



September 14, 2011

Robert A. Wharton  
President  
South Dakota School of Mines and Technology  
501 E. St. Joseph St.  
Rapid City, SD 57701

Dear President Wharton:

Enclosed is a copy of South Dakota School of Mines and Technology's *Systems Appraisal Feedback Report*. It begins with a concise Executive Summary, intended for those general readers that do not require a high level of detail. Your Systems Appraisal Team of quality experts provided extensive detail in the full report by identifying nine distinct groups of what they view as your institution's *strengths* and *opportunities for improvement*, one group for each of the nine AQIP Categories. We are also emailing your institution's AQIP Liaison a copy of this full *Systems Appraisal Feedback Report*.

To receive maximum benefit from your Systems Appraisal, you and your colleagues should plan to invest substantial time in discussing it, considering the team's observations and advice, and identifying which actions will best advance your institution.

To comply with federal requirements, we need the CEO of the institution formally to acknowledge receipt of this report within the next two weeks, and to provide us with any comments you wish to make about it. Limit your acknowledgement and comments to a maximum of two typewritten pages, and understand that your response will become part of your institution's permanent HLC file, to be shared with future peer reviewers who review your institution (including the next Systems Appraisal team, the next Quality Checkup visit team, and the next Reaffirmation of Accreditation panel). Email your response to [AQIP@hlcommission.org](mailto:AQIP@hlcommission.org); call me or Mary Green (at 800-621-7440 x130) if you have any questions about it.

We know you will gain real value from the Systems Appraisal Feedback and the activities it will stimulate within your institution, and we are proud to be working with you as you continue along the never-ending path to improvement.

Sincerely,

Stephen D. Spangehl, Vice President for Accreditation Relations

# **SYSTEMS APPRAISAL FEEDBACK REPORT**

in response to the *Systems Portfolio* of

## **SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY**

**September 14, 2011**



**Academic  
Quality Improvement  
Program**

The Higher Learning Commission **NCA**

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## EXECUTIVE SUMMARY FOR SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY

The following are summary comments on each of the AQIP Categories crafted by the Appraisal Team to highlight South Dakota School of Mines and Technology's achievements and to identify challenges yet to be met.

- The School of Mines has dedicated considerable efforts in Category 1, Helping Students Learn. The institution is strongly dedicated to its STEM programming core, and the development of the STEPS program shows a commitment to education within a culture of continuous quality improvement. Many of the processes are moving beyond the reactive stage. However, there remains an opportunity in integrating these processes into a coherent whole that ties external and internal institution wide and program specific learning objectives into a smooth process. Such an integrated process could facilitate success in meeting the aggressive goals outlined in the portfolio.
- The College has clearly identified three strategically determined, non-instructional objectives, and it has taken appropriate steps to develop processes associated with measuring its effectiveness in pursuing those objectives. There remain significant opportunities to present evidence that processes are used effectively to connect, correlate, or otherwise link institutional mission with these objectives.
- The School of Mines shows that it is able to identify and build relationships with student stakeholders (current and future) and it has processes in place to learn more about the needs and satisfaction of the students. Now the College is poised to use selected results from these processes to improve the experiences of these students. There exists, however, a possible bias in assessment of those needs towards pre-existing institutional goals at the expense of other legitimate stakeholder groups such as the immediate community. The College is challenged to improve its ability to develop and build relationships with external stakeholders, to collect data and feedback from them, and to analyze the results of those relationships for further improvement.
- The School of Mines represents an institution that appears to have an inherent inclination toward developing and maintaining positive and productive relationships among its employees, its students, and its various constituencies. The College faces the challenge of how to manage its ability to value people and detect and mitigate

dissatisfaction as the institution grows its student population and alters the workload expectations of faculty and staff.

- The School of Mines devotion to and communication of its Strategic Foci appears to inform and “drive” institutional decision-making. There is some question as to how short-term, operational planning links to the strategic planning and budget planning processes. The College might benefit from a more intentional approach to succession planning and from establishing analytics that reflect a more integrated strategy for measuring its performance regarding leading and communicating.
- The overall culture, ethos, and relatively small size of the School of Mines are distinct advantages in terms of promoting improvements in institutional support services. Although improvements need to continue to be made, the School of Mines demonstrates a commitment to enhancing operational support services. The College appears to be in the early stages of showing how these data lead to improvements and what the process is for improvement to occur. A connection to strategic planning is unclear. There are opportunities for the College to take a more forthright and deliberative approach to the process by which it collects, analyzes and utilizes data in support of this category.
- The School of Mines shows that it has processes and infrastructure in place to support its ability to evaluate its effectiveness in both academic and non-academic arenas of the College, drawing upon a rich set of high-quality data. Establishing systematic processes to determine data needs of departments and units and how these data are analyzed and shared would be beneficial. The College understands its performance relative to other Board of Regents System schools; however, it could benefit by developing processes that allow comparison with peer institutions beyond the BOR system.
- The School of Mines demonstrates its commitment to continuous improvement through its willingness to revisit and revise strategic foci and planning processes and through participation in the AQIP process. The institution is wrapping up development of a Strategic Plan and will soon begin to implement that plan, which should facilitate more routine cycles of comprehensive planning and planning by individual units. The connection between budget planning and the strategic plan is unclear, and the process for budget planning could be described more thoroughly. Planning for continuous improvement is included in the strategic plan but is not articulated well in the system

portfolio. Although the institution is in the early stages of this process, the groundwork has been set for the future.

- The School of Mines appears to be in the early stages of determining which collaborations to pursue, learning how to build and maintain collaborations and relationships, and then measuring the effectiveness of its efforts. While the overall culture and apparent orientation of the College would seem to support a coherent approach to building relationships, there appears to be an opportunity for it to be more deliberate in its efforts to identify specific goals in this regard and to use appropriate tools to measure its corresponding effectiveness and progress.

Accreditation issues and Strategic challenges for South Dakota School of Mines and Technology are listed in detail within the Strategic and Accreditation Issues Analysis section of the Appraisal Feedback Report.

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## **ELEMENTS OF South Dakota School of Mines and Technology's FEEDBACK REPORT**

The *Systems Appraisal Feedback Report* provides AQIP's official response to your *Systems Portfolio* by a team of readers trained in evaluation. After appraisers independently reviewed your document, the team reached consensus on essential elements of your institutional profile, strengths and opportunities for improvement by Category, and significant issues for your institution. These are presented in three sections of the Feedback Report: Accreditation Issues Analysis, Critical Characteristics Analysis, and Category Feedback. These components are interrelated in defining context, evaluating performance, surfacing critical issues, and assessing institutional performance.

It is important to remember that the Systems Appraisal Team had only your *Systems Portfolio* to guide their analysis of your institution's strengths and opportunities for improvement.

Consequently, their report may omit important strengths — if you were too modest to stress them in your *Systems Portfolio*, or if your discussion and documentation of them was unconvincing. Similarly, the team may have pointed out areas of potential improvement that are already receiving the institution's attention. Again, the team used its best judgment in identifying improvement opportunities. If some of these areas of potential improvement are now strengths rather than opportunities because of your own focused efforts, that is all to your credit. If the team was unsure about an area, we urged it to err on the side of giving your institution the best

possible advice about where investing your efforts might pay off. If some of their advice comes after the fact, after you've already tackled an area, no harm is done.

