

# FY11 Budget Hearing Appropriations Committee



Black Hills State University  
transforms lives through  
innovative high-quality  
academic programs and a  
dynamic learning community

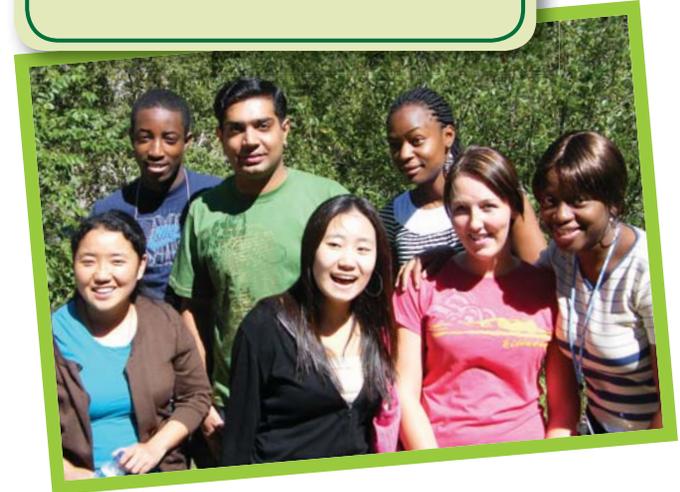
# Increasing Enrollment

**Enrollment at BHSU reached an all-time record high in fall 2009.**

- Record enrollment of 4,076 students in Fall 2009
  - Third largest university in the state
  - Students from 64 of the 66 counties in South Dakota
  - Students from 44 states and 25 countries
- Three largest majors: Business, Education, Biology
- More than 30 percent of BHSU students are adult learners
- Over 1,100 students in Rapid City
- 33 percent increase in graduate students over the past 5 years
- Nearly 1 in 4 students at BHSU is the first in their family to go to college
- The number of American Indian students who earn a degree from BHSU is nearly twice the BOR system average



In the last 4 years, the number of students graduating from BHSU has increased by **35%**



# Academic Programs

**Vision Statement: Black Hills State University will be recognized as an innovative, high-quality university in the Black Hills region, the State, the nation, and the world.**



- BHSU offers 56 academic degrees at the master's, bachelor's and associate degree level and is continually updating these programs and developing innovative academic programs to meet the State's needs.
  - Niles Armstrong, junior mathematics major, was recently selected to receive a \$5,000 NASA Space Grant Student Stipend for research.
  - Tyson Karn, physical education major from Rapid City, earned one of the 2010 NASPE Outstanding Major of the Year designations. That marks three years in a row that BHSU students have received this recognition.
  - The Jacket Journal, BHSU student newspaper, received a first place overall award in the American Scholastic Press Association's annual newspaper competition.
  - Riston Haugen, Baltic, was one of only 10 students awarded a National Science Foundation (NSF) travel scholarship based on the scientific merits of their work at the Ecological Genomics Symposium.
  - Photographs by 22 Black Hills State University mass communication students were chosen as finalists for the 29th Annual College Photographers Competition by Photographers Forum magazine.
  - BHSU business students won the Idea Creation competition at Launch '09, an entrepreneurship education event which included college participants from across the state.
  - Keely Krolkowski, freshman chemistry major from Martin, was awarded with the highly competitive Davis-Bahcall Scholarship, a one-of-a-kind opportunity for South Dakota students interested in science. Recipients study at the Sanford Lab at Homestake in Lead, the Gran Sasso National Underground Laboratory in Italy, and Princeton University in New Jersey.
  - Dr. Brian Smith, professor of biology at BHSU, was recently elected to the International Board of Trustees of The Herpetologists' League

# Academic Quality

The academic quality at BHSU is evidenced by the outstanding success of its graduates, the positive feedback from outside review, the innovative academic programs and delivery methods, as well as the increasing number of graduates, growing enrollment and continuing interest in BHSU programs from across the state and region.

