

FORESIGHT

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SPECIAL BIENNIAL REPORT & 50th ANNIVERSARY EDITION

Laramie Design Squad—
Collaborating with WYDOT
(see story, page 5)

*Working for Wyoming
and the World*



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Message From the Dean

It is with pleasure that I introduce the fiftieth anniversary of the College's publication of a magazine presenting interesting articles from the wealth of activities conducted by the College's faculty, staff, students, alumni and friends. This issue of *Foresight* briefly recounts the history of College's magazine, indicating how it grew from a very useful little rag titled *Engineers* to become *Foresight*, a comprehensive magazine for a broad, national readership.

This issue of *Foresight*, moreover, is an important moment for me to signal that the College is getting underway with a major planning effort aimed at substantially improving and expanding its instructional and research facilities. Though the College's many achievements are to be celebrated, it is clear to many of us that the College must upgrade its facilities in order to accommodate planned growth, grasp opportunities and meet competitive contemporary national standards for university-based education and research. The planning effort entails a comprehensive and challenging project likely comprising two major parts:

- To increase and improve capacity and functionality for instruction –replacement of the "Sawtooth," a large, 1926 vintage space in the center of the Engineering Building.
- To increase research laboratory capacity – possible addition of a laboratory building.

Planning will confirm a long-range vision for the College that addresses key questions such as – Enrollment size at the B.S., M.S., and Ph.D. levels? Configuration, functionality, and ambience of space sought for effective instruction? Strategic themes for programs of instruction and research? Laboratory needs? The College currently is renovating ten classrooms, enhancing or adding teaching laboratories (notably, the addition of the Encana Integrated Simulation Data Center, and the Kenneth Beach Industrial Controls Laboratory [See *Foresight's* Spring-Summer '10 issue]), in the Engineering Building. However, the College needs an even greater overall level of facility upgrading. Future issues of *Foresight* will document progress toward developing the facilities and overall ambience the college should pursue.

The present issue of *Foresight* features a cross-section of current activities at the College, including the Laramie Design Squad, the commissioning of two new laboratories for instruction and research, the appointment of Dr. Andy Hansen as Associate Provost for Academic Affairs, and student successes, and the retirement of senior engineer Ron Borgialli. Additionally, this issue contains a summary of metrics charting the College's growth in student enrollment and research productivity, and a short report on funds donated to the College.

We are sincerely grateful to all who have given to UW and the college; your support helps us build the best educational experience for our students.

continued



Over the years the College's programs of undergraduate education have strived to augment classroom instruction with real-world practical experience, doing so in various ways. Presently, through the Student Services Center, annually about ninety percent of the College's undergraduates have summer jobs related to their education program. To be sure, some students chose to use the summer to travel and see the world. The Laramie Design Squad is an experiential learning opportunity the College offers in collaboration with the Wyoming Department of Transportation (WYDOT). The Squad offers a work-study program for undergraduate engineering students interested in continuing their education, while working part time on a WYDOT highway design team. Students in the Squad gain actual design experience that underpins their classroom education in the fundamental principles and techniques of highway design.

The College has delivered excellent programs of education since its formal foundation in 1929, though engineering programs and departments existed at the University of Wyoming since the 1891-92 academic year (and indeed the Engineering Building dates back to 1926). For fifty years *Engineers* and *Foresight* have reported on the College's activities. My colleagues and I look toward to a further fifty years of *Foresight* reporting on the College's accomplishments, including the successful development and use of its upgraded facilities.

Robert Ettema, Dean

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ON THE COVER:

Work on installation of a storm sewer and placement of concrete pavement to reconstruct approximately a mile of Spruce and Third Streets in Rawlins, Wyo., a project designed by the Wyoming Department of Transportation Laramie Design Squad, under the direction of Jim Kladianos, in the Department of Civil and Architectural Engineering, courtesy photo.



Project designed by the Laramie Design Squad, constructed by Rawlins Field Office, working on replacement of city road infrastructure, photos courtesy of WYDOT.

Laramie Design Squad Provides Cooperative Education Opportunity

Courtesy of James R. Kladianos

Laramie Design Squad Design Team Leader

The University of Wyoming College of Engineering and Applied Science, in cooperation with the Wyoming Department of Transportation (WYDOT), provides an educational opportunity to undergraduate students in the field of roadway design. Located in the Department of Civil and Architectural Engineering, the members of the Laramie Design Squad are full time engineering students who also work a minimum of 20 hours per week for WYDOT, producing contract plans for highway construction projects under the supervision of three full-time design engineers.

During the course of their tenure in the Design Squad, the students learn the fundamental principles of highway design, associated federal and state design policies and procedures, and the operation of computer software for drafting (Microstation) and roadway design (Geopak). They perform all of the tasks in the highway design process, from

drafting simple details to developing final contract plans and summaries of pay quantities for multi-million dollar construction projects.

Originally established as a road design squad at UW in 1968, the Design Squad operated until the mid-1970's. It was re-opened in 1980 with the same vision and goal: to provide educational opportunities to students in real-world situations, using critical thinking skills and problem-solving techniques. Since the inception of the Laramie Design Squad, approximately 159 students (records for the pre-1980 squad are sketchy) have completed at least six months of training in the Design Squad, plus the 11 students who are current members. Of the 139 students who have been through the program since 1980, 134 (96%) received their bachelor's degrees, usually in either civil or architectural engineering.

The Design Squad supervisors, along with faculty members, representatives from other WYDOT divisions, and practicing transportation engineers in the private sector, also



The Laramie Design Squad students put their design training and efforts to use while they are in college to produce contract plans for millions of dollars worth of roadway construction projects every year – for the benefit of the users of Wyoming’s roadways.

help to teach the senior design class in Transportation, in which other engineering students are allowed to gain similar training and experience by working on real highway projects.

The Laramie Design Squad offers a unique learning experience. The knowledge gained through the Design Squad is immediately put to use rather than stored away in a notebook full of class notes and academic exercises. Students put their skills to productive use while they are in college to produce contract plans for roadway construction projects for the benefit of the users of Wyoming’s roadways.

Selection of Student Employees

A four-person committee selects students to fill Design Squad positions as they are vacated by graduation. At times, the selection process is extremely competitive, with 20 or more students vying for two or three vacant positions. Selection criteria includes: student grades, employment history, recommendations, and a sincere desire to pursue a career in transportation engineering, preferably with WYDOT.

Entry level students are currently paid \$11.77 per hour. These wages, combined with full state benefits and the practical training and design experience that are provided to the students, has allowed WYDOT to attract and retain engineering students of exceptional quality.

Production of Contract Plans for Roadway Projects

Over the years, the students in the Design Squad have produced contract plans for projects ranging in complexity from the installation of shoulder rumble strips to the complete reconstruction of an urban street, including the installation of sidewalk, wheelchair ramps, curb and gutter, concrete pavement, storm sewer, traffic signals, overhead sign structures, etc. This project also involved coordination with the city for installation of water and sanitary systems.

Between 2007 and 2010, the members of the Design Squad completed contract plans for 18 projects that were let to contract for bid prices totaling approximately \$78 million.

Foresight—Informing You for 50 Years

Editor's Note

Engineering Senator Dave McPherson of Tucson, Ariz., and fellow Engineering Senators Ralph Menke of Elk Mountain, Fred Cady of Omaha, Neb., and Barry Burnette of Newcastle, started the first engineering news magazine in 1961 with the help of editor Allyn Wells and Faculty Advisor Dr. Francis M. Long. The magazine, titled "*Engineers*" at that time was an eleven page black and white spread featuring student society news and biographical information of new faculty members. Under coordination of Don Lamb, the publication became *Foresight* news in 1975.

The publication has reported many changes over the years, most significantly the reinstated petroleum engineering in 1996, and new programs such as Energy System Engineering, Earth System Science, and Computer Engineering. In 2001, the College added the Computer Science degree program (formerly in the College of Arts and Sciences).

Longtime editor Susan McCormack served as editor for 16 years until 2005, when the editorial baton was passed to Thyra Page who is now entering her 6th year in that capacity. When *Engineers* first began, it was mailed to a couple hundred faculty and staff members. Today, *Foresight* news magazine is mailed to over 9,700 College alumni, friends, and donors. Circulation is increased each year to accommodate new graduates and subscription requests.

