



Reconciling the SUS Strategic Plan Y-Axis goals and those of the SUS institutions¹

A summary of the following consultants' reports: (1) *Compilation of Analyses that Compare BOG and Institutional Plans* (11/8/04), MGT of America, Inc, 107 pp., and (2) *Degree Planning and Projection Model for the SUS* (11/18/04), The North Highland Company, 130 pp.²

The aforementioned consultants' reports were disseminated to SUS institutions the day before the Florida Board of Governors' meeting of November 17, 2004. This document attempts to summarize the methodology used, and the findings reported in these data intensive reports with a particular emphasis on future considerations to be made by the University of South Florida.

Purpose:

- To examine the differences between BOG goals and university plans for degree production (by level and in targeted programs).

Targeted areas:

Critical needs in education
Critical needs in health care

Emerging technologies – mechanical science and manufacturing

Emerging technologies – natural science and technology

Emerging technologies – medical science and health care

Emerging technologies – computer science and information technology

Emerging technologies – design and construction

Emerging technologies – electronic media and simulation

Economic development – high wage/high demand occupations

Educated citizenry and workforce

- To develop estimates of the operating costs and capital investments necessary to reach degree production goals.

¹ This Summary is preliminary and is based on the unverified data presented in the two reports which, in certain instances, appear to be inconsistent.

² Please note: Data presented is that drawn from the MGT of America, Inc, report unless otherwise noted.

Methodology:

The MGT of America, Inc., study utilized institutional headcount, FTE and degrees awarded projections (submitted to DCU in June 2004), and the Integrated Postsecondary Education System (IPEDS).

Expenditure information was compiled from the 2002-03 SUS Expenditure Analysis (The North Highland Co. Study utilized SUS Expenditure Analysis Reports for 1998-2003) by two-digit CIP instructional discipline and by course level. Cost by student major and degree was estimated by translating cost by discipline and level information using a crossover matrix showing percentage of all courses taken by student major program for each level. Total expenditures by student major and by level were divided by the number of degrees awarded by a student major and by level to derive the estimated cost per major by level.

Information relating to space allowances per student (i.e. square feet per student) and construction cost per square foot were compiled from the SUS space needs formula to derive estimates of capital investment for new construction per incremental student credit hour by discipline and level. The derived capital investment factors by discipline and level were multiplied by the number of student credit hours produced by discipline and level to estimate the gross capital investment required by level for current enrollments per the SUS space formula and construction cost factors. The gross required capital investment by level was divided by the number of degrees by level to derive an estimate of capital investment per degree by level.

The North Highland Co. Study also utilized Florida Education and Training Placement Information Program (FETPIP) data, the Council of 100 Report, Community College bachelor degree production data, and the USF News and World Report (2005 Edition).

SUS-wide Findings:

- **All Baccalaureate degrees** – institutional plans equal 97.8% of the BOG goal for 2012-13 (a deficit of 1,279 degrees) i.e. +41% [FGCU = 175%; FAMU = 111%; UWF = 78%; NCF = 52%; USF = 47%; UCF = 42%; FIU = 37%; UNF = 33%; FAU = 323%; FSU = 22%; UF = 6%]. *No comment on USF in (1).* USF will become the State's 3rd highest producer of baccalaureate degrees by 2012-13, up from 4th.
- **All Master's degrees** – institutional plans equal 108.9% of the BOG goal for 2012-13 (an excess of 1,580 degrees) i.e. +41% [FGCU = 198%; FAMU = 166%; UF = 71%; FSU = 52%; USF = 38%; UCF = 38%; FIU = 37%; FAU = 33%; UWF = 33%; UNF = 17%]. No NCF. *2 new programs planned at USF (1).* USF will remain the State's 2nd highest producer of master's degrees by 2012-13.
- **All Doctoral degrees** – institutional plans equal 218% of the BOG goal for 2012-13 (an excess of 1,783 degrees) i.e. +13% [FAMU = 1,591%; UNF = 720%; FIU = 225%; UCF = 171%; FAU = 154%; USF = 119%; UF = 110%; FSU = 65%; UWF = 7%], No NCF and FGCU. UF will award 96% of degrees. *2 new programs planned at USF (1).* USF will remain the State's 2nd highest producer of doctoral degrees by 2012-13.

