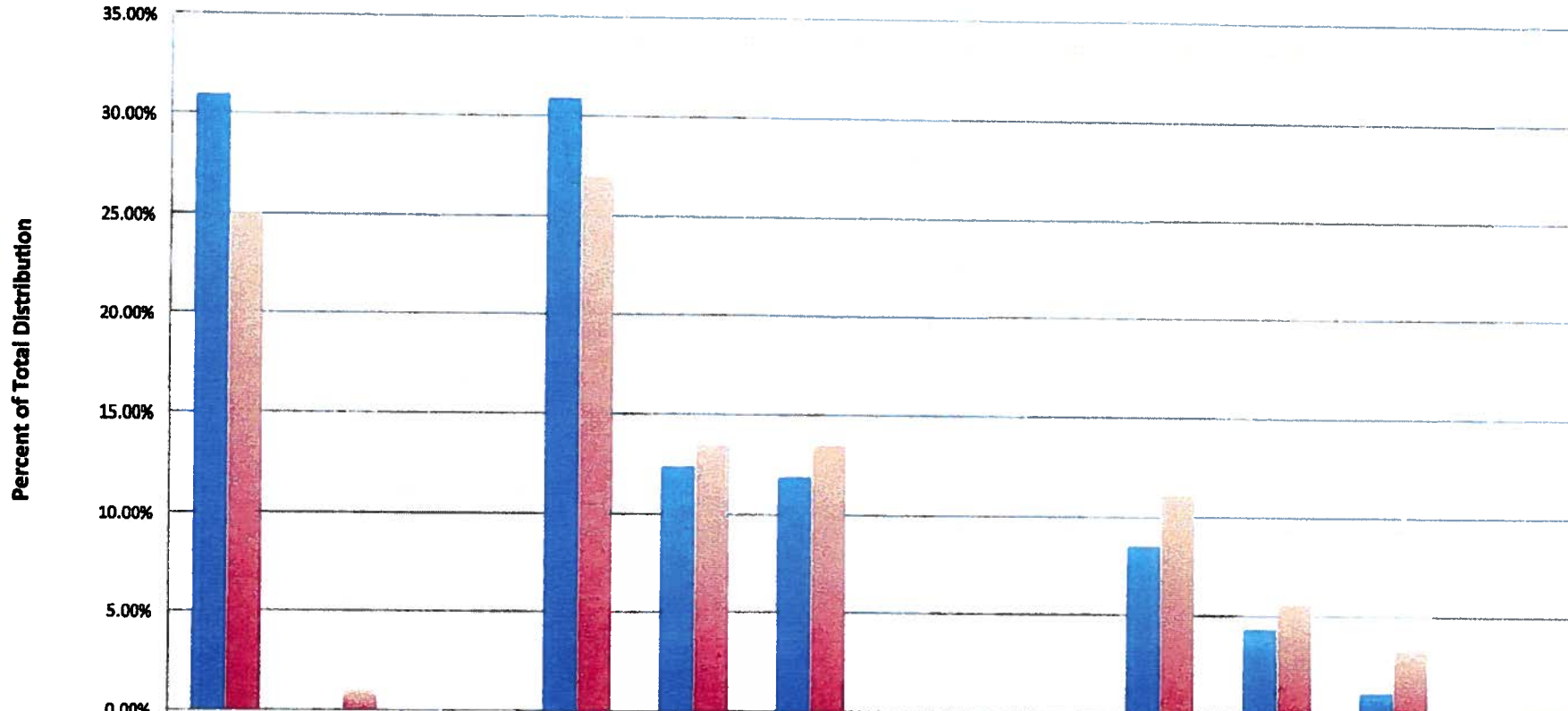
Secretary, Board of Regents

I&G Distribution



Other Adjustments TBD
 Faculty Compensation
 Staff Compensation
 Mill Levy
 Land Grant Permanent Fund

Distribution Comparison



	EOC SCH	Base Adjustment	Total Awards	STEMH Awards	At-Risk Awards	Research	Momentum Points	Dual Credit
FY15 Funded	30.91%	0.00%	30.89%	12.41%	11.89%	8.51%	4.32%	1.08%
FY16 Proposed	25.00%	1.00%	27.00%	13.50%	13.50%	11.10%	5.60%	3.30%

Distribution Percentages
 FY16 New Mexico Distributive Model
 16-Sep-14

New Money Available for Outcomes Funding	2.0%	\$12,178,000	A
Percent of FY16 to Go Through Outcome Measures	10.0%		P
Total FY15 I&G plus Comp		\$608,900,400	B
Total Estimated FY16 I&G (before inst share or comp) (A + B)		\$621,078,400	C
Amount of FY16 to go through Outcomes (C * p)		\$62,107,800	D
FY16 Not Funded by Outcomes (C - D)		\$558,970,600	
Amount to be Shaved from FY15 (D - A)		\$49,929,800	E
Percent of FY15 Shaved for Outcomes Funding (E / B)	8.2%		

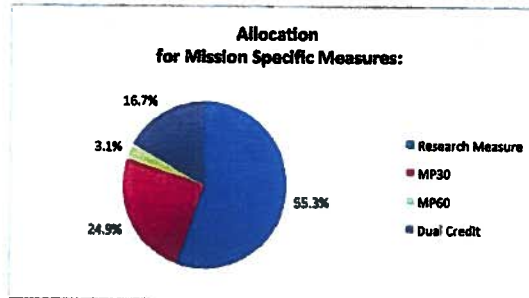
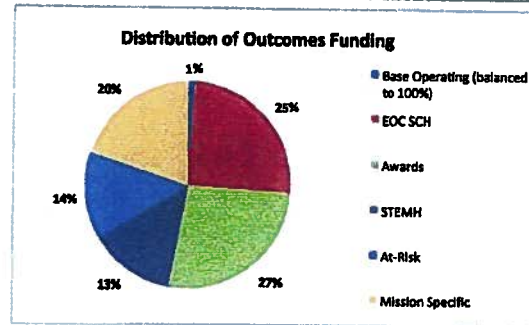
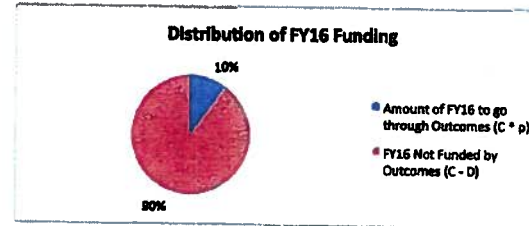
Dual Credit Funding (B)

Distribution of Outcomes Funding

Total (dollar values rounded to nearest \$100)	100.0%	\$62,108,000
Base Operating (balanced to 100%)	1.0%	\$621,100
EOC SCH	25.0%	\$15,527,000
Awards	27.0%	\$16,769,100
STEMH	19.5%	\$8,384,600
At-Risk	13.5%	\$8,384,600
Mission Specific	20.0%	\$12,421,600