At the beginning of 2009, the magazine was increased in length from 16 to 20 pages and decreased in number of issues per year from four to three. News stories are mainly written and edited by the Communications Office but are also solicited from alumni and faculty members. The cost of printing three issues per year runs close to \$16,000 with donations bringing in only a third of that cost each year.

We greatly appreciate your support of the College and in keeping this valuable source of information available to future alumni and friends.

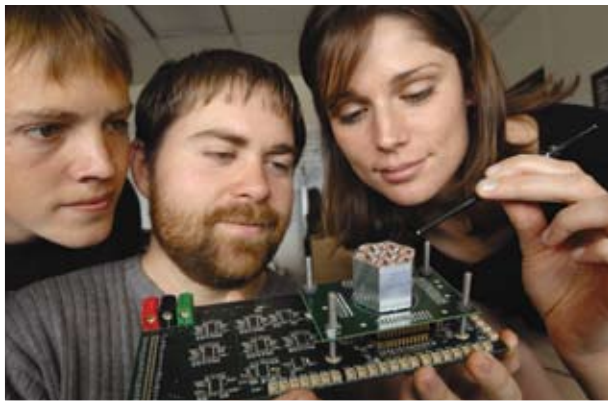
If you have exciting news you would like to share with others, please submit the information to engevents@uwyo.edu or call us at (307) 766-4248.



In 2008, civil engineering students participated in the Concrete Canoe Race (see above). Don Veal visits with Ken Endsley (kneeling), left to right: Gabor Vali, Wayne Sand, and Larry Irving (far right) - (1980) at the Donald L. Veal Research Flight Center (below), UW photos.



A team of UW students, along with project lead Dr. John Nydahl and advisor Dr. Kynric Pell, participated in the Formula Society of Automotive Engineers (FSAE) competition (1998). Team members included Shawn McCaslin, Dusty Rodriguez, Jason Gies, Ed Repshire, and Jaime Romero. not pictures are team members Jack Van, Seth Eastlick, Ben Sheen, Chris Sproul and Chris Cataudella, UW photo.



Graduate students in electrical and computer engineering (left to right) are Geoff Luke, John Benson, and Kim Creaser, conducting research on a fly-eye-inspired sensor (2007) courtesy photo.



The College building in 1961, shown above, was near the edge of town on the North side of campus, photo from the 1961 UW yearbook. Today, the College building remains an integral part of campus, on the Northwest edge of Prexy's Pasture.



Mechanical engineering students (above, center) participated in the Clean Snowmobile Challenge, (2001) UW photos.



Above right, Senior Research Scientist Jennifer Mercer and M.S. student Wiesje Mooiweer in the field after recovery of a balloon-borne aerosol instrument released from McMurdo Station, Antarctica, (2008) courtesy photo.



Lisa Owen and Sandy Gabriel study computing technology at UW (2009) UW photo.



Civil/environmental engineering students Burt Andreen, Ian Jolovich, Rhianna Poss, George Carter, Jerry Hamel, Tad Rosenlund, and Amber Lebsock practice their presentation for the symposium. The design project was titled "Upgrading the Littleton/Englewood Wastewater Treatment Plant," UW photo.

SENIOR DESIGN 2010

An estimated 200 people attended the College of Engineering and Applied Science Senior Design Symposium held December 2, 2010. Over 70 college seniors representing architectural, civil, chemical, petroleum, electrical and computer engineering exhibited and presented individual and team design projects. Their projects were judged by over 20 judges representing business, industry, and the University. Students were required to design, and in some cases to fabricate, the project selected with their advisers. Nearly 25 individual projects were presented during the symposium. Projects included a design of a wireless weather station, fabric measurer/cutter system, civil engineering dam design and design planning for the Albany County Public Library Renovation.

Symposium Award Winners

Chemical Engineering

Best Presentation - Methanol to Polyolefins
Maxine Delgado, Joseph Hollingsworth,
Murtaza Shabbir Hussain, Torrey Mullen
and Andrew West

Electrical & Computer Engineering

Best Presentation - Single Investigator Category
Donovan Buckman – Fabric Measurer/Cutter System

Honorable Mention – Single Investigator Category
James Baker - Automatic Calibration Unit
for Optimal Air Testing

Best Presentation - Multiple Investigator Category
Jeremy Hickox and Paul Stampe – Data Logger

Honorable Mention – Multiple Investigator Category
Bob Benton and Travis Waters –Wireless Weather Station

Best Presentation - Theoretical Contribution Category
Adrian Palmer - Ethernet Condition Control Simulation

*Thank you to the following Senior
Design Symposium sponsors:*

Rocky Mountain Power Foundation



*Volpi/Cupal Electrical Engineering
Design Fund*

Commencement exercises were held December 3, 2010. Congratulations to the following degree candidates!

Doctor of Philosophy

Polatmyrat Akmammedov, Civil
Reinaldo Morales Garcia, Civil
Casey Fagley, Electrical
Saeed Ovaysi, Petroleum
Josef Pohl, Computer Science
Hui Pu, Petroleum

Master of Science

Keshav Basnet, Civil
Amy Brandvik, Petroleum
Ryan Buffington, Electrical
Kimberly Creaser, Electrical
Ryan Fertig, Civil
Suraj Gajendar, Electrical
Anup GondKar, Electrical
Peter Irey, Civil
Scott Koch, Civil
Kaspars Krutkramelis, Chemical
Anthony Kunkel, Electrical
Travis Lairscey, Electrical
Xiaobao Li, Mechanical
Yitong Luo, ENRE
Rodolfo Monterrozo, Chemical
Lily Nuryaningsih, Chemical
Gurudatha Pai, Electrical
Daniel Peterson, Electrical
Amos Purdy, Electrical
Tyler Robison, Civil
Mohamedyousuf Sayenna, Mechanical
Christopher Schultz, ENRE
Lakshmi Sivasankaran, Electrical
Kiel VonFeldt, Civil
Qing Zhang, Civil

Bachelor of Science

Architectural Engineering

Colby Bancroft
Bailey Brown
Wade Brown
Jonathan Fontes
Jordan Lutz
Daniel Maurais
Jera Schlotthauer

Chemical Engineering

Abdulaziz Al Noaim
Kristin Carter-Matheson (dual)
Thien Pham

Civil Engineering

Elliott Bauder
Kolter Booth
Richard Ferguson,
Bradley Gal
William Hensel
Emily Huth
Ian Jolovich
Emily Layton
Ji Liu
Todd Mattson
Zekial Rios
Brock Roberts
Erik Strock
Nancy Thoman
Mathew Wilder
Tio Winter
Whitney Wise
Cody Woods
Cody Wyatt

Computer Engineering

Jennifer Beman
Adrian Palmer
Paul Stampe
Travis Waters

Electrical Engineering

Robert Benton
Kurtis Buck
Donovan Buckman
Jeremy Hickox
Christopher Isaacson
Anthony Michaelis
Max Nachtigal
Eric Young

Mechanical Engineering

Charles Galey
Anthony Garcia
Daniel Mosiman
Lori Sandberg
Corey Saner
Bridget Schabron
Elizabeth VanHoosen
Luke Walker
Kyle Werkele

Petroleum Engineering

Kristin Carter-Matheson (dual)
Mitchell Heimer
Brandon Heiner
John Paul Nwafor

COMMENCEMENT



College commencement banners, UW photo.



UW Opens Simulation Lab

Eric Marsh, Executive Vice-President for Encana's Natural Gas Economy team (center) is assisted by UW President Thomas Buchanan (left) and Chemical and Petroleum Engineering Department Head Andy Hansen in cutting the ceremonial ribbon at the recent lab opening. Photo by Andy Carpenean.

Courtesy of UW News Service

The newest laboratory in the University of Wyoming's College of Engineering and Applied Science was funded through a generous gift from Encana Oil & Gas USA. It's only fitting, then, that the center has the look and feel of a facility Encana would build to suit its own research needs.