- All First Professional degrees – institutional plans equal 100.7% of the BOG goal for 2012-13 (an excess of 15 degrees) i.e. 57% [FAMU = 244%; USF = 122%; FSU = 102%; UF = 26%] No FAU, FGCU, FIU, NCF, UCF, UNF, UWF. *Planned doubling of the size of the medical school at USF represents a significant statewide policy issue (1).* USF will remain the State's 4th highest producer of first professional degrees by 2012-13.
- Targeted programs – institutional plans fall short of BOG goals for awarding 50% (or 16,521) of degrees in targeted programs (a deficit of 3,101 or 18.8%). The shortfall is most pronounced at the baccalaureate level, with excess at the doctoral level.

- Baccalaureate level – sum of SUS targeted degrees = 86% of BOG goal for 2012-13 (-4,016 targeted degrees)

Shortfall in Education (-484); Health Care (-486); Mechanical Science (-2,198); Natural Science (-2,697); Medical Science (-64); Design and Construction (-230); and High Wage/High Demand (-354)

- Master's level – sum of SUS targeted degrees = 99% of BOG goal for 2012-13 (-116 targeted degrees)

Shortfall in Education (-367); Design and Construction (-51); and High Wage/High Demand (-1,189)

- Doctoral level – sum of SUS targeted degrees = 238% of BOG goal for 2012-13 (+1,040 targeted degrees)

No shortfall.

- First Professional level – sum of SUS degrees = 99.6% of BOG goal for 2012-13 (-9 targeted degrees)

Shortfall in Medical Science (-311); and High Wage/High Demand (-14).

- The North Highland Co. Study notes an SUS-wide degree surplus (in 2013-14) in the following disciplines/levels:

Mass Communications (326 baccalaureate)
 Letters (378 baccalaureate)
 Psychology (378 baccalaureate)
 Protective Services (216 baccalaureate)
 Social Sciences (537 baccalaureate)
 Visual and Performing Arts (195 baccalaureate)
 Business and Management (non-targeted) (818 baccalaureate)

Public Administration (156 master's)

Business and Management (non-targeted) (386 master's)

- The North Highland Co. Study notes SUS-wide degree deficits (in 2013-14) in the following disciplines/levels:

Computer & Information Science (284 baccalaureate)

Education (533 baccalaureate)

Engineering (265 baccalaureate)

Life Sciences (265 baccalaureate)

Physical Sciences (96 baccalaureate)

Nursing (310 baccalaureate)

- Operating costs are estimated to increase \$873M (\$536M for the 9 targeted program areas) to fund university plans or \$694M to fund BOG plans. The primary difference being the significant difference in doctoral degree productivity (+1,783 doctoral degrees).

- \$438M for SUS baccalaureate degree plan (+15,228)
- \$474M for BOG baccalaureate degree plan (+16,507)
- \$438M for SUS targeted baccalaureate degree plan (+7,933)
- \$391M for BOG targeted baccalaureate degree plan (+11,949)
- \$159M for SUS master's degree plan (+6,684)
- \$122M for BOG master's degree plan (+5,104)
- \$88M for SUS targeted master's degree plan (+3,297)
- \$91M for BOG targeted master's degree plan (+3,413)
- \$183M for SUS doctoral degree plan (+1,849)
- \$7M for BOG doctoral degree plan (+66)
- \$107M for SUS targeted doctoral degree plan (+1,002)
- -\$4.1M for BOG targeted doctoral degree plan (-38)
- \$93M for SUS professional degree plan (+904)
- \$92M for BOG professional degree plan (+889)
- \$82M for SUS targeted professional degree plan (+804)
- \$83M for BOG targeted professional degree plan (+813)
- \$873M for SUS degree production plan (+24,665)
- \$694M for BOG degree production plan (+22,566)
- \$536M for SUS targeted degree production plan (+13,036)
- \$561M for BOG targeted degree production plan (+16,167)

- Capital costs for new university facilities are estimated to increase \$2.1B to fund university plans or \$1.4 B (\$955M is to fund baccalaureate production) to fund BOG plans. The primary cost difference (\$653M of \$663 M) is to fund doctoral degree production.

