

Why Great Universities Matter to Dallas and to Texas

- Great Universities Are a Critical Element to Great Cities and States
- I'm Not Talking about Wonderful Undergraduate Educational Institutions – I'm Talking about Major Research Universities
- Without More Tier One Research Universities, Texas Will Lose:
- Top Talent to Other States
- Federal Research and Development Dollars to Other States
- Venture Capital Investment Dollars to Other States
- Businesses to Other States
- Our Future to Other States and Countries?

Today's Great Cities Aren't Necessarily Tomorrow's Great Cities

City	Population Rank in 1920
New York City	1
Chicago	2
Philadelphia	3
Detroit	4
Cleveland	5
St. Louis	6

Key's to Future Prosperity:

Then: Ports, rail hubs, and natural resources for manufacturing

Now: Places where creativity, discovery, and entrepreneurship converge

The Association of American Universities (AAU)

- 60 U.S. institutions
- The AAU's represent 1.5% of the >4,000 colleges and universities
- But the AAU's:
 - Garner 57% of all federal R&D that goes to universities
 - Are home to 81% of the academic members of the National Academies
 - Since the founding of the Nobel Prizes in 1901, 70% of winners at U.S. institutions have been affiliated with an AAU university
 - The AAU universities are home to only 6% of U.S. undergraduate students but are home to 63% of all National Merit Scholars

The 10 Most Populous States

State	Population (M)	Number of AAU Universities	Number of AAU Universities per 10 million People
California	36.8	9	2.4
Texas	24.3	3	1.2
New York	19.5	7	3.6
Florida	18.3	1	0.5
Illinois	12.9	3	2.3
Pennsylvania	12.5	4	3.2
Ohio	11.5	2	1.7
Michigan	10.0	2	2.0
Georgia	9.7	2	2.1
North Carolina	9.2	2	2.2
	Average	(Excluding TX)	2.2

Texas Has Half the Average Number of Top Universities per Capita

Sources: wikipedia.org for population data; aau.org for AAU university information.

Texas Needs More Top-Tier Research Universities

AAU universities in the 3 most populous states:

California: Home to 9

New York: Home to 7

Texas: Home to 3:

- UT Austin
- Texas A&M
- Rice

By population proportion to California, Texas should have 6 AAU Universities

How Many Top Research Universities Should Texas' Two Largest Cities Have?

Rank ¹	City	Number of AAU Universities	AAU Universities
1	New York City	4	Columbia, NYU, Rutgers, Stony Brook
2	Los Angeles	4	USC, UCLA, Caltech, UC Irvine
3	Chicago	2	Northwestern, U. of Chicago
4	Washington DC	2	Johns Hopkins, U. of Maryland
5	Dallas-Fort Worth	0	
6	Philadelphia	1	U. Pennsylvania
7	Houston	1	Rice
8	San Francisco	2	Stanford, UC Berkeley
9	Boston	3	Brandeis, Harvard, MIT
10	Atlanta	1	Emory
	Average (Excluding Texas)	2.4	

¹Based on economic productivity of metro. Statistical areas in 2005. Source: www.bea.gov/newsreleases/regional/gdp_metro/2007/.

Universities as Engines of Economic Growth

MIT as an example. In just one year (2004):

- 133 patents issued
- 20 companies started
- \$1.2B of sponsored research
- \$2B of operating expenditures

In 1994:

- Alumni have founded more than 4,000 companies employing 1.1 million people and generating \$232 billion in sales worldwide
- The 2005 economic output of the DFW Metroplex was \$285 billion – roughly equal to MIT alums.

