An Analysis of Graduation Rates at Research Universities

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**Nominated for Best Paper**

Objectives

- Promote the Need for a NATIONAL DATABASE on Engineering Student Retention : NO DATABASE CURRENTLY EXISTS
- Suggest types of Analysis using 2003 Graduation Rates at Highly Successful Research Universities

Background

- Universities Included in Analysis
  - **6-Year 2003 Graduation Rate > 75%**
  - **STEM % of degrees> 25%**
  - **Classified as Doctoral Research Extensive**
- 24 Universities
  - Carnegie Mellon University
  - Case Western Reserve University
  - Columbia University
  - Cornell University
  - Duke University
  - Johns Hopkins University
  - Lehigh University
  - Massachusetts Institute of Technology
  - Princeton University
  - Rensselaer Polytechnic Institute
  - Rice University
  - Stanford University
  - Texas A & M University
  - Tufts University
  - University Of California-Berkeley
  - University Of California-Davis
  - University Of California-Irvine
  - University Of California-San Diego
  - University Of Illinois at Urbana
  - University Of Michigan-Ann Arbor
  - University Of Rochester
  - University Of Wisconsin-Madison
  - Vanderbilt University
  - Washington University in St Louis
- URM – Under-Represented Minorities
- GRADUATION GAP is the Difference between the Overall and URM 6-Year Graduation Rates