**Executive Summary:** Summative statements agreed upon by the Systems Appraisal Team reflecting the reviewers' assessment of the institution's current status in relation to critical quality characteristics: robustness of process design; utilization or deployment of processes; the existence of results, trends, and comparative data; the use of results data as feedback, and systematic processes for improvement of the activities that the Category covers. Since institutions are complex, maturity levels may vary from one Category to another.

Strategic challenges for the institution are listed in detail within the Strategic and Accreditation Issues Analysis section of the Appraisal Feedback Report.

**Strategic and Accreditation Issues Analysis:** Strategic issues are those most closely related to your institution's ability to succeed in reaching its mission, planning, and quality improvement goals. Accreditation issues are areas where you have not yet provided evidence that you meet the Commission's *Criteria for Accreditation*, or where the evidence you have presented suggests you may have difficulties, now or in the future, in meeting these expectations. If accreditation is essential for your institution then any accreditation issues identified are, by definition, also strategic. The Systems Appraisal Team identified both of these kinds of issues through analysis of your Organizational Overview and the feedback it provided for each Category, as well as by reviewing the Index to the *Criteria for Accreditation* that you provided along with your *Systems Portfolio*. This list of strategic issues offers a framework for addressing ongoing improvement of processes and systems, serving as an executive summary of the Report's key findings and recommendations.

**Critical Characteristics:** Your Systems Portfolio's Organizational Overview provides context for the team's knowledge of your institution's identity, mission objectives, strategic goals, and key factors related to improvement. Critical Characteristics are those features most important for understanding the institution's mission, environment, stakeholders, competitive position, goals, and processes. Characteristics having the greatest relevance to each Category are identified in the Report.

**Category Feedback:** The Report's feedback on each of AQIP's nine Categories specifically identifies strengths and opportunities for improvement. An **S** or **SS** identifies strengths, with the double letter signifying important achievements or capabilities upon which to build.

Opportunities are designated by **O**, with **OO** indicating areas where attention may result in more significant improvement. Comments, which are keyed to your *Systems Portfolio*, offer brief analysis of each strength and opportunity. Organized by Category, and presenting the team's findings in detail, this section is the heart of the Report.

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## **STRATEGIC AND ACCREDITATION ISSUES**

In conducting the Systems Appraisal, the team attempted to identify the broader issues that present the greatest challenges and opportunities for your institution in the coming years. These are all strategic issues, ones you need to grapple with as you identify your institution's strategies for confronting the future and becoming the institution you want to be. The team also examined whether any of these strategic issues put your institution into jeopardy of not meeting the Higher Learning Commission's accreditation expectations.

**Issues Affecting Compliance with the *Criteria for Accreditation*.** An important goal for the Systems Appraisal was to review your institution's compliance with the Higher Learning Commission's *Criteria for Accreditation*. The peer quality experts who served on the team were all trained in evaluating Colleges and universities using the Commission's *Criteria*, and the Systems Appraisal process they followed included careful steps to ensure the team used the *Criteria* as a major factor in their review. As the team reviewed your presentation of your institution's systems and processes under each AQIP Category, it searched for accreditation-related issues and concerns. In addition, the team used the *Index to the Criteria for Accreditation* that you provided with your Portfolio to perform a comprehensive review of the *Criteria* and each Core Component to ascertain whether you presented compelling evidence that your institution complies with each of these Commission expectations.

The Systems Appraisal team concluded that South Dakota School of Mines and Technology has presented evidence that it complies with each of the Five *Criteria for Accreditation* and each of their Core Components. Although the Systems Appraisal does not in itself constitute a review for continued accreditation, the team's conclusion upon reviewing your Portfolio against the *Criteria* will serve as a telling piece of evidence during the Commission's next scheduled AQIP review of your institution for Reaffirmation of Accreditation.



**Issues Affecting Future Institutional Strategies.** The Systems Appraisal Team identified the following strategic issues to assist South Dakota School of Mines and Technology in prioritizing and taking action on the important broad challenges and opportunities it faces. From these you may discover your vital immediate priorities, shaping strategies that can lead to a quantum leap in the performance of your institution. Implementing these strategies may call for specific actions, so AQIP's expectation that your institution be engaged in three or four vital Action Projects at all times will help encourage your administrators, faculty, and staff to turn these strategic goals into real accomplishments. Knowing that South Dakota School of Mines and Technology will discuss these strategic issues, give priority to those it concludes are most critical, and take action promptly, the Systems Appraisal Team identified:

- In two sections of the Systems Portfolio (i.e. Categories 7 and 8), the School of Mines describes a budgeting process that seems to change with the financial situation or the strategic planning status of the institution. This approach may hamper the institution's ability to manage the budget to produce both short-term and long-term success. A stronger budget process would be one that is reliably applied and yet allows the College to respond to changes in the financial or strategic planning environment.
- The School of Mines identifies one of its key commitments as filling an appropriate role in fostering economic development in the region; thus, it will benefit by making greater connections and developing relationships at the local and state levels. The College needs to improve how it communicates and promotes the benefits it provides to local and state activities and to show how it is becoming part of and participating in the general community.
- In several places throughout the portfolio, the School of Mines notes that it does not have processes in place to compare its performance to institutions beyond its Board of Regents System. The College would benefit from a clear identification of its peer institutions beyond the BOR with which it wishes to compare itself and from developing processes and procedures for collecting and analyzing comparative benchmark data with its peers.
- The School of Mines expresses ambitious goals for expanding the graduate program and research programs by 2020. Achieving these goals may increase revenue to the College and position it as a higher caliber, research-driven STEM institution. While

growth has its benefits, it also brings challenges. One such challenge is the trade off between resources and faculty and administrative time committed to undergraduate students vs. graduate students. Systems Portfolio and draft Strategic Plan contain little evidence that the College has thought about such challenges and made plans to ameliorate these challenges.

- Although the School of Mines has formal policies in place by which student and other stakeholder concerns can be addressed, the implementation of those policies and their results apparently have not been monitored in a manner that would provide useful information regarding their actual impact on or relationship to student satisfaction or retention. The research protocols and methodology used by the school may not be adequate for purposes of broad, institution-wide analysis of stakeholder satisfaction, which suggests that an opportunity may exist to pursue these objectives in a manner that illustrates a systematic, integrated approach.

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## USING THE FEEDBACK REPORT

The AQIP *Systems Appraisal Feedback Report* is intended to initiate action for improvement. It is therefore important that the Report produced by the Systems Appraisal Team stimulate review of organizational processes and systems. Though decisions about specific actions are each institution's, AQIP expects every institution to use its feedback to stimulate cycles of continual improvement. At the next Strategy Forum an AQIP institution attends, its peers will examine in detail how it is using the feedback from its Systems Appraisal.

An organization needs to examine its Report strategically to identify those areas that will yield greatest benefit if addressed. Some key questions that may arise in careful examination of the Report may be: How do the team's findings challenge our assumptions about ourselves? Given our mission and goals, which issues should we focus on? How will we employ results to innovate, grow, and encourage a positive culture of improvement? How will we incorporate lessons learned from this review in our planning and operational processes? How will we revise the *Systems Portfolio* to reflect what we have learned?

How an organization interprets, communicates, and uses its feedback for improvement ought to support AQIP's core values, encouraging involvement, learning, collaboration and integrity.