Allocation of Dollars for Mission Specific Measures:

	FY15			
	Allocation	Percent		
Research Measure	\$ 3,537,706	55.3%	\$6,867,400	11.1%
MP30	\$ 1,593,969	24.9%	\$3,094,200	5.0%
MP60	\$ 200,769	3.1%	\$389,700	0.6%
Dual Credit	\$ 1,066,500	16.7%	\$2,070,300	3.3%
	\$ 6,398,944	100.0%		



FY16 New Mexico Distributive Model

17-Sep-14

New Money %
 New Money Available for Outcomes Funding
 Percent of FY16 to Go Through Outcome Measures
 Percent of FY15 Shaved for Outcomes Funding

2.00%
12,178,000
10.00%
8.20%

Total	100.0%	62,108,000
Base Operating	1.0%	621,100
EOC SCH	25.0%	15,527,000
Awards	27.0%	16,769,100
STEMH	13.5%	8,384,600
At-Risk	13.5%	8,384,600
Mission Specific	20.0%	12,421,600

Institution	1 Total FY15 Operating Distribution	2 Percent Distribution	3 Amount Shaved from FY15	4 FY16 Outcomes Funding	5 FY16 I&G Before Inst. Share	6 Percent Distribution	7 Dollar Change FY15 to FY16	8 Percent Change FY15 to FY16	9 Institutional Share	10 Compensation	10 Dollar Change FY15 to FY16	11 FY16 Total	12 Ending Percent Distribution
Grand Total	608,900,400	100.00%	(49,929,700)	62,108,600	621,079,300	100.0%	12,178,900	2.0%	0	0	12,178,900	621,079,300	
NM Tech	27,508,300	4.52%	(2,255,700)	2,872,800	28,125,400	4.53%	617,100	2.2%	0	0	617,100	28,125,400	4.53%
NM State	118,112,500	19.40%	(9,685,200)	12,239,500	120,666,800	19.43%	2,554,300	2.2%	0	0	2,554,300	120,666,800	19.43%
UNM	189,147,900	31.06%	(15,510,100)	20,058,200	193,696,000	31.19%	4,548,100	2.4%	0	0	4,548,100	193,696,000	31.19%
Research Total	334,768,700	54.98%	(27,451,000)	35,170,500	342,488,200	55.14%	7,719,500	2.3%	0	0	7,719,500	342,488,200	55.14%
Eastern	27,540,200	4.52%	(2,258,300)	2,860,800	28,142,700	4.53%	602,500	2.2%	0	0	602,500	28,142,700	4.53%
Highlands	28,195,600	4.63%	(2,312,000)	2,797,000	28,680,600	4.62%	485,000	1.7%	0	0	485,000	28,680,600	4.62%
Northern	10,859,700	1.78%	(890,000)	730,300	10,694,000	1.72%	-159,700	-1.5%	0	0	-159,700	10,694,000	1.72%
Western	17,102,600	2.81%	(1,402,400)	1,899,900	17,600,100	2.83%	497,500	2.8%	0	0	497,500	17,600,100	2.83%
Regional Total	83,692,100	13.74%	(6,862,700)	8,288,000	85,117,400	13.70%	1,425,300	1.7%	0	0	1,425,300	85,117,400	13.70%
Eastern Roswell	11,991,700	1.97%	(983,300)	1,130,300	12,138,700	1.95%	147,000	1.2%	0	0	147,000	12,138,700	1.95%
Eastern Ruidoso	2,128,300	0.35%	(174,500)	177,100	2,130,900	0.34%	2,600	0.1%	0	0	2,600	2,130,900	0.34%
NMSU Alamogordo	7,895,700	1.30%	(647,400)	536,000	7,784,300	1.25%	-111,400	-1.4%	0	0	-111,400	7,784,300	1.25%
NMSU Carlsbad	4,259,400	0.70%	(349,300)	346,400	4,256,500	0.69%	-2,900	-0.1%	0	0	-2,900	4,256,500	0.69%
NMSU Dona Ana	23,165,800	3.80%	(1,899,600)	2,350,400	23,616,600	3.80%	450,800	1.9%	0	0	450,800	23,616,600	3.80%
NMSU Grants	3,622,100	0.59%	(297,000)	254,000	3,579,100	0.58%	-43,000	-1.2%	0	0	-43,000	3,579,100	0.58%
UNM Gallup	9,272,300	1.52%	(760,300)	568,800	9,080,800	1.46%	-191,500	-2.1%	0	0	-191,500	9,080,800	1.46%
UNM Los Alamos	1,905,100	0.31%	(156,200)	126,000	1,874,900	0.30%	-30,200	-1.6%	0	0	-30,200	1,874,900	0.30%
UNM Taos	3,488,300	0.57%	(286,000)	397,800	3,600,100	0.58%	111,800	3.2%	0	0	111,800	3,600,100	0.58%
UNM Valencia	5,545,800	0.91%	(454,800)	537,000	5,628,000	0.91%	82,200	1.5%	0	0	82,200	5,628,000	0.91%
CNM	55,448,600	9.11%	(4,546,800)	7,241,100	58,142,900	9.36%	2,694,300	4.9%	0	0	2,694,300	58,142,900	9.36%
Clovis	9,895,100	1.63%	(811,400)	889,100	9,972,800	1.61%	77,700	0.8%	0	0	77,700	9,972,800	1.61%
Luna	7,444,900	1.22%	(610,500)	390,500	7,224,900	1.16%	-220,000	-3.0%	0	0	-220,000	7,224,900	1.16%
Mesalands	4,244,000	0.70%	(348,000)	279,600	4,175,600	0.67%	-68,400	-1.6%	0	0	-68,400	4,175,600	0.67%
NMJC	5,532,900	0.91%	(453,700)	617,700	5,696,900	0.92%	164,000	3.0%	0	0	164,000	5,696,900	0.92%
San Juan	24,786,600	4.07%	(2,032,500)	1,749,700	24,503,800	3.95%	-282,800	-1.1%	0	0	-282,800	24,503,800	3.95%
Santa Fe	9,813,000	1.61%	(804,700)	1,058,800	10,066,900	1.62%	259,900	2.6%	0	0	259,900	10,066,900	1.62%
CC Total	190,439,600	31.28%	(15,616,000)	18,658,100	193,473,700	31.15%	3,034,100	1.6%	0	0	3,034,100	193,473,700	31.15%