Results

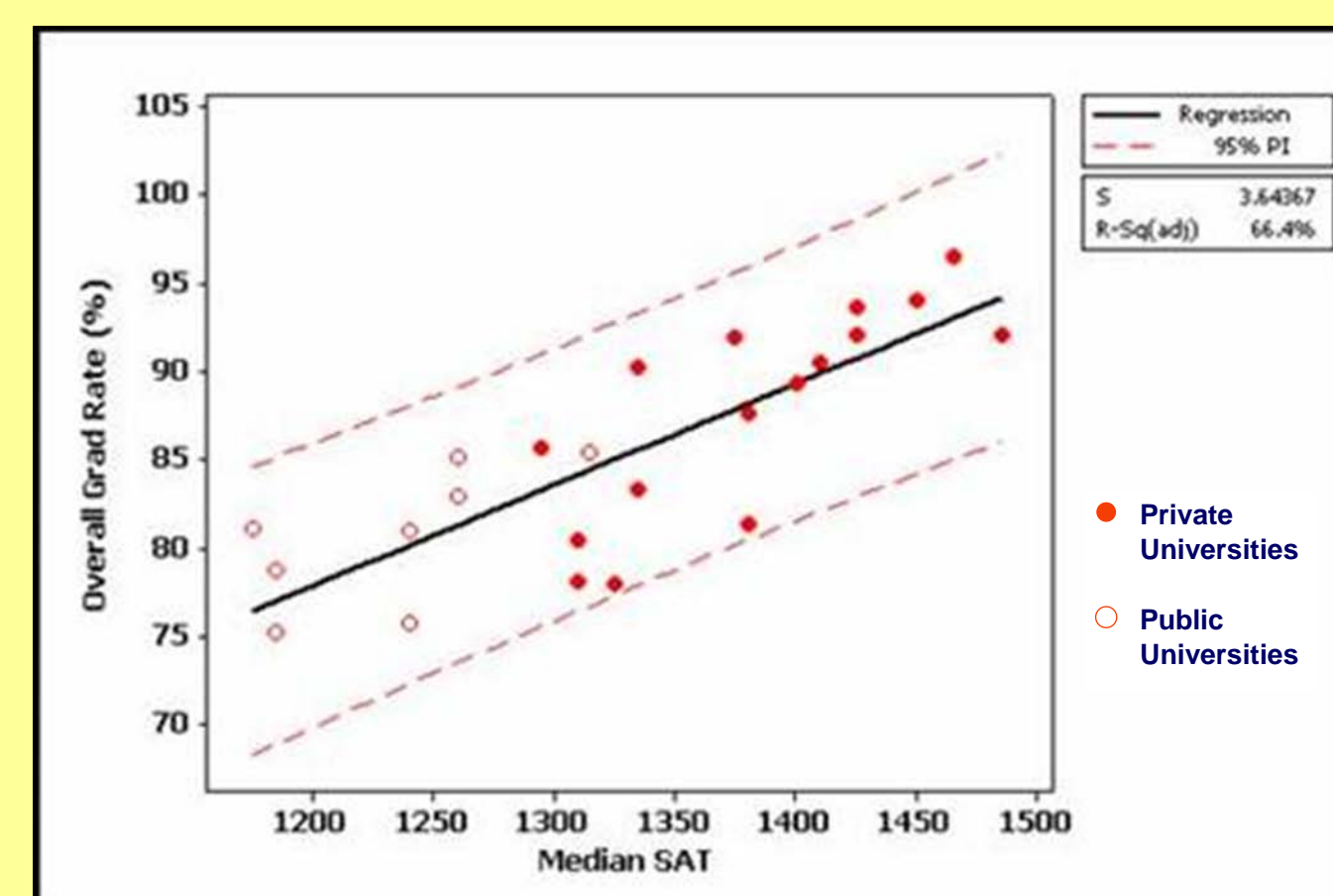### Graduation Rate Distributions of the 24 Universities