Based solely upon an organization's *Systems Portfolio*, the Report reflects a disciplined, external review of what an organization says about itself. The report should help an organization identify ways to improve its *Systems Portfolio* so it functions better to communicate accurately to internal and external audiences. But the Report's chief purpose is to help you to identify areas for improvement, and to act so that these areas actually improve. These improvements can then be incorporated into an updated *Systems Portfolio*, guaranteeing that future Systems Appraisals will reflect the progress an institution has made.

Within a year following the Systems Appraisal, an institution participates in another AQIP Strategy Forum, where the focus will be on what the institution has learned from its Appraisal (and from its other methods of identifying and prioritizing improvement opportunities, and what it has concluded are its major strategic priorities for the next few years. AQIP's goal is to help an institution to clarify the strategic issues most vital to its success, and then to support the institution as it addresses these priorities through Action Projects that will make a difference in institutional performance.

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## CRITICAL CHARACTERISTICS ANALYSIS

The purpose of this section is to identify what team members understood to be the critical and distinguishing characteristics of your institution. They are the shared understanding of the most important aspects of South Dakota School of Mines and Technology, its current dynamics and the forces surrounding it, and its internal momentum and aspirations, at least as team members understood them. This section also demonstrates that the Systems Appraisal Team recognized and knew what makes South Dakota School of Mines and Technology distinctive. Should you find some characteristics that you think are critical and missing from this list, you may want to clarify and highlight these items when you revise your *Systems Portfolio* and other literature explaining your institution to the public.

### Item Critical Characteristic

OV1a Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not-for-profit science, technology, engineering, and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.

- OV1b The STEPS (Students Emerging as Professionals) program targets co-curriculum on human development in technical, professional and effective domains. It helps ensure that all employees share an integrated vision of the students learning outcomes.
- OV2 In addition to traditional services for students, including career support, advising, and international student support, the College emphasizes support for Native American students and women in science and engineering.
- OV3 The School of Mines identifies itself as a high-quality, low-cost institution providing STEM education.
- OV4a Hiring policies and procedures at the College are determined by the South Dakota Board of Regents (BOR) and are uniform across the state institutions.
- OV4b The College has a high ratio of fulltime to adjunct faculty members.
- OV5 The executive offices of the BOR closely coordinate campus functions and divisions on a system-wide basis. Decisions are made at the campus level with state system governance through the policies and leadership decisions of the BOR.
- OV6 The School of Mines' mission commits it to educating scientists and engineers by giving them hands-on access to cutting-edge technologies. To keep cost of attendance low, employees must be flexible, cross-trained, and able to work with fewer support staff than most engineering and science universities.
- OV7 The BOR publishes an annual Accountability Report for the state system, including the School of Mines, that compares access, quality, efficiency, and contributions to economic development of state institutions.
- OV8 The College's key commitments are to keep tuition low; to be the state's technological university; to fill an appropriate role in fostering economic development; and to prepare engineers and scientists for leadership roles.
- OV9 The School of Mines engages in key partnerships with Native American colleges, scientific organizations, regional development offices, student support service providers, and community outreach agencies.

## CATEGORY FEEDBACK

In the following sections, each of which deals with strengths and opportunities for improvement for one of the nine AQIP Categories, selected *Critical Characteristics* are again highlighted, those the Systems Appraisal Team believed were critical keys to reviewing that particular AQIP Category. The symbols used in these “strengths and opportunities” sections for each Category stand for *outstanding strength* (SS), *strength* (S), *opportunity for improvement* (O) and *pressing or outstanding opportunity for improvement* (OO). The choice of symbol for each item represents the consensus evaluation of the Systems Appraisal Team members, and deserves your thoughtful consideration. Comments marked SS or OO may need immediate attention, either to ensure the institution preserves and maximizes the value of its greatest strengths, or to devote immediate attention to its greatest opportunities for improvement.

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### AQIP CATEGORY 1: HELPING STUDENTS LEARN

*Helping Students Learn* identifies the shared purpose of all higher education organizations, and is accordingly the pivot of any institutional analysis. This Category focuses on the teaching-learning process within a formal instructional context, yet also addresses how your entire institution contributes to helping students learn and overall student development. It examines your institution's processes and systems related to learning objectives, mission-driven student learning and development, intellectual climate, academic programs and courses, student preparation, key issues such as technology and diversity, program and course delivery, faculty and staff roles, teaching and learning effectiveness, course sequencing and scheduling, learning and co-curricular support, student assessment, measures, analysis of results, and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its *Systems Portfolio* section covering Category 1, Helping Students Learn:**

***Item Critical Characteristic***

OV1a Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not-for-profit science, technology, engineering,

and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.

OV1b The STEPS (Students Emerging as Professionals) program targets co-curriculum on human development in technical, professional and effective domains. It helps ensure that all employees share an integrated vision of the students learning outcomes.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 1, Helping Students Learn.**

<i>Item</i>	<i>S/O</i>	<i>Comment</i>
1P1	S	The School of Mines is a part of the state system which defines general requirements. In addition to working within the objectives established by the BOR, these requirements have been focused to the specific needs of being a STEM institution using the STEPS program.
1P2	S	The School of Mines develops specific program objectives as a part of maintaining ABET, Inc. or ACS accreditation. The institution has paired programs which are not directly governed by these external accreditation agencies with programs which are so governed.
1P3	O	The School of Mines has identified as strong push to develop competitive research institutes and academic programs in line with the three goals for development. However, with the exception of input from the BOR, it is not clear what processes are employed to gather information for the development of these programs and institutes. An opportunity exists to clearly define these processes as this could transform a reactive process into a proactive systematic process.
1P4a	S	The School of Mines engages in a wide array of activities to gather information, including professional and industrial advisory boards, student and employer surveys, program reviews, as well as working with the BOR. Programs are also reviewed on a six-year cycle and employ outside evaluators in the process.

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| 1P4b | O  | The School of Mines has an opportunity to more clearly identify processes for integrating collected information back into the academic endeavor thereby closing the loop on the assessment process and creating more responsive academic programming.  |
| 1P6  | S  | The School of Mines presents evidence outlining the various mechanisms employed to communicate expectations concerning required preparation to potential, entering, transfer, and continuing students. In addition, efforts are in process to respond to areas of concern around repeated and withdrawal courses and student cohorts that appear to be at risk.  |
| 1P7  | O  | The School of Mines recognizes an opportunity to strengthen the existing processes in place to assist students in selecting areas of study. Current efforts in the institution are directed to students who enter with a career goal established.  |
| 1P8  | O  | The School of Mines has an opportunity to seek a resolution of the disconnect between the needs to expand enrollment, maintain and high end approach to STEM education, and respond to deficiencies in preparation for some students. There is a challenge to identify which students could benefit from remediation to assist in their academic progress and which students won't benefit. Further, there is an opportunity to expand support beyond those students identified in need of remediation. Finally, it is not clear how the institution assists students for whom the School of Mines is not the optimum academic choice in making that decision or assist them in making an alternative academic plan. |
| 1P9  | OO | The School of Mines has an opportunity to develop more proactive processes for detecting and addressing learning styles. Addressing this issue could capture students who have the potential to succeed but do not for want of such assistance.  |
| 1P10 | O  | The School of Mines outlines a range of services offered to address special needs without identifying the appropriateness or effectiveness of the efforts as well as how students in need are matched with these services. In addition, it is not clear how emerging needs are to be met or  |

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how to identify when a service has met the need. Finally, evidence was not clearly presented for the reorganization of the WISE program or how the reorganization will be assessed for improvement in addressing needs of women students and faculty.