- \$881M for SUS baccalaureate degree plan (+15,228)
- \$955M for BOG baccalaureate degree plan (+16,507)
- \$459M for SUS targeted baccalaureate degree plan (+7,933)
- \$691M for BOG targeted baccalaureate degree plan (+11,949)
- \$341M for SUS master's degree plan (+6,684)

- \$260M for BOG master's degree plan (+5,104)
 - \$168M for SUS targeted master's degree plan (+3,297)
 - \$174M for BOG targeted master's degree plan (+3,413)
 - \$677M for SUS doctoral degree plan (+1,849)
 - \$24M for BOG doctoral degree plan (+66)
 - \$367M for SUS targeted doctoral degree plan (+1,002)
 - -\$13.9M for BOG targeted doctoral degree plan (-38)
 - \$197M for SUS professional degree plan (+904)
 - \$194M for BOG professional degree plan (+889)
 - \$175M for SUS targeted professional degree plan (+804)
 - \$177M for BOG targeted professional degree plan (+813)
 - \$2.1B for SUS degree production plan (+24,665)
 - \$1.4B for BOG degree production plan (+22,566)
 - \$1.2B for SUS targeted degree production plan (+13,036)
 - \$1.0B for BOG targeted degree production plan (+16,167)
- Institutional plans fall \$236M (or +81%) short of the BOG goal (+130%) in total research expenditures for building world-class academic programs and research capacity.
 - Research expenditures per FT faculty member - \$89,837. 0% change/FT faculty @ USF (0% BOG goal)
 - Federal Research Expenditures per FT faculty member – \$30,815>\$43,105. 40% change/FT faculty @USF (6% BOG goal)
 - Total research expenditures – \$268.8M>\$470.9M. 75% change @ USF (130% BOG goal)
 - Patents – 18% change @ USF
 - NRC rankings -
 - Centers of Excellence -
 - Doctoral degrees per 1000 FT faculty – 77>91. 18% change @ USF (0% BOG goal)

USF-specific Findings:

- **Baccalaureate degree production = +47% @ USF (compared to +41% BOG goal)**

1.3-1 “USF’s planned growth at branch campuses and other extended locations accounts for 49% of the SUS total growth in off-campus production of bachelor’s degrees”.

Critical needs in education: 3rd (2003/04) > 2nd (2008/09) > 1st (2012-13) *High share of increase*
Critical needs in health care: 5th (2003/04) > 4th (2008/09) > 2nd (2012-13) *Growth plan is ambitious*

Emerging technologies – mechanical science and manufacturing: 3rd (2003/04) > 3rd (2008/09) > 2nd (2012-13) *High reliance for share of increase*

Emerging technologies – natural science and technology: 2nd (2003/04) > 2nd (2008/09) > 1st (2012-13) *High reliance for share of increase*

Emerging technologies – medical science and health care: No production at USF

Emerging technologies – computer science and information technology: 4th (2003/04) > 1st (2008/09) > 1st (2012-13) *Doubling in growth; high reliance for share of increase*

Emerging technologies – design and construction: 2nd (2003/04) > 2nd (2008/09) > 1st (2012-13) *High reliance for share of increase*

Emerging technologies – electronic media and simulation: No production at USF

Economic development – high wage/high demand occupations: 5th (2003/04) > 5th (2008/09) > 3rd (2012-13)

Educated citizenry and workforce: 4th (2003/04) > 4th (2008/09) > 5th (2012-13) *Minimal growth reflects priorities on target program areas*

The North Highland Co. Study notes USF deficits at the baccalaureate level (in 2013-14; and cumulative) in the following disciplines:

Education (149; 785) – highest across SUS with 2nd highest instructional cost per degree (after UF) and 3rd highest salary

Engineering (119; 567) – 2nd highest in SUS with 2nd highest instructional cost per degree (after FAU) and 4th highest salary

Computer & Information Sciences (37; 175) – 2nd/3rd in SUS with lowest instructional cost per degree and 4th highest salary.

Health Professions (70; 330) – 3rd/4th in SUS with 2nd lowest instructional cost per degree.