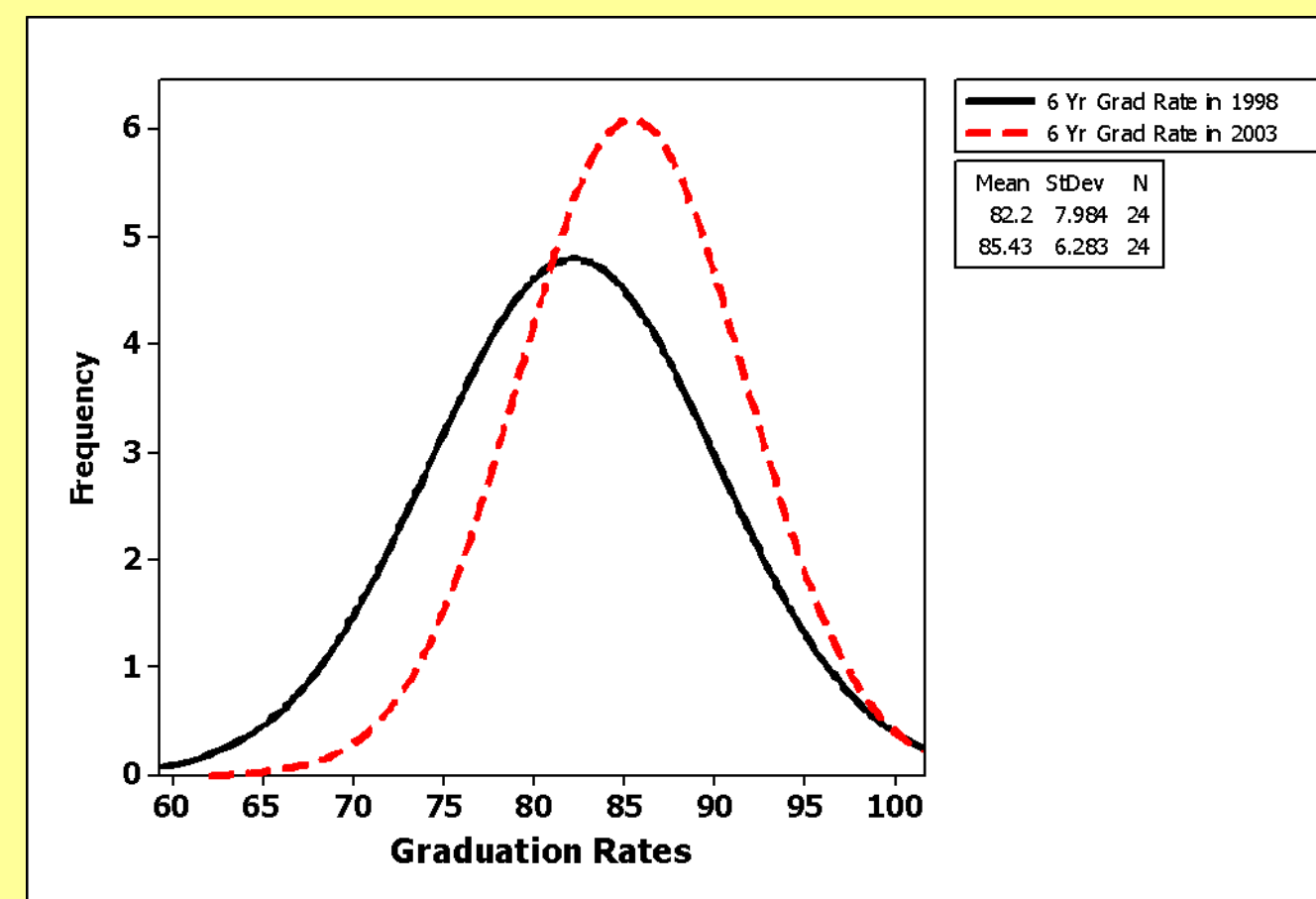
Average 3% Improvement in 6-Year Graduation