Office of Research

Strategic Plan

November 4, 2013
SOUTH DAKOTA STATE UNIVERSITY

Vision:
As a leading land-grant university, South Dakota State University will champion the public good through engaged learning, bold and innovative research and creative activities, and stewardship within a global society.

Mission:
South Dakota State University provides a rich academic experience in an environment of inclusion and access through inspired, student-centered education; creative activities; and research, innovation and engagement that improve the quality of life in South Dakota, the region, the nation and the world.

Core Values:
South Dakota State University is committed to:

- Excellence in learning, discovery and engagement;
- Passion for the institutional mission;
- Improved quality of life for the people and communities of South Dakota, our nation and the world;
- Appreciation for academic, scientific and humanitarian achievements;
- Curiosity and innovation;
- Acceptance and embracement of diverse cultures and perspectives;
- Civility, integrity and trustworthiness;
- Transparency in decision-making and information sharing;
- Fiscal and programmatic accountability;
- Economic and environmental sustainability.
OFFICE OF THE VICE PRESIDENT FOR RESEARCH

Mission:
To advance the University’s success in research, scholarship, and innovation in support of higher education, societal benefits, and economic development.

Vision:
Establish the University as a nationally recognized research institution that serves the state, region and nation.

Values:
Accountability
Accept responsibility and ownership for necessary decisions, actions, support, and results of research administration.

Teamwork
Work cooperatively as members of a leadership team.

Responsiveness
Provide courteous, professional, and informed service to internal and external clients.

Integrity
Ensure that the research enterprise conforms to the highest moral and ethical standards. Maintain and advance a reputation of high integrity on behalf of the University.

Engagement
Engage with other University leaders and stakeholders to advance creative scholarship and the research enterprise.

Legacy
Understand, embrace and support the land grant mission and foster a work ethic consistent with that mission.

STRATEGIC GOALS AND ACTION STEPS

Strategic Goal 1: Develop an administrative structure to support higher performance in sponsored research and economic development.

Alignment with Impact 2018 Goal 3(d) - Build strategic, local, state, regional, national, and global partnerships that mutually enhance the academic experience of learners and contribute to environmental vitality and community development.

Alignment with Impact 2018 Goal 4 - Secure human and fiscal resources to ensure high performance through enhanced financial management and governance systems.

Action Steps:
1. Create the Division of Research & Economic Development, comprised of: Office of the Vice President for Research and Economic Development (VPRED)
Office of Research and Sponsored Programs (ORSP)
Office of Technology Transfer and Commercialization (TTO)

Associated units:
- Geospatial Sciences Center of Excellence
- North Central Sun Grant Regional Center
- Ethel Austin Martin Program in Human Nutrition
- Bioscience and Engineering Laboratory
- South Dakota EPSCoR

2. Change the title of the Vice President for Research to the Vice President for Research and Economic Development.

3. Occupy office space in the Administration Building that collocates the VPRED, ORSP, and TTO.

4. Recruit, develop, and retain talented people and ensure that the Office/Division has the human, financial, and technical capability to advance the research enterprise.

5. Adopt LEAN principles throughout the Office/Division.

6. Partner with the SDSU Foundation to finance key capital projects for disciplinary and interdisciplinary research and grow endowments to support research.

7. Ensure effective communication, visibility, and response to the South Dakota Congressional delegation and key federal agencies.

8. Develop a plan and policies for implementation and management of envisioned Sponsored Programs Risk Management Fund and the Research Infrastructure Improvement Fund.

**Strategic Goal 2:** Plan and construct modern research facilities that create synergies and increase competitiveness.

*Alignment with Impact 2018 Goal 2(a) - Build upon best available science to strengthen research capabilities and capitalize on emerging and interdisciplinary opportunities.*

*Alignment with Impact 2018 Goal 1(d) - Empower faculty, staff and students to collaborate through partnerships within and external to the university, including select partnerships with institutions from abroad.*

A. Establishing the Bioscience and Engineering Research Laboratory is a performance indicator for the Impact 2018 plan. The Office/Division will:

**Action Steps:**

1. Develop a plan and policies for dedicated management, administrative and governance structures in the envisioned interdisciplinary research laboratory.

2. Develop a consensus for long-term commitment of necessary institutional and private funds and resources for the laboratory.

3. Partner with the President, the SD Board of Regents, and SDSU Foundation to draft a strategy to obtain the necessary capital for design and construction of the laboratory.
B. Initiate a long-term plan for improvement of research space on campus.