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| 1P11      | S  | The School of Mines identifies several processes and measures, both internal and from the BOR, employed to define, communicate, and assess expectations for effective teaching and learning.   |
| 1P12      | S  | The School of Mines has clearly made a commitment to face-to-face, technology enhanced course delivery as the most effective for meeting the institutional mission. The institution has engaged the AQIP action project process to support and enhance delivery options.   |
| 1P13-1P14 | S  | The School of Mines has a regularly scheduled review process in place which functions in conjunction with external evaluators, BOR audits, and advisory boards to keep program up-to-date and effective. Further, this process serves to identify programs in need of revision or discontinuation.                                       |
| 1P15a     | S  | The School of Mines has the identified goal of being a STEM educational institution and has developed processes and measures to address learning support need of faculty and students.   |
| 1P15b     | O  | The School of Mines has an opportunity to address concerns identified by the Student Senate regarding inconsistencies and gaps in the advising support process.  |
| 1P16      | SS | The School of Mines has effectively employed the STEPS program, developed with input from alumni, business and industry partners, and University Advisory Board members, to facilitate alignment of co-curricular and curricular goals. In addition, this program is aligned with the outcomes of the ABET, Inc., accreditation efforts. |
| 1P17a     | S  | The School of Mines employs internal (STEPS) and external (e.g., CAAP, ABET, Inc., CAMP success, and Fundamentals of Engineering Exam) measures to monitor student progress towards having met learning and developmental expectations at graduation.  |



- 1P17b      O      The School of Mines has an opportunity to examine the assessments of student learning to determine if it is gathering data on a sufficiently broad range of student learning experiences, given that not all students participate in the activities currently employed to assess student learning.
- 1P18      O      The School of Mines does not clearly present how review processes and instruments have led to changes within a department's curriculum or teaching, to the teaching of general education courses, or to the teaching of courses that support the globalization/global issues and intensive writing requirements of the general education program. The Institution has an opportunity to more clearly identify the processes employed to close the loop from assessing student learning to changing programs and courses of study. It also has an opportunity to develop institution wide processes and report results that bridge the current gap between assessment efforts of individual instructors, departmental/program reviews, and those of the BOR (CAAP).
- 1R4      O      The School of Mines presents and analyzes multiple measures which indicate graduates possess the skills and abilities required by the stakeholders who depend upon these graduates. There is evidence in the trend data indicating lack of improvement in some areas which suggests there is an opportunity to expand and further analyze the trend data.
- 1R5      O      The School of Mines presents data analysis regarding various areas of student support services. The analyses of Campus Support Services and Academic advising include trend data, analysis and recommendations for action. However, other areas such as the BOR Cloud analysis lack trend data, and the Native American Services is limited to monetary expenditures without comparable satisfaction data. The opportunity exists to develop comparable measures and analyses for these areas.
- 1I2a      S      The School of Mines has endorsed a process of systematic improvement which is enabled by the flat administrative structure. This process is

furthering the development of a culture of continuous improvement at the institution.

- 112b            O     The School of Mines identifies various forces in the culture and infrastructure that drive improvements but has an opportunity to more clearly identify the processes employed to link these forces to the improvements that have been made.

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## **AQIP CATEGORY 2: ACCOMPLISHING OTHER DISTINCTIVE OBJECTIVES**

*Accomplishing Other Distinctive Objectives* addresses the processes that contribute to the achievement of your institution's major objectives that complement student learning and fulfill other portions of your mission. Depending on your institution's character, it examines your institution's processes and systems related to identification of other distinctive objectives, alignment of other distinctive objectives, faculty and staff roles, assessment and review of objectives, measures, analysis of results, and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its *Systems Portfolio* section covering Category 2, Accomplishing Other Distinctive Objectives:**

***Item    Critical Characteristic***

- OV2    In addition to traditional services for students, including career support, advising, and international student support, the College emphasizes support for Native American students and women in science and engineering.
- OV6    The School of Mines mission commits it to educating scientists and engineers by giving the hands-on access to cutting edge technologies. To keep the cost of attendance low, employees must be flexible, cross-trained, and able to work with fewer support staff than most engineering and science universities.
- OV9    The School of Mines engages in key partnerships with Native American colleges, scientific organizations, regional development offices, student support service providers, and community outreach agencies.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 2, Accomplishing Other Distinctive Objectives.**

<i>Item</i>	<i>S/O</i>	<i>Comment</i>
2P1a	S	The School of Mines is in the process of significant institutional restructuring for the purpose of enhancing its commitment to non-instructional objectives. In this regard, there is evidence of the School's enhanced commitment to sponsored research in the organizational changes within the Office of Research, and there is quantitative evidence that these changes have resulted in a significant increase in external funding during the past 15 years.
2P1b	O	The school does not provide details on the underlying processes associated with many of the initiatives it cites in support of its efforts in this category, nor does it describe the correlation between the various elements of its research institutes with their intended impact on institutional mission.
2P2	O	Although there is sound logic behind the College's choice of major institutional objectives in support of state-level needs, there is little evidence as to how these objectives were selected in lieu of other options or needs.
2P3	S	The College appears to recognize the importance of effectively sharing information through newsletters, convocations, and other media.
2P4	O	The school identifies the key elements associated with measuring its progress and success in supporting non-instructional objectives, but it has an opportunity to more effectively describe the relationship and/or correlation between and among those elements and specific institutional objectives.
2P5	O	Although the School of Mines utilizes a number of appropriate measures to determine the faculty and staff resources necessary to its non-instructional objectives, there appears to be an opportunity for the college

- to identify the expectations for, needs of, and the satisfaction levels of these cohorts.
- 2R1            O        The College has an opportunity to identify and implement assessment strategies that will serve to inform it of the effectiveness of its four research institutes, as well as its progress in terms of accomplishing other, non-instructional objectives in support of other stakeholders.
- 2R2a           S        The College has established technology-based, programmatic linkages with a significant number of area businesses, and its research funding has increased substantially in recent years. These factors appear to confirm an institutional commitment to its distinctive objectives.
- 2R2b           OO       The School of Mines provides evidence that it has increased graduate enrollment and total graduate student funding over the past five years (i.e. Table 2R2.4), but it does not provide a strategy for achieving the 12% annual growth needed to meet its goal of 1000 graduate students by 2020. In this regard, comparative data associated with other institutions/programs will likely be especially relevant.
- 2I1            O        Although the School identifies four specific areas of research emphasis, and provides results that serve to illustrate institutional strengths and areas for potential growth, there may be an opportunity for the School to develop measures of correlation between those results and the associated processes.