Rates from 1998 to 2003
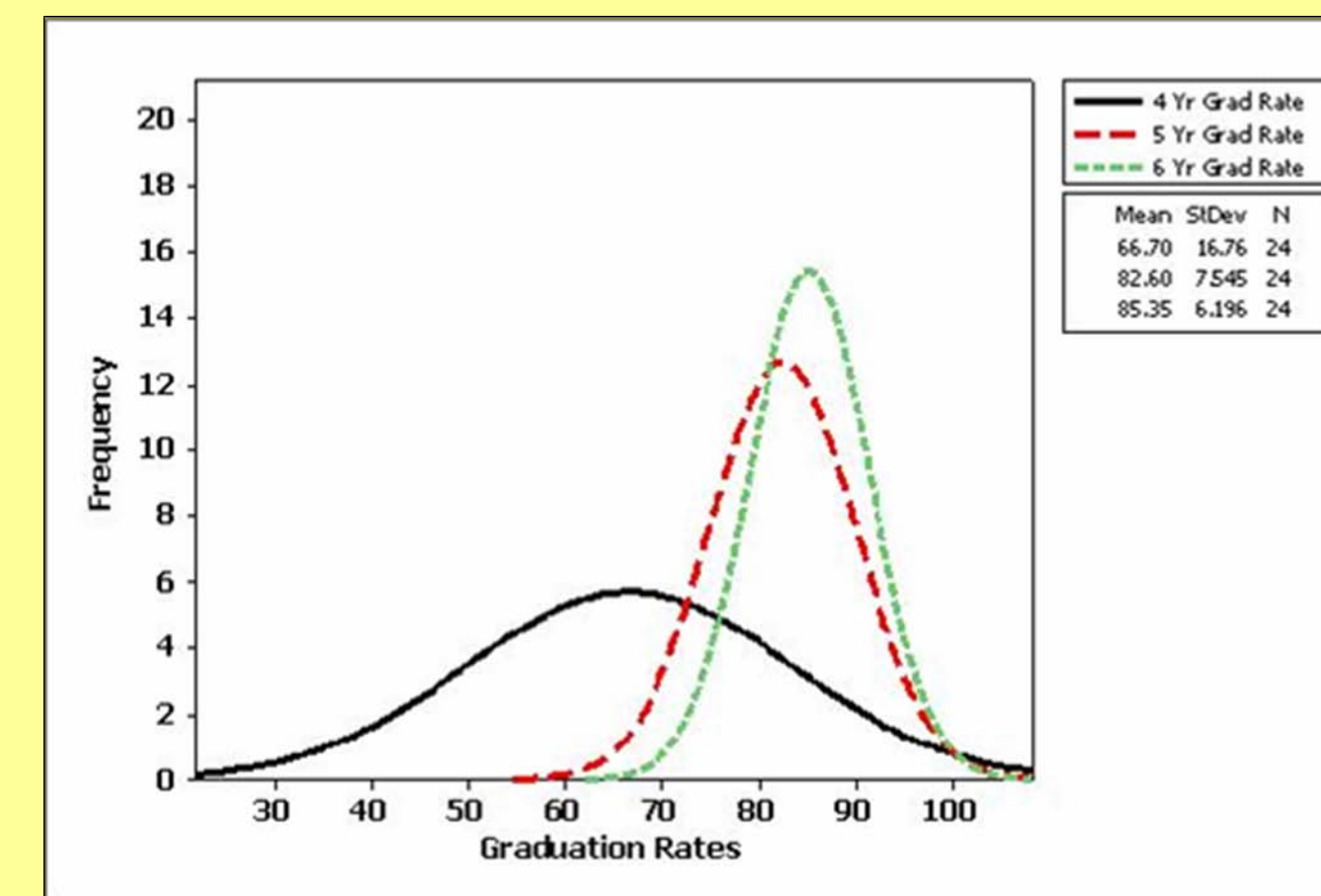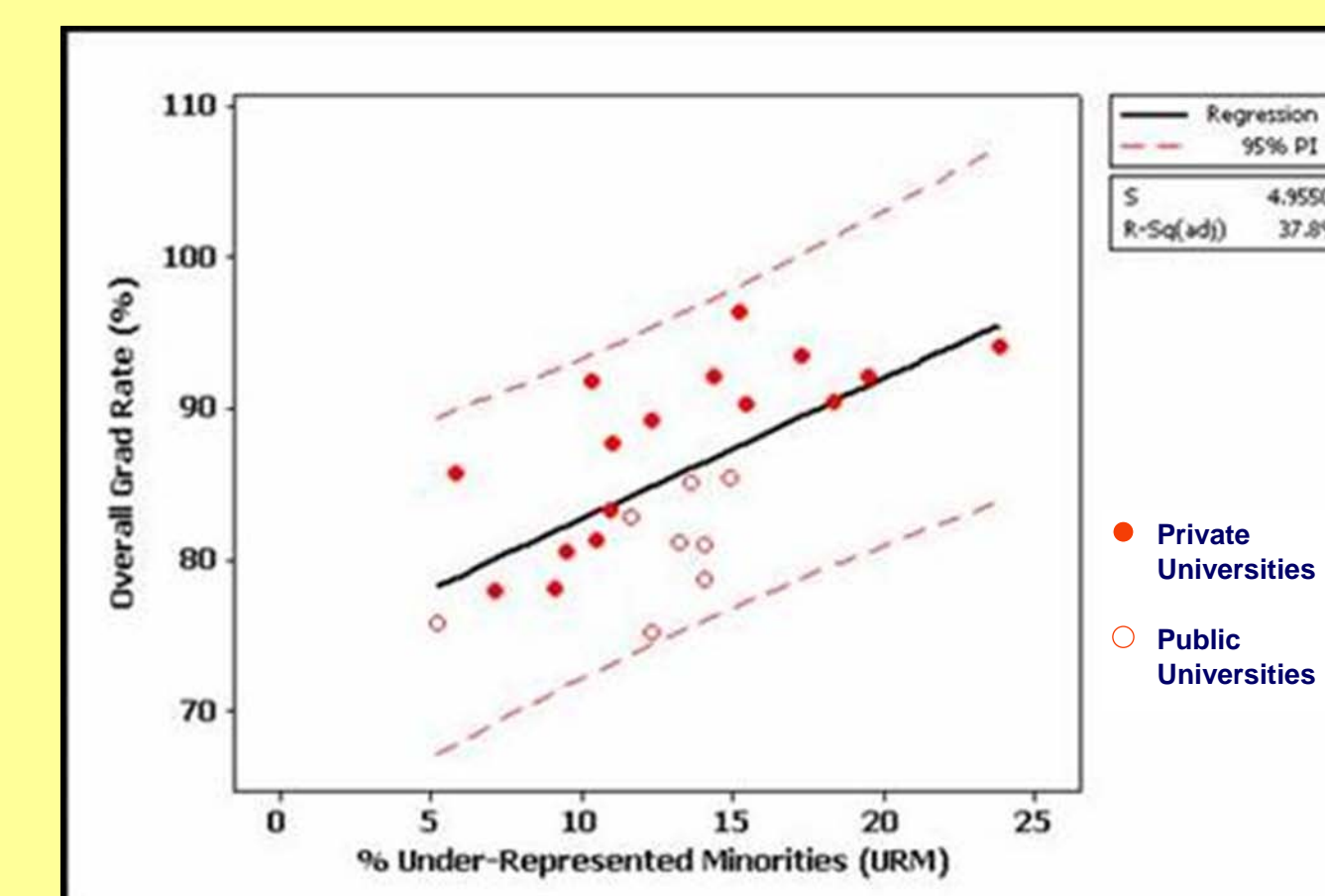
