THE MAGAZINE FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF WYOMING

Volume 18, Number 1, September 2016

UW TRUSTEES EDUCATION INITIATIVE

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EDUCATION INITIATIVE





On the COVET Riley Abramson, Cord Cossairt and other fifth- and six-graders from Andy Pannell's UW Lab School class experience water and oil molecules in 3-D using Associate Professor Alan Buss's program (see page 70).

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UWyo

September 2016 Volume 18, Number 1 UWYO.EDU/UWYO

The Magazine for Alumni and Friends of the University of Wyoming

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UWvo is published three times per year as a partnership between UW Institutional Marketing and the UW Foundation. UWvo is supported by the UW Alumni Association, UW Research & Economic Development, Student Affairs, Academic Affairs, and the Office of the President. ©2016 by the University of Wyoming. All rights reserved. Excerpts from this magazine may be reprinted with permission, provided appropriate credit is given to the University of Wyoming and copies of reprinted materials are provided to the editor.

UWyo

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Persons seeking admission to the University of Wyoming shall be considered without regard to race, color, religion, sex, national origin, disability, age, veteran status, sexual orientation or political belief.

₩UW editor's letter



Teaching Excellence

I always loved going to school. I owe that to amazing teachers and educational leaders who nurtured a creative, hands-on learning environment that kept me coming back for more. Last year, my two children began attending the UW Lab School, a public school on the University of Wyoming's Laramie campus. Many of the teachers are UW graduates, and many of UW's student teachers cycle through the school. It's encouraging to see my

kids receiving such a quality education and engaging in projects they care about.

In May, my eighth-grader was among 12 children who—accompanied by a Lab School teacher, a Laramie High School teacher, a UW professor and UW College of Education students—participated in an international youth summit in Croatia, sponsored by the International Center for Innovation in Education. Along with students from Poland, Serbia, Japan, Germany and other countries, they gave panel presentations on everything from activism and social justice to entrepreneurship, art and science. They went on to do service work and to travel the country. Not only was the experience educational, it was life-changing an excellent example of what can happen when educators embrace innovation.

Preparing stellar teachers, counselors and school administrators is what the University of Wyoming's Trustees Education Initiative is all about.

In this issue of *UWyo Magazine*, you'll get the inside scoop on the initiative, as well as the distinctive, connected, impactful and recognized programs already underway at the College of Education.

Whether it's for our own children, grandchildren, nieces, nephews or future employees, we all can celebrate the importance of a great education.

Micaela Myers

Micaela Myers Editor, *UWyo Magazine*

Teachers, UW students and middle school students attend the International Conference on Excellence, Creativity, and Innovation in Basic & Higher Education in Croatia.





UNIVERSITY OF WYOMING

www.uwyo.edu/ceas

I felt the education and experience I had at UW was really beneficial for my career path. I had sufficient training and good interaction to prepare me for the real world. It wasn't just out of the textbook. I gained the design experience and applied that in my first and subsequent jobs. -Carla Hansen, Architectural Engineering '01

WHAT CAN A DEGREE FROM UW DO FOR YOU?

The **College of Engineering and Applied Science** is a nationally recognized institution of academic excellence and **world-class research.** Rewarding and dynamic careers await individuals who graduate from one of our areas of study. Find opportunities to learn alongside industry professionals and renowned faculty by developing real-world projects. **54%** of UW students graduate with little to no debt.

\$59,000 – Average starting salary for our graduates.



Vibrant UW Has a Bright Future

By Laurie Nichols

It has been quite a whirlwind since I became the University of Wyoming's 26th president on May 16. In addition to getting to know the outstanding people and programs of the institution, I have traveled around Wyoming to learn everything I can about the state, meet its people and hear their thoughts and desires for the state's university.

The common theme of all of those interactions has been affection for and pride in the university, along with the expectation that it deliver on its land-grant mission of

access, quality education, research to stimulate the economy, and service to the state and nation. The support from the state and UW's many alumni is remarkable, and I am more convinced than ever that the university's future is as bright as the beautiful summer sunshine I have enjoyed in my first months in Wyoming.

In spite of the drop in state funding as a result of Wyoming's economic downturn, UW remains as vibrant as ever. In fact, I am confident UW will emerge from this difficult time as an even stronger, more focused institution.

As we reduce budgets in response to declining state revenues, students will continue to be the university's top priority. We are committed to delivering high-quality education and student success, including recruitment/access, retention, persistence, transfer ease, and timely completion of degrees. UW will continue to place the quality of academic programs as a high priority.