The new Encana Integrated Simulation Data Center, located in the UW Engineering building, designed to resemble a professional industry data room, officially opened October 8, 2010, with a ribbon-cutting ceremony attended by Encana and university officials who touted the lab's many attributes, including its abundance of work space and audio-visual capabilities.

"This lab will not only provide our students with tremendous team-building opportunities but allow them to work in a facility that has the look and feel of industry," said Vladimir Alvarado, an assistant professor of chemical and petroleum engineering who led a committee charged with designing the center. "My thinking was that we should avoid having rows of computers as in a traditional computer lab and instead provide a comfortable space to promote collaborative work. I believe this room will set a good standard for something vital to engineering and other areas of research: Teamwork."

One of three labs funded through a \$2 million gift from Encana in 2006 and supplemented by a matching gift from the State of Wyoming, the 30-seat center will provide undergraduate students with the rare opportunity to experience advanced simulation technology within the petroleum engineering discipline. The center will also

allow for collaborative work between students and faculty and serve as an ideal location for workshops.

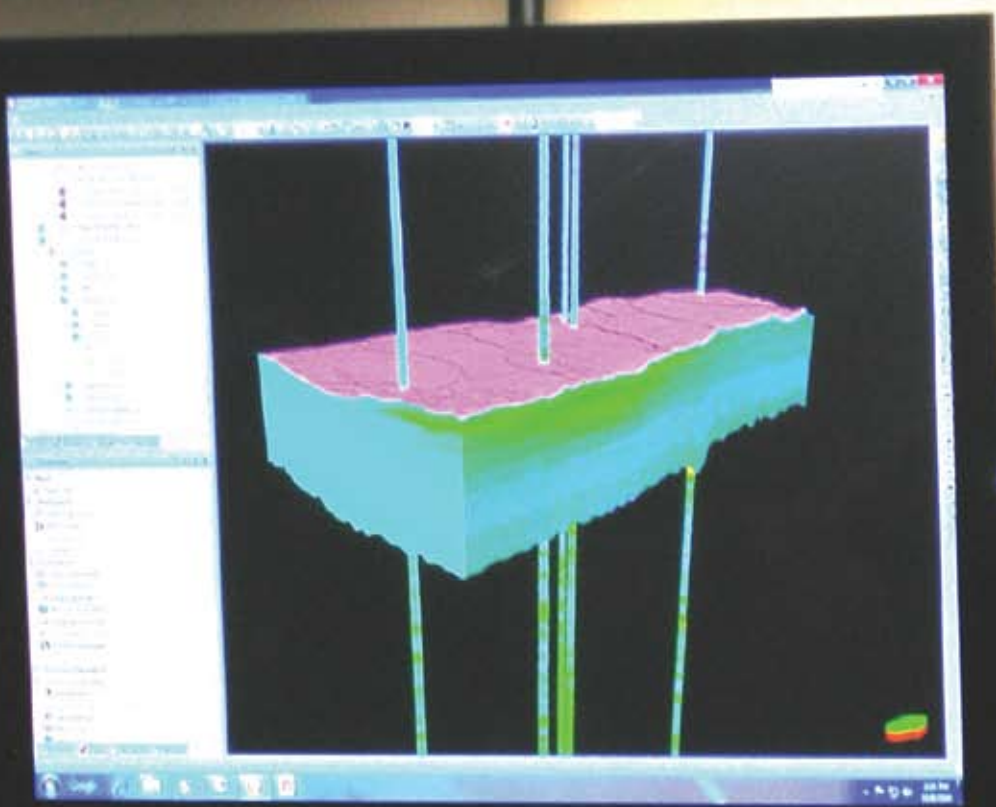
The center will not only provide a professional atmosphere for research but a variety of "software suites that are used routinely by industry," said Alvarado.

Thanks to donations from Halliburton and Schlumberger—the world's two largest oilfield service companies—the center will offer access to exploration and production modeling software used by oil and gas professionals globally.

"The Encana Integrated Simulation Data Center, also known as the Reservoir Simulation Lab, is a remarkable facility that enables the Department of Chemical and Petroleum Engineering to teach a series of cutting-edge courses on gas and oil reservoir behavior, drilling and production," said Rob Ettema, dean of the College of Engineering and Applied Science. "The layout of the lab, and its use of sophisticated software packages from Halliburton and Schlumberger, places students in real-world situations of reservoir operation."

Encana's gift also facilitated the opening, in 2008, of UW's Three-Phase Flow Laboratory, a world-class research facility designed to identify flow characteristics of oil, gas and water in rock cores under reservoir conditions.

Encana USA is an exploration and production subsidiary of the Encana Corporation, based in Calgary, Alberta. With headquarters in Denver, Encana explores for and produces oil and gas in Colorado, Texas and Wyoming, including Jonah Field and the Wind River and Green River basins.



Eric Marsh, Executive Vice-President for Encana's Natural Gas Economy team (pictured right in the Encana Lab) explains the capabilities of the new Data Center during a simulation exercise. Special guests on hand for the laboratory demonstration were John Davidson of Landmark/Halliburton (left) and College National Advisory Board member Henry Bauer; photo by Thyra Page.





