

Planning South Dakota Tech's Future

During 2003-2004, the Tech campus engaged in a conversation regarding our past, present, and most importantly, our future. The dialogue was informed by several existing planning documents and involved all students, faculty members, and staff who elected to participate. Alumni, community leaders, and interested citizens were invited, and some elected to join in the dialogue.

All-campus meetings were held Oct. 29, 2003, and Jan. 22, 2004, along with several small-group discussions. A website was created for all background documents, group discussion transcripts, and work products. (<http://www.hpcnet.org/PresidentCampusPlanning>)

A summary designed to capture the essence of the plan and to highlight major concerns was discussed with the Board of Regents in March 2004. A third all-campus planning session was held May 11, 2004, to identify a work agenda for the coming year.

Assumptions that Guide our Planning

A number of planning documents, studies, and institutional analyses informed our conversation about Tech's future. Six assumptions emerged as critical. Our response to these assumptions undergirds our plans and actions. The assumptions are summarized as follows:

1. **Mission Affirmation.** South Dakota Tech is, and plans to continue to be, a small technological university with a curriculum grounded in engineering, the physical sciences, and technology. No mission expansion is contemplated.
2. **West River Consortium (Tech/BHSU).** Our plans are designed to make the Consortium a viable mechanism for the collaborative delivery of post-secondary education throughout the West River region.
3. **State Demographics.** Our plan is built on the demographic changes facing South Dakota. Of sharp concern is the declining 18- to 24-year-old population.
4. **Regional/National Demographics.** Our plan also recognizes projected dramatic population increases in selected midwestern states, including Colorado, Idaho, Kansas, Minnesota, and Utah.
5. **Need for Scientists and Engineers.** Current South Dakota data suggests a Steady State between graduates in science/engineering and announced employers' needs statewide. Any environmental change resulting in a reduction in graduates or increase in work place expansions could result in a shortage of this critical element of the workforce. Regionally and nationally, the projected additional need for scientists and engineers now and in the future is significant.
6. **Financial Analysis.** Economic and social pressures will continue to challenge the financing of higher education nationally and across South Dakota. Future institutional financial planning will need to take a "total resource management" approach. Fiscal planning will necessarily include the use of tuition and fees, state support, auxiliary enterprises, grants and contracts, and philanthropy.

Mission, Vision, and Goal

The South Dakota School of Mines and Technology serves the People of South Dakota as their technological university. Its mission is to provide a well-rounded education that prepares students for leadership roles in engineering and science; to advance the state of knowledge and application of this knowledge through research and scholarship; and to benefit the state, region, and nation through collaborative efforts in education and economic development. Our mission as a technological university was reaffirmed by the South Dakota Board of Regents in December 2003.

South Dakota Tech is dedicated to being a leader in twenty-first century education that reflects a belief in the role of engineers and scientists as crucial to the advancement of society. Our vision is to be recognized as a premiere technological university in the United States.

Most immediately, our goal is to be recognized as the university of choice for engineering and science within South Dakota and among our peer group of specialized engineering and science universities.

Critical Implications

Critical implications (even changes in direction for the institution) that need to be understood, both on campus and by those beyond, include the following:

1. Positioning South Dakota Tech as a regional/national small technological university (i.e., Meet South Dakota's needs first, but move beyond)
2. Remaining at current size (+/- 200)
3. Redirecting enrollment/strategy (e.g., target underserved, out-of-state, and international students)
4. Expanding R & D foci
5. Adding additional Ph.D. Programs
6. Building partnerships everywhere!

Strategic Agenda 2004-2005

Strategic Initiatives

During 2003-2004, the South Dakota Tech campus community formulated four strategic initiatives to provide a framework for the actions that we must undertake to achieve our goals and vision, as outlined on the enclosed insert sheet. These strategic initiatives evolved from our campus-wide planning process.

Action items under each initiative were identified for attention during the coming year. These action items emerged from the May 11, 2004, planning meeting; were reviewed and discussed by the Self-Study/Strategic Initiative Steering Committee (which will lead the effort on many of these initiatives); and were reviewed by the Executive Council. A critique of our progress in meeting these action items will serve as the starting point for our May 2005 all-campus planning session.