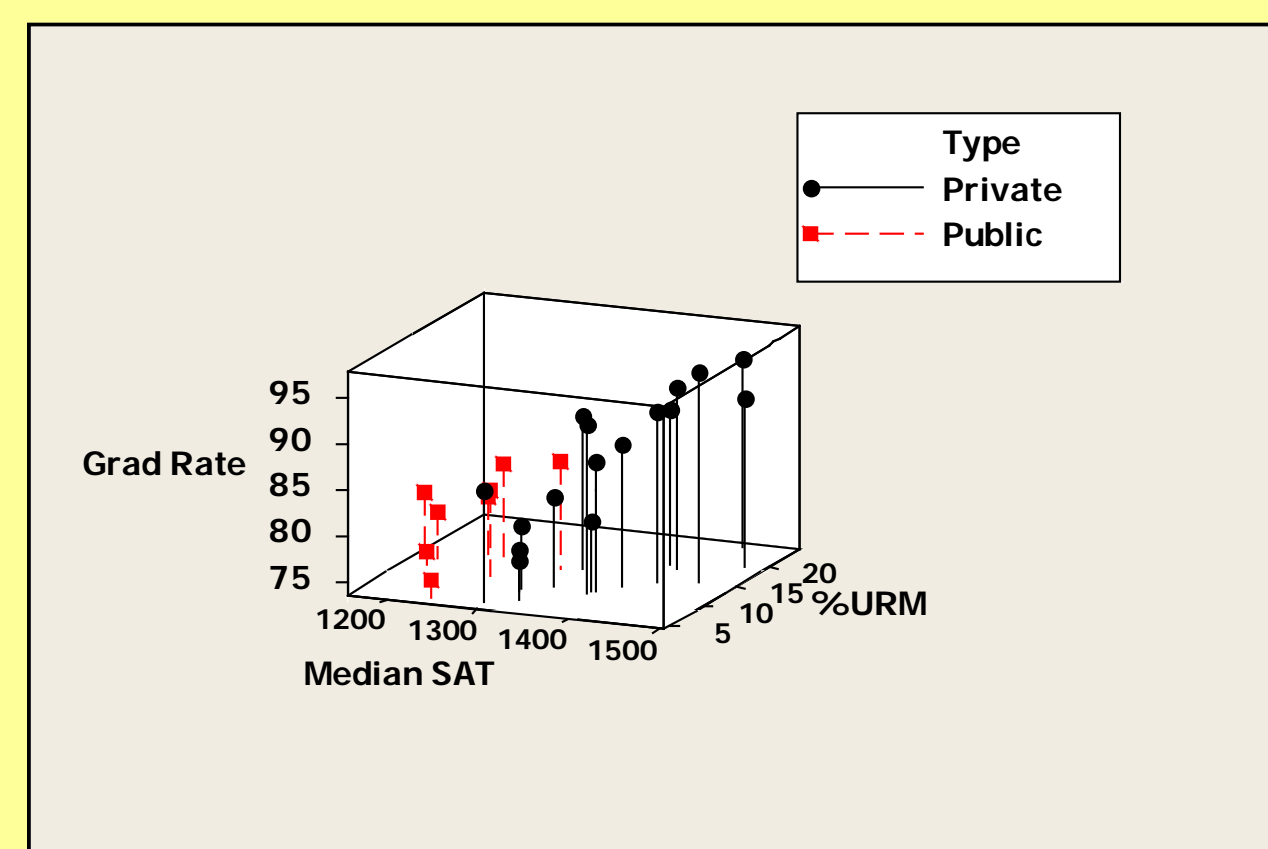Many Students Taking 5 to 6 years to Graduate