- **Master’s degree production = +38% @ USF (compared to +41% BOG goal)**

Critical needs in education: 3rd (2003/04) > 2nd (2008/09) > 1st (2012-13) *High share of increase*

Critical needs in health care: 5th (2003/04) > 4th (2008/09) > 2nd (2012-13) *Growth plan is ambitious*

Emerging technologies – mechanical science and manufacturing: 3rd (2003/04) > 3rd (2008/09) > 3rd (2012-13) *Rapid growth in degree production*

Emerging technologies – natural science and technology: 2nd (2003/04) > 2nd (2008/09) > 2nd (2012-13) *Rapid growth in degree production. High reliance for share of increase*

Emerging technologies – medical science and health care: 1st (2003/04) > 1st (2008/09) > 1st (2012-13) *Modest increase in degree production*

Emerging technologies – computer science and information technology: 1st (2003/04) > 2nd (2008/09) > 2nd (2012-13)

Emerging technologies – design and construction: 3rd (2003/04) > 2nd (2008/09) > 2nd (2012-13)

Emerging technologies – electronic media and simulation: No production at USF

Economic development – high wage/high demand occupations: 3rd (2003/04) > 3rd (2008/09) > 3rd (2012-13) *Modest growth in degree production*

Educated citizenry and workforce: 5th (2003/04) > 4th (2008/09) > 5th (2012-13) *Constrained growth in non-targeted areas*

The North Highland Co. Study notes USF deficits at the master's level (in 2013-14; and cumulative) in the following disciplines:

Business & Management (6; 72) – 2nd in SUS with 4th highest instructional cost per degree and 3rd highest salary.

- Doctoral degree production = +119% (6th highest rate of growth; compared to +13% BOG goal)

Critical needs in education: 3rd (2003/04) > 3rd (2008/09) > 3rd (2012-13) *High share of increase*
Critical needs in health care: 1st (2003/04) > 1st (2008/09) > 1st (2012-13) *Primary provider of degrees*

Emerging technologies – mechanical science and manufacturing: 4th (2003/04) > 3rd (2008/09) > 3rd (2012-13) *Rapid growth in degree production*

Emerging technologies – natural science and technology: 3rd (2003/04) > 4th (2008/09) > 6th (2012-13)

Emerging technologies – medical science and health care: 2nd (2003/04) > 1st (2008/09) > 1st (2012-13) *High growth in public health; new program in biomedical engineering*

Emerging technologies – computer science and information technology: 4th (2003/04) > 2nd (2008/09) > 2nd (2012-13)

Emerging technologies – design and construction: 1st (2003/04) > 1st (2008/09) > 1st (2012-13)

Largest degree growth planned

Emerging technologies – electronic media and simulation: No production at USF

Economic development – high wage/high demand occupations: 2nd (2003/04) > 3rd (2008/09) > 2nd (2012-13) *Strong growth*

Educated citizenry and workforce: 3rd (2003/04) > 4th (2008/09) > 5th (2012-13) *One new program*

- **First professional degree production = +122% (2nd highest rate of growth compared to +57% BOG goal; only four universities produce professional degrees. USF's limited to medical degrees where there is projected underproduction across the SUS)**

Critical needs in education: No production at USF

Critical needs in health care: 2nd (2003/04) > 2nd (2008/09) > 2nd (2012-13) *Planned doubling of medical degrees in established program represents a significant statewide policy issue*

Emerging technologies – mechanical science and manufacturing: No production at USF

Emerging technologies – natural science and technology: No production at USF

Emerging technologies – medical science and health care: No production at USF

Emerging technologies – computer science and information technology: No production at USF

Emerging technologies – design and construction: No production at USF

Emerging technologies – electronic media and simulation: No production at USF

Economic development – high wage/high demand occupations: No production at USF

Educated citizenry and workforce: No production at USF

- **The ratio of heads on the main campus to other locations at USF is projected to be 73%: 37% in 2012-13 (compared to 81%: 19% in 2003-04) which indicates a higher rate of student growth on the regional campuses than at the main campus.**
- **The USF System is projecting a 58,802 headcount and 47,109 FTE by 2012-13 which will make it the largest university in the SUS [UF = 55, 239; UCF = 51,908]. USF plans to award 11,293 annually by 2012-13 (3rd highest in the SUS).**
- **USF will require an increase of \$123M in its operating budget (second only to UF @ \$168M) to produce the degrees projected. USF will require the 2nd highest operating investment per degree at the baccalaureate level (\$72, 288); 3rd at the Master's level (\$18,287); 2nd at the doctoral level (\$21,126); 4th at the First Professional level (\$11,255); and 3rd total across the SUS.**

The North Highland Co. Study notes that:

UWF, UNF, UCF, and FAU have higher typical/average instructional costs across baccalaureate programs.