Strategic Initiative 1: Reshape the Learning and Teaching Experience

A distinctive curriculum and co-curriculum will make South Dakota Tech a national university of choice for high quality, relevant education in engineering and science. Our curriculum needs to be distinctive enough to attract the best and brightest while ensuring that all students develop both technical expertise and “soft skills.”

During 2004-2005, attention will be given to the following:

A. Undergraduate

- Develop and implement a campus-wide retention strategy,* including:
 1. An “early alert” team chaired by the Director of Retention and Testing with support from the Director of Counseling and ADA Services, Director of the Mentor/Mentee Program for Women, FIRST/Residence Hall Director, representative of Multicultural Affairs, and faculty representatives
- Develop a coherent first-year experience, including consideration of a director and sources of funding
- Redesign the IS degree curriculum; complete and implement changes
- Develop a comprehensive campus-wide program for assessment and improvement of student communication skills
- Address faculty and staff training needs, including improving communication and other non-technical skills and securing continued faculty development funding
- Provide (summer) educational and conferencing opportunities for professionals and educators in the region, and for college-bound and potentially college-bound youth
- Obtain external funding to support international initiatives
- Consider curricular and pedagogical improvements, including
 1. Taking advantage of BOR mandates on global awareness and communications skills to develop a distinctive curriculum
 2. Defining and developing a laptop program
 3. Establishing “Undergraduate Research Grants”
 4. Introducing undergraduate research into undergraduate curriculum as a mandatory component
 5. Developing undergraduate courses in nanotechnology

***TOP PRIORITY FOR THE INSTITUTION AND BOARD OF REGENTS**

B. Graduate

- Submit and have approved a proposal to initiate a Ph.D. in nanoscience and engineering
- Submit and have approved a plan to split AEWB program into a Ph.D. in atmospheric sciences and engineering
- Begin planning for a Ph.D. in biomedical engineering with USD/SDSU

C. Student Experience

- Build and support student body through the following:
 1. Developing and applying strategies to recruit the most appropriate students
 2. Developing a new admission standards strategy and having it approved
 3. Introducing a campus-wide multi-dimensional strategy to increase minority representation on campus as initiated by the Multicultural Committee
 4. Supporting collaboration on global awareness initiatives
 5. Developing curricula for orientation and other sessions in career planning/job search, health issues, globalization, diversity awareness, and leadership development
 6. Coaching students to apply for prestigious external scholarships, assistantships, etc.
 7. Implementing Women in Engineering project
 8. Identifying needed alumni continuing-education opportunities and designing a response strategy

Strategic Initiative 2: Promote the Acquisition, Discovery, and Application of Knowledge

A continuing and growing focus on research and scholarship in all its manifestations will enable us to better serve our constituencies and fulfill our mission. Excellence in focused areas of scholarship will gain us national recognition for leading-edge research and development that contributes to the quality of life and economic well-being of the state and the nation.

Please note that this area encompasses “research” and “scholarship” in many forms, including the scholarship of teaching and learning and undergraduate research.

During 2004-2005, attention will be given to the following:

A. Funding

- Seeking and obtaining additional external funding for cutting-edge research and scholarship*
- Defining for the administrative team the research areas on which to concentrate efforts at external fund-raising
- Preparing to negotiate an increase in overhead rate and designing a means of reinvesting the funds to support research
- Building a case for differential lab fees and/or a separate lab maintenance appropriation

***TOP PRIORITY FOR THE INSTITUTION AND BOARD OF REGENTS**

B. Infrastructure

- Improving library resources, including developing a process for library research acquisitions funded by F&A and matching library funds
- Improving research and technology-transfer capacity, including
 1. Establishing/enhancing an office of grant support and grant writing
 2. Coordinating our tech-transfer initiatives with the BOR and state to support entrepreneurial efforts
 3. Considering additional staffing in this area
 4. Creating talking points or “Tech stories” on campus achievements and points of pride in this area for use in promoting ourselves in regional and national media
 5. Continuing to add federal and private resources to support R&D
- Clarifying, and if needed, redefining, workload policy as it impacts faculty ability to have time for research

Strategic Initiative 3: Engage and Serve the Broader Community

Our ability to fulfill our mission will be enhanced as we develop networks and partnerships with external entities. We will expand collaborations with the Native American community, other universities, and business and industry.