Imagine ---

- Boston (and Massachusetts) without MIT and Harvard
- The San Francisco Bay area (and California) without Stanford and UC Berkeley
- Austin (and Texas) without U.T. Austin

Business Week, October 14, 2008: “The Best Cities for Riding Out a Recession” Includes Pittsburgh – University of Pittsburgh and Carnegie Mellon (both AAU institutions)

Venture Capital

- ≈\$30 B per year of VC investment in the U.S. – just 0.2% of GDP
- 11% of all U.S. jobs are at VC backed companies (and growing!)
- 21% of GDP comes from VC backed companies (and growing!)
- From 2006-2008, job growth in VC backed companies was **8 times greater** than the U.S. economy as a whole
- Examples : Amazon, Apple, AOL, Dell, eBay, Facebook, Google, Intel, Medtronic, Microsoft, Qualcomm, YouTube

State	Population	Federal R&D	NAS Members	Venture Capital
California	12%	18%	30%	50%
Massachusetts	2%	5%	15%	11%
Texas	8%	5%	3%	4.5%

2007 Venture Capital Investment in Texas

Metropolitan Area	Population	Gross Product	Venture Capital
DFW	26%	31%	28%
Houston	24%	32%	13%
San Antonio	8%	7%	2%
(TOTAL)	58%	70%	43%
Austin	7%	6%	55%

Texas is Spiky!

Sources: Wikipedia, Census Bureau, BEA, Price-Waterhouse-Coopers

Texas Is Losing Talent to Other States

- In Fall, 2007:
 - Texas exported 11,500 high school students to doctoral granting universities in other states
 - Texas attracted 3,700 high school graduates from other states to doctoral-granting Texas universities
 - **Texas had a net brain drain of 7,800 high school students to universities in other states**
 - 7,800 students is approximately the size of the freshman class at either UT Austin or Texas A&M
 - The problem is getting worse

Source: IPEDS Institutional Characteristics and Enrollment Reports, 2006 and 2000

Info. on Rice U. reported in speech by Richard Fisher, Sept. 24, 2007, as reported to him by Malcolm Gillis, former Rice U. President
(Confirmed verbally by D.E. Daniel with Malcolm Gillis, 2008)

Let's Review the Situation

- Research and venture capital are the “fuel” for job growth and prosperity
- To create wealth, we used to invest in smokestacks (factories) – now we invest in universities (brains)
- Texas is exporting tax money to other states to fund research at their universities
- As a result other states are proportionally attracting more top faculty talent and more venture capital than Texas, and starting many more companies than we
- And other states are attracting our best and brightest young talent
- Is this a smart investment strategy for Texas' future?

Texas House Bill 51

- Signed by the Governor on the UT Dallas campus June, 2009
- Idea is to reward success – make universities earn the dollars
- Texas Research Incentive Program
 - \$50 M of matching gifts for faculty chairs, graduate student fellowships, and research support
 - UT Dallas: \$17.3M in gifts September 1, 2009, and \$15M in state matching funds – \$20M dedicated to faculty chairs
- National Research University Fund
 - \$500M endowment repurposed to support emerging research universities that meet certain criteria:
 - Quality students, faculty, and graduate programs
 - Research productivity and infrastructure investments

How We Did It

- Started with a white paper, May, 2008, then many presentations
- Editorials in *Dallas Morning News* starting June 2008
- Other newspapers across the state picked up on the “tier one” idea
- Senator Florence Shapiro and then Senator Judith Zaffirini called 7 university presidents together to begin working out the details
- Senator Robert Duncan conceived idea of repurposing \$500M endowment
- Legislation filed
- Representative Dan Branch filed HB51 and lined up the money
- University presidents stuck together
- The top priority from several major Chambers of Commerce
- Momentum built especially from media and business leaders
- Legislation passed almost unanimously

What's Next?

- Hold on to our gains
- Sustain the matching gifts program
- Start distributing funds from the endowment as universities qualify
- Right now at UT Dallas, we're very aggressively recruiting top faculty with \$20M in new chair funds and more on the way
- Results?
 - Business, civic, and legislative leaders are now our strongest advocates
 - Research at UT Dallas has doubled in last 5 years
 - Disclosures and spin-outs are way up
 - Graduate student applications for next year are up 45% (masters) and 70% (doctoral)
 - Significant increase in interest for co-location on or near our campus from businesses