USF's instructional costs rank 7th out of 10 (NCF is not included) across the SUS at the baccalaureate level. Instructional costs for baccalaureate degrees are lower than SUS average in six of eight targeted program areas (Computer Information Systems; Education; Mathematics; Physical Sciences; Health Sciences; and Business/MIS)

FAU, FAMU have higher typical/average instructional costs across master's programs.

USF's instructional costs rank 7th out of 10 (NCF is not included) across the SUS at the master's level.

UCF, FAU have higher typical/average instructional costs across doctoral programs.

USF's instructional costs rank 8th out of 9 (NCF and FGCU are not included) across the SUS at the doctoral level.

- The North Highland Co. Study notes that for baccalaureate graduates *UNF, USF, FAU maintain the highest average starting salaries for targeted programs across the SUS.*

The North Highland Co. Study notes that for master's graduates *FAU, UCF and USF, maintain the highest average starting salaries across the SUS.*

- USF will require capital investment in the amount of \$287M (second only to UF @ \$473M) to produce the degrees projected. USF will require the 2nd highest capital investment per degree at the baccalaureate level (\$145,546); 3rd at the Master's level (\$39,101); 2nd at the doctoral level (\$78,263); 4th at the First Professional level (\$23,789); and 2nd total across the SUS. All costs are expressed in 2003/04 dollars.
- The North Highland Co. Study notes that USF is ranked 5th (behind UF; FSU; FIU; and UCF) using the U.S. News and World Report weighted score (National Rank=3; Classes with <20 = 7th; Classes with 50+ = 3rd; Graduation Rate = 3rd; Freshman Retention = 4th; Selectivity = 5th; Peer Assessment = 6th)
- The North Highland Co. Study establishes the following goals for USF:
 - Increase degree productivity in all areas with an emphasis in:
 - “Critical Needs” areas of education and the health professions (nutrition, pharmacy, and public health)
 - “Emerging Technologies” areas of engineering, life and physical sciences, medicine, computer sciences, information systems, public and community health, marine and environmental.
 - “High Wage/High Demand” areas of MBA, educational leadership, and audiology.
 - Assist the state with the challenges of rapid development by providing increased opportunities for the education of Florida's citizens and outstanding research outcomes to improve the quality of life.
 - Improve student retention rates
 - Improve time-to-graduation

Recommendations for Further Consideration at USF:

- Do we need to develop more/less aggressive degree production goals?

Recommendation: No change at the baccalaureate level. Continued growth on the regional campuses is essential to enhancing geographical access to higher education. Though not essential (since SUS 99% of BOG goal by 2012-13), we might consider an increase in Master's degree productivity particularly on regional campuses. Doctoral degree growth is high (119%; 6th highest rate; compared to BOG 13% goal). USF is one of only four current Doctoral Research Extensive Universities in SUS. Projected growth is consistent with institutional mission. Consider focus on targeted doctoral degrees. Professional degree production is high (122%) but only four universities produce. This includes overproduction of pharmacy graduates elsewhere and underproduction of medical graduates. Therefore USF's projected growth in medical graduates appears appropriate particularly in light of CEPRI's recommendations on the future of medical education in the SUS. USF might consider further expansion of medical education across the state.

- Should we reprioritize degree growth plans to targeted areas?

Recommendation: It is not essential but careful attention ought to be given to education, business (targeted areas) and medicine.

- Do we need to re-examine growth patterns across USF-system?

Recommendation: Yes, meeting the geographical needs for access to higher education (particularly at the baccalaureate and masters degree levels) will be crucial for the regional campuses of the USF System.

- Do we need to re-evaluate USF's PECO CIP plans based upon degree production plans?

Recommendation: Yes. It makes no sense to recommend construction projects that are not aligned with the SUS targeted priorities.

- Do we need to reconsider USF's *Building World-Class Academic Programs and Research Capacity* goals?

Recommendation: No, not at this time. It is essential that strategic steps be taken to reduce the faculty count denominator, consistent with other SUS institutions.

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