Many universities across the country have gone through a similar process in recent years. Some have resorted to massive programs cuts and hefty tuition increases. I do not expect ours will be of that magnitude, although we will no doubt do some of this. Wyoming supports its public university, and its students, at the highest level of any state in the nation—as a result, our tuition for resident undergraduates is by far the lowest in the country, and tuition for nonresidents is among the lowest. Our standing as one of the nation's lowest-cost universities will not change.

In the coming weeks, we will prepare a plan to present to the Board of Trustees for additional reductions in the 2017–18 academic year. That plan likely will include elimination or combining of academic and non-academic programs, restructuring or reorganization of departments or other units, and finding more efficient ways of doing university business. The goal will be to focus on our core mission while becoming more streamlined, nimble and efficient.



I experienced a similar budget reduction at my previous university, so I know that reductions cause stress and impact morale. But I also know that it is possible for an institution to go through reductions of this magnitude and emerge in a favorable position as a result of prioritization and innovative thinking. I'm committed to making sure that is the case for UW. Strategic planning is one of my first priorities for the university, and I intend for it to move forward in the coming year in an inclusive and transparent manner.

One of the major issues to be determined in the planning process is UW's enrollment capacity and the optimal size of the university. We have been pretty steady at between 13,000 and 13,500 students in recent years. We need to decide how much and how fast the university should grow in the years to come, and how student-generated tuition and fees will factor into a new revenue model for the university.

Even amid the talk of budget cuts, I'm excited that there are big things still happening at the university. Because of strong support from the governor, legislators and private interests, the university has three major initiatives underway: the Tier-1 Engineering Initiative, the Science Initiative and the Trustees Education Initiative. These involve investments in programs and facilities, and they will have significant, positive benefits for our students and the state's economy.

In spite of the challenges facing Wyoming, I remain optimistic for the university and the state's education system. Higher education is critical to Wyoming's future, because our graduates are the people who will drive the innovations for the state's key industries; develop new ideas and businesses to diversify the state's economy; and assure that Wyoming remains a great place to live, work, play and raise families.

The University of Wyoming is an outstanding institution of higher learning, committed to the achievement of our students. I decided to accept the position of president this year because of our extremely bright future, and I feel even more strongly about it now. After meeting many of our outstanding faculty and staff members, interacting with a good number of students and traveling around the state, I am convinced that we are a great university poised to achieve even higher levels of excellence.

Lami S. nichol



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UNIVERSITY OF WYOMING

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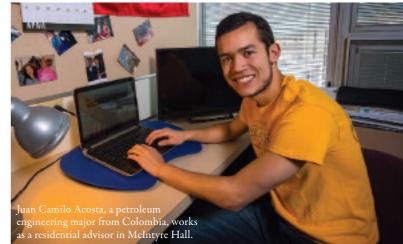


Cari Sue Covolo, an agriculture teacher at Mountain View High School, takes part in a joint workshop by UW and Teton Science Schools that brought teachers from across Wyoming to Evanston for three days of hands-on learning about science experiments they can implement into their classes.

Mechanical engineering Ph.D. student Daniel Merkel works with high school student Spencer Swift during the Engineering Summer Program.







Kanti Devote is nursing major from Nepal.



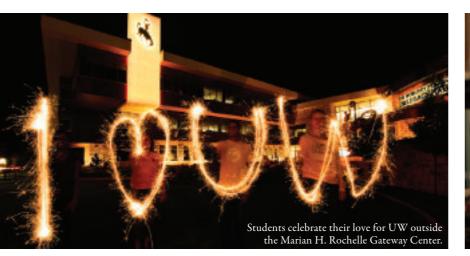


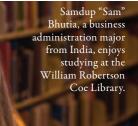
UW student Caitlin Murch works with young golfers Dillon and Cameron during the Jacoby Golf Course First Tee program in June.