**Action Steps:**
1. Review the existing quality assessment of existing University research space.
2. Develop a plan for long-term improvement of laboratories and related research infrastructure, such as shared equipment and high performance computing.

**Strategic Goal 3:** Provide administrative services that empower employees and students to excel in research and scholarship.

*Alignment with Impact 2018 Goal 2(b) - Provide the support infrastructure, facilities and services that expand the capacity for quality research, scholarship and creative activities.*

Providing quality space and services that support high-performing research faculty will be a priority for the Office/Division. Priorities will include the following three areas of focus:

A. Fundamental Pre-Award Services and Management
The ORSP will develop effective services aimed at providing efficient and effective customer service that optimizes the competitiveness of faculty, staff and students. Toward this aim, ORSP will be empowered to make decisions and provide necessary support.

**Action Steps:**
1. Emphasize assistance and support services to faculty and staff in obtaining and managing externally funded projects.
2. Develop written policies and procedures relevant to research and sponsored programs.
3. Produce informative workshops and training that will enhance competitiveness in research funding, compliance with regulations and other matters.
4. Facilitate faculty leadership of major initiatives and programs, by providing ORSP support to develop large multi-investigator proposals that exceed $10 million per award.

B. Multidisciplinary Research Facilities Management (e.g. Animal Resource Wing and the proposed Bioscience and Engineering Research Laboratory)
Unique research facilities and interdisciplinary laboratories can be successfully developed to excite research; however, such facilities must be managed to maximize productivity of scientists and promote research synergies.

**Action Steps:**
1. Develop business structures for management, administrative, financial, and user support for the existing Animal Resource Wing and the envisioned Bioscience and Engineering Research Laboratory.

C. Core Instrument Facilities
As the University grows its research capacity, efficient operation of key multi-user shared equipment facilities will increase in importance.
**Action Steps:**

1. Develop a plan to coordinate future development of multi-user shared research equipment facilities, high-performance computing, and related infrastructure.

**Strategic Goal 4:**

*Lead the empowerment of faculty, staff, and students to excel in innovation, commercialization, entrepreneurship, and job creation.*

*Alignment with Impact 2018 Goal 2(c) - Expedite innovations and new technologies with commercial viability to realize their full potential.*

*Alignment with Impact 2018 Goal 2(d) - Transfer research, scholarship, and expertise for the public good.*

*Alignment with Impact 2018 Goal 2(e) - Pursue public/private partnerships that enhance innovation, create career opportunities and bolster economic development.*

The University has made great progress in commercializing new innovations and knowledge through the TTO. The work of the TTO has captured value through license and royalty income and has led the University efforts in creating knowledge-based start-up businesses. To ensure the progress toward the Impact 2018 goals, the Office/Division will do the following:

**Action Steps:**

1. Provide on-going training for faculty, staff, and students regarding the TTO, policies, procedures, and intellectual property.
2. Recruit and facilitate preparation of confidential intellectual property disclosures to the TTO.
3. Improve efficiencies in assessing disclosed inventions for potential commercial value through objective, efficient, and systemic professional procedures.
4. Promote and publicize technologies and achieve appropriate licenses to established firms and new ventures.
5. Obtain recognition for the University through APLU, AUTM, and other technology transfer organizations.
6. Examine the current portfolio of licenses for market performance and compliance with license terms.
7. Protect intellectual properties that are deemed to have significant commercial value.
8. Manage IP-related income and insure for correct disbursements to creators.
9. Provide assistance on technology transfer matters in the Brookings community and with other higher education institutions in the state.
10. Develop policies, procedures, forms, and business documents in order to provide best-in-class services to faculty, staff, and stakeholders.
11. Assure that the TTO is properly staffed in order to lead innovation and knowledge-based economic development in South Dakota.
Strategic Goal 5: **Promote student participation in academic research and scholarship.**

Alignment with Impact 2018 Goal 1(c) – Involve students with faculty to expand excellence in scholarship and creative works, and build a highly educated workforce that develops tomorrow’s leaders.

The Office/Division will collaborate with and support efforts that involve students in research, scholarship, and innovation.

**Action Steps:**
1. Produce the online SDSU Journal of Undergraduate Research.
2. Assist with student involvement in state-driven opportunities through the South Dakota Board of Regents and other entities.
3. Partner with key units of the University that have coordinated participation of undergraduate students in research as part of their mission, such as the Honors College, the Institute for STEM Education Enhancement, projects funded through the NSF Research Experiences for Undergraduates program, and other units.