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### **AQIP CATEGORY 3: UNDERSTANDING STUDENTS' AND OTHER STAKEHOLDERS' NEEDS**

*Understanding Students' and Other Stakeholders' Needs* examines how your institution works actively to understand student and other stakeholder needs. It examines your institution's processes and systems related to student and stakeholder identification, student and stakeholder requirements, analysis of student and stakeholder needs, relationship building with students and stakeholders, complaint collection, analysis, and resolution, determining satisfaction of students and stakeholders, measures, analysis of results, and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its Systems Portfolio section covering Category 3, Understanding Students' and Other Stakeholders' Needs:**

***Item    Critical Characteristic***

- OV2    In addition to traditional services for students, including career support, advising, and international student support, the College emphasizes support for Native American students and women in science and engineering.
- OV3    The School of Mines identifies itself as a high-quality, low-cost institution providing STEM education.
- OV6    The School of Mines' mission commits it to educating scientists and engineers by giving them hands-on access to cutting-edge technologies. To keep cost of attendance low, employees must be flexible, cross-trained, and able to work with fewer support staff than most engineering and science universities.
- OV9    The School of Mines engages in key partnerships with Native American colleges, scientific organizations, regional development offices, student support service providers, and community outreach agencies.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 3, Understanding Students' and Other Stakeholders' Needs.**

<b><i>Item</i></b>	<b><i>S/O</i></b>	<b><i>Comment</i></b>
3P1a	S	the School of Mines has multiple processes in place for identifying and addressing the changing needs of students, including utilizing several industry-standard and nationally-normed assessment instruments to assist in its efforts to identify existing and emerging needs of various student cohorts, and including the Student Senate President as a member of the University Cabinet.
3P1b	O	In the portfolio overview, Native American students are identified as a key group, and growth in graduate programs is one of three key distinctive

objectives in Category 2; however, the input from these students is informal. Processes to analyze the data and select courses of action are not described.

- 3P2 S The College largely takes advantage of its relatively small size and low faculty/teacher ratio to monitor distinct student groups. It also has incorporated monitoring functions within the responsibilities assigned to various student cohort-specific offices and programs.
- 3P3/3P4 S The School of Mines reviews its Strategic Plan on a two-year cycle for institutional units and on a three year cycle for Strategic Foci. The strategic planning processes incorporate data from the President's Stakeholder Survey, which is conducted every four years, thereby infusing current feedback into the planning process.
- 3P5 O The School of Mines expresses a bias towards identifying stakeholder needs on the basis of how well those needs facilitate meeting the aggressive goal of reaching \$70 million per year in research funding. While an admirable goal, this focus may prevent the institution from recognizing other potential needs within stakeholder groups.
- 3P6 O Although the College has formal policies in place by which student issues and complaints can be addressed, the implementation of those policies has not been monitored in a manner that would provide useful information regarding their impact on or relationship to student satisfaction or retention.
- 3R2a S The results generated by the school's "Administrative Support Services" surveys appear to reflect positively on the effectiveness of the College's efforts to meet the needs of its students and other stakeholders.
- 3R2b O On the NSSE, scores were higher than national comparison groups, but senior scores were lower. SSI scores were higher than national comparison groups for some measures but lower for others, and although many scores were higher in 2010 than 2006, some declined. The School of Mines might benefit from further analysis of these data points.

3R3a	S	The NSSE and SSI results support the College's sense that it is effectively building and maintaining its relationships with students.
3R3b	O	The data generated by the NSSE survey indicates that the College has an opportunity to promote greater student/faculty interaction and strengthen its efforts in the areas of active and collaborative learning.
3R4	O	The School of Mines recognizes an opportunity to develop a common survey to measure stakeholder satisfaction.
3R5	O	The College has an opportunity to build relationships with its surrounding communities.
3R6	S	External evaluation of the Alumni Association and the Foundation found the School of Mines to be comparable or stronger in most areas.
3I1	O	The College has taken forthright steps to enhance student satisfaction via a number of distinct initiatives. However, there may be an opportunity to articulate that objective in a manner that illustrates a systematic, integrated approach.
3I2	S	The culture of the School of Mines appears to be a significant factor in the degree of its success in promoting student and stakeholder satisfaction.

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#### **AQIP CATEGORY 4: VALUING PEOPLE**

*Valuing People* explores your institution's commitment to the development of your employees since the efforts of all of your faculty, staff, and administrators are required for institutional success. It examines your institution's processes and systems related to work and job environment; workforce needs; training initiatives; job competencies and characteristics; recruitment, hiring, and retention practices; work processes and activities; training and development; personnel evaluation; recognition, reward, compensation, and benefits; motivation factors; satisfaction, health and safety, and well-being; measures; analysis of results; and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its Systems Portfolio section covering Category 4, Valuing People:**

**Item Critical Characteristic**

OV1a Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not-for-profit science, technology, engineering, and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.

OV4a Hiring policies and procedures at the College are determined by the South Dakota Board of Regents (BOR) and are uniform across the state institutions.

OV4b The College has a high ratio of fulltime to adjunct faculty members.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology’s most important strengths and opportunities for improvement relating to processes encompassed by Category 4, Valuing People.**

<i>Item</i>	<i>S/O</i>	<i>Comment</i>
4P1	O	The School of Mines clearly identifies the constraints established by the external governing BOR and related entities without addressing the internal processes for identification of the specific credentials, skills, and values required for faculty, staff, and administrators. There was no evidence that it had a process for determining what those dimensions should be in the context of its mission and objectives.
4P2	O	Although the School of Mines uses mandatory search committee training and diverse committee composition to target desired skills and credentials, the hiring processes as described do not identify how the College ensures that the people employed possess the credentials, skills, and values required.
4P3	O	Although the School of Mines presents evidence that its recruiting, hiring, and retaining efforts contain multiple elements, it is not clear from the evidence submitted how those elements are identified, organized, and monitored for effectiveness.
4P4	S	Various welcoming, orientation, and training events are offered for new employees. Core values were developed in 2009 with input from all employees. The College used a task force, with feedback from



- discussions between vice presidents and their staff, to craft a core values statement that was released and promoted in 2010. The School of Mines identified that its staff needed to improve communication skills and created the “Advanced Connections” training program to meet this need.
- 4P5            O     The School of Mines identifies several components employed in planning for staff changes without addressing how those components are organized into an intentional process. There may be an opportunity for the School of Mines to incorporate the personnel performance review process within its planning for changes in personnel. Turnover is monitored and vacated positions are reviewed, promoting fiscal responsibility in personnel; however, processes for planning for changes in personnel are not described.
- 4P7a           S     The School of Mines has appropriately defined its expectations for employee conduct and has identified specific examples of unethical or inappropriate behavior. In addition, there appears to be effective processes in place by which to respond to instances in which these standards have been abridged.
- 4P7b           O     The College has the opportunity to explain how the ethical behavior and polices are communicated to employees and promoted by the institution, for example, by requiring employees to complete training to prevent sexually harassment.
- 4P9            O     Faculty are required to create a Professional Development plan focused on institutional goals and resources needed; however, similar processes are not in place for other employees. Processes to train and develop all employees so they contribute fully and effectively throughout their careers are not described.
- 4P10           O     The School of Mines identifies several elements and steps in its evaluation efforts. However, it is unclear how those efforts are monitored to close the loop to identify effectiveness of the elements and develop appropriate revisions.

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- 4P12      O      The School of Mines recognizes a benefit in developing a more functional process of determining and responding to motivation issues. The institution acknowledges that its reliance on a series of exit interviews and instruments does not provide relevant and routine data related to employee motivation and attitudes regarding their work, institutional relationships, or general satisfaction.
- 4R2      O      There are potentially significant gaps in the College's approach to measuring its effectiveness at valuing people. Where those gaps exist, there obviously is no supporting data with which the institution can assess its effectiveness.
- 4R3      O      The School of Mines identifies that it has the opportunity to identify and develop comprehensive measures of employee productivity. Additionally, the College notes that it has the opportunity to develop a means of measuring faculty productivity and use of time, and this will be critical as the institution grows the graduate student population and external funding.
- 4R4      OO      Processes for making comparisons with other STEM institutions outside of BOR schools and shared tools to make comparisons within BOR are opportunities for improvement.
- 4I2      S      The small size, flat administrative structure, absence of colleges, and representation on senates, councils, the Cabinet, and committees help support improvements and make employees feel valued.

