



**College of Business and Information Systems**

**Institutional Program Review  
Report to Board of Regents**

**Doctorate of Science in Information Systems  
Master of Science in Information Systems  
Bachelor of Science in Information Systems**

**Date of visit: 22 April 2013**

**Reviewer: Jay F. Nunamaker, Jr., Ph.D., P.E.**

**Regents and Soldwedel Professor of MIS**

**Computer Science and Communication**

**University of Arizona**

## Program Review Report to Board of Regents

### A. Describe the strengths and weaknesses identified by the reviewers

#### *Analysis of Trends in the Discipline*

In the context of enrollments in the undergraduate information systems (IS) program, the reviewer indicates that while declining enrollments in information systems programs started with the “dot com” bust and the perception that all IS or information technology (IT) jobs are being outsourced, this trend has reversed and that “*nothing could be further from the truth*”.

#### *Analysis of Academic Programs and Curriculum*

The reviewer indicates that the undergraduate program and curriculum are excellent. The reviewer rates the academic programs and curriculum at a “5” This rating is on a scale of 1 – 5, where “5” is considered excellent. The reviewer noted, “The curriculum for the undergraduate program seems significant and is providing the students with relevant training and placements.”

The reviewer also indicates that the Master of Science (MSIS) program has been a “*solid program*”. The program has been closely aligned with the competencies of the IS faculty and the curriculum has been substantially revised in accordance with the Association for Information Systems’ (AIS) MSIS 2006 curriculum guidelines and thereafter to take advantage of the latest developments in the field, e.g., respond to recent significance in cloud computing, mobile computing, and business analytics.

The D.Sc. program is also very successful. With the program’s focus on technical research, the reviewer recommends that students are advised to take technical courses in their first year of study.

#### *Analysis of Program Enrollment and Student Placement*

In the reviewer’s assessment, “enrollment in the undergraduate program needs to be drastically increased. There is an excellent opportunity to create a unique niche in the financial, banking, healthcare and information technology market for graduates.” The decline in IS enrollments reflects a national trend. Both the MSIS and D.Sc. have been very successful. The MSIS program continues to represent a great growth opportunity.

#### *Analysis of Faculty Credentials*

The reviewer recognizes the dedication of the faculty to the program and to the students, and describes the programs as “high touch”. The reviewer also recognizes a number of the department’s faculty based on their publications.

However, in general, the reviewer indicates that while faculty is highly productive with respect to teaching, there is a significant opportunity for improving research productivity. Improving research productivity can be accomplished by changing the incentive system for research and gradually shifting the culture from a predominantly teaching culture to a balanced teaching and research culture.

### ***Analysis of Academic and Financial Support***

For the undergraduate program, the reviewer rates the effective use of resources to meet program goals at a “5”, and rates financial support at a “4”. This rating is on a scale of 1 – 5, where “5” is considered excellent.

### ***Analysis of Facilities and Equipment***

The reviewer rates classroom and laboratory facilities for both graduate programs at a “4” (on a scale of 1 – 5, where “5” is excellent).

### ***Analysis of Major-Field Assessment***

For the undergraduate program, the reviewer rates the appropriateness of assessment measures and major field assessment activities relative to program goals at a “5” (on a scale of 1 – 5, where “5” is excellent).

### ***Overall Evaluation of Strengths and Limitations of the Academic Programs Being Reviewed***

Overall, the strengths, limitations, and observations identified by the reviewer include:

#### Strengths

- The undergraduate Information System suffers from low enrollment.
- The MS in Information Systems and the DSc Information Systems are very good.
- The MSIS follows generally accepted guidelines.
- Faculty members are dedicated to the students and program.
- Financial support for the program is adequate
- Facilities and equipment are very good.
- Assessment activities are rigorous and conducted on a regular basis
- Overall, the programs are “significant” and “providing students with relevant training and placements”.
- The graduate programs are internationally visible with 58 students in the doctoral program.

#### Limitations

- The research component should be improved. This applies to undergraduate and graduate IS programs, with particular emphasis on the graduate programs. According to the reviewer “*this is very important for the long-run viability of the IS graduate programs, and in particular, the doctoral program*”

#### Observation

- The BSIS program can be categorized as a STEM program. The IS programs should be marketed as a STEM program (Science, Technology, Engineering and

Mathematics) program. This approach will enable the recruiters to leverage the regional high school emphasis on STEM career preparation.

- The MS program can be categorized as a STEM program. The IS programs should be marketed as a STEM program (Science, Technology, Engineering and Mathematics) program.
- There is an excellent opportunity to create a unique niche in the financial and banking health care and information technology market for graduates.

#### **B. Briefly summarize the Reviewer's Recommendations**

The reviewer recommends the following with respect to the undergraduate IS program:

- Maintain the excellence in teaching.
- Enhance the research component of all degrees.
- Increase enrollment in undergraduate program.
- Address faculty salary problems and research incentives as discussed in section 3.4 of the report.
- Continue to stress the assessment program for all degree levels. From the reviewer's perspective, the assessment program is a first class operation and should be expanded.

#### **C. Indicate the present and continuing actions to be taken by the college or department to address the issues raised by the review. What outcomes are anticipated as a result of these actions?**

DSU is cognizant of the importance building its research culture with a goal of shifting from a teaching culture to a balanced teaching and research culture. Towards this goal, in 2010 DSU initiated an Academic Quality Improvement Program (AQIP) project entitled "Building a research culture at DSU". This project aims to shift the predominant mindset at Dakota State University from a teaching-only orientation to a teaching, research, and scholarship orientation. Specifically, the project aims to create an environment in which research, scholarship, and creative activity are respected, rewarded, and reported (to internal and external stakeholders). Within this initiative, the university is undertaking a number of activities to enrich the research culture at DSU and to improve the research productivity of faculty. This range from inviting speakers, organizing grant writing workshops, administering internal competitive grant competition, and streamlining processes for faculty to re-allocate time for research.

DSU's AQIP project has undergone its first annual review. Overall, the comments are very positive and emphasize DSU's forward thinking as well as the criticality of the project. It also emphasizes how we proceeded in an open and transparent manner with significant communication and involvement from the faculty (an important aspect for successfully inducing change). However, the report also recognized that DSU is not alone

in its challenges and the lessons learned as DSU moves forward could be of potential benefit to many schools in the future looking to create a culture shift within their institutions. Despite recent successes and accomplishments, there is still a room for improvement in DSU's research culture and DSU remains committed to this effort. As the AQIP reviewer noted, "The largest challenge...changing the mind-set". Aside from changing the culture from within, DSU is cognizant of the importance to emphasize research requirements for new faculty hires.

Consistent with the reviewer's recommendation and with DSU's mission and values, DSU will however, continue to support teaching and continue to pride itself with the quality of instruction.

The faculty will consider marketing the BSIS program as a STEM program. The South Dakota K12 education continues to evolve towards STEM preparation and the strategy would serve our regional students and employers. The STEM program label would provide an excellent recruitment niche for the BSIS program.

DSU's strategic plan emphasizes development of Technology Leadership. The BSIS faculty have initiatives in place to increase IS recruitment and retention as part of the development of Technology Leadership.

With respect to assessment activities, DSU plans to continue to emphasize and support assessment activities. The effort is consistent with DSU's emphasis on continuous improvement, and graduate programs are no exception.