Strategic Goal 6: **Establish collaborations that enhance the impact of University research and lead to national distinction.**

Alignment with Impact 2018 Goal 3(d) - Build strategic, local, state, regional, national, and global partnerships that mutually enhance the academic experience of learners and contribute to environmental vitality and community development.

Alignment with Impact 2018 Goal 1(f) - Increase regional and national distinction of the University.

To develop sustained strength in research and scholarship, the University must develop and cultivate relationships with industry, funding agencies and government officials to generate synergy in research and scholarship and provide value to stakeholders

**Action Steps:**
1. Establish synergistic partnerships with businesses and health care systems.
2. Engage with the Executive Director of the Research Park at South Dakota State University to recruit businesses and start-up ventures.
3. Increase visibility of University research through news releases, web-based information, and research reports.
4. Provide leadership through key organizations to catalyze best practices and high performance of university research (e.g. Research Affairs Council, Growth Partnership, Brookings Economic Development Corp., SD Biotechnology Association, Governor's Office of Economic Development, REACH committee, etc.).
PERFORMANCE INDICATORS

Strategic Goal 1: Develop an administrative structure to support higher performance in sponsored research and economic development.

<table>
<thead>
<tr>
<th>Performance Indicators</th>
<th>Baseline</th>
<th>2018 Target</th>
<th>Office/Division Leadership</th>
<th>Definition / Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change the Office name to the Division of Research and Economic Development</td>
<td>The VPR office and subordinate offices</td>
<td>Division of Research &amp; Economic Development with subordinate offices for research and sponsored programs and for technology transfer</td>
<td>The Vice President for Research and Economic Development (VPRED)</td>
<td>President’s report to SD BOR Executive Director</td>
</tr>
<tr>
<td>Co-locate the Division offices in the Administration Building</td>
<td>NA</td>
<td>NA</td>
<td>VPRE</td>
<td></td>
</tr>
<tr>
<td>Capitalize construction and endowments</td>
<td>NA</td>
<td>Construction of the Biosciences and Engineering Research Laboratory</td>
<td>VPRE</td>
<td></td>
</tr>
<tr>
<td>Develop policy and procedures for implementation of the Sponsored Programs Risk Management Fund and Research Infrastructure Improvement Fund.</td>
<td>NA</td>
<td>Full implementation of the funds</td>
<td>VPRE</td>
<td>DCBM White Paper #4</td>
</tr>
</tbody>
</table>
Strategic Goal 2: Plan and construct modern research facilities that create synergies and increase competitiveness.

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<tbody>
<tr>
<td>Develop a plan and policies for populating and organizing the Bioscience and Engineering Research Laboratory</td>
<td>NA</td>
<td>FY2014</td>
<td>VPRED</td>
<td>Partnership with the President</td>
</tr>
<tr>
<td>Develop a financial plan for the Bioscience and Engineering Research Laboratory</td>
<td>NA</td>
<td>FY2015</td>
<td>VPRED</td>
<td>Partnership with the SDSU Foundation</td>
</tr>
<tr>
<td>Obtain BOR approvals for construction of the Bioscience and Engineering Research Laboratory</td>
<td>NA</td>
<td>FY2016</td>
<td>VPRED</td>
<td>Partnership with Facilities and Services</td>
</tr>
<tr>
<td>Develop a plan for improvement of university research space.</td>
<td>2013 Cannon-Design report for the Bioscience and Engineering Laboratory</td>
<td>FY2016</td>
<td>VPRED</td>
<td></td>
</tr>
</tbody>
</table>
**Strategic Goal 3: Provide administrative services that empower employees and students to excel in research and scholarship.**