- **One in three BHSU graduates enrolls in a graduate degree program**, earning acceptance into prestigious graduate degree programs in the state and region, including Creighton University, University of South Dakota, Ohio State University, Johns Hopkins University, South Dakota State University, Mayo School of Health Sciences, the University of Wyoming, the University of Michigan, and others.
- **BHSU faculty embrace innovative changes in education** using evidence-based teaching to improve student learning in an environment that fully utilizes technology.
- **BHSU emphasizes experiential learning** including research, service learning, professional development, employment, and internships. BHSU students also have the opportunity to develop leadership and teamwork skills in more than 65 campus organizations.

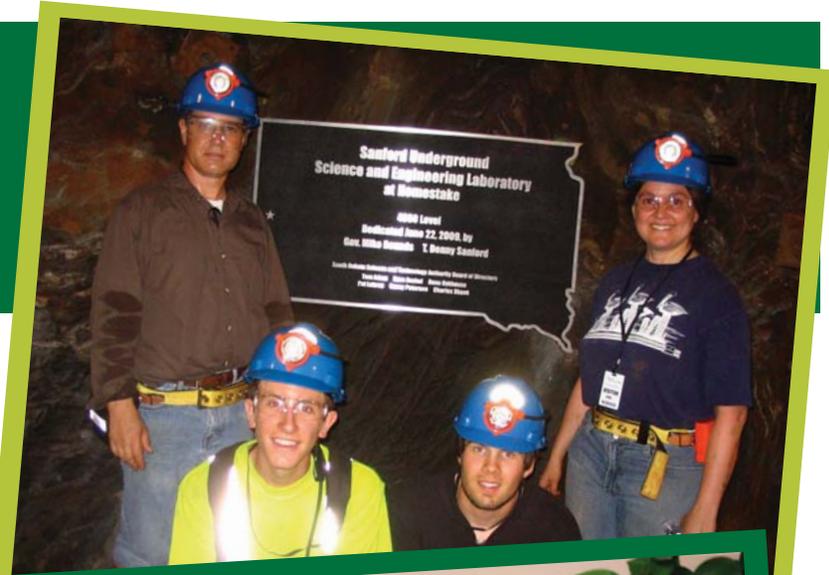


U.S. Secretary of Education Arne Duncan (left) highlighted the BHSU College of Education for its dynamic and effective teacher preparation programs. A project through the Center for the Advancement of Math and Science Education (CAMSE) was cited as an example of a high-quality, innovative program for closing the achievement gap in mathematics for Native American students.

# Impacting the State's Economy

**BHSU is strategic and proactive in developing ways to contribute to the State's economic development.**

- **BHSU research is aligned with the priorities and needs of the State.**
  - The Center for the Conservation of Biological Resources (CCBR) was created based on the strengths of the BHSU biology program to address regional problems in conservation and biodiversity management.
  - The WestCore DNA core facility is one of only 13 centers nationwide with state-of-the-art research technology to conduct DNA testing for state agencies and private entities including fingerprinting, sequencing, wildlife forensics, and parentage testing.
  - Just 17 miles from Sanford Lab, BHSU is heavily involved in DUSEL and SUSEL activities. Nearly 50 BHSU faculty, staff and students are involved in Sanford Lab initiatives including neutrino physics and microbial genomics research, science education, history, technology, mass communications, and photography. BHSU's involvement with Sanford Lab has provided nearly \$2M grant funding in the last three years and significant collaborations with other researchers from across the nation and world.
    - Partner in a 2010 center in physics
    - QuarkNet site along with Boston University, Columbia University, Johns Hopkins University, Purdue University, Rutgers University, University of Houston, University of Maryland, University of Notre Dame, and University of Pennsylvania
    - Lux experiment



BHSU provides science and math activities to K-12 students with a special emphasis on middle school students while they are in a critical stage for making important career decisions.