**New Mexico Distributive Model
(NMDM) Awards Distribution**

Institution	FY15 Distribution	Total FY16 Outcomes Funding		Section 1: Base & EOC SCH		Section 2: Certificates and Degrees Awarded				Section 3: Mission Sensitive Measures																		
				Base Operating	EOC SCH	Awards	STEMH	At-Risk	All Certificate and Degree Awards	Research	MP 30	MP 60	Dual Credit	Mission Measure Total														
Total	100.00%	62,100,000	200%	621,100	100%	15,527,000	100%	16,769,100	100%	8,384,600	100%	8,594,600	100%	33,538,200	100%	6,857,400	100%	3,094,200	100%	389,700	100%	2,670,900	100%	12,422,100	100%			
Tech	4.52%	2,872,800	4.6%	28,100	4.5%	496,900	3.2%	554,100	3.3%	425,100	5.1%	134,400	1.6%	1,113,600	3.3%													
State	19.40%	12,239,500	19.7%	120,500	19.4%	3,006,800	19.4%	3,941,200	23.5%	1,548,900	18.5%	1,561,800	18.6%	7,053,900	21.0%	1,234,200	18.0%											
UNM	31.06%	20,058,200	32.3%	192,900	31.1%	4,785,200	30.8%	6,455,600	38.5%	2,347,800	28.0%	2,703,800	32.2%	11,507,200	34.3%	2,060,300	30.0%											
Research	54.98%	35,170,900	56.6%	341,500	55.0%	8,288,900	53.4%	30,980,900	65.3%	4,922,800	51.5%	4,400,000	52.3%	18,672,700	56.7%	6,857,400	100%											
Eastern	4.52%	2,880,800	4.6%	28,100	4.5%	748,400	4.8%	798,000	4.8%	260,900	3.1%	457,900	5.5%	1,516,800	4.5%													
Highlands	4.63%	2,797,000	4.5%	28,800	4.6%	687,500	4.4%	935,200	5.6%	462,500	5.5%	498,500	5.9%	1,896,200	5.7%													
Northern	1.78%	730,900	1.2%	11,100	1.8%	162,100	1.0%	93,100	0.6%	114,500	1.4%	119,200	1.4%	326,800	1.0%													
Western	2.82%	1,899,900	3.2%	17,400	2.8%	429,400	2.8%	426,900	2.5%	196,000	2.3%	294,800	3.5%	917,700	2.7%													
Regional	13.74%	8,288,000	13.5%	85,400	13.7%	2,827,400	18.1%	2,253,200	13.6%	1,033,900	12.3%	1,970,400	16.3%	4,657,500	13.9%													
Roswell	1.97%	1,190,900	1.8%	12,200	2.0%	286,200	1.8%	189,500	1.1%	270,700	3.2%	119,700	1.4%	570,900	1.7%													
Ruidoso	0.35%	277,100	0.3%	2,200	0.3%	53,200	0.3%	16,500	0.1%	31,900	0.4%	15,800	0.2%	64,200	0.2%													
Alamogordo	1.30%	594,000	0.9%	8,100	1.3%	177,300	1.1%	91,200	0.5%	38,700	0.5%	79,200	0.9%	209,100	0.6%													
Carlsbad	0.70%	348,400	0.6%	4,300	0.7%	110,000	0.7%	40,300	0.2%	22,500	0.3%	31,900	0.4%	94,700	0.3%													
Dona Ana	3.80%	2,350,400	3.8%	23,600	3.8%	626,300	4.0%	459,400	2.7%	307,500	3.7%	407,500	4.9%	1,174,400	3.5%													
Grants	0.59%	254,000	0.4%	3,700	0.6%	64,800	0.4%	41,600	0.2%	21,800	0.3%	41,500	0.5%	104,900	0.3%													
Gallop	1.52%	568,800	0.9%	9,500	1.5%	206,800	1.3%	84,600	0.5%	50,100	0.6%	86,400	1.0%	221,100	0.7%													
Los Alamos	0.31%	126,000	0.2%	1,900	0.3%	38,000	0.2%	18,900	0.1%	5,800	0.1%	9,600	0.1%	34,300	0.1%													
Taos	0.57%	397,800	0.6%	3,600	0.6%	103,200	0.7%	27,500	0.2%	26,300	0.3%	34,100	0.4%	87,900	0.3%													
Valencia	0.92%	557,000	0.9%	5,700	0.9%	142,600	0.9%	75,800	0.5%	55,700	0.7%	73,000	0.9%	204,900	0.6%													
CNM	9.11%	7,241,100	11.7%	56,600	9.1%	1,897,000	12.2%	1,601,500	9.6%	1,347,600	16.1%	1,109,500	13.2%	4,058,600	12.1%													
Clovis	1.63%	889,100	1.4%	10,100	1.6%	195,400	1.3%	191,100	1.1%	218,800	2.6%	140,300	1.7%	550,200	1.6%													
Luna	1.22%	390,500	0.6%	7,600	1.2%	108,500	0.7%	70,600	0.4%	64,300	0.8%	61,900	0.7%	194,800	0.6%													
Mescaleros	0.70%	279,600	0.5%	4,300	0.7%	57,200	0.4%	42,600	0.3%	93,700	1.1%	22,000	0.3%	158,300	0.5%													
NMJC	0.92%	617,700	1.0%	5,600	0.9%	190,800	1.2%	108,700	0.6%	41,600	0.5%	56,100	0.7%	206,600	0.6%													
San Juan	4.07%	1,749,700	2.8%	25,300	4.1%	615,400	4.0%	293,700	1.8%	270,500	3.2%	192,400	2.3%	756,600	2.3%													
Santa Fe	1.61%	1,058,600	1.7%	10,000	1.6%	338,100	2.2%	211,400	1.3%	161,100	1.9%	133,400	1.6%	505,900	1.5%													
CC's	11.26%	14,450,100	23.0%	194,300	31.3%	5,210,000	33.6%	3,564,900	21.3%	3,029,800	36.1%	2,614,500	31.2%	9,208,000	27.5%													
Total	100.00%	62,100,000	200%	621,100	100%	15,527,000	100%	16,769,100	100%	8,384,600	100%	8,594,600	100%	33,538,200	100%	6,857,400	100%	3,094,200	100%	389,700	100%	2,670,900	100%	12,422,100	100%			

the
employability
partnership - It's all
about the pipeline
BUSINESSdriven

90%
of welfare recipients are
high school dropouts

So... how is the pipeline in New
Mexico?