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<tbody>
<tr>
<td>Workshop and Training events</td>
<td>2</td>
<td>5</td>
<td>Associate VP for Research (AVPR) and TTO Dir.</td>
<td></td>
</tr>
<tr>
<td>Develop policies and procedures regarding sponsored research</td>
<td>ongoing</td>
<td>Complete FY2014</td>
<td>AVPR</td>
<td>Assistance from Univ. Counsel and Provost’s Office</td>
</tr>
<tr>
<td>Establish user policy and practices for the Animal Resource Wing and the Bioscience and Engineering Research Laboratory</td>
<td>NA</td>
<td>FY2014 for ARW and FY2015 for BERL</td>
<td>VPRED</td>
<td>Collaborate with University Veterinarian and AES Director</td>
</tr>
<tr>
<td>Inventory and review current multi-user equipment facilities</td>
<td>NA</td>
<td>FY2015</td>
<td>VPRED</td>
<td>Work with the academic deans</td>
</tr>
<tr>
<td>Develop a plan for coordination and development of multi-user equipment facilities.</td>
<td>NA</td>
<td>FY2017</td>
<td>VPRED</td>
<td></td>
</tr>
<tr>
<td>Total university research expenditures</td>
<td>$68.7 million</td>
<td>$115 million</td>
<td>AVPR</td>
<td></td>
</tr>
<tr>
<td>Hire one additional ORSP grant specialist to assist in development of large multi-PI proposals.</td>
<td>1</td>
<td>2</td>
<td>AVPR</td>
<td></td>
</tr>
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</table>
Strategic Goal 4: Lead the empowerment of faculty, staff, and students to excel in innovation, commercialization, entrepreneurship, and job creation.

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<tr>
<td>Workshop and Training events</td>
<td>5</td>
<td>10</td>
<td>TTO Director</td>
<td>Assistance from Deans</td>
</tr>
<tr>
<td>IP Revenue</td>
<td>$1.8 million</td>
<td>$3.0 million</td>
<td>TTO Director</td>
<td></td>
</tr>
<tr>
<td>Invention and crop variety disclosures</td>
<td>61</td>
<td>80</td>
<td>TTO Director</td>
<td></td>
</tr>
<tr>
<td>Royalty-bearing licenses to businesses and start-ups</td>
<td>5 licenses to businesses</td>
<td>15 licenses to businesses</td>
<td>TTO Director</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 licenses to start-ups</td>
<td>8 licenses to start-ups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop policies and procedures regarding technology transfer</td>
<td>ongoing</td>
<td>Complete FY 2014</td>
<td>TTO Director</td>
<td>Assistance from University Counsel and Provost's Office</td>
</tr>
<tr>
<td>Establish a formal relationship with other SD BOR institutions for collaborative best-of-class technology transfer services.</td>
<td>NA</td>
<td>Complete FY 2014</td>
<td>TTO Director</td>
<td></td>
</tr>
<tr>
<td>Hire one licensing specialist in TTO</td>
<td>0</td>
<td>1</td>
<td>TTO Director</td>
<td></td>
</tr>
</tbody>
</table>
**Strategic Goal 5: Promote student participation in academic research and scholarship.**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>SDSU Journal of Undergraduate Research</td>
<td>8 to 12 articles annually</td>
<td>24 articles</td>
<td>VPRE D</td>
<td>The Division will recruit additional submissions through the academic deans and chief librarian</td>
</tr>
<tr>
<td>Student participation in Pierre Poster Day</td>
<td>2 students per event</td>
<td>4 students, 2 posters and 2 additional ambassadors.</td>
<td>VPRE D</td>
<td>BOR planning</td>
</tr>
<tr>
<td>Annual SDSU student research event</td>
<td>40 student participants</td>
<td>50 student participants</td>
<td>AVPR</td>
<td>Collaborate with Deans and campus leaders involved in student research.</td>
</tr>
</tbody>
</table>
Strategic Goal 6: Establish collaborations that enhance the impact of University research and lead to national distinction

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</tr>
</thead>
<tbody>
<tr>
<td>Execute business agreements on behalf of the University</td>
<td>200</td>
<td>300</td>
<td>VPRE, AVPR, and TTO Director</td>
<td>Start-up companies and collaborating businesses in the Research Park at SDSU, the Agriculture Technology Center for Rural Enterprise or other locations in the I-29 corridor.</td>
</tr>
<tr>
<td>Establish start-up companies based on university based technologies and know-how</td>
<td>5 total</td>
<td>15 total</td>
<td>TTO Director</td>
<td>Collaborate with Deans and campus leaders involved in collaborative research with external entities.</td>
</tr>
<tr>
<td>Highlight strategic collaborations with the private sector and health systems through announcement events, seminars, and symposia.</td>
<td>3</td>
<td>6</td>
<td>VPRE, AVPR, and TTO Director</td>
<td>Partnership with University Marketing &amp; Communications</td>
</tr>
<tr>
<td>News releases and research reports</td>
<td>Approx. 20 news releases and 1 university report</td>
<td>30 news releases, 5 research videos, and 2 university reports</td>
<td>VPRE</td>
<td></td>
</tr>
</tbody>
</table>