# Impacting the State's Economy

## BHSU is committed to workforce development.

- BHSU began an associate's degree program in Advanced Manufacturing Technology to support the State's manufacturing workforce needs which is offered in Rapid City, Sioux Falls, Spearfish, and Yankton. BHSU is working to create awareness and understanding of Lean Manufacturing concepts.
- Innovative master's degrees are being developed to meet the State's economic needs:
  - The MBA (Master's in Business Administration) addresses the needs of employers and employees in Western South Dakota.
  - The Professional Science Master's Degree in Science Entrepreneurship will prepare scientists for DUSEL and related opportunities and attract and produce entrepreneurs to lead the creation of new enterprises.
- The University offers historical and performing arts events that boost economic development and cultural tourism.
  - Variety of cultural events including the Summer Institute of the Arts, Johanna Meier Opera Institute, and theatre and music performances
  - History Day host site
  - MOU with Adam's House and Museum
  - Deadwood Archeology (collaborative course with USD and State Historical Department)
- BHSU is involved in cooperative efforts with Native American tribes.
  - Center for American Indian Studies
  - Native American scholarships
  - Annual Powwow and Native American week
  - Educational consulting with reservation schools



(Left to right) Rapid City Mayor Alan Hanks, South Dakota Board of Regents member Dr. James Hansen, Board of Regents Executive Director Dr. Jack Warner, South Dakota School of Mines and Technology President Bob Wharton, and Black Hills State University President Kay Schallenkamp participated in the ceremonial groundbreaking for the University Center - Rapid City, which will provide a single site location for higher education offerings in the State's second largest city.

**1 in 5** people in  
**Rapid City** who have  
a bachelor's degree earned their diploma from  
**BHSU.**  
Residents of the State's second largest city  
would not have this opportunity without the  
**University Center - Rapid City.**

# Impacting the State's Economy

## **BHSU connects technology and business.**

- The new South Dakota Center for Enterprise Opportunity (SD CEO), funded by the SBA, and the Center for Business, Entrepreneurship and Tourism (CBET) - which are both located on the BHSU campus - support entrepreneurs, businesses and industry with research, the commercialization of research-derived technology, small business start-up and management, and the promotion of technology-based economic development.
- Plans are underway to develop a business incubator.
- BHSU collaborates with SUSEL/DUSEL, Black Hills Vision, the South Dakota Department of Education, the South Dakota Department of Tourism and Economic Development, and others.
- BHSU participates in Workforce 2025.
  - Build Dakota - participation in manufacturing workforce summit
  - Dakota Rising program, designed to spur the state's rural economy
  - Dakota Seeds - internships
  - Dakota Roots - business partner
  - Live Dakota - Youth Business Academy



*BHSU is focused on increasing the number of math and science teachers, meeting a critical need in the state. BHSU also offers a teacher certification program, Project SELECT, that allows people who already have a college degree to earn their certification in an accelerated 12-month program that is offered in Rapid City and Pierre.*