Mobile Laboratory Improves Air Quality Measurements in Sublette County

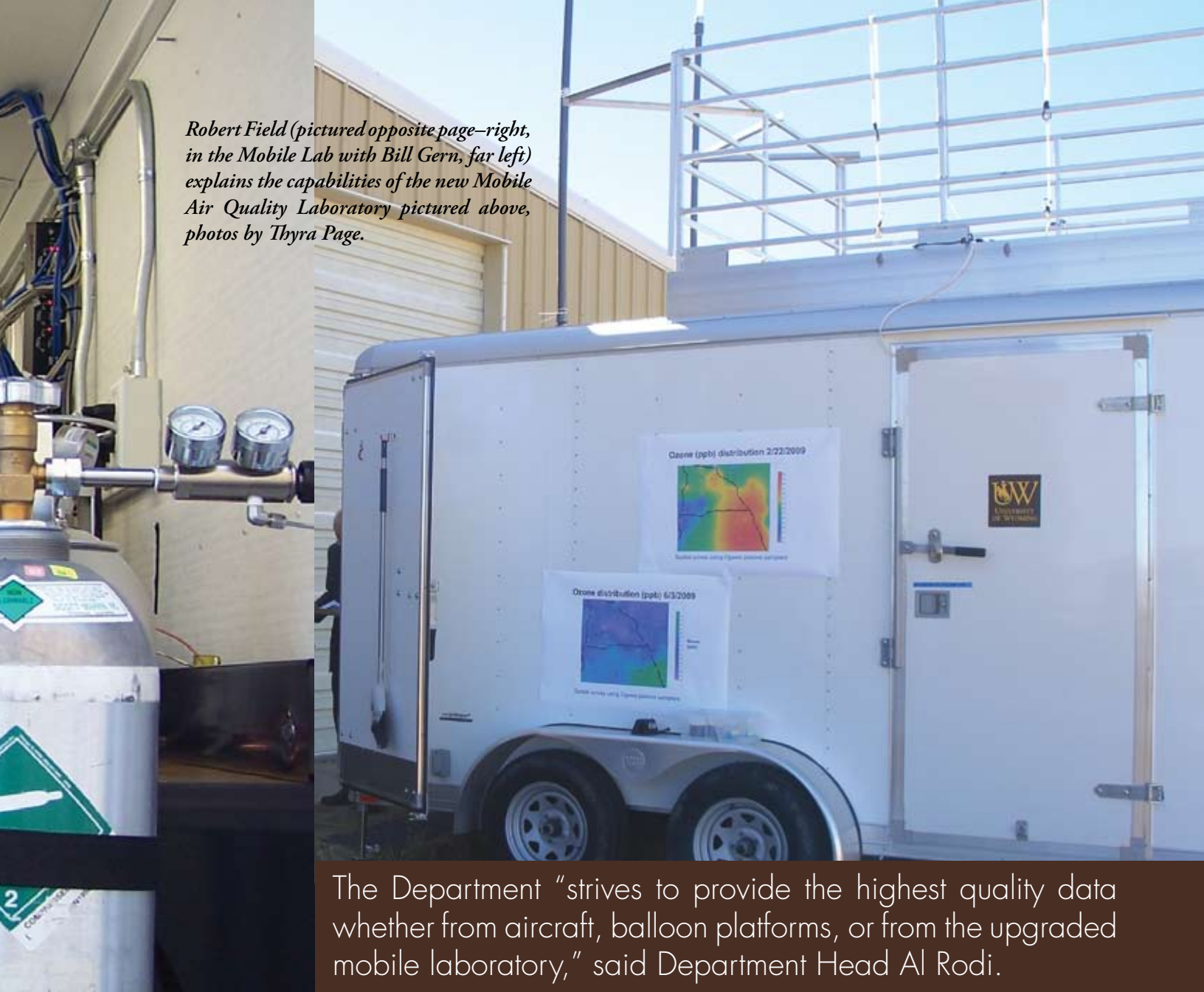
Courtesy of UW News Service

This fall researchers in the Department of Atmospheric Science unveiled an upgrade of a UW mobile air quality monitoring laboratory. The upgrade comes two years after the laboratory was initially built to monitor air quality in Sublette County, Wyoming. In recent years, Sublette County has experienced winter-time ozone episodes – a new air pollution issue for the area. Ozone is regulated through provisions of the Clean Air Act and the National Ambient Air Quality Standard level has been exceeded near the town of Boulder, south of Pinedale.

Laboratory upgrades include the addition of an ozone precursor analysis system. The system samples ambient air and uses gas chromatography to measure volatile organic compounds twenty-four hours a day, seven days a week. Data are then fed into a custom software package that provides accurate and efficient identification of these compounds.

This work has added another area of emphasis to the traditional work of the Atmospheric Science Department. Department Head Al Rodi says the department “always strives to provide the highest quality data whether from aircraft and balloon platforms, or from the upgraded mobile laboratory.” This work has already demonstrated the localized nature of ozone episodes through extensive monitoring during 2008-09.

Robert Field (pictured opposite page—right, in the Mobile Lab with Bill Gern, far left) explains the capabilities of the new Mobile Air Quality Laboratory pictured above, photos by Thyra Page.



The Department “strives to provide the highest quality data whether from aircraft, balloon platforms, or from the upgraded mobile laboratory,” said Department Head Al Rodi.

The upgraded mobile laboratory was re-deployed November 2010 at the edge of the Pinedale Anticline Oil and Gas Development as part of a project jointly funded by the Pinedale Anticline Project Office and the UW School of Energy Resources (SER). “The upgrade is essential for a better understanding of ozone formation,” says Associate Research Scientist Robert Field, one of the project’s Principal Investigators. Another Principal Investigator, UW Atmospheric Science Professor Derek Montague says, “the mobile facility provides the significant advantage of being able to measure ozone precursors at multiple sites of interest rather than being restricted to a single location as for fixed sites.”

“For the past two years this laboratory has enabled important measurements that define the scope of ozone episodes and the ambient levels of methane,” Field said. The on-going measurement project, known as the Pinedale Anticline Spatial Air Quality Assessment, is designed to assist the Wyoming Department of Environmental Quality (WDEQ) Air Quality Division with its air quality management of pollutants related to elevated levels of ozone observed in Sublette County. The project is scheduled to run for the next two years.

“State of the art trace level measurements that show the distribution of key compounds are essential to understand ozone formation,” said Field. “Besides the unique laboratory facility, the current project is using specially treated stainless steel air sample collection canisters and passive samplers during what is now known in Sublette County as ‘ozone season.’” The project will provide essential information for development of predictive ozone models by the WDEQ Air Quality Division. “This mobile laboratory is designed to aid in accurately assessing the impact of development on air quality,” said Mark Northam SER director.

Hansen Named UW Associate Provost

Courtesy of UW News Service

Andy Hansen, professor and former head of the Department of Chemical and Petroleum Engineering, has accepted the position of University of Wyoming associate provost for undergraduate and graduate studies beginning Jan. 1.

“Andy has earned a reputation as an outstanding teacher at all levels; he has an excellent record of research and scholarship, and he has proven himself to be a sure-handed leader in a variety of roles at UW,” says Myron Allen, UW provost. “In my assessment, he has an ideal background for the job. I hope you will join me in welcoming him to this new set of responsibilities”

Hansen has been a member of the UW faculty since 1986, advancing from assistant professor to full professor (1997). He has served as head of the Department of Chemical and Petroleum Engineering; associate dean for graduate programs and research in the UW College of Engineering and Applied Science; founding academic coordinator, UW School of Energy Resources; American Council on Education (ACE) Fellow; and Presidential Faculty Fellow.

While at UW, Hansen has received numerous awards, including Outstanding Faculty Member within the College of Engineering and the Council for Advancement



and Support of Education's Wyoming Professor of the Year.

Among his other honors are College of Engineering Outstanding Undergraduate Teacher, UW Excellence in Advising Award, American Society of Mechanical Engineering Outstanding Contribution, John P. Ellbogen Meritorious Classroom Teaching Award and the UW 2001 Warming up the Chill award recognizing his role as a teacher who values diversity. Hansen earned a B.S. in civil engineering and Ph.D. in mechanical engineering from Montana State University and an M.S. in mechanical engineering from the University of Washington.

Bagley and Schmidt to Lead Engineering Departments

David M. Bagley was recently appointed head of the Chemical and Petroleum Engineering Department for a four-year term, replacing Dr. Andy Hansen who was recently selected as



UW Associate Provost. Bagley previously served as head of the Department of Civil and Architectural Engineering at UW. He received a B.S. in chemical and petroleum refining engineering from the Colorado School of Mines in 1984, M.S. in environmental engineering from Cornell University in 1989, and Ph.D. in environmental engineering also from Cornell University in 1993. He is a registered professional Engineer in Florida, Wyoming and Ontario, Canada.

Richard “Dick” Schmidt was appointed head of the Department of Civil and Architectural Engineering at UW beginning August 1, for a four-year term.

Civil and Architectural Engineering Associate Professor **Rhonda Young** will serve as interim head from Jan. 1 through July 31. Young joined UW in 2002. She came to

UW from KPG, Inc., a consulting firm in Seattle, Wash., where she served as project manager. Her research and professional experience is in the area of transportation with specific focus on roadway design, transportation planning, economics and decision-making techniques.

Schmidt is a graduate of the University of Kansas with a Ph.D. in civil engineering (1986). His work to bridge cultural and language barriers on campus earned him the 2009 Faculty Award for Internationalization. He serves as faculty advisor for the International Engineering Club; established the International Engineering Program, which has led to bilateral exchange agreements between UW and universities in Belgium, France, Germany and Guatemala; and helped students initiate the UW chapter of Engineers Without Borders (EWB), a service organization that partners with communities across the world to develop sustainable solutions to technical problems. He is also a member of the Wyoming professional chapter of EWB. Schmidt's research focuses on connection design for heavy timber structures. He recently completed a five-year term as associate dean in the College and is currently on sabbatical leave in Germany, where he is studying techniques for structural health monitoring using fiber optic sensors.

Electrical and Computer Engineering Receives Department of Energy Grant

Courtesy of Dr.s Pierre and Muknahallipatna

The University of Wyoming (UW) College of Engineering and Applied Science Electrical and Computer Engineering Department has received a half million dollar grant to integrate a mode meter into software for a power system control center. The funding to UW is part of a larger project from the Department of Energy to the Western Electricity Coordinating Council (WECC).

"This project is taking the research and algorithms we've been developing over recent years and coordinates with the WECC to integrate them into actual power system control centers. The goal is real-time estimation of electromechanical modes which is useful for system operators in running the power grid reliably," said Professor John Pierre, UW's project principal investigator. Pierre, along with UW Professor Suresh Muknahallipatna and post doc Luke Dosiek, will be collaborating with faculty at Montana Tech to write the code which will be integrated into a control center vendor's software.

UW's project is part of the WECC's larger smart grid project entitled Western Interconnection Synchrophasor Project (WISP). Synchrophasor devices provide GPS time-synchronized measurement data from throughout the power grid. The WECC is responsible for coordinating and promoting bulk electric system reliability in the Western US power grid. The WECC encompasses 14 western states and parts of Canada and Mexico. Its members face the challenges in coordinating the day-to-day operation and long range planning to provide reliable service to millions of customers spread across nearly 1.8 million square miles.