Graduation Rate Graphs

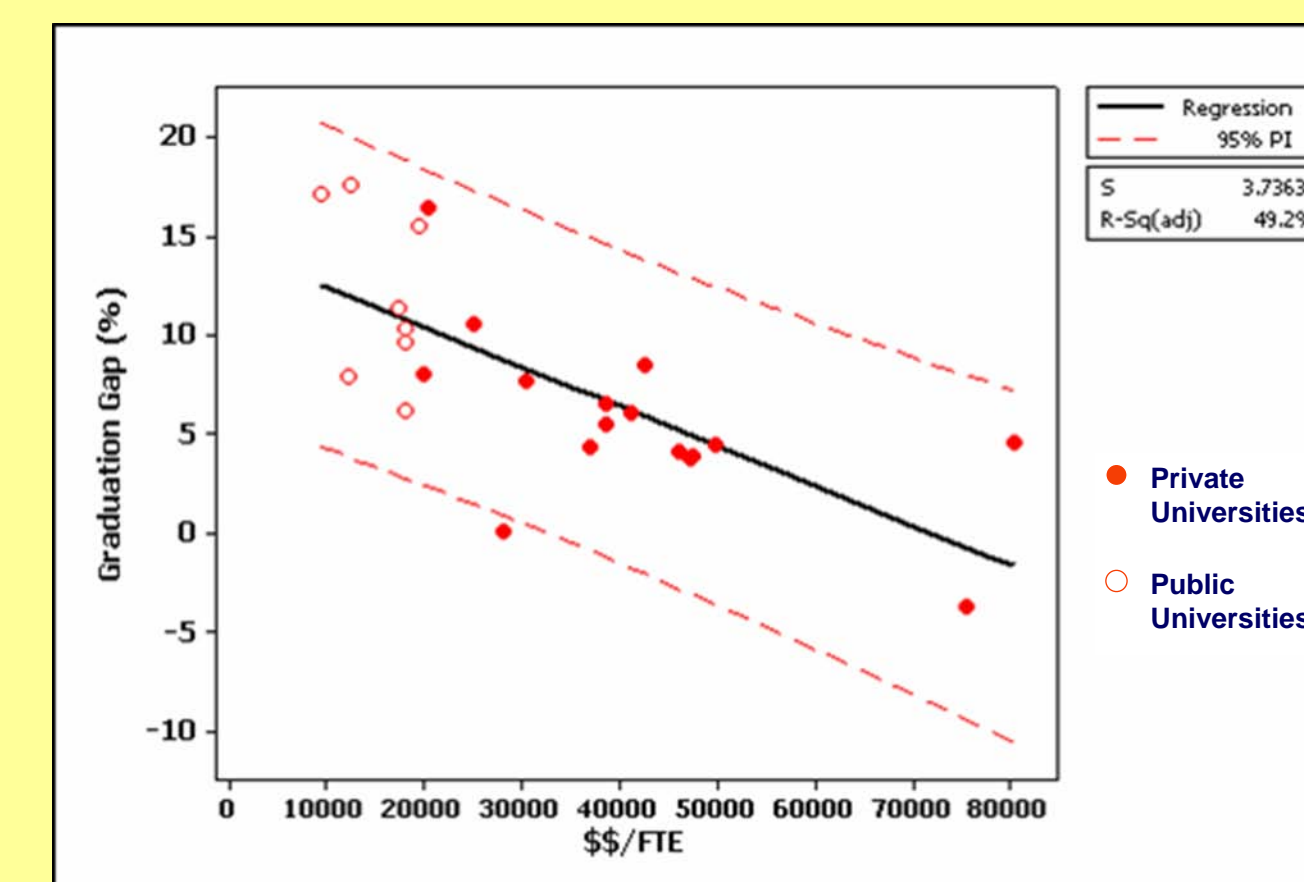6-Year Graduation Rate vs. Median SAT (Selectivity)

6-Year Graduation Rate Increases with higher % URM

Graduation Gap Graph

Private Universities have Higher Graduation Rates with Higher Median SAT and % URM

Graduation Gap decreases with more Student Support money($) invested.

$$/FTE = Invested Student Support $ per Full-time Student Equivalent

Conclusions

Graduation Rates
- Predicted Graduation Rate = 16.9 + 0.0469 Median SAT + 0.473 (%URM) R^2 = 74%
- No significant difference in Graduation Rate between public and private universities once corrected for Median SAT and % URM

Graduation Gap
- No significant difference in Graduation Gap between private and public universities once corrected for Student Support $/FTE.

- Success Stories: In a DEA benchmarking analysis of Graduation Gap, three universities were identified as "efficient" benchmarks with respect to Selectivity (SAT) and Student Support $: Texas A&M, Case Western Reserve U. and Washington U. at St. Louis.

Recommendations

ASEE expand its current database to include :
- Engineering student graduation rates
- First year retention statistics

Acknowledgements

Database Source : Education Trust