# Impacting the State's Economy

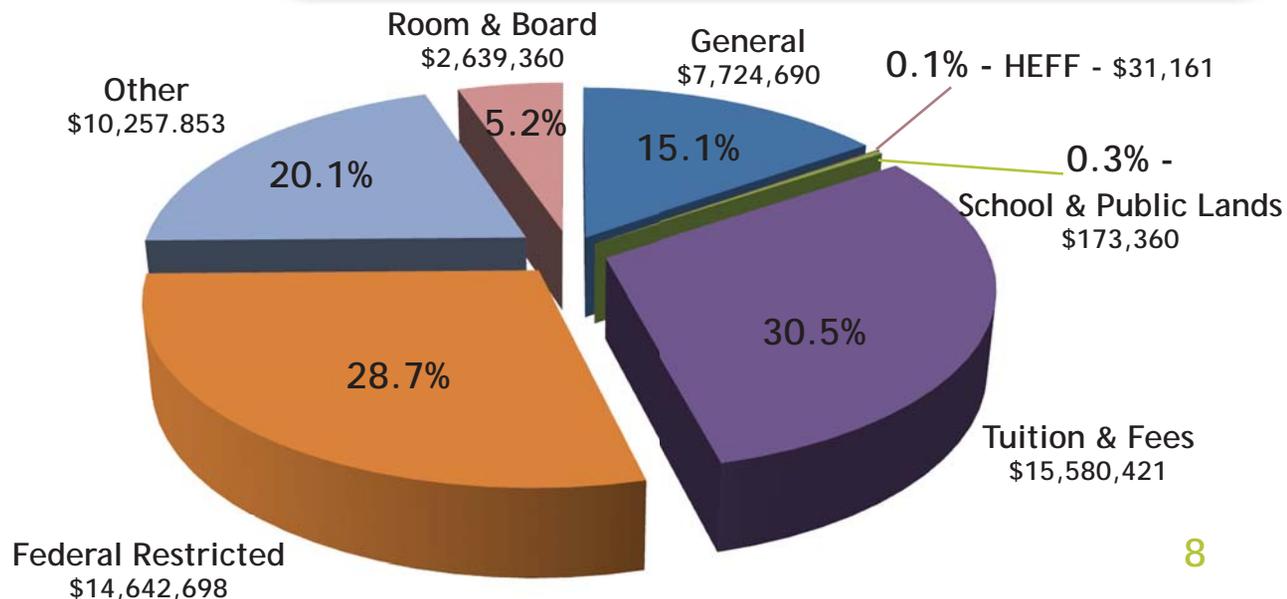
## BHSU creates economic opportunity in the State of South Dakota.

- The Donald E. Young Sports and Fitness Center, which hosts a wide variety of events, had an economic impact of nearly \$3 million on the City of Spearfish.
- BHSU offers a number of course delivery options including online, DDN, D2L and Elluminate to provide access to educational opportunities that are especially important during an economic downturn.
- The University offers a growing number of non-credit workshops and certificates including: Sustainable Design/ Designing Green Buildings workshops; Medical Transcription; Medical Billing; Social Networking; Website Design; eMarketing; Bookkeeping; Executive Administrative Business Leadership, and others.
- Only 15 percent of the University's budget comes from the State general fund.



BHSU received the Award of Excellence from the Spearfish Economic Development Corporation for the University's economic contribution to the region.

In FY09, BHSU stewarded the State's **\$8.3** million general fund investment to create an additional **\$33** million of direct spending and an additional **290 jobs** in South Dakota.



# Research Growth

## BHSU is uniquely located to maximize research opportunities.

- Grants and contracts to BHSU have increased 500% over the last decade.
- BHSU's strategic plan emphasizes research productivity.
- Grant funding strengthens our research infrastructure and enhances research facilities without additional state appropriations.
- Nearly 75 students presented their undergraduate research at national conferences last year.
- Students have the opportunity to conduct research in areas such as biomedical research, genomics, biotechnology, physics, environmental science, deep underground science, psychology, business, political science, and education. BHSU has had more than 100 federally and privately funded undergraduate research fellowships in the last decade.



Dr. Garth Spellman (second from right), assistant professor of biology at BHSU, was recognized nationally as the Young Investigator of the Year by the Experimental Program to Stimulate Competitive Research (EPSCoR).