Dr. John Pierre, a Professor in the Department of Electrical and Computer Engineering, earned a B.S. in electrical engineering with a minor in economics from Montana State University in 1986. He worked as an electrical design engineer for Tektronix, then continued his education at the University of Minnesota where he received M.S. and Ph.D. degrees in electrical engineering after which time joined the faculty at UW in 1992.

"This project is taking the research and algorithms we've been developing over recent years and coordinates with the Western Electricity Coordinating Council to integrate them into actual power system control centers," said Professor John Pierre.

Along with his research interests in applied statistical signal processing and digital signal processing education, he has received over \$1.5 million in external grants as principal or co-principal investigator. Early in his career his primary research was on array and communication system calibration. In recent years he has developed a significant research program investigating system identification techniques to help monitor the stability of the power grid and worked with Intermountain Laboratories in Sheridan, Wyo., on an infrasonic sensor array for avalanche detection.

Dr. Suresh Muknahallipatna joined the faculty in the Department of Electrical and Computer Engineering in 1997. He was previously a post-doc in the Department of Electrical and Computer Engineering at UW. He has been a university professor for the past 12 years and has mentored 20 graduate students. Suresh received a Bachelor of Engineering (1988) in electrical engineering from the Bangalore University, India, a Master of Engineering (1991) in electrical engineering from the Bangalore University and a Ph.D. in electrical engineering (1995) from the University of Wyoming. Current research interests are in storage area, nano-satellite and mobile ad-hoc networks. He is a senior IEEE member.



Contest participants include (back row): Josh Herr, Zeb Fross, Frank Zebre, Ryan Herrod, Jay Wuensch, Sean Ludtke and Chris Prosser; front row: Mason Hall, Dustin Brown, Brett Riotto and David Peek, photo courtesy of James Ward.

Computer Science Team Lands First Place Finish at Computing Machinery Contest, 10th at Regional

Courtesy of James Ward

The Computer Science Department sponsored four teams for the 35th annual Association for Computing Machinery International Collegiate Programming Contest. “The Battle of the Brains is the Olympics of the computer programming world,” says Michael Karasick, vice president of strategy and technology at IBM Software Group. “These students push their minds to the limit, manipulating technologies such as analytics, system optimization and collaboration to effectively solve a semester’s worth of computer programming in just five hours. The amount of talent that we have the opportunity to witness each year is truly impressive and a testament to the value of this competition.” The contest challenges teams to use their programming skills and rely on their mental endurance to solve complex, real-world problems under a five-hour deadline.

UW competes in the Rocky Mountain Regional Contest, which had four sites this year. At the Fort Collins site, UW teams competed directly against 18 teams from the Colorado School of Mines, Colorado State University, Mesa State University, Montana State University and the U.S. Air Force Academy. The regional contest covers the geographic area of Arizona, Utah, Colorado, Wyoming, Eastern Nevada, Idaho,

Montana, Alberta, Saskatchewan, and New Mexico (excluding Dona Ana county). In all, there were 52 teams competing in the regional competition for the top spot, with the winner advancing to world finals in Egypt.

The UW team members that participated in the contest include: WyoGold: Ryan Harrod (Gillette), Jay Wuensch (Gillette) and Frank Zebre (Kemmerer); WyoBown: Don Brockus (Cody), Zebulon Fross (Lysite), and Mason Hall (Casper); WyoPokes: Dustin Brown (Jackson), Sean Ludtke (Cheyenne), and David Peek (Cheyenne); WyoCowboys: Joshua Herr (Cheyenne), Chris Prosser (Thermopolis), and Brett Riotto (Wilson). Computer Science Lecturer James Ward served as coach for all teams.

Members of the local student chapter of ACM honed their skills at programming as well as learning to write successful proposals for travel fund requests. They were granted funds from the ASUW Activities Council and the UW Enrichment Fund for Engineering.

Over the five hours of the competition, the four teams worked hard and submitted a number of programs. When the final results were counted, the WyoGold team had finished first in the Fort Collins site and 10th in the regional contest.

College Awarded Assistive Technology Grant

By Sara DiRienzo/WIND, edited by Thyra Page

The National Science Foundation recently awarded a grant of \$124,855, to the University of Wyoming, College of Engineering and Applied Science (CEAS) to fund the project entitled, "Undergraduate Design Projects to Aid Persons with Disabilities."

In collaboration with the Wyoming Institute for Disabilities (WIND), CEAS will work with engineering students interested in assistive technology from all disciplines enrolled in senior design classes. Interested students will create assistive technology devices to assist individuals with disabilities in Wyoming and the surrounding region. The projects will directly contribute to the quality of life for people with disabilities, with special emphasis on independent living technologies.

The grant is a five-year renewal of the current initiative which recently expired, under the authority of Steven F. Barrett, Ph.D., P.E., CEAS associate dean for academic programs.

The project name, "Accessible Wyoming," encourages students to focus on devices that assist individuals with disabilities explore Wyoming and other frontier states. However, the projects are not limited to that theme.

While Barrett maintains a list of potential projects, he is accepting need-based project ideas from individuals in Wyoming and surrounding states. If a project is accepted, a senior design student will work

on the prototype for a year and the individual will receive the assistive technology device for free, once approved by instructors. Students will be working on assistive technology to aide with all types of disabilities and needs.

"We encourage our students to make and maintain contact with the individual or family while they are working on the project," said Barrett. "There is no need to worry if a project is too big or too small and it is completely free of charge."

Three students have already started their assistive technology projects. Senior students Jennifer Catchpole, computer engineering and Jim Follum, electrical engineering, are working on an alarm clock to assist individuals with hearing impairments.

"The clock will look like a normal alarm clock with two plugs in the back. A lamp will plug into the back and turn on an hour before the alarm will go off," said Follum. "The lamp starts dimly and grows brighter to mimic the sun." The clock will also include a vibrating wristband component.

Senior electrical engineering student, Anthony Michaelis is working on a color detection system to help individuals with color blindness. Michaelis, who is colorblind himself, explained, "You shine the green, blue, and red lights onto an object, and the device measures how much light is reflected back." At that point, a computer reads the results and identifies the color of the object.



Anthony Michaelis (right) is working on a color detection system to help individuals with color blindness, courtesy photo.

"We encourage our students to make and maintain contact with the individual or family while they are working on the needs-based project," said Associate Dean Steve Barrett. "There is no need to worry if a project is too big or too small and it is completely free of charge."

Biennial Report Data

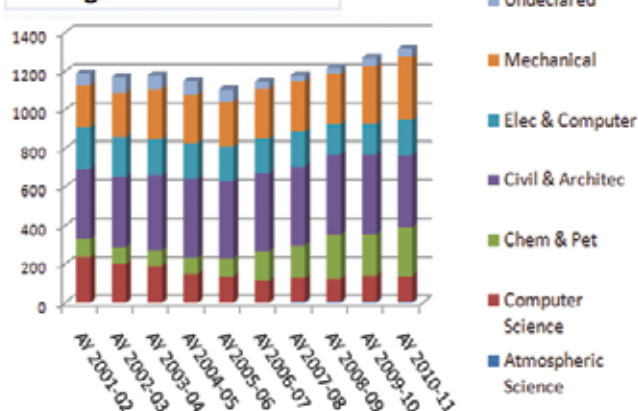
The College's support budget weathered the second of the two-year budget cut implemented in 2009, for a total reduction of 10%. In every way possible, we tightened our belts in an effort to continue all of the outstanding undergraduate programs, graduate education and research opportunities that our students have come to rely on. One small change is that we elected to provide this shortened version of the Biennial Report (versus a separate brochure) so as to insure that you received an overview of the state of the College.

Over the last several years, enrollment in the College has continued to grow at a steady rate. With the booming energy sector, the reintroduction of petroleum engineering, and the support for higher education shown by the State's Hathaway scholarship program, enrollments have exceeded our expectations. Fall 2010 brings 1316 undergraduates and 259 graduate students enrolled versus 1260 and 195 just two years earlier in the fall of 2008.

