Developing Tier One Universities: the Texas Approach

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1. What is Tier One?

• Names:
  – World Class University
  – Tier One
  – Research University

• There is no formal definition of Tier One university that is universally accepted.

Generally Accepted Definition

In the United States:
• Carnegie Foundation Classification
  – Top Tier ranking of RU/VH
• Association of American Universities
  – Membership
• Top American Research Universities
  – Top universities
Carnegie Foundation

• Basic Classification
  – Doctorate-Granting Universities
  – Master’s Colleges and Universities
  – Baccalaureate Colleges
  – Associate’s Colleges
  – Special Focus Institutions
  – Tribal Colleges

Doctorate-Granting Universities

• RU/VH: Research University (very high research activities), 108
• RU/H: Research University (high research activities), 99
• DRU: Doctoral/Research Universities, 90
Association of American Universities

- 61 leading comprehensive research-intensive universities in the US and Canada (2).
- Last three universities admitted:
  - SUNY-Stony Brook, 2001
  - Texas A&M University, 2001
  - Georgia Tech, 2010
- “Left” AAU in 2011
  - Syracuse University (1966-2011)
  - University of Nebraska (1909-2011)

Top American Research Universities

- The Center for Measuring University Performance at the Arizona State University.
- The Top American Research Universities, 2010 Annual Report (244 pages).
  - Top 50 universities,
  - Top 50 public universities, and
  - Top 50 private universities in the U.S.
Why not world ranking?

• The US dominates higher education in the world.
  In ARWU ranking
  – Among the top 20 universities, 17 of them are US universities.
  – Among the top 20 engineering colleges, 16 are in the US.
  – Among the top 20 Computer Science Department, 16 are in the US.

• My rule of thumb:
  Top $x$ in the US $\approx$ Top $2x$ in the world

2. Arguing for More

• Current State:
  – Based on Carnegie’s Top Research University classification as a measure, there are 108 universities on the list.
  – The US population is about 304,000,000, so about every 2,800,000 residents deserves a top tier university.
  – We can compute the Population-Adjusted number of top universities for each state.
### States with 3+ Carnegie Tier 1’s

<table>
<thead>
<tr>
<th>States with 3+</th>
<th>Top Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>11</td>
</tr>
<tr>
<td>New York</td>
<td>11</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>6</td>
</tr>
<tr>
<td>Florida</td>
<td>5</td>
</tr>
<tr>
<td>Georgia</td>
<td>4</td>
</tr>
<tr>
<td>Illinois</td>
<td>4</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>4</td>
</tr>
<tr>
<td>Texas</td>
<td>4</td>
</tr>
<tr>
<td>Indiana</td>
<td>3</td>
</tr>
<tr>
<td>Michigan</td>
<td>3</td>
</tr>
<tr>
<td>North Carolina</td>
<td>3</td>
</tr>
<tr>
<td>Ohio</td>
<td>3</td>
</tr>
<tr>
<td>Virginia</td>
<td>3</td>
</tr>
</tbody>
</table>

Only 3 before 2010

### States with 3+ Carnegie Tier 1’s

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</tr>
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<td>11</td>
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<td>Florida</td>
<td>13</td>
</tr>
<tr>
<td>Texas</td>
<td>4</td>
</tr>
</tbody>
</table>

States with High Population Growth
How: Interdependency

Texas Higher Ed Classification

- Universities
  - Research (2)
  - Emerging Research (7)
- Health Institutions
- 2-Year Institutions
- Community Colleges
  - Doctoral (6)
  - Comprehensive (8)
  - Master’s (8)
3. The Texas Approach

- Political support: 21 out of 31 state senators are in a district of the seven universities.
- Seven Universities are designated as Emerging Research Universities (ERUs).

The Seven Universities

[Logos of the seven universities]
Funding

- A set of eligibility criteria is established for ERUs to become National Research Universities (NRUs).
- Establishing a National Research University Fund (NRUF) to promote the NRU to Tier One.
- Establishing a Texas Research Incentive Program (TRIP) to leveraging private donations for the enhancement of research productivity and faculty recruitment.
Texas Research Incentive Program

- The Texas Research Incentive Program matches large private donations geared toward boosting research at eligible institutions.
  - Gifts of more than $100,000 receive a 50% match from the state,
  - those above $1 million get a 75% match, and
  - $2 million or more is matched at 100%.