## BHSU research addresses South Dakota issues.

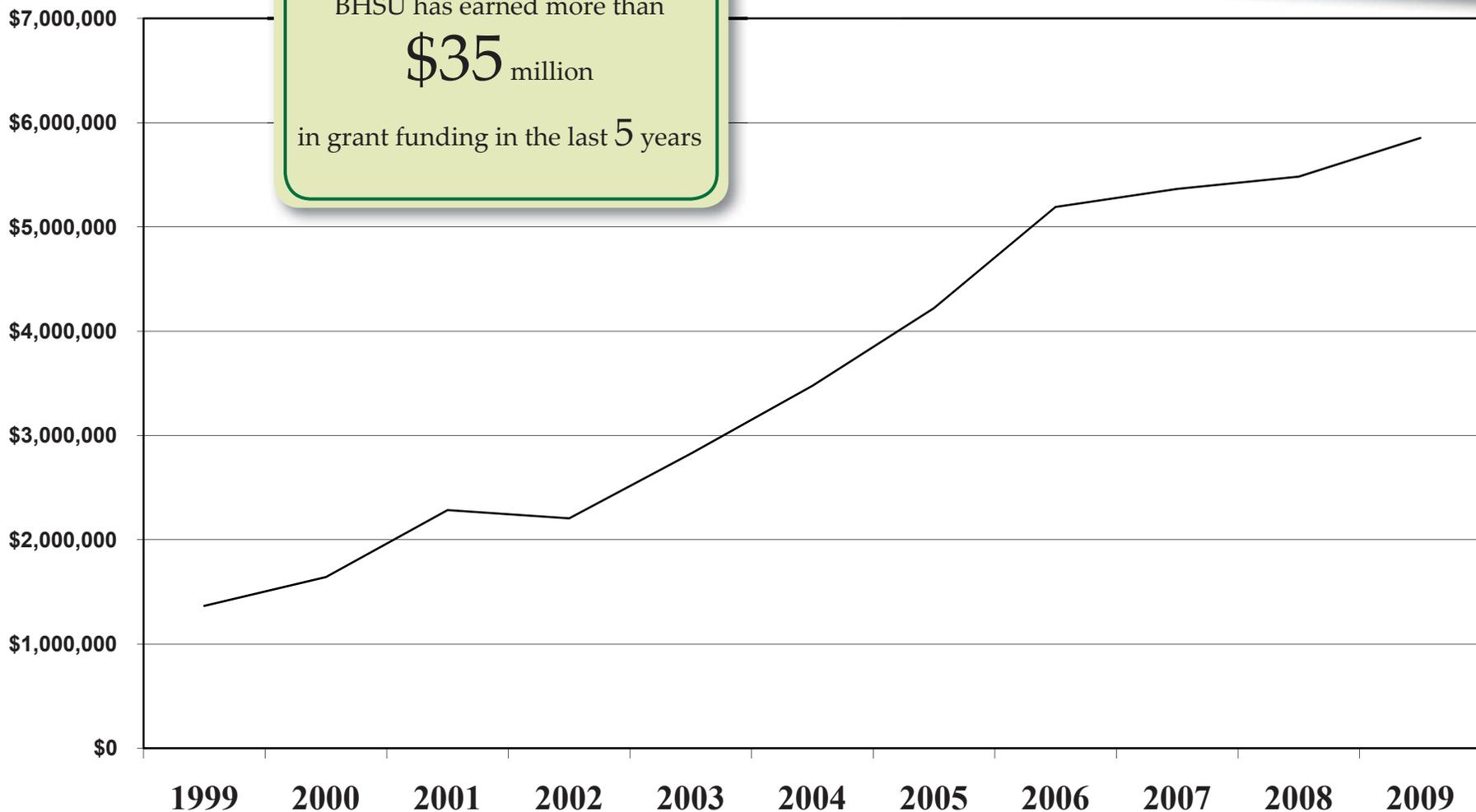
- Microbial diversity studies and bioprospecting for bioactive metabolites in DUSEL
- Plant response to drought
- Genetic analysis of native bison and South Dakota fish
- American Indian medicinal plants as a source of new antibiotics
- Genomic basis of silver sensitivity in dermatophytic fungi
- Geographic variation in venom of the prairie rattlesnake
- Malarial parasites in the endemic White-winged Junco
- Proposals to develop an immersion tank detector scintillator to screen large samples of materials and for the purification of cryogenics such as liquid nitrogen, argon and xenon; and a trace gas analyzer for DUSEL
- Economic impact studies and market feasibility studies for businesses and agencies
- Outcomes of students who have graduated from S.D. public schools after having received special education services
- Reading achievement of American Indian students