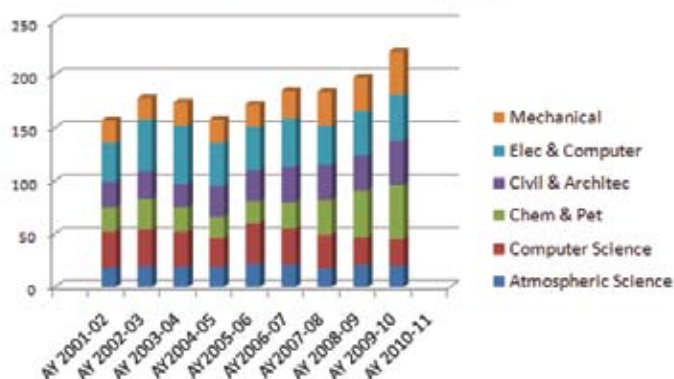
During FY10, the College earned more than \$9 million in research awards, exceeding state appropriations. This is significant to note because without research dollars the College would be limited in its ability to provide the same level of excellence in education. Research dollars are used to build and maintain state-of-the-art teaching and research laboratories, some of which are unique worldwide. The awards were from diverse funding sources, and reflected the range of frontier challenges pursued by the College's faculty, staff, and students. The diagrams on this page indicate the growth in research awards during recent years, the mix of research-funding sources, and the overall composition of funding sources.

In summary, the programs offered by the College of Engineering and Applied Science address the challenges facing Wyoming and the world. Just as important to note, the College's students have fun. The many informal activities available through the College and the University help to ensure that students do more than pursue weighty societal challenges.

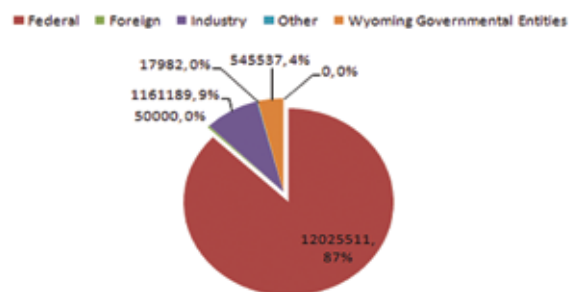
Undergraduate Enrollment



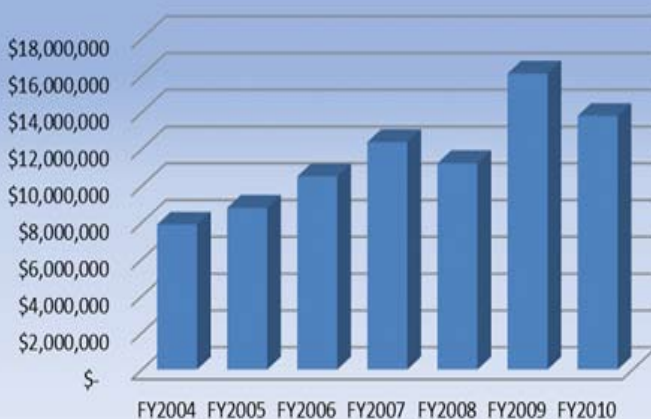
Graduate Enrollment, Fall



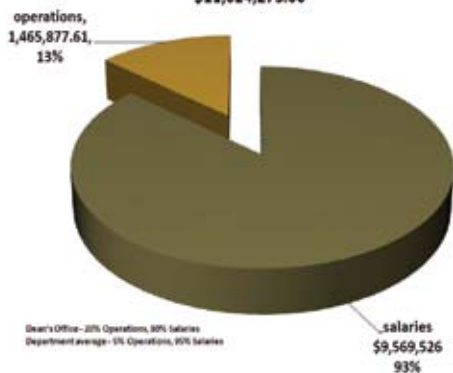
College's Research Awards by Sponsor, FY 2010



Research Awards Fiscal Years 2004-2010



Section I (state) salaries and operations FY2010



THANK YOU

Thank you all for your support and giving over the years and into the future. There are many ways to impact the success of UW students. Rest assured that your gift—no matter how large or how small—will and has done just that. If you have any questions or you would like to discuss your options on ways to give, feel free to contact Laura Baxter, Major Gift Officer, at 307-766-1802, Lbaxter1@uwyo.edu.

CHARITABLE GIFT ANNUITIES

Did you know that you can ensure your retirement income while helping future generations of UW engineering and applied science students achieve their dreams?

Under the terms of a gift annuity, you transfer cash or property to the UW Foundation and receive generous fixed payments for life—how much is determined based upon your age the year the gift is funded. A charitable gift annuity can create a fixed lifetime income for the joint lives of both husband and wife, or it may even benefit a third party such as an aging parent. Gift annuities can benefit you in a variety of ways such as income security, generous fix payments based on the American Council on Gift Annuities current published rates, tax benefits, and a lasting educational legacy.

Single-Life Gift Annuity Rates

Age	Rate*	Age	Rate*
60	5.2%	80	7.2%
65	5.5%	85	8.1%
70	5.8%	90+	9.5%
75	6.4%		

Two-Life Gift Annuity Rates

Age	Rate*	Age	Rate*
60	4.9%	80	6.3%
65	5.1%	85	7.1%
70	5.4%	90	8.3%
75	5.7%		

* Set by the American Council on Gift Annuities, effective 7/1/2010

A Great Example - Jane Holt

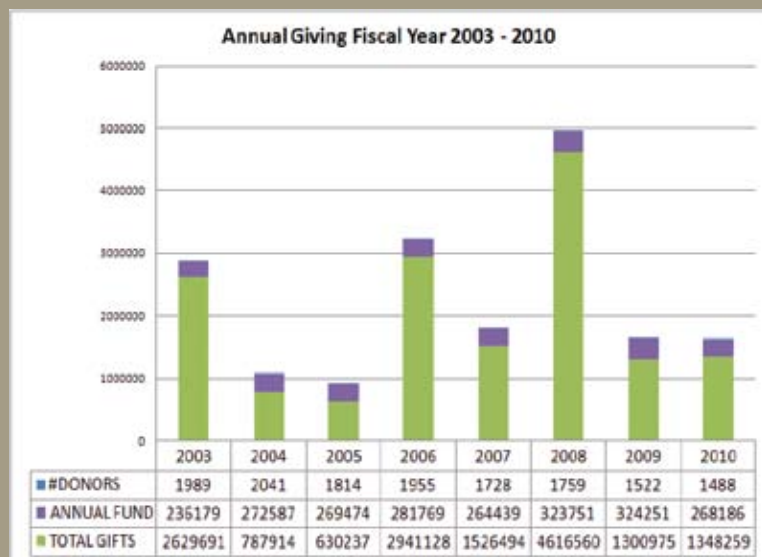
Born in 1921, Jane Holt had a long and successful career as a programmer at the Social Security Administration. While working as an operator, she took night classes to become a programmer at a time when computers still used punch cards. After she retired, she moved to Laramie and took classes at UW, including English literature, computer courses, history, and math. She appreciates UW's summer cultural programs and how senior-friendly UW and Laramie are. Because her father was an engineer, she decided to establish a charitable gift annuity that benefits students in the College through the Jane N. Holt Scholarship fund. Then she set up another, and then a third. A charitable gift annuity allows donors to benefit the UW program of their choice while retaining a predictable and steady stream of income for the balance of their lives. "Math and science are very important to our future," says Jane.

The Charitable IRA Rollover Has Been Extended

The charitable IRA rollover allows those who are 70½ or older to make tax-free gifts of up to \$100,000 to qualified charitable organizations such as the University of Wyoming Foundation. The funds must be transferred directly from an IRA. President Obama signed legislation extending this rollover for 2010 and 2011. Because of the tight window between now and the end of the year, new legislation gives you until Jan. 31, 2011, to make a gift that is effective in 2010. This does not, however, reduce your opportunity to make an additional contribution of up to \$100,000 in 2011 and obtain the same benefits for that tax year. The benefits of utilizing the charitable IRA rollover are that you can meet your charitable giving goals by transferring your required minimum distribution (as well as additional amounts) to UW and avoid the income tax on these funds (if you don't need that income).