48%
of 3rd graders cannot read
at grade level

In 4 years, NM will need
50,000
employees who are trained in
science, technology, engineering &
mathematics

That group is
4x
more likely to drop out
of high school

93%
of those jobs will require
a college degree

Entry to Market is Delayed:

1. Higher Ed enrollments are dropping
2. Retention Rates are unacceptable, and are significantly higher than the high school dropout rate.
3. The 4 year degree has become the 6 year plus degree

KEY indicators

workers in the pipeline

Unemployment

Dependence on welfare

Per capita income through markets, not legislation

remediation required

4th grade reading

Under-employment

high school graduates

college graduates

Private vs. Public Sector Jobs

newly created jobs

EMPLOYABILITYpartnership

State budget – vs ROI

State Budget Allocation - FY20 Recurring GF Appropriations

- Annualized GDP impact
- Public Safety \$200 million
- Public Schools \$475 million
- Higher Education \$140 million
- Other \$125 million

EMPLOYABILITYpartnership

BUSINESS driven

The Employability Partnership Board

- Responding to our NM Businesses' demands
- BI-Partisan
- Private & Public Sector Representation (3-1)
 - Pipeline engaged at Cabinet Sec. Level: PED, HED, WFS, EDD, MHS

EMPLOYABILITYpartnership

BUSINESS driven

Where will business find a workforce?

EMPLOYABILITYpartnership

BREAKING cycles

EMPLOYABILITYpartnership

OURmission

Establish NM as the fastest growing in key indicators in education & economy in the Southwest by 2020 and #1 overall by 2040

EMPLOYABILITYpartnership

OURSuccesses

Accomplishments To-Date

- Completed a statewide survey of New Mexico businesses
- Working towards data integration
- Incubated the Higher Ed Work Group
- Developed the Business Engagement Committee
- Increase the number of early college high schools

EMPLOYABILITYpartnership

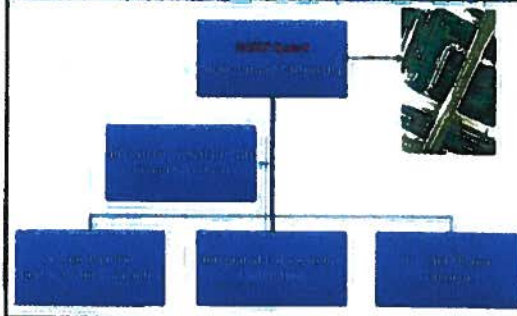
OVERCOMINGchallenges

Facing the Truth

- Private sector not viewed as the customer
- Worker delivery-system fragmented: inefficiencies & duplication
- Data is decentralized & insufficient
- Investments reward participation not results
- Policy is not evaluated based on employability impact
- Excuse for failed performance: poverty

EMPLOYABILITYpartnership

THEorganization



OURstrategies

High -level Strategic Initiatives

- Establish a fully integrated workforce delivery system
- Realize a smarter return on investment
- Establish real accountability for real results
- Champion effective teachers and school leaders
- Develop and implement a business engagement strategy
- Launch a formal public/private entity


EMPLOYABILITYpartnership

What if we all banded together to break the cycle?
How can Higher Ed Collaborate?



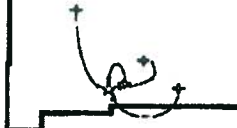
Alignment and Articulation


New Mexico State University/University of New Mexico
Joint Board of Regents Meeting
September 20, 2014



NMSU System Wide Course Alignment Initiative


Purpose: to review and align student learning outcomes in courses that are taught on multiple campuses within the NMSU system.






Other Alignment Efforts

- New Mexico Nursing Education Consortium
- Early Childhood Degree programs
- College of Businesses statewide
- NMSU/ UNM Engineering course exchange
- UNM/ NMSU Cooperative Pharmacy Program
- State Common Core



General Ed Core Course Transfer Curriculum

In accordance to state law (Chapter 21, Article 1B NMSA 1978), the New Mexico Higher Education Department has established policies to guarantee successful transfer of completed core courses between New Mexico postsecondary public institutions.

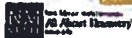


New Mexico Higher Education Department Common Core Matrix

Construct and analyze graphs and/or data sets.
Use and solve various kinds of equations.


Understand and write mathematical explanations using appropriate definitions and symbols.

Demonstrate problem solving skills within the context of mathematical applications.



New Mexico Higher Education Department Common Core Matrix

State	Course	Course	Course
CNM	MATH 131s	MATH 1113	College Algebra
ENMU	MATH 119	MATH 1113	College Algebra
NMBU	MATH 140	MATH 1113	College Algebra
NMJC	MA 113	MATH 1113	College Algebra
NMSU	MATH 121G	MATH 1113	College Algebra
Santa Fe CC	MATH 121	MATH 1114	College Algebra
UNM	MATH 121	MATH 1113	College Algebra



What about Articulation?

All New Mexico colleges and universities accept the HED Common Core.

Maximizing transfer credits depends on a student's clear vision and academic advising toward that vision.



Questions & Discussion





THE UNIVERSITY *of*
NEW MEXICO

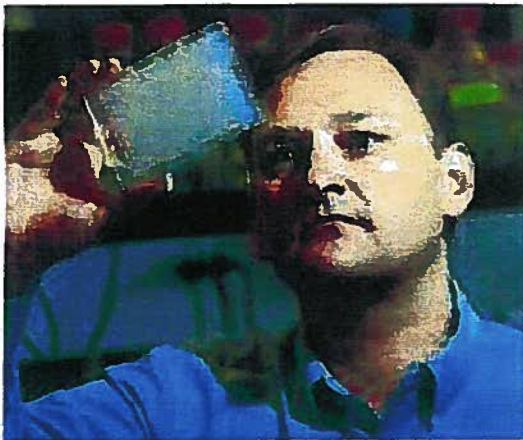


Collaborative Science between NMSU and UNM

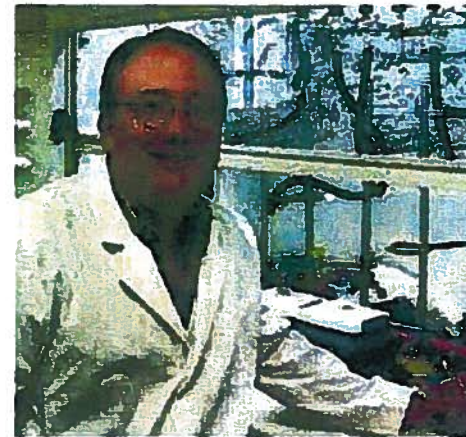




Collaborative Science between NMSU and UNM



Eric R. Prossnitz, PhD



Jeffrey B. Arterburn, PhD

Team Science



Helen Hathaway, PhD
Developmental Biology, UNM



Jeffrey Arterburn, PhD
Synthetic Chemistry, NMSU



Larry Sklar, PhD
Center for Molecular Discovery
UNM



Tudor Oprea, MD, PhD
Cheminformatics, UNM



Clinical & Translational Science Center

Productivity

- 23 joint publications since 2005
- >4000 citations (68 total pubs)

nature
chemical biology

Virtual and biomolecular screening converge on a selective agonist for GPR30

Cristian G Bologa^{1,7}, Chetana M Revankar^{2,3,7}, Susan M Young³, Bruce S Edwards^{3,4}, Jeffrey B Arterburn⁵, Alexander S Kiselyov⁶, Matthew A Parker⁶, Sergey E Tkachenko⁶, Nikolay P Savchuck⁶, Larry A Sklar^{3,4}, Tudor I Oprea¹ & Eric R Prossnitz^{2,3}