TRIP Funding

<table>
<thead>
<tr>
<th>University</th>
<th>FY2010</th>
<th>FY2011</th>
<th>FY2012</th>
<th>FY2013</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTD</td>
<td>7,727,502</td>
<td>6,954,751</td>
<td>1,715,388</td>
<td>10,908,650</td>
<td>27,306,291</td>
</tr>
<tr>
<td>TTU</td>
<td>10,820,320</td>
<td>9,738,288</td>
<td>3,877,441</td>
<td>1,940,037</td>
<td>26,376,086</td>
</tr>
<tr>
<td>UH</td>
<td>2,379,617</td>
<td>2,141,655</td>
<td>8,115,243</td>
<td>1,510,000</td>
<td>14,146,516</td>
</tr>
<tr>
<td>UTSAS</td>
<td>1,425,324</td>
<td>1,282,792</td>
<td>1,091,884</td>
<td>1,550,000</td>
<td>5,350,000</td>
</tr>
<tr>
<td>UTEP</td>
<td>1,508,415</td>
<td>1,357,573</td>
<td>1,996,498</td>
<td>462,150</td>
<td>5,324,636</td>
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<tr>
<td>UNT</td>
<td>857,593</td>
<td>771,834</td>
<td>925,382</td>
<td>175,000</td>
<td>2,729,808</td>
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<tr>
<td>UTA</td>
<td>281,230</td>
<td>253,107</td>
<td>90,663</td>
<td>-</td>
<td>625,000</td>
</tr>
<tr>
<td>Remaining</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,266,663</td>
</tr>
<tr>
<td>Total</td>
<td>25,000,000</td>
<td>22,500,000</td>
<td>17,812,500</td>
<td>17,812,500</td>
<td><strong>83,125,000</strong></td>
</tr>
</tbody>
</table>
NRUF Eligibility Criteria

- The NRUF statute created two categories of eligibility criteria: mandatory and optional.

### Mandatory Criteria

- Designation as an “emerging research university” in the Coordinating Board’s accountability system, and
- At least $45 million in “restricted” research expenditures each year in two consecutive fiscal year.
Optional Category

• The optional category allows for flexibility: an institution must meet four out of the six criteria identified in statute or determined by the Coordinating Board.
  A. Endowment Funds at least $400 million.
  B. 200 Doctor of Philosophy (Ph.D.) Degrees Awarded
  C. Freshman Class of High Academic Achievement
  D. Institutional Recognition of Research Capabilities and Scholarly Attainment
  E. High-Quality Faculty
  F. High-Quality Graduate Education

Data Collection Period

• Most of the criteria must be met for two consecutive years within a state budget biennium.
  – Sept. 1, 2007- August 31, 2009 (FY08, FY09)
  – Sept. 1, 2009- August 31, 2011 (FY10, FY11)
  – Sept. 1, 2011- August 31, 2013 (FY12, FY13)
Specific Measurements, Example

- Quality Faculty
  - Member of (at least 5)
    - Nobel Prize
    - National Academy of Science
    - National Academy of Engineering
    - Academy of Arts and Science
    - Institute of Medicine

4. The Impact & UH’s Experience

- Research Focus priorities:
  - Energy
  - Health
  - Arts
  - Stars
- Carnegie-Ranked Tier One (4th in the state)
- Among the nation’s top 50 public research universities in three of the nine performance categories (TARU Report, 2010)
UH’s “Points of Pride”

• 1 Nobel Prize
• 1 National Medal of Science
• 3 National Academy of Sciences
• 9 National Academy of Engineering
• 1 National Academy of Education
• 1 American Academy of Arts and Sciences
Moving toward Tier One

Distribution of Fund

• In 2009, the legislators did not realize the participants would meet their criteria so rapidly.
• In 2011, the University of Houston is considered to be imminently eligible.
• The problem: The plan to distribute the fund is not completely settled.
  – The front runner: “We deserve the money”
  – All the others: “Let’s save some money for the future”
Proposed Payout Plan

NRUF ~613 Million

Biennium payout rate 4.5%

28 Million

14 Million

First University

Proposed Payout Plan to Universities

<table>
<thead>
<tr>
<th>Return for Reinvestment</th>
<th>Distribute to Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>1/3</td>
<td>1/3</td>
</tr>
<tr>
<td>1/4</td>
<td>1/4</td>
</tr>
</tbody>
</table>

1 university

2 universities

3 universities
5. Conclusions

• UH is on the brink of achieving Tier One followed closely by UTD and Texas Tech.

• Benefits to the universities:
  – More focused research agenda,
  – Reason for fund raising from alumni and business,
  – Pride among faculty and students,
  – Hiring of top-rated scientists and scholars

Conclusions

• Reasons for the success:
  – A strong financial incentive,
  – A pay-as-you-improve approach,
  – Clearly defined and measurable goals,
  – Reputable evaluation organizations,
  – A competitive approach,
  – A cooperative strategy,
  – Commitment and support.
Adopting the plan

- Approaches:
  - Pay and go improve
  - Pay as you improve
- Let them compete,
- Credible ranking organizations
  - SHJT’s ARWU
  - Association of East Asian Research Universities