Questions?

Please contact Tracy Richardson, Director of Planned Giving, UW Foundation, at (307) 766-3934 or trichar6@uwyo.edu. Please consult your attorney or tax advisor before making any decision related to a planned gift.



In Memoriam

Sadly since our last issue, we have lost the following alumni. Our sympathy goes out to the families of our valued alumni and friends.

Gerald D. Allard, Jr., BSPE 1965	El Paso, TX	Wesley J. Nelson, BS AgEN 1949	Laramie, WY
David K. Bement, BSEE 1962	McKinney, TX	Robert L. Olsen, BSME, 1952	Pasco, WA
Neil D. Buchanan, BSME 1967	Manderson, WY	James D. Perry, BSCE 1987	Ashburn, VA
William H. Cain, Jr., BSME 1967	Geronimo, OK	Bruce J. Policky, BSPE 1978	Spring, TX
Leonard Colpitts, Jr., BSEE 1978	Mesa, AZ	Robert L. Pollard, BSCE1969	Aurora, CO
Jennings R. Furgason, BSME 1958	Cheyenne, WY	Louis Ruffini, BSEE 1950	Rock Springs, WY
Edward M. Harboe, BSEE 1942	Denver, CO	Francis J. Sakmar, BSME 1961	Monument, CO
Charley R. Johnson, BSCE 1959	Las Vegas, NV	Claude R. Satterfield, BSCE 1948	Wichita, KS
Craig D. Kestner, BSCE 1982	Basin, WY	Robert E. Shipp, BSEE 1949	Rocklin, CA
Col. Donald E. Langwell, BSEE 1957	Las Cruces, NM	Henry A. Steinhausen, BSCE 1961	Thornton, CO
Thomas T. Logan, BSME 1958	Redondo Beach, CA	John D. Stewart, BSGE 1960	Tulsa, OK
August C. Moncini, BSME 1940	Albany, OR		

James Irwin Cavalli died Wednesday, Nov. 17 at the age of 64. He was born Oct. 3, 1946, to Roy and Frieda (Moore) Cavalli, in Fort Ord, Calif. His family later moved to Cheyenne, where he graduated from Cheyenne Central in 1965. He completed his civil engineering degree at the University of Wyoming in 1969 and went to work for Wyoming Department of Transportation.



He met and married his wife Linda (Brown) Cavalli, of Cheyenne, on Aug. 8, 1970. They enjoyed the time they had together and their marriage was a testament to all who viewed it. Together they raised two very successful children. He was very proud of all the accomplishments of both Matthew and Michelle.

He worked for Banner and Aspen-Banner Engineering for 42 years. He worked on the Hog Park Reservoir, Rob Roy Reservoir and Grey Rocks Reservoir. He knew the sewer, storm sewer and water layouts of Medicine Bow, Rock River and most of Laramie. His goal before retirement was to design placement of 1,000 miles of pipe. He had 985 miles at the time of his death. You almost made it, Jim.

Professionally, he was active in the Wyoming Engineering Society, serving as president in 2009. He participated in promoting scholarships for University of Wyoming engineering students through the Wyoming Engineering Society Chapter.

Serving his community was extremely important to him. During his service, he was awarded the Top Hand Award from the Chamber of Commerce in 2002; the Business Person of the Year in 2003; and Laramie Area Chamber of Commerce President Award in 2005.

He also served as president of the United Way and Laramie Economic Development Corporation. He also recruited Linda into serving as co-chairs of the United Way Drive in 2005.

He was an avid Wyoming Cowboy fan. He could be found in any weather supporting the Cowboys and Cowgirls. He was a longtime season ticket holder in multiple sports.

He is preceded in death by his mother, Frieda Cavalli. He is survived by his wife Linda; his son, Matthew (Kristina) Cavalli, of East Grand Forks, Minn.; and his daughter, Michelle (fiance Greg Sawyer) Cavalli, of Hong Kong. He is also survived by his 90-year-old father, Roy, of Cheyenne; sisters, Barbara (Red) Redmond of Cheyenne, and Janet (Darrel) Blevins of Powell; and his three grandchildren Emma Grace, Joshua Roy and the expected grandchild, all of Minnesota; and many nieces, nephews, aunts and uncles. He is leaving behind an incredibly wide circle of friends who will miss him.

In lieu of flowers, memorial contributions may be made to: United Way of Albany County, c/o Jim Cavalli Memorial, 710 E. Garfield, Suite 116, Laramie, WY 82070 or Wyoming Engineering Society Scholarship Fund, c/o Jim Cavalli Memorial, 1007 E. Curtis, Laramie, WY 82072.

Originally published in the Laramie Boomerang.

Student Highlights

Travis Dustin Bolinger, B.S. computer science, and current graduate student in Computer Science, was awarded an Upsilon PI Epsilon International Honor Society for Computing and Information Disciplines scholarship in the amount of \$1,000 for academic year 2010-11.

From Aurora, Colorado, Travis applied to UW starting fall 2006 semester, following graduation from Grandview High School in Centennial, Colorado. He received a B.S. in computer science last May and is working in the Computer Science masters program. He is working on his thesis project, under the direction of Dr. Ruben Gamboa, on the topic of parallel processing using commodity machines to store and manipulate astronomical databases. Travis was a founding member of the UPE Wyoming Chapter last year and is involved in the UW chapter of the Association for Computing. He plans to graduate in May 2011, with a masters degree and hopes to find employment in the Denver metro area.

Electrical engineering student, **Dax Crum**, of Phoenix, Ariz., was recently honored at the University of Wyoming Football 2010 awards program. In addition to honoring the 2010 senior class, a total of 15 awards were handed out in honor of the top performers on this year's Cowboy Football team. Crum received both the Brent Schieffer Most Inspirational Player award and the Brian Lee Scholar-Athlete award. A senior at UW, Dax Crum will graduate in May 2011, with a B.S. in electrical engineering.



Sameep Deshpande, Master's candidate from Nashik, Maharashtra, India, joined the UW Department of Mechanical Engineering in spring 2010. He has a bachelor of engineering in mechanical engineering from the University of

Pune in India. He is working under the direction of Dr. Yuan Zheng on research in the specialty of "Advanced Solar Coal Gasification." The Objective of the research is "Coal Gasification Technology" using solar power to produce "Syngas," a high-quality gaseous fuel that can be used in efficient combined cycles or fuel cells and is cleaner than the original solid feedstock. Its energy content increases by the solar input in an amount equal to the energy change



Associate Dean Steven Barrett, Union Wireless Recruiting Specialist Justin Kaiser and Union Wireless Director of Human Resources Frank Draney (far right) present the Union Wireless Scholarship to Robert W. Streeter, senior engineering student from Saratoga, photo courtesy of Union Wireless.

of the gasification reaction. In addition, the technique is a clean coal technology which is helpful in carbon capture and hence control over CO₂ emissions.

Mahdi Kazempour is a Ph.D. candidate in the Department of Chemical and Petroleum Engineering. Mahdi has a B.S. in chemical engineering from Sharif University of Technology in Tehran, Iran, and an M.S. in chemical engineering with a focus on process design, simulation and control, from Iran University of Science and Technology. Current research focuses on chemical flooding simulation and modeling, considering new aspects such as reactive transport modeling.

Vijay Sabawat received first place honors for his submittal of an original written paper on rural intelligent transportation systems to the 2010 National Rural Intelligent Transportation System (NRITS) Conference. Papers were reviewed and scored by transportation industry leaders active in the field of rural ITS. Vijay is from Hyderabad, India, and is seeking a Ph.D. in civil engineering working under the direction of Dr. Rhonda Young in the Department of Civil and Architectural Engineering (transportation).

Robert W. Streeter, Saratoga, Wyo., is the 2010 recipient of the Union Wireless Engineering and Applied Science Scholarship. This is the second year of the annual scholarship agreement between Union Wireless and the University.