# Research Growth

## Grant funds have:

- Paid the cost of more than 30 FTE in FY09
- Funded \$891,415 in scholarships the last three years
- Funded \$177,829 in research equipment

BHSU has earned more than  
**\$35** million  
in grant funding in the last 5 years



# Energy Efficiency

**Historically BHSU has taken a leadership role in sustainability with a campus-wide effort to reduce energy costs.**

- BHSU was the first South Dakota University to join the American College and University Presidents Climate Commitment, a consortium of more than 600 universities across the nation dedicated to address climate change by garnering institutional commitments to neutralize greenhouse gas emissions

## Construction

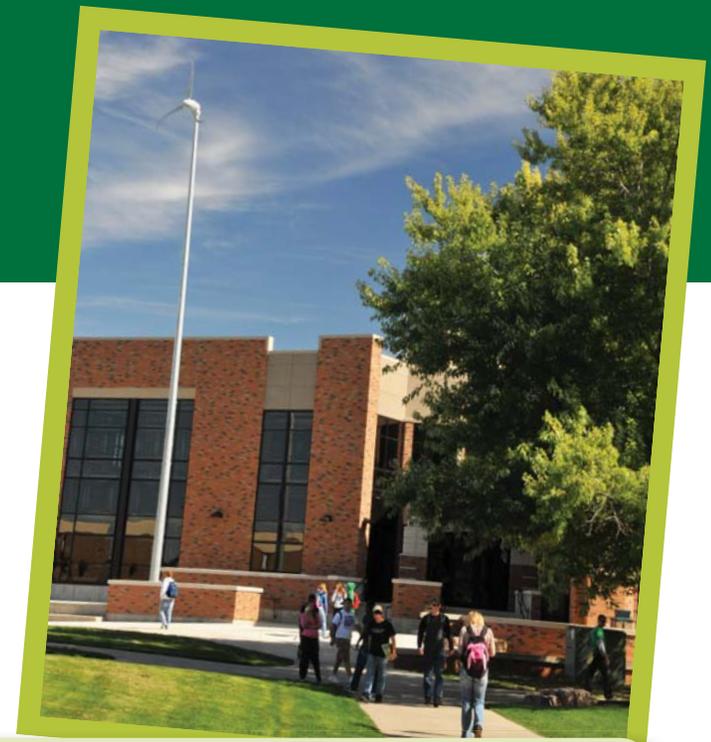
- Renovations and new construction are being designed with energy efficiencies and a goal of silver certification from LEED (Leadership in Energy and Environmental Design)
  - Addition and renovation to the Student Union
  - New Science Building

## Retrocommissioning

- Retrocommissioning projects are taking place in several buildings on campus to provide more efficient operation of the air handling systems
  - Young Center - Payback is estimated in 11.5 years
  - Jonas Academic - Payback is estimated in 9.9 years
  - Library - Payback from energy savings in 11 years

## Campus Lighting

- Campus lighting was replaced with high efficiency fluorescent lamps (energy savings payback was 5.5 years)
- All new lighting (renovation or construction) is installed with the highest efficiency lamps available



Based on data from the statewide energy audit conducted by Sebesta Blomberg, BHSU uses the least amount of energy per square foot of the six universities.

- BHSU uses 128 MBTUs of energy per square foot, 22% less than the system average
- BHSU accounts for 9.8% of the total square feet but only uses 7.6% of the total MBTUs consumed by the system

(MBTU is 1,000 British thermal units)

# Energy Efficiency

## Water

- All plumbing replacements include water saving fixtures and automatic valves
- Landscape designed to require less water
- Irrigation controls being phased in to reduce water consumption
- Going trayless at the cafeteria saves the amount of water used by dining services

## Planning

- The University has completed a utility master plan
- Pursuing performance contract opportunities for future energy efficiency projects