During 2004-2005, attention will be given to the following:

A. Economic Development

- Designate a task force to:
 1. Identify current activities and key individuals or groups
 2. Carefully define the constituencies we will serve through our economic-development efforts
- Establish a “one-stop” South Dakota Tech economic development resource, office, or point person, with emphasis placed on making it truly one stop
- Conduct workshops on economic development for campus and community
- Revise structures and policies to encourage entrepreneurial activities leading to technology transfer
- Inventory campus equipment, talent, and expertise
- Initiate monthly meetings with economic development leaders in the community
- Produce an economic development marketing brochure
- Highlight economic development opportunities during 2005 Alumni Reunion
- Provide Business Office support for the Office of Educational/Summer Programs and Professional Conferences
- Succeed with construction of Black Hills Business Incubator on campus

B. Educational Development

- Build K-14 linkages (including tribal and community colleges) to promote prospective student interest in Tech by
 1. Designating a task force to:
 1. identify current activities and key individuals or groups
 2. carefully define what we plan to achieve through our K-14 linkage efforts
 2. Determining the needs of area K-12 teachers, tribal colleges, and feeder students
 3. Collaborating with tribal and community colleges
 4. Recreating a visiting scholar program
 5. Participating in and collaborating with associations of middle school and high school math and science teachers
- Seek external funding for minority student scholarships and support for under-represented or economically disadvantaged students
- Advance Tech/BHSU collaborations by:
 1. Collaborating on programs in IS, Business, Computer Science, Biology, and Manufacturing Technology
 2. Opening the West River Higher Education Consortium Facility

C. Community Relations

- Increase community involvement with Tech athletics
- Seek out opportunities for faculty and staff members to serve, including
 1. Board memberships
 2. Visiting scientists and engineers
 3. Media experts
 4. Subject experts for local media coverage
- Enlist Student Affairs in support of community service projects
- Enlist Student Affairs to co-chair a campus/community coalition on student health and safety issues
- Develop a parents' organization

Strategic Initiative 4: Prepare for our future as a national player in science and engineering education and research

The necessary facilities, infrastructure, marketing, support services, and management will be developed to enable us to provide excellence in engineering and science education and to conduct nationally recognized research. Preparing for our future includes a review the organizational structure of the university.

During 2004-2005, attention will be given to the following:

A. Institutional Review

- Completing the ABET re-accreditation process successfully
- Reviewing the organizational structure of the university
- Identifying the benchmarks and matrices to define and measure progress toward regional, state, and national prominence, with the vision to become “distinguished” amongst our peer institutions
- Updating the campus master plan while incorporating the BOR space utilization study and expanding facilities to keep pace with campus growth
- Establishing a consensus on the library’s function(s) and achieving a consensus on the resources and structures needed to fulfill the function(s) with an updated and expanded mission statement and a five-year development plan
- Collecting a five-year development plan from every department and program and evaluating the plans in light of the question: “How will this department change to further our goal of becoming distinguished amongst our peer institutions, and what, specifically, will be done?” Each five-year plan will include the following:
 1. Curriculum improvement plan
 2. Research objectives
 3. Community service

B. Leadership Development

- Supporting administrative effectiveness by:
 1. Building and maintaining a cohesive leadership team for academic affairs
 2. Developing and implementing professional development program for deans, directors, and chairs

C. Marketing

- Further improving the website and university publications, including:
 1. Redesign of the Tech home page and direct campus links
 2. Developing mechanisms for consistency and continuous improvement of the website
 3. Capitalizing on opportunities to gain recognition by nominating individuals and programs for national awards
 4. Considering the appointment of a webmaster
- Building marketing initiatives, including:
 1. Increasing our visibility East River
 2. Conducting an economic impact study
 3. Increasing institutional presence in regional and national venues
 4. Promoting and facilitating K-14 and other outreach with the Office of Educational/Summer Programs and Professional Conferences

D. Developing Resources

- Designing with SDSM&T Foundation a plan for a major all-resource fund raising campaign