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## **AQIP CATEGORY 5: LEADING AND COMMUNICATING**

*Leading And Communicating* addresses how your institution's leadership and communication structures, networks, and processes guide your institution in setting directions, making decisions, seeking future opportunities, and building and sustaining a learning environment. It examines your institution's processes and systems related to leading activities, communicating activities, alignment of leadership system practices, institutional values and expectations, direction setting, future opportunity seeking, decision making, use of data, leadership

development and sharing, succession planning, measures, analysis of results, and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its Systems Portfolio section covering Category 5, Leading and Communicating:**

***Item Critical Characteristic***

**Key items relevant to this Category from the Critical Characteristics Analysis:**

- OV4 Hiring policies and procedures at the School of Mines are determined by the South Dakota Board of Regents (BOR) and are uniform across the state institutions.
- OV5 The executive offices of the BOR closely coordinate campus functions and divisions on a system wide basis. This means that decisions are made at the campus level with the state system governance by the policies and leadership decisions of the BOR.
- OV9 The School of Mines engages in key partnerships with Native American colleges, scientific organizations, regional development offices, student support service providers, and community outreach agencies.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 5, Leading and Communicating.**

<b><i>Item</i></b>	<b><i>S/O</i></b>	<b><i>Comment</i></b>
5P1	SS	The School of Mine's mission has been established by the South Dakota legislature, and it is subject to periodic review by the South Dakota Board of Regents. A relatively recent strategic planning process resulted in revised mission, purpose and vision statements, all of which are the basis of the institution's 3-year strategic plan review cycle.
5P2	S	Direction setting is determined by the statutory mission, Strategic Foci, BOR policies, the governor's goals, state priorities, and regional trends. The Executive Council uses the Strategic Foci to determine direction and forms task forces if directions or issues do not fit within existing committees.

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| 5P3a | S  | The School of Mines uses various committee and meeting structures to get input from key stakeholders. Students have representation at the College through Student Senate, at BOR through the Student Federation, and at the legislation through the Student Association. Student needs are monitored through the Sophomore Satisfaction Inventory and NSSE, and input is collected through events for prospective students.                   |
| 5P3b | O  | While the College relies on an appropriate mix of data sources from key stakeholders, there may be an opportunity to organize these various data elements in a manner that would reflect greater reliance on a standardized process for collecting and analyzing meaningful data.   |
| 5P4  | S  | The School of Mines uses the Strategic Foci, AQIP process, AVET and ACS frameworks, and the four areas of research emphasis to maintain a strong focus on students and learning.  |
| 5P5  | SS | The Executive Council is the main decision-making body for the School. Whenever possible and appropriate, the work of the EC is complemented by standing committees, but task forces and/or additional work groups are established when necessary. The academic leadership team is responsible for strategic decision-making within the division of academic affairs, with tactical decisions remaining the prerogative of operational units. |
| 5P6  | S  | The School of Mines clearly identifies the procedural connections between internal and external evaluation protocols in its use of data in the context of administrative decision-making.   |
| 5P7  | S  | The School of Mines uses multiple methods of maintaining effective communications, and it has taken appropriate steps to ensure broad representation on committee, convocations, yearly all-campus meetings, contributions to campus newsletters, and through a variety of technology-based media.  |
| 5P8  | SS | The president of the College uses the Strategic Foci as the context for articulating his messages to the academic community. In addition, inter-campus communications emphasize institutional mission, school   |

- leadership praises agility, and the work of task forces reflect collaborative engagement.
- 5P9 OO While institutional executives have the opportunity to develop their leadership abilities through participation in retreats, conferences and other noteworthy venues, the College appears to rely on HR initiatives originating from the South Dakota Bureau of Personnel to address the professional development needs of other employees. In addition, the School has an opportunity to demonstrate its commitment to staff development by identifying resources and establishing processes that support faculty and staff leadership development.
- 5P10 O New presidents are given a charge and are reviewed annually by the BOR, AQIP, ABET, and ACS structures help guide other leadership changes. The School of Mines would benefit from intentional succession planning.
- 5R1 OO The College does not rely on a single, consistently administered protocol to measure Learning and Communicating, with the results being a general lack of longitudinal data from which to extrapolate emerging trends, or to make meaningful comparisons against other, external sources of metrics.
- 5R2 O The School of Mines scored higher than a national comparison group on all seven categories provided from the Great Colleges to Work For Survey. These results suggest leadership is doing a good job of communicating Strategic Foci, but the decision to no longer participate in this survey represents an opportunity for the School to determine other options for collecting relevant, valid and meaningful information relative to its commitment to leading and communicating. The College would benefit from regularly using an instrument to measure Leading and Communicating performance which will allow comparisons with BOR, national, and competing institutions.
- 5I1 S As a data-intensive academic environment, the School of Mines is well-positioned to rely on meaningful and relevant information in the context of

institutional operations and decision-making. Examples of this approach can be seen in recent initiatives related to administrative restructuring, inter-campus communications, defining specific research objectives, and the establishment of the STEPS program.

- 512            S        The College's generally "flat" administrative structure serves to enhance the prospects for effective communication between and among various elements of the School.

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## **AQIP CATEGORY 6: SUPPORTING INSTITUTIONAL OPERATIONS**

*Supporting Institutional Operations* addresses the variety of your institutional support processes that help to provide an environment in which learning can thrive. It examines your institution's processes and systems related to student support, administrative support, identification of needs, contribution to student learning and accomplishing other distinctive objectives, day-to-day operations, use of data, measures, analysis of results, and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its Systems Portfolio section covering Category 6, Supporting Institutional Operations:**

***Item    Critical Characteristic***

- OV2    In addition to traditional services for students, including career support, advising, and international student support, The School of Mines emphasizes support for Native American students and women in science and engineering.
- OV3    The School of Mines identifies itself as a high-quality, low-cost institution providing STEM education.
- OV5    The executive offices of the BOR closely coordinate campus functions and divisions on a system-wide basis. Decisions are made at the campus level with state system governance through the policies and leadership decisions of the BOR.

OV6 The School of Mines' mission commits it to educating scientists and engineers by giving them hands-on access to cutting-edge technologies. To keep cost of attendance low, employees must be flexible, cross-trained, and able to work with fewer support staff than most engineering and science universities.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 6, Supporting Institutional Operations.**

<i>Item</i>	<i>S/O</i>	<i>Comment</i>
6P1/6P2	S	The School of Mines has multiple processes in place to identify the support service needs of students, staff, and key stakeholders, including periodic surveys, advisory board feedback, employer reviews, and governance structures. With the student center renovations, the College provides a clear, concrete example of how support needs were identified and then used to make decisions.
6P3	S	The School of Mines works closely with the Rapids City Police Department to ensure campus safety and has invested in appropriate personnel and policy to ensure campus safety. The creation of an Environmental Health and Safety office and hiring of a director of it should significantly improve safety.
6P4	S	The School of Mines shows abundant evidence that on a day-to-day basis it offers services that support academic life, student development, administrative processes, research activities, general facilities management, and the personnel needs for the campus. The Student Senate provides regular feedback on student services through "Senate Resolutions" and representation on the University Cabinet.
6P5a	S	The School of Mines uses its web site, internal portal, State Bureau of Personnel web site, and other electronic tools to document support processes and stimulate communication.
6P5b	O	The College does not indicate how this information sharing encourages innovation or empowerment.