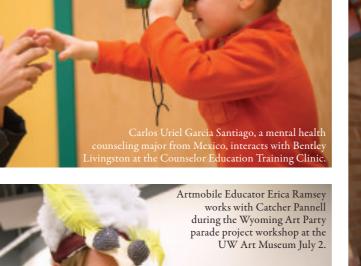














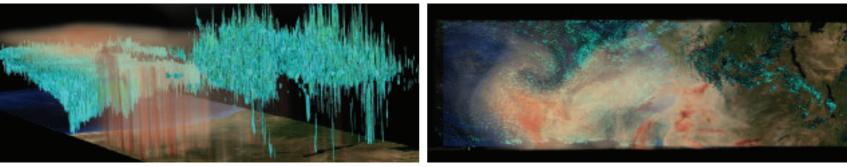
Kaitlyn Foster attends UW through the Outreach School's Northeast Regional Center in Gillette







CELEBRATING FOUR YEARS WYOMING SUPERCOMPUTING

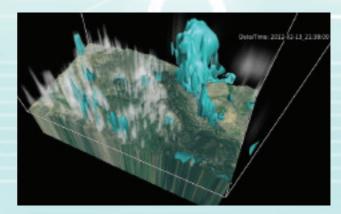


Left and right: The supercomputing work of UW atmospheric science Professors Xiaohong Liu and Bart Geerts shows simulations of smoke particulates from South Africa moving to the atmosphere and impacting cloud formation and weather patterns.

2016 marks the four-year anniversary of the National Center for Atmospheric Research (NCAR)-Wyoming Supercomputing Center (NWSC). When the supercomputer known as Yellowstone was installed in 2012, it was among the world's fastest, most data-intensive supercomputers with a speed of 1.5 petaflops and a bytes-to-flops ratio of about 11. This means that it can perform 1.5 quadrillion operations per second and input or output 11 pieces of information per calculation. The NWSC is the result of a partnership among the University Corporation for Atmospheric Research, the operating entity for NCAR; the University of Wyoming; the state of Wyoming; Cheyenne LEADS; the Wyoming Business Council; and Black Hills Energy. The NWSC is operated by NCAR under sponsorship of the National Science Foundation. Now a new supercomputer is on the way. Yellowstone's successor, Cheyenne, will come online at NWSC in early 2017.

"Researchers at the University of Wyoming will make great use of the new system as they continue their work into better understanding such areas as the surface and subsurface flows of water and other liquids, cloud processes and the design of wind energy plants. UW's relationship with NCAR through the NWSC has greatly strengthened our scientific computing and data-centric research. It's helping us introduce the next generation of scientists and engineers to these endeavors."

-William Gern, UW vice president of research and economic development



Professor Bart Geerts' study of how cloud seeding can enhance precipitation in Wyoming created this simulation image.

DEDICATED TO SCIENCE

NWSC is dedicated to improving scientific understanding of climate, severe weather, air quality and other vital atmospheric science and geoscience topics. The center also houses a premier data storage (16 petabytes) and archival facility that holds historical climate records and other information. UW faculty, graduate students and collaborators use Yellowstone to gain a better understanding of cloud formation and seeding, extreme weather events, the geohydrology of Wyoming's river basin, seismic hazard evaluation, planet formation, wind energy and carbon sequestration and storage.

5.34 QUADRILLION

The successor to Yellowstone, nicknamed Cheyenne, is a new 5.34-petaflop, highperformance computer, meaning it can carry out 5.34 quadrillion calculations per second. It will be capable of more than 2.5 times the amount of scientific computing performed by Yellowstone.

145,152

Cheyenne will feature 145,152 latest-generation Intel Xeon processor cores in 4,032 dual-socket nodes (36 cores/node) and 313 terabytes of total memory.



Since the facility opened in 2012, more than 2,200 scientists from more than 300 universities and federal labs have used its resources.

3Xs

Despite its increased power, Cheyenne will be three times more energy efficient than Yellowstone, which is itself highly efficient.

2017

Cheyenne will be installed at the NWSC during the second half of 2016 and is scheduled to become operational at the beginning of 2017.

008

In addition to core hours, Wyoming's share of the NWSC resources is around 800 terabytes of high-performance storage and 5 petabytes of long-term tape storage.

75 MILLION

UW's current share of the NWSC resource is 75 million core hours on 30 open projects. This share of core hours will more than double next year. One core hour is the equivalent of running one application on a single computer for one hour. This level of usage ranks Wyoming No. 1 in total allocations and usage. No. 1 in total usage and third in active projects of the NWSC-among the more than 100 universities with access to the center.

KEY TOOL

Cheyenne will serve as a key tool for researchers at UW and across the country studying effects of climate variability on the world's ecosystems, severe weather, geomagnetic storms, seismic activity, air quality, wildfires and other geoscience topics.