## BHSU is seeking funding for a wood-fired boiler

- Provides opportunity for BHSU to use an alternative energy source to heat and cool the campus
- Uses wood chips, reducing the need for natural gas and fuel oil as a heating source
- Reduces utility costs
  - Grant from the U.S. Forest Service Economic Action Program determined BHSU is a good candidate for wood-chip heating
  - Potential partnership with Spearfish Forest Products cogeneration plant would pipe steam from saw mill to campus
  - Preliminary estimates indicate 40% savings on annual utility consumption

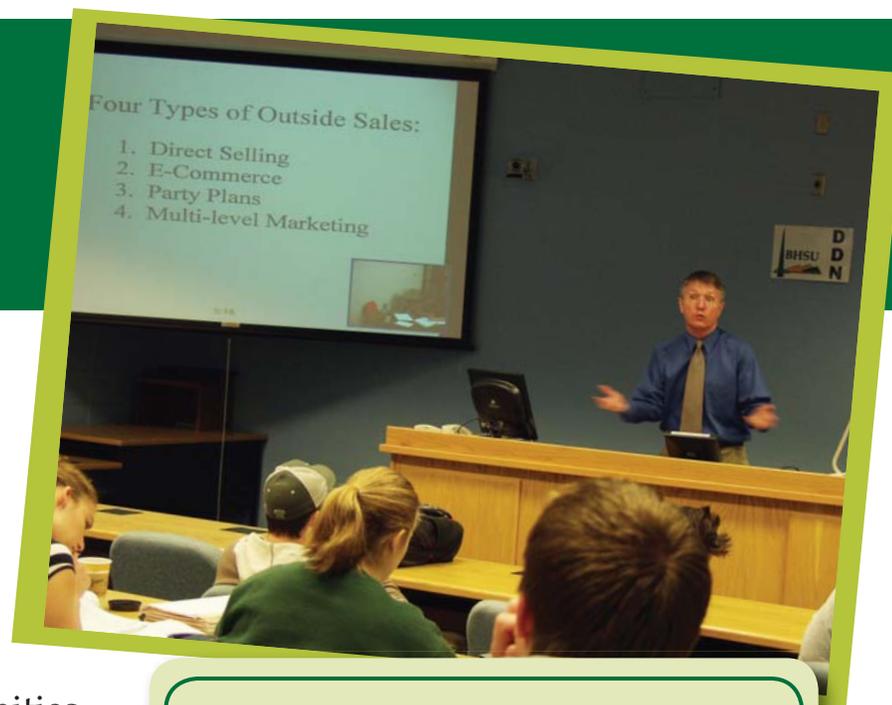
A wood-fired boiler would save up to **40** percent of BHSU's natural gas and fuel oil costs and **reduce** dependence on natural gas and fuel oil for heating.

**BHSU is continuing to pursue energy efficiency projects and consider renewable energy sources to reduce long-term utilities costs.**

# Integrating Technology

**BHSU faculty are constantly learning and integrating new technology to prepare students for the rapidly changing workplace**

- BHSU's faculty have increased the number of online and hybrid courses by 28% to provide additional learning options. This also has created more opportunities for place-bound students and working adults.
- Faculty are utilizing additional online resources (hardware and software) such as Google Wave, Ning (a collaborative tool), EtherPad, Camtasia (video capture for the web and mobile devices), iPods, ClassSpot, Voki (using avatars), Xtranormal (allows creation of animated movies), and others to prepare students for the rapidly changing workplace.
- 89 percent of BHSU students bring their own computer to campus. Faculty incorporate new technology to enhance student learning maximizing the use of computers and other technology.
- BHSU academic buildings and residence halls will be entirely wireless by Fall 2010.



**Faculty adapt innovative educational approaches to emphasize critical thinking in a knowledge-based economy**

- The top 10 in-demand jobs in 2010 did not exist in 2004.
- We are currently preparing students for jobs that don't yet exist using technologies that haven't been invented in order to solve problems we don't even know are problems yet.