NATURE CHEMICAL BIOLOGY VOLUME 2 APRIL 2006

nature
chemical biology

In vivo effects of a GPR30 antagonist

Megan K Dennis¹, Ritwik Burai², Chinnasamy Ramesh², Whitney K Petrie¹, Sara N Alcon¹, Tapan K Nayak¹, Cristian G Bologa³, Andrei Leitao³, Eugen Brailoiu⁴, Elena Deliu⁴, Nae J Dun⁴, Larry A Sklar^{5,6}, Helen J Hathaway^{1,5}, Jeffrey B Arterburn^{2,5}, Tudor I Oprea^{3,5} & Eric R Prossnitz^{1,5}

NATURE CHEMICAL BIOLOGY VOLUME 5 JUNE 2009

Science

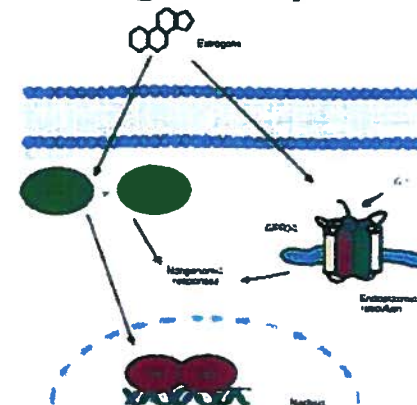
A Transmembrane Intracellular Estrogen Receptor Mediates Rapid Cell Signaling

Chetana M. Revankar,^{1,2} Daniel F. Cimino,^{1,2} Larry A. Sklar,^{2,3} Jeffrey B. Arterburn,⁴ Eric R. Prossnitz^{1,2,4}

SCIENCE VOL 307 11 MARCH 2005

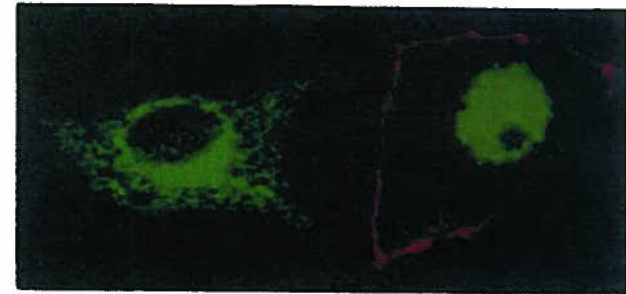
NEWS AND VIEWS

Untangling the estrogen receptor web



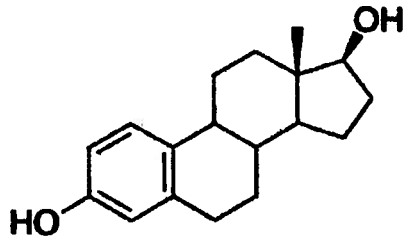
Productivity

- 4 R01 grants since 2005
- Multi-PI R01 from 2008-2014 and pending
- Foundation grants: Cowboys for Cancer Research, Stranahan, Oxnard
- >\$10M in funding
- Center for Molecular Discovery (>\$20M in funding)
- 2 patents (U. S. Patent Nos. 7,875,721 & 8,487,100)
- Licensed to Azano Biotech and Accelerera Diagnostics

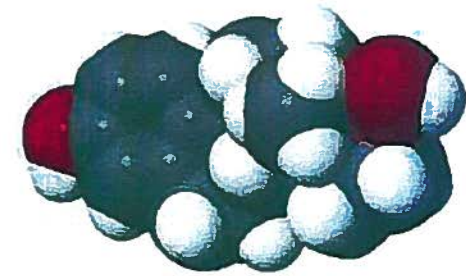


GPER

ER α



What is the Science? Physiological & Disease Roles of Estrogen



Reproductive system:

- breast ductal and lobuloalveolar outgrowth: **breast cancer**
- endometrial growth, maturation, menstrual cycle: **endometrial/ovarian cancer**

Nervous system:

- pain, mood, depression, sleep, neuroprotection: **depression, stroke**

Immune system:

- inflammatory responses, autoimmunity: **multiple sclerosis, arthritis**

Endocrine system:

- pituitary, thyroid, adrenal, ovary/testis, pancreas: **obesity, diabetes**

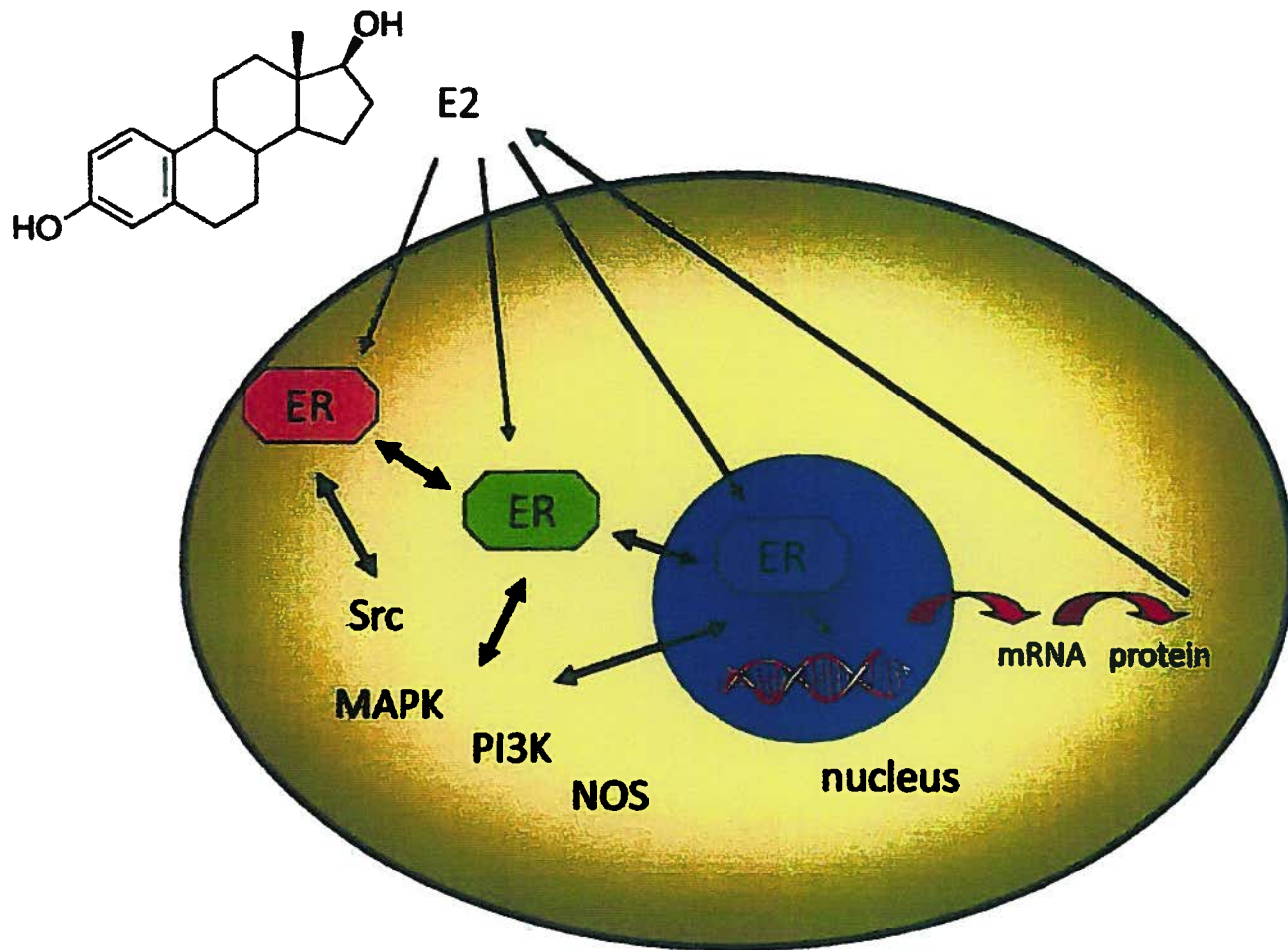
Skeletal physiology:

- maintenance of bone mass: **osteoporosis**

Vascular function:

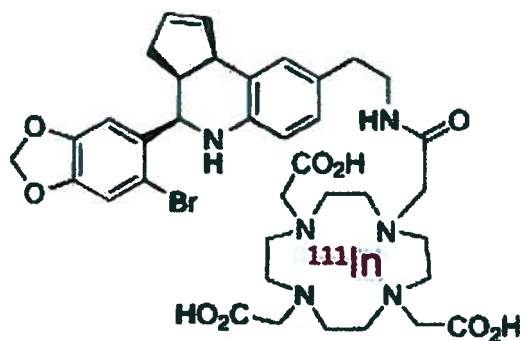
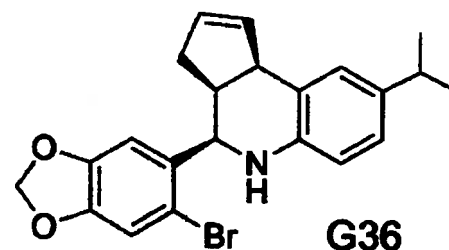
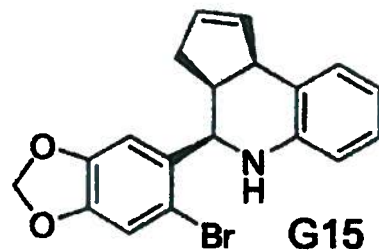
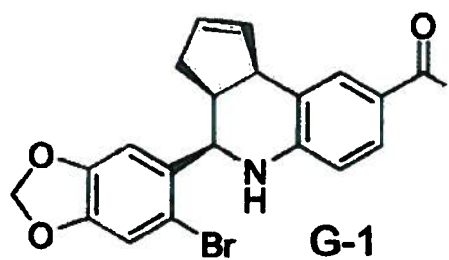
- smooth muscle & endothelial cells: **hypertension, atherosclerosis**

Complex Interplay between Multiple Receptors



Estrogen Receptors: ER α , ER β and GPR30/GPER

New Ligands as Potential Drugs and Diagnostic Agents



Demonstrated Therapeutic Indications for G-1/G15/G36

Cancer:

- Breast (anti-hormone resistant, triple negative) and endometrial cancer (and others)

Nervous system:

- Depression
- Stroke

Immune system:

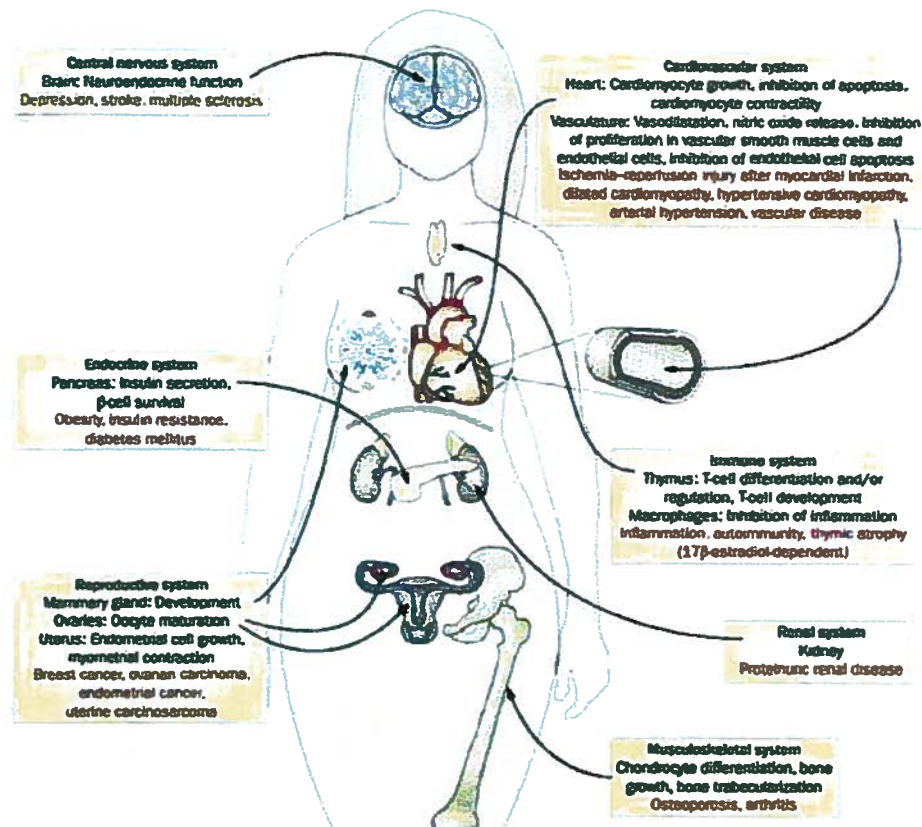
- Multiple sclerosis

Endocrine system:

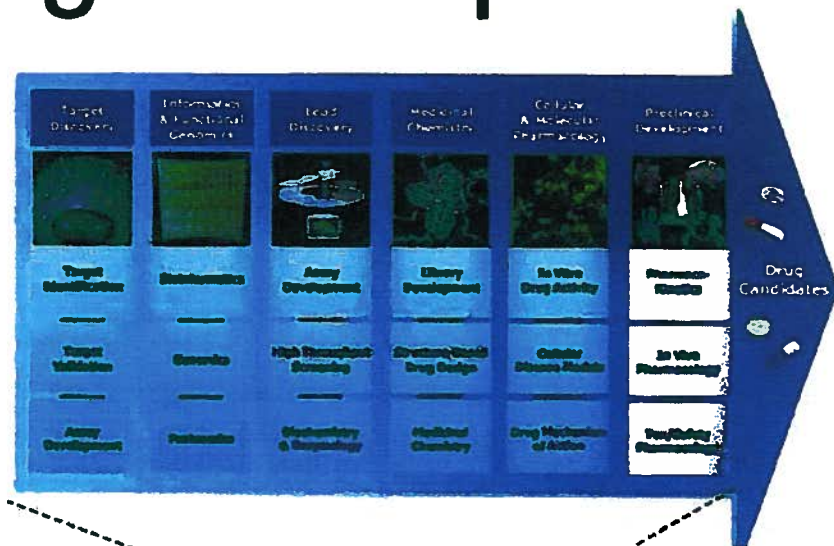
- Diabetes
- Obesity

Vascular function:

- Hypertension
- Atherosclerosis
- Myocardial Infarct
- Renal Disease

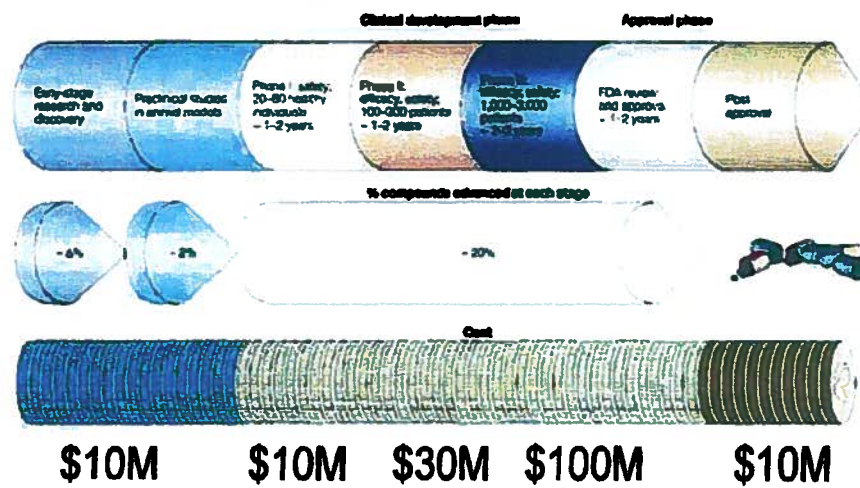


Drug Development Pipeline



- Blockbuster drugs:
Lipitor \$12.5 B/yr
Plavix \$9 B/yr
Nexium \$8 B/yr

- Repurposing



Timeline: GPER DD Pipeline

- Target identification: GPER (2002)
 - Assay development (2003)
 - Screening compounds (2004)
 - Lead Identification (2005, file patents, issued 2011, 2013)
 - Efficacy in disease models (2007-present)
 - Initial Preclinical Pharmacokinetics/Safety/Toxicity (2011)....
 - Clinical Studies Phase I/II/III (future ?)
-

Challenges

- NIH and other funding <10% percentile
 - Consequence: faculty spend >>> time writing grants vs doing experiments
 - Gaps in research funding damage programs
Survival = bridge funding but institutional resources are limited/unavailable
 - Magnitude of costs to complete the transition from preclinical success to clinical studies = “Valley of Death”
 - How can we help the next generation of faculty scientists develop and survive ?
-



New Mexico **INBRE**

IDeA Networks of Biomedical Research Excellence

*Funded by the Institutional Development Award (IDeA)
National Institutes of Health (NIH) since 2001*

The **NM-INBRE** champions **biomedical research excellence** in the state of New Mexico through the development of innovative, supportive and sustainable research environments for faculty and students, while building a network of lead scientists and educators at the state, regional and national level.

PI/Director: Dr. Jeffrey B. Arterburn

Regents Professor, Dept. of Chemistry & Biochemistry
New Mexico State University



Partner Institutions...

- University of New Mexico
- Eastern New Mexico University
- New Mexico Institute of Mining & Technology
- New Mexico Highlands University
- Northern New Mexico College
- San Juan College
- National Center for Genome Resources
- Western New Mexico University



NIH NIGMS Grant Number 2P20GM103451-14

***Competitive Renewal Proposal Funded 2014-2019 Total \$18.14M**

NM-INBRE Program Significant Outcomes and Impacts (since 2001)

- **Funded 47 faculty investigators** across the state. Many have achieved independent extramural funding
 - **Mentored and supported faculty, resulting in 32 successful tenure applications**
 - **Student training:**
 - **233 American Indian tribal college students** introduced to biomedical research opportunities through sponsored recruiting events
 - **100 students annually** provided laboratory or community-based research experience
 - **769 students trained** at partner institutions, since 2001
 - **40 student internships** in clinical, translational, and community-based research
 - **Published 427 research articles** in scientific journals
 - **Provided 1316 research presentations** by faculty and students at national and international meetings
 - **\$44,006,853 in new, external research funding** awarded to New Mexico institutions
 - **Secured funds to build a 1500 sq. ft. exercise center at the Zuni Pueblo**, as part of an initiative to eliminate health disparities affecting New Mexico's Zuni Indians
-

2014 NM-INBRE Investigators at New Mexico State University



Kevin Houston, Assistant Professor, Chemistry & Biochemistry

Understanding the mechanisms leading to resistance to a popular medication (tamoxifen) which is used to treat breast cancer. Resistance to tamoxifen has been linked to lower survival rates in breast cancer patients.

Patricia Lodato, Assistant Professor, Biology

Investigating a strain of the bacterial pathogen, *Escherichia coli* O157:H7, and how its virulence is controlled. This could lead to strategies to treat or prevent the diseases it causes—diarrhea, kidney failure, and nervous system problems.

Becky Keele, Associate Professor, Nursing

Developing culturally acceptable interventions to increase regular exercise among Mexican-American preschool-age children. Promoting exercise in young children may reduce risk factors for many chronic diseases, such as obesity and diabetes, which can begin early in life.

Mingzhou Joe Song, Associate Professor, Computer Science

Investigating the genes that control cancer cells' invasion of surrounding body tissues. This work may lead to improved strategies for treating cancer.