GILLETTE STUDENT WINS \$30K ENTREPRENEURSHIP COMPETITION AT UW

Trevor Trouchon, a UW sophomore computer engineering student from Gillette, won this year's John P. Ellbogen \$30K Entrepreneurship Competition sponsored by the UW College of Business. Trouchon's proposed company, SanMon, specializes in designing and providing



tools to sanitary companies to help maintain the cleanliness of portable toilets (porta-potties). In total, he will receive \$15,000 and space in the Wyoming Technology Business Center for one year to grow the business. Second- and third-place students also received prizes.

UW NAMES KATE MILLER PROVOST/VICE PRESIDENT FOR ACADEMIC AFFAIRS



Kate Miller, an accomplished geophysicist who led Texas A&M University's College of Geosciences for the past seven years, was named UW provost and vice president for academic affairs and began duties in August. Miller started her career as an Amoco Production Co. geologist before earning a Ph.D. from Stanford University in 1991. She succeeds David Jones, who returns to the faculty of UW's College of

Health Sciences. The provost/vice president for academic affairs is the second-ranking leadership position at the university.

UW TRUSTEES ELECT MACPHERSON AS BOARD PRESIDENT

Saratoga attorney John MacPherson was elected in May as president of the UW Board of Trustees. MacPherson, who served as the board's vice president for the past two years, takes the gavel from Dave Palmerlee of Buffalo. MacPherson first was appointed as a trustee by Gov. Matt Mead in 2011. Dave True of Casper was elected vice president; Jeff Marsh of Torrington was elected secretary; and John McKinley of Cheyenne was elected treasurer.



UW DEBATE TEAM MAKES HISTORY

UW debate team members Hunter McFarland and Mary Marcum concluded their collegiate debate careers this spring with historic finishes at the national championships. The senior duo competed first at the Cross Examination Debate Association national championship in Binghamton, N.Y., where more than 100 teams participated. During the preliminary debates, the two scored six wins, which earned them the 13th seed in the tournament going into the elimination-round debates. McFarland, of Twin Falls, Idaho, and Marcum, of Omaha, Neb., ended the competition in the Elite Eight. No other UW team has advanced to that level in more than 40 years. McFarland and Marcum then competed at the qualification-only championship National Debate Tournament, where they advanced to the elimination rounds.

NEW UW PLAY THERAPY CENTER RECEIVES NATIONAL APPROVAL

Recent recognition is raising the visibility of the new Rocky Mountain Center of Play Therapy Studies. The Association for Play Therapy recently awarded "Approved Center of Play Therapy Education" status to UW's program, housed in the College of Education's Department of Professional Studies. Kara Carnes-Holt, assistant professor of counselor education, was named center's first director when it opened in May. UW is now one of only 14 approved play therapy centers in the country.



Along Wyenolog's Hanne Highway 20

Pressioner



BOOKS IN STORE

The University Store (**uwyostore.com**) is home to one of the largest selections of





books by Wyoming authors and about Wyoming. Titles include *Rangeland Plants: Wyoming Tough* by Mae Smith, et al., from University of Wyoming Extension; *Along Wyoming's Historic Highway 20* by Michael J. Till; *The Small-Town Midwest: Resilience and Hope in the Twenty-First Century* by Julianne Couch; *Wild Mammals of Wyoming and Yellowstone National Park* by Steven W. Buskirk; 8000 Miles of Dirt: A Backroad Travel Guide *to Wyoming* by Dan Lewis; and *Wyoming Grasslands*, photographs by Michael P. Berman and William S. Sutton and text by Frank H. Goodyear Jr. and Charles R. Preston.

UW BY THE NUMBERS

7

UW rodeo team member Josee Vogel placed seventh in goat tying at the College National Finals Rodeo this June.

No. 4

UW ranks the fourth most physically active campus among 29 small public universities, according to a recent national survey from the National Collegiate Fitness Index.

11

Eleven UW students and their proposed companies were named as finalists in the first Fischer Innovation Challenge in June. The competition, supported through a financial gift from Donne Fisher and matched by the UW Office of Research and Economic Development, seeks to catalyze Wyoming technology startup businesses. The finalists now compete to apply for

\$125,000 in seed money.

Two papers by molecular biology Professor Mark Gomelsky's laboratory were nominated by the editorial board of the *Journal of Bacteriology* to be included on the list of 100 most influential papers published in this journal since 1916.

No. 5

Great Value Colleges ranked UW fifth in its list of "20 Great Recreation Centers at Small Colleges."