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- 6R2 O The College recently engaged an external strategic planning consultant whose data indicated that the institution had an opportunity to address several aspects of institutional operations. The results of that survey suggest that a meaningful percentage of students responded with opinions that were somewhat inconsistent with the School's expectations. Also, it is not clear what improvements are being considered and implemented as a result of the SSI findings in order to improve operations.
- 6R3 O The College's performance results for administrative support services processes reflect opportunities for improvement. However, there is a question as to whether the results of the Administrative Support Services survey administered in 2010 reflect inadequate institutional processes or external variables that may be only partially within the control of the College. Also, the School of Mines has identified the need to improve its net operating revenue ratio.
- 6R4 S The School of Mines uses the information it receives from key stakeholders to improve services through its committee and governance structures.
- 6R5 O The School of Mines uses the BOR system to gauge the effectiveness of its institutional support services. The BOR only uses schools within South Dakota. A process of comparing with other schools, especially STEM institutions nationally would benefit the College especially STEM institutions.
- 6I1a S The School of Mines provides a listing of recent improvements, initiatives, and upgrades in institutional operations that have the potential to have a positive effect on support services.
- 6I1b O The College presents a long list of improvements in Category 6. It is not clear how these improvements are tied to data analysis or are applied systematically in response to identified needs; there is an opportunity to link processes with results with improvements. How these improvements



relate to the Strategic Plan and the strategic foci of the institution is unclear.

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## **AQIP CATEGORY 7: MEASURING EFFECTIVENESS**

*Measuring Effectiveness* examines how your institution collects, analyzes, and uses information to manage itself and to drive performance improvement. It examines your institution's processes and systems related to collection, storage, management, and use of information and data – at the institutional and departmental/unit levels; institutional measures of effectiveness; information and data alignment with institutional needs and directions; comparative information and data; analysis of information and data; effectiveness of information system and processes; measures; analysis of results; and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its Systems Portfolio section covering Category 7, Measuring Effectiveness:**

***Item    Critical Characteristic***

- OV1a    Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not for profit science, technology, engineering, and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.
- OV5    The executive offices of the BOR closely coordinate campus functions and divisions on a system wide basis. This means that decisions are made at the campus level with the state system governance by the policies and leadership decisions of the BOR.
- OV7    The BOR publishes an annual Accountability Report for the state system considering access, quality, efficiency, and contributions to economic development of state institutions.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 7, Measuring Effectiveness.**

***Item                    S/O    Comment***

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- 7P1            S        The School of Mines has three major repositories of data: student and academic data managed by Colleague (a BOR system platform), financial and HR data managed by Banner (a BOR system platform), and grants and research data managed on campus. Colleague and Banner appear to be effectively utilized by the College, and they are well-respected products among institutions of higher education. Additionally, data managers have created a query library, create virtual fields for just-in-time calculations, and routinely send operational data reports to directors and department heads.
- 7P2            S        The College has established an effective process by which multiple units or taskforces select and use data to inform operations and planning, and many units routinely share data-rich reports with entities such as the University Advisory Board and the Executive Council.
- 7P3            S        The College utilizes a number of user and advisory groups to ensure that the specific needs of diverse end-users are considered in the process of collecting data, in determining the necessary storage capacities, and in developing appropriate accessibility protocols.
- 7P4a           O        The College describes a situation where processes for managing budget data and decision-making shift or change with the institution's economic conditions. It might consider creating a formal budget process that functions in a repeatable way in both eras of budget surplus and budget scarcity, especially given that an era of surplus may not occur in the near future. The School provides examples of data distribution and use, but *processes* describing how performance data and information are *analyzed* at the organizational level are not described.
- 7P4b           O        The School of Mines indicates that academic assessment data is sent to department heads for use in program and accreditation reviews or it is used for reviewing General Education assessment plans, but the Systems Portfolio would benefit by explaining how academic assessment data are analyzed and used to propose and implement changes, if needed, to further student performance on learning objectives.

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| 7P5  | O | The College provides several examples of comparative data and how the data are used (Table 7P5.1). However, the College should clearly describe the <i>processes</i> that determine the needs and priorities for comparative data and information and the criteria and methods for selecting sources of comparative data and information within and outside the institution. |
| 7P6a | S | The Strategic Foci are used in annual reviews of departments and units to formulate the goals and evaluate performance. All departments and units also use the Foci to frame their budget requests and use data to support their requests.   |
| 7P6b | O | The College has an opportunity to organize the many alignment activities into an integrated process for monitoring departmental and unit analyses and use of data. An integrated process could enhance the overall data use by identifying gaps as well as overlapping efforts, and could include sharing of these analyses.   |
| 7P7  | S | The School of Mines and the Board of Regents have established an appropriate set of procedures to ensure that institutional data and the associated information management systems reflect high standards of currency, accuracy, reliability and security.   |
| 7R1  | S | The College provides examples of how it and the BOR monitor the effectiveness of data systems like Banner and Colleague and how ITS monitors institutional computing system effectiveness.   |
| 7R2a | S | The College provides strong evidence that the student information system (Colleague), the financial and HR information system (Banner), and ITS activities meet the needs of the institution, enabling it to get the data its needs in a timely manner.  |
| 7R2b | O | The College shifted to the Desire to Learn system due to a recent AQIP Action Project, and while the increase in usage of Desire to Learn is encouraging, the College might consider conducting a formal assessment of whether or not the system meets institutional needs.  |

- 7R3 O The School of Mines provides limited performance results and might seek guidance from the Higher Learning Commission regarding how to compare its performance on *Measuring Effectiveness* with results from higher educational institutions outside the BOR system. Of particular value would be opportunities to compare itself to peer STEM institutions.
- 7I2a S The College benefits from its STEM identity by having a campus culture that accepts and requires the use of data to inform discussions, assessment, and decision-making, thus requiring that the College efficiently collects, manages, and distributes high quality data.
- 7I2b O The System Portfolio could explain how the institution's culture and infrastructure help the College to select specific processes for improvement and to set targets for improved performance results.

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## **AQIP CATEGORY 8: PLANNING CONTINUOUS IMPROVEMENT**

*Planning Continuous Improvement* examines your institution's planning processes and how your strategies and action plans are helping you achieve your mission and vision. It examines your institution's processes and systems related to institutional vision; planning; strategies and action plans; coordination and alignment of strategies and action plans; measures and performance projections; resource needs; faculty, staff, and administrator capabilities; measures; analysis of performance projections and results; and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its *Systems Portfolio* section covering Category 8, Planning Continuous Improvement:**

***Item Critical Characteristic***

- OV1a Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not-for-profit science, technology, engineering, and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.