Timothy Wright, Associate Professor, Biology

Examining the effects of alcohol consumption on learning and brain function, using parakeets as an animal model for how adults learn new languages. This is especially important among our growing immigrant population.

2014 NM-INBRE Investigators at University of New Mexico

Colleen Fordyce, Assistant Research Professor, Biochemistry & Molecular Biology

Examining the way that breast cancer cells manage pH in order to proliferate. A possible therapy for breast cancer may focus on controlling the pH-regulating enzyme that enables cancer cells to multiply.



Jennifer Gillette, Assistant Professor, Pathology

Identifying critical molecules involved in the initiation and progression of a type of leukemia called chronic lymphocytic leukemia (CLL) that attacks the blood and bone marrow. This understanding may enable the development of improved therapies and prognostic tools.



Ramachandra Gullapalli, Assistant Professor, Pathology; Chemical & Nuclear Engineering

Investigating the causes of gallbladder cancer in three ethnic populations—American Indians, Hispanics, and Caucasians—to improve methods of diagnosis and risk analysis. This work will result in better therapy options for patients with a highly fatal form of the disease.



Charles Melancon III, Assistant Professor, Chemistry & Chemical Biology

Harnessing technical tools from biology, chemistry, computer science, and engineering to identify naturally occurring chemical products that may treat diseases such as cancer and multi-drug resistant microbial infections.



Vallabh Raj Shah, Associate Professor, Biochemistry & Molecular Biology; Internal Medicine

Assessing the effectiveness of diet, physical activity, behavioral weight loss, and weight control interventions for pre-diabetic adults and children of the American Indian Zuni community.



Additional Collaborations fostered by NIH IDeA Program

Shared access to core facilities through the following:

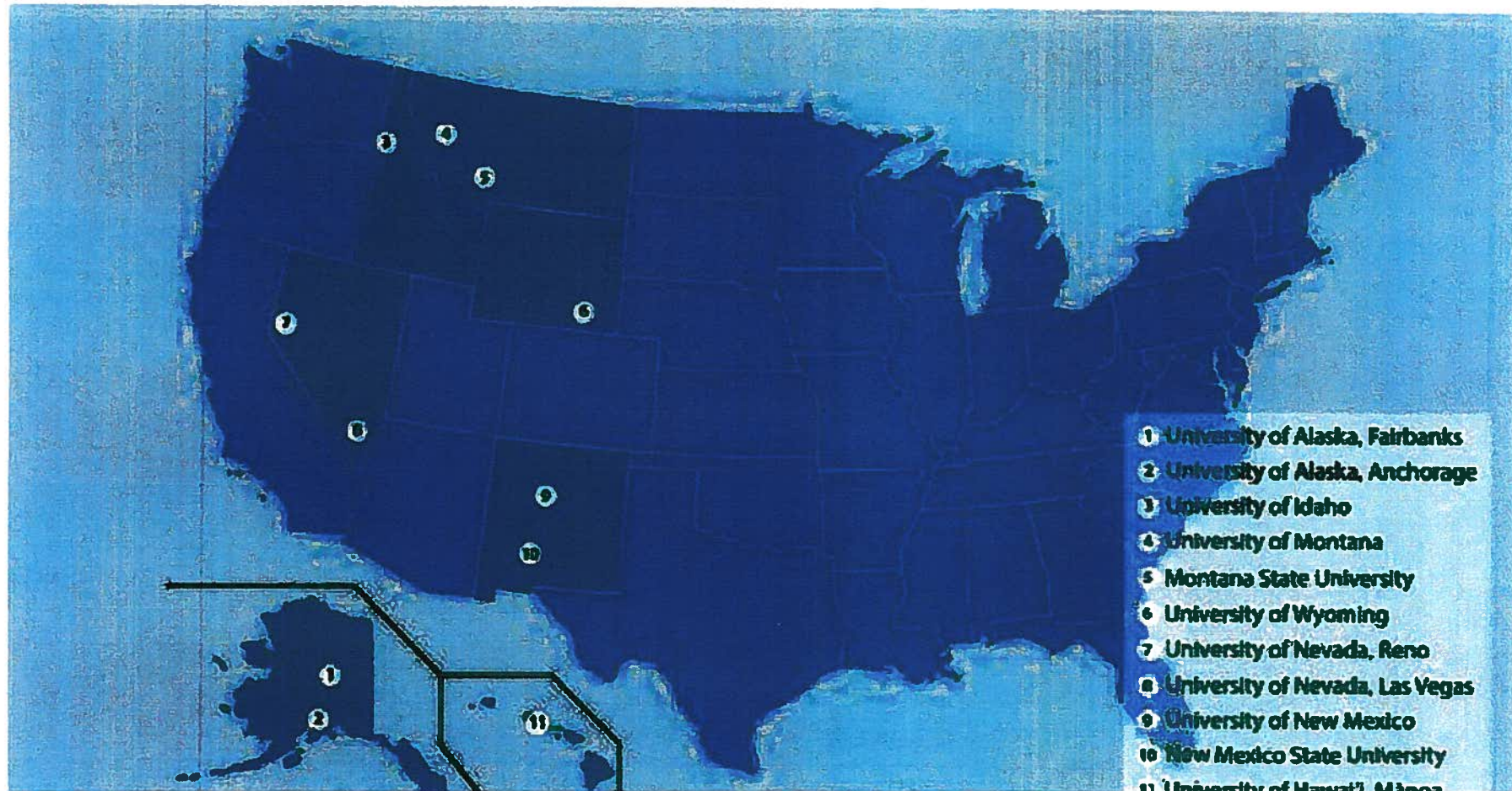
- COBRE at UNM
 - Integrative Program in CNS Pathophysiology Research
 - UNM Mind Research Network: Multimodal Imaging of Neuropsychiatric Disorders (MIND)
 - Center for Evolutionary and Theoretical Immunology (CETI)
- Center for Molecular Discovery (CMD)
- Clinical & Translational Research Center (CTSC)

Shared student research training

- NM-INBRE Summer Experience (NMSU)
- Undergraduate Pipeline Network (UNM)
- Direct research experience on NM-INBRE Projects (all participating institutions)
- Partnership with other student research training programs: RISE, MARC, Bridges, HHMI (NMSU); IRACDA (UNM)



MOUNTAIN WEST RESEARCH CONSORTIUM INSTITUTIONS



The Mountain West Research Consortium (MWRC) and Clinical Translational Research Infrastructure Network (CTR) are comprised of 11 academic institutions working to build capacity for transformative biomedical research and improve health outcomes within the region. Activities include opportunities for collaboration and research training, access to shared resources and services joint pilot funding, VIVO networking, mini-sabbaticals, junior faculty mentoring, and an undergraduate biomedical research pipeline program