UW SELECTED AS PART OF \$20 MILLION ENERGY COALITION

In May, UW was selected by the National Energy Technology Laboratory—part of the U.S. Department of Energy (DOE) laboratory system—to be part of a prestigious nationwide energy coalition to investigate the future of fossil energy. The award, titled the University Coalition for Fossil Energy Research (UCFER), was established by the DOE through an open competitive process to advance basic and applied research that supports continued use of fossil energy. UCFER is a collaboration of nine universities, many of which have Tier-1 status in energy and engineering research. The award to UCFER includes \$20 million in initial funding, spanning the next six years.

RESEARCH UNDERWAY

Name that research	Details, please	Researchers in the lead
NASA Research Grant to Help Understand Experiments Conducted on the International Space Station	A UW project titled "Experimental and Numerical Investigation of Terrestrial Stable Cool Flames for Improved Understanding of International Space Station Droplet Combustion Experiments" will be among those funded by NASA, which will award about \$8 million to 11 schools for research and technology development projects in areas critical to the agency's mission.	Erica Belmont, assistant professor in the Department of Mechanical Engineering in the College of Engineering and Applied Science
UW, INL, USGS Researchers Study Pulling Rare Earth Elements from Industrial Waters	UW researchers have joined colleagues from the Idaho National Laboratory and U.S. Geological Survey to study the potential for retrieving rare earth elements from water produced in oil and gas production and geothermal projects. The U.S. Department of Energy announced that the UW/INL/USGS research project is one of four selected to receive up to \$4 million.	UW principal investigators are Scott Quillinan and Fred McLaughlin of the Carbon Management Institute in the School of Energy Resources and Jonathan Brant, associate professor in the Department of Civil and Architectural Engineering
New Research Details How Big Game Follow Spring Green–Up	Most big-game animals in the West can assess the quality of vegetation during the spring green-up to select the best patches of habitat during the growing season, a team of researchers led by UW and U.S. Geological Survey scientists documented. Findings were published in <i>Proceedings of the Royal Society B</i> in June.	Jerod Merkle, lead author and postdoctoral researcher in the USGS Wyoming Cooperative Fish and Wildlife Research Unit at UW
• Scientists Gain Supervolcano Insights from Wyoming Granite	What do subterranean magma chambers look like? A National Science Foundation-funded study by UW researchers suggests that scientists can go back into the past to study the solidified magma chambers where erosion has removed the overlying rock, exposing granite underpinnings. Details were published in the June issue of <i>American Mineralogist</i> .	Carol Frost, professor in the Department of Geology and Geophysics, and master's student Davin Bagdonas

To read more about these research projects and many others, visit uwyo.edu/news.

SCHOLARSHIP FOR **DISPLACED** COAL WORKERS, FAMILIES

In June, the UW College of Engineering and Applied Science announced the creation of a new scholarship fund to assist displaced coal industry employees from around Wyoming. In the early stages, the college will provide 10 scholarships at \$1,500 each for one academic year but will actively raise money for additional awards. The scholarship will be available to former coal industry employees to pursue an engineering degree at UW or an engineering-related degree at one of Wyoming's community colleges. It also will be available to children of the displaced workers who plan to attend UW and seek an engineering degree.

UW FOUNDATION NEWS

In August, the University of Wyoming Foundation announced a new singleyear fundraising record, receiving \$63.1 million in private support during the 2016 fiscal year.

The foundation also announced its new board members. Honorable April Brimmer Kunz, former president of Wyoming State Senate, is the new chair of the UW Foundation Board of Directors; vice chair is Greg Hill (president and COO of Hess Corp.), and secretary is Chad Deaton (CEO of Baker Hughes, retired). In addition, five new members add a wide range of expertise to the board: Scott Macdonald, CFO of Starz LLC, from Centennial, Colo.; Peter Sherman, executive VP of Omnicorn Group Inc. from New York; Mary Shafer-Malicki, CEO of BP Angola (retired) from Denver, Colo.; Patrick Higgins, CEO of Orrison Distributing Ltd. from Cheyenne, Wyo.; and Ron Salvagio, partner with Accenture Foundation Inc. from Naples, Fla.

THREE RECEIVE UW HONORARY DEGREES

During UW commencement ceremonies in May, the university conferred its highest award, the honorary doctoral degree, upon three individuals: Tom Bell, award-winning writer and conservationist; Don King, statistician and entrepreneur; and John McPhee, Pulitzer Prize-winning author and teacher.