- OV5 The executive offices of the BOR closely coordinate campus functions and divisions on a system-wide basis. Decisions are made at the campus level with state system governance through the policies and leadership decisions of the BOR.
- OV7 The BOR publishes an annual Accountability Report for the state system, including the School of Mines, that compares access, quality, efficiency, and contributions to economic development of state institutions.
- OV8 The College's key commitments are to keep tuition low; to be the state's technological university; to fill an appropriate role in fostering economic development; and to prepare engineers and scientists for leadership roles.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 8, Planning Continuous Improvement.**

<i>Item</i>	<i>S/O</i>	<i>Comment</i>
8P1	S	The School of Mines established its four Strategic Foci in 2008 and has assiduously pursued them in all planning efforts. The key planning processes include, but are not limited to, comprehensive and research strategic planning, facilities and landscape master planning, system planning, institutional planning, planning in Academic, Business, Student, and Research Affairs, and academic program planning. These planning efforts include broad representation and input.
8P2/8P3	S	By expanding the Strategic Foci from four to five in 2011, the College demonstrated that it views its strategic plan as a living document, adaptable to changing internal and external environments. Unit level plans are reviewed every two years, and the comprehensive Strategic Plan is reviewed every three years.
8P4	S	The College appears to have an effective process for aligning and coordinating planning activities at all major levels of institutional operations.
8P5	S	Based, in part, on the recommendations and observations of a strategic planning consultant, the School of Mines has identified its specific

- planning objectives, established specific performance targets, and determined appropriate measures of progress toward those targets.
- 8P6 O The College has allocated resources primarily based upon immediate needs due to decreasing budgets. The System Portfolio suggests that the budget-planning process will be based on the success of implementing the Strategic Plan. The opportunity exists for the College to develop a budget-planning process that operates regardless of the success or failure of the strategic plan. That is, the budget-planning process operates independently as a process, and the decisions made using that process can be grounded in the strategic plans.
- 8P7 OO The fact that the College has not incorporated risk assessment in its planning processes represents a significant opportunity for improvement.
- 8P8 O In its strategic plan the School of Mines commits itself to developing employee capabilities so that the institution enhances its ability to reach its ambitious goals for enrollment, graduate programs, and research expansion; however, it is not clear how the College plans to foster the professional development of its employees.
- 8R2 S The College has shown a steady increase in its performance in undergraduate enrollment, graduate enrollment, external funding, and administrative transition.
- 8R3 S Growth in enrollment, external funding, and positions are expected. Implementation of the Strategic Plan will create targets, benchmarks, and a dashboard.
- 8R4 O The College provides logical reasoning and evidence in support of its belief that its approach is both institutionally viable and operationally effective, however the planning process in place has not been formally validated or its results compared with other external entities.
- 8R5 O While the preliminary results of the College's relatively new planning process are promising; there is an opportunity for the College to

- thoughtfully monitor the actual impact of its approach through the use of appropriate indicators and metrics related to clearly identified objectives.
- 811 S The College has recently participated in extensive strategic planning, selected by AQIP for accreditation, created a Council on Graduate Studies, and created a campus and facilities master plan.
- 812 S The overall institutional culture, its core mission, and programmatic emphasis on STEM-based curricula all serve to support improvements in this Category.

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### **AQIP CATEGORY 9: BUILDING COLLABORATIVE RELATIONSHIPS**

*Building Collaborative Relationships* examines your institution's relationships – current and potential – to analyze how they contribute to the institution's accomplishing its mission. It examines your institution's processes and systems related to identification of key internal and external collaborative relationships; alignment of key collaborative relationships; relationship creation, prioritization, building; needs identification; internal relationships; measures; analysis of results; and efforts to continuously improve these areas.

**Here are the Key Critical Characteristics of South Dakota School of Mines and Technology that were identified by the Systems Appraisal Team as most relevant for its interpretation of its *Systems Portfolio* section covering Category 9, Building Collaborative Relationships:**

***Item Critical Characteristic***

- OV1a Governed by the South Dakota Board of Regents, South Dakota School of Mines and Technology (School of Mines) is a public, not-for-profit science, technology, engineering, and mathematics (STEM) College with programs accredited by ABET, Inc. and approved by American Chemical Society.
- OV5 The executive offices of the BOR closely coordinate campus functions and divisions on a system-wide basis. Decisions are made at the campus level with state system governance through the policies and leadership decisions of the BOR.

- OV8 The College's key commitments are to keep tuition low; to be the state's technological university; to fill an appropriate role in fostering economic development; and to prepare engineers and scientists for leadership roles.
- OV9 The School of Mines engages in key partnerships with Native American colleges, scientific organizations, regional development offices, student support service providers, and community outreach agencies.

**Here are what the Systems Appraisal Team identified as South Dakota School of Mines and Technology's most important strengths and opportunities for improvement relating to processes encompassed by Category 9, Building Collaborative Relationships.**

- 9P1/2a        S        The School of Mines creates, prioritizes, and builds relationships with educational institutions and employers in line with its strategic foci and mission in three primary areas: system relationships as a member of the Board of Regents System; recruitment and articulation agreements; research affiliations. The College uses multiple means to create and maintain relationships with employers of its graduates, including having employers serve on advisory boards or building connections between employers and the Career Center and its activities.
- 9P1/2b        O        The School of Mines clearly identifies the elements that contribute to the collaborative relationships in various areas of institutional operation. However, the institution has an opportunity to identify (or develop) processes needed to integrate the elements identified into an ongoing proactive system for developing, maintaining, prioritizing, reviewing, and as appropriate, modifying or discontinuing collaborative relationships.
- 9P3/9P4       O        The School of Mines has established what appears to be strong relationships with appropriate law enforcement and medical facilities/personnel to ensure the safety and security of the campus community and with special services vendors that support institutional operations. However, the portfolio lists a series of other external service providers under contract with the institution, but it does not explain how these relationships are created/built, how these relationships are in



- alignment with the mission and strategic plan, or how these relationships are reviewed to verify that they are financially beneficial for the institution.
- 9P5            O     The School of Mines recognizes that it needs to optimize its processes for communicating with and engaging the local community at large.
- 9P6            O     The School of Mines currently does not routinely monitor or measure the extent or quality of some of its external relationships. There is an opportunity to strengthen this dimension of the School's approach to building and maintaining such relationships, particularly given their potential impact on strategic, mission-driven objectives such as enrollment, sponsored research and revenue/funding
- 9P7            S     The School of Mines supports internal relationship building through the use of councils, advisory boards, faculty/student deliberative bodies, and campus-wide community-building activities
- 9R1/9R2      O     The School of Mines identifies several measures and results for measuring collaborative relationships for which there exists the opportunity to integrate with the elements identified in the process questions. Creation of such an integrated process could enable the institution to more effectively create, review, prioritize, and modify its collaborative relations, internal and external.
- 9R3            O     The School of Mines has an opportunity to seek comparative data from external sources against which to assess its success and progress on this dimension of institutional operations.
- 9I1            O     The School of Mines lists examples of improvements, and the initiatives described may, in fact, have the potential to strengthen this aspect of the School's efforts at developing relationships, but there is no obvious connection cited. As a result, systematic and comprehensive processes and performance results for Building Collaborative Relationships are not described.
- 9I2            O     There appears to be an opportunity for the School of Mines to take a more forthright and deliberative approach to the manner by which it

collects, analyzes and utilizes data in support of this category. Given the charge from BOR to play an important role in regional economic development, the institution can more actively pursue and develop collaborations and relationships when it benefits students, the regional community, and/or the local economy.