

## Executive Summary

### Thoughts on Creating More Tier One Universities in Texas

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Texas is home to three outstanding Tier One universities: Rice, Texas A&M, and UT Austin. Maintaining the strengths of these institutions relative to the best universities in the nation is vital. But this will not be enough to keep Texas competitive in the face of what has become a global contest for talent, ideas, home-grown advances, and economic development. Texas must develop more top-tier universities, particularly in the major population centers of the state. Texas lags states such as California and New York in this area, and pays the price:

- Texas ships off more than 10,000 high school graduates per year who attend doctoral-granting universities in other states, while recruiting only about 4,000 per year from other states to Texas. This brain drain – a net loss of nearly 6,000 highly qualified students per year – is large and increased by 54% in the last 6 years;
- Texas has 8% of the U.S. population but only receives 5% of Federal research and development (R&D) funding and 5% of the nation's venture capital investment. If Texas received just its population-based share (8%), that would be \$3.7 B more each year; and
- The dearth of top-tier universities hurts Texas' largest cities. Dallas-Fort Worth, for example, is the fourth-most populous and fifth-most economically productive city in the U.S., but has no Tier One academic university, ranks 22<sup>nd</sup> in research expenditures (\$700 M per year below the average of the 10 largest cities) and 11<sup>th</sup> in number of college degrees awarded (awarding less than half the average of the 10 largest cities).

The Texas Higher Education Coordinating Board has designated seven universities as *emerging research universities*: Texas Tech, Univ. of Houston, Univ. of North Texas, UT Arlington, UT Dallas, UT El Paso, and UT San Antonio. The next Tier One university in Texas, if there is to be one, would almost certainly emerge from this group.

One strategy for creating more Tier One universities in Texas is to select universities for advancement and infuse them with the resources needed to become Tier One. But the challenge of selecting which universities to advance is divisive and politically difficult.

A more pragmatic approach may be to provide incentive funding that rewards attributes critical to Tier One success. This approach recognizes that:

1. State funding alone cannot build a Tier One university – support from local communities and private donations is essential; and
2. Choices by university leaders in faculty recruiting and program emphasis are critical to creating the research-intensive culture required to be Tier One.

Comparison of Texas' emerging research universities to Tier One universities nationwide shows a \$3,000 per student per year minimum funding deficit. The deficit cripples the emerging research universities in competition for top talent and research funding.

The recommended funding of \$3,000 per student per year would provide sufficient operating funds to enable an emerging research university to compete successfully. At \$3,000 per student per year, the additional state funding required to advance one university (the average emerging research university with 22,000+ students) to Tier One status is \$70 million per year. The minimum state funding needed to advance two universities is \$140 million, and to advance three universities would require annual funding of \$210 million. Annual state funding of \$140 or \$210 million is recommended to enable 2 or 3 institutions to reach Tier One status.

With the suggested approach, all seven emerging research universities would be eligible to receive the funding and all seven would benefit. However, it is assumed that two to three institutions, in partnership with their supporters and communities, would be the most motivated and the most successful in meeting the incentive criteria. Thus, it is expected a majority of the funds would aggregate in a few institutions.

This state-funded incentive program would have two elements, described below:

1. Provide matching state funds for gifts and community funds that support the critical elements of a Tier One university:
  - Merit-based undergraduate student scholarships. Rationale: Institutions must have academically distinguished undergraduate students if they are to be Tier One. Scholarships also address financial aid and student accessibility issues, and help to keep Texas' top talent in Texas.
  - Graduate student fellowships. Rationale: Fellowships are essential to recruit the top-quality graduate students that are required for a Tier One university.
  - Faculty professorships or chairs. Rationale: Tier One universities attract the very best faculty talent – professorships and chairs are vital elements if universities are to succeed in recruiting and retaining top-tier faculty talent.
  - Research equipment, research programs, and research infrastructure, including buildings. Rationale: Top-tier research universities attract substantial private and industrial support for research, which would be encouraged through this program.
  - Pipeline programs for at-risk students and critical fields. Rationale: Top-tier universities, through summer programs and other outreach mechanisms, aggressively recruit at-risk students and the students needed for critical fields.
2. Provide incentives for universities that create a top-tier university culture, namely:
  - Incentive funding tied to annual research funding per faculty member. Rationale: Texas already rewards externally funded research through the Research

Development Fund and the Texas Competitive Knowledge Fund. These are very valuable programs that should be continued and strengthened. However, a particularly useful measure of top-tier status is research productivity per faculty member, which separates the “pretty good” institutions from truly top tier. The research incentive would distribute additional funds beyond the current programs based on annual external research expenditures per FTE faculty member to motivate both research and emergence of a Tier One institutional profile.

- Incentive funding tied to faculty members who have been elected to the National Academies. Rationale: The National Academies consist of the Institute of Medicine, National Academy of Engineering, and National Academy of Sciences. Election to an Academy is widely regarded as the highest honor for a scientist, engineer, or doctor. Membership is a critical measure of faculty quality at leading universities, and there is a large difference in the number of National Academy members at the seven emerging research universities and the typical Tier One university nationwide. This incentive would attract more of the very best talent in the nation to Texas and to the emerging research universities.
- Incentive funding to support a demonstrable commitment to undergraduate research education. Rationale: The world’s top research universities engage undergraduate students in research. It is recommended that institutions receive extra funding for undergraduates who have registered for a course with a documented faculty-supervised research experience for participating students.

It is suggested that 50% of a pool of state funds be allocated to the matching gifts program (#1 above). The other 50% would be distributed based on achievement of goals linked to attaining a Tier One institutional profile and culture (#2 above). It is suggested that 30% be allocated to research funding per faculty member, 10% to faculty who have been elected to the National Academies, and 10% to support the commitment to research education. To provide reasonably smooth funding, it is recommended that a two-year average for the previous biennium, or average for the previous 3 years of research expenditures, be used as the basis for determining the level of state matching funds – this will smooth out year-to-year fluctuations.

The universities would use the additional state funding to hire more top-quality faculty, to enhance educational and research support for students, to build research facilities and infrastructure, and to fund programs that are essential to becoming a true Tier One institution.

In summary, these recommendations are made on the premise that state funding alone cannot lift a university to Tier One – private and community support are essential. The proposal avoids the need to choose among universities. The proposal motivates and empowers communities and private supporters to back their university if they see the benefit of a Tier One university. The suggested funding level is sufficient to support a serious program that will gain attention nationwide. All seven emerging research universities would benefit from this program, but the incentive funding would focus on those institutions that are most successful in attracting the outside funding that is essential for achieving Tier One status and implementing choices consistent with a Tier One university profile.