Bell grew up on a ranch near Lander during the Great Depression and served in World War II. Awarded the Silver Star for gallantry in action in 1944, he was severely wounded during a mission over Austria by a burst of flak that nearly killed him and caused the loss of his right eye, for which he received the Purple Heart. Bell earned a bachelor's and then a master's in wildlife conservation and game management, both from UW. He worked for the Wyoming Game and Fish Department and taught science in Lander schools. He founded the Wyoming Outdoor Council in 1967

and the *High Country News* in 1970.

King was born in Cheyenne during the Great Depression to a family that had a large sheep-breeding operation in Laramie and Albany counties. He studied statistics at UW, receiving his bachelor's and master's degrees. In



1961, he co-founded Westat Inc., which has become one of the world's leading private-sector statistical survey research organizations. He served as a highlevel executive in a series of connected companies and became president of King Research Inc., which achieved prominence for information system evaluations. In 1997, he retired from the business world to concentrate on writing, lecturing and service.

McPhee is a graduate of Princeton University, where he teaches nonfiction writing, and is known as one of the pioneers of creative nonfiction. The author of more than 30 books and collections, he is a four-time finalist for the Pulitzer Prize in general nonfiction and won the award in 1999 for his collection, *Annals of the Former World.* One of the books in that collection is *Rising from the Plains*, a portrait of the family of the late David Love, UW alumnus and pre-eminent geologist of the Rocky Mountain West.



MYOMING CONJECTIONS

Superintendent Jillian Balow created lasting connections as a student at UW.

By Micaela Myers

As a fifth-generation Wyomingite, Jillian McGarvin Balow never considered attending anywhere but the University of Wyoming for her undergraduate degree in education. She joined two siblings and a number of cousins in Laramie.

"Without sounding trite, the very best part about Wyoming is the people, and the second best is UW, where great people spend a few years together and cross paths for the rest of our lives," she says.

Elected the state superintendent of public instruction in 2014, Balow taught in Wyoming public schools for 10 years before moving her focus to education policy. Throughout this time, the connections she made at UW remained strong.

"I was a member of Tri Delta, an Associated Students of UW senator and a UW ambassador," she says. "I never knew I was 'networking' at the time—I just liked to stay active and involved. Nonetheless, those meaningful UW connections have always been a part of my personal and professional life."

Balow completed her student teaching in Gillette, where she had graduated high school, and she's continued to work with her mentor teacher ever since. From there, she taught in Hulett for eight years.

"Every school in every community across our state

offers our students unique opportunities," Balow says. "Some of my most inspirational role models became my teaching colleagues."

Big goals: As superintendent, Balow's goals include practical elements for Wyoming children, including career readiness. "I want to see all students have the opportunity to participate in meaningful career pathways, whether FFA, coding, welding or another field," she says. "High school graduates should possess academic, technical and employability skills no matter their postsecondary plans."

Along those same lines, Balow wants high school graduates to have a better foundation in financial literacy, including understanding personal finances and creating budgets they can stick to. She's also passionate about suicide prevention.

Giving back: In addition to her other commitments, Balow serves as a UW trustee. "Not many have the chance to give back to the institution that set them on a path of unlimited opportunities in life," she says. As such, she's a proud supporter of the UW Trustees Education Initiative (see page 22).

"It's a timely and exciting opportunity for UW and our state," Balow says. "I hope my involvement with the initiative helps bridge the divide between K–12 and higher education. Pre-eminent teacher and leader preparation is the foundation for excellent schools and student success."

UW snapshots

INVESTING IN THE FUTURE

Professor Jackie Leonard's research helps Wyoming's school children engage in science, technology, engineering and math.

By Micaela Myers

Although Jackie Leonard is no longer a public school teacher, as she was for 15 years when her career began, seeing kids experience those "aha" moments as they learn hands-on remains her main motivation.

"That gives me a sense of purpose and helps me know that the work we're doing is making a difference," says Leonard, who recently transitioned from director of the University of Wyoming Science and Mathematics Teaching Center (SMTC) to UW professor of mathematics education. "It makes me feel like we're contributing to an important process in young children's lives that will pay us dividends down the road."

Pioneering initiatives: Leonard came to UW in 2012 when she took on the director role. The SMTC's multi-faceted goals include excellence in preschool through college science and mathematics teaching and learning, as well as superlative research. The center offers academic programs for science and math teachers, including three master's programs, and an endorsement for middle-level math and science. It also provides outreach to teachers and schools via the work