UPCOMING EVENTS

Visit our Booth at the
Wyoming Engineering
Society Convention
February 3-4
Little America Hotel,
Cheyenne, Wyoming

Tau Beta Pi
Honors Banquet
April 15
Crane-Hill
Dining Room
RSVP due by April 8
to engevents@uwyo.edu
or (307) 766-4248

Visit our Booth—#600
at the
CBM Energy Expo
June 15-16
Gillette, Wyoming

Thank you for your support of
the College of Engineering and
Applied Science!
Please contact the College
Communications Office at
(307) 766-4248
or by e-mail to
engevents@uwyo.edu about
other exciting events.

Faculty and Staff Highlights



Brian Towler

David Bell, with co-authors **Brian Towler** and **Maohong Fan**, recently published their text entitled *Coal Gasification and Its Applications*. The book approaches coal gasification and related technologies from a process engineering point of view, with topics chosen to aid the process engineer who is interested in a complete, coal-to-products system. It provides a perspective for engineers and scientists who analyze and improve components of coal conversion processes.

Charlie Dolan, Ryan Kobbe, and Dave Walrath were recently honored by UW Mortar Board members as “Top Profs” at a recent ceremony. All of the members of the senior honor society selected professors who have made a positive impact on their lives at UW. These professors go beyond normal classroom expectations to help their students succeed, both in college and later in their careers. “Being selected as a ‘Top Prof’ is a great honor for professors because they are chosen by the students,” says College of Engineering and Applied Science Professor David Whitman, Mortar Board adviser. Selection as a member of Mortar Board is one of the highest honors that a UW senior can achieve. Mortar Board recognizes students who have excelled in and out of the classroom, based on scholarship, leadership and service. Mortar Board members participate in many projects and activities throughout the year, both on campus and in the Laramie community.



Ryan Kobbe

Associate Professor **Robert Kubichek**, Electrical and Computer Engineering, is on a sabbatical leave at the Advanced Research Laboratory (ARL) at the University of Texas at Austin for the Spring 2011 semester. Dr. Kubichek will be participating in a project to develop underwater acoustic communication systems. The system uses multiple acoustical sensors to counter adverse channel effects such as noise and interference. This involves areas of signal processing and software-defined radio. This collaboration is expected to yield a variety of joint publications and proposals, and in the future may result in projects involving UW students and ARL.

National Science Foundation (NSF) Faculty Early Career Development recipient, **Chung-Souk Han**, Ph.D., has recently joined the UW Mechanical Engineering Department as an associate professor. For his NSF career award, Dr. Han receives a five-year, \$400,000 award from the NSF to conduct research outlined in his proposal titled “Integrated Research and Education on the Size Dependent Deformation in Polymers –Indentation Tests, Material Modeling, and Numerical Simulations.”



Chung-Souk Hann

Alumni Highlights

Craig Alburn, B.S. civil engineering 1988, M.S. civil engineering 2002, and his wife Ann welcomed daughter Caylee Ryann on September 8. Weighing 7 pounds, 11 ounces and 20 inches long, she joins her new family and sibling Levi.

James Heimbeck, B.S. computer science 1983, M.S. EBusiness 2004, is currently employed with Fusionbox, a Denver agency working with web developers and the team managing projects. He was with InComm previously, where he managed projects and integrations with the company's web based and financial service applications.

Newlywed **Julie (Sandberg) Read** graduated from UW in 2007 with a B.S. in electrical engineering and an M.S. in aerospace engineering in 2010 from Texas A&M University. Julie is currently employed with Odyssey Space Research in Houston, Texas. **Tim Read** graduated from UW in 2007 with a B.S. in political science and a B.S. in management. He then earned an M.S. in industrial engineering at Texas A&M University in May 2010. He is currently working on his Ph.D. in Occupational Injury Prevention at the University of Texas School of Public Health in Houston. Both Julie and Tim were members of the UW Chapter of Tau Beta Pi, the engineering honor society. We wish them well as they begin their new lives together.

Leith Sheets, B.S. civil engineering 2009, and his wife Brittany welcomed a son, Teagan Franklin Sheets. Teagan weight 7 pounds, 1/2 ounce and was born November 25. Maternal grandparents are David and Cindy Matthews of Evanston. Paternal grandparents are Frank and Debbie Sheets, also of Evanston.

Michael Sullivan, B.S. petroleum engineering 1961, JD 1964 Law, is among ten attorneys from Rothgerber Johnson & Lyons, LLP, selected by their peers for inclusion on the list of Best Lawyers in America for 2011. Mike works in the Casper office of the firm and was selected for his work in alternative dispute resolution and international arbitration.

Hank Swartout, B.S. petroleum engineering 1977, was elected Chairman of the Board and CEO of Saxon Oil Company Ltd. He previously held positions as manager of Bawden Western Oceanic Offshore, vice president of rig design and construction for Dresco and manager of construction for Nabors Drilling Canada. Saxon Oil Company is an independent international oil and gas company engaged in the acquisition, development, and production of oil and natural gas reserves.

Married Sept. 18, 2010, **Dorothea Tribble** obtained a B.S. in architectural engineering in 2000 and Ellis Michael Ott obtained a B.S. in mathematics in 2000 from the University of Alaska; M.S. statistics 2002 and Ph.D. statistics and education in 2007, from Iowa State University. Dorothea interned as a structural engineer with firms in Albuquerque, New Mexico, and Idaho Falls, and earned her professional engineer license. She is currently a teaching assistant at the University of Alaska Fairbanks pursuing a masters degree in civil engineering. Ellis is a research associate and accountability coordinator with the Fairbanks North Star Borough School District. Congratulations!

Nicholas "Nick" Wilson of Cowley, Wyo., (B.S. civil engineering 2006) is now a licensed professional engineer in Utah with his recent passing of the Principles and Practice of Engineering Exam in April 2010. He currently resides in Salt Lake City, Utah, with his wife and two young sons and is employed by PCL Construction Inc., one of the top five largest construction firms in the U.S. and Canada.



Mr. and Mrs. Tim Read



Mr. and Mrs. Ellis Michael Ott

Borgialli Retires after 30 Years with the College



Over the last 30 years, senior engineer and mechanical engineering graduate **Ron Borgialli** has provided the Department of Chemical and Petroleum Engineering and its collaborators with technical support that is critical to research and instruction. Ron retired in January after his dedicated service to the

liquefaction project, one of a kind, it was in operation for several years.

Ron worked with Professor Chang Yul Cha on the tire project for several years converting old tires into a liquid fuel source—carbon black was a very useful by-product from the process. He has designed and built many reactors in the department, some that come to mind are corona discharge while he worked with professor Pradeep Agarwal. The reactors were designed to break down H₂S. He has also designed and manufactured many projects for GE working with Professor John Ackerman.

College.

Ron grew up in Newcastle and from high school, attended Sheridan Junior College for two years. He worked at Kerr McGee one summer building the coal silos and decided that it might be easier to get back into school and finish up a degree. He came to the University of Wyoming and chose the Mechanical Engineering degree program, graduating in December 1979. Before graduating he worked for Professor Howard Silver in the Chemical Engineering Department on his coal liquefaction project. After graduating, Professor Silver offered him a full time staff position, which he accepted and continued for over six years, after which time he was out of a job due to lack of funding for Professor Silver's project. He met his wife Sheryl during that time and they liked Laramie and decided to stay until something else came along. He did odd jobs for over two years when Professor Henry Haynes called to ask if he wanted to come back to work for him. Ron accepted and started work on a new design for a small scale continuous coal

liquefaction project, one of a kind, it was in operation for several years.

Professor Mohammed Piri has provided Ron with many challenging projects in the past five years. The most recent project is a high pressure Hast X cell used for measuring drop size under high pressure.

Professor Norm Morrow and Ron have worked out many “kinks” in the field of core flooding. They have made new designs in the core holder making it much easier for the students to use. Ron, George and Dean Twitchell have made over 40 of the new core holders in stainless steel which is corrosion resistant with the higher salt concentrations used in today's flooding experiments.

Ron wishes to thank every faculty and staff member as well as his family members that have supported and mentored him over the years. The students and their projects are a challenge and many thanks to them for their cooperation and collaborative efforts. Special thanks to Frank Garen and Dominic Palese who were with the Department as technical staff over 20 years ago.

Enjoy Ron—we will miss you!!

Send News to
engevents@uwyo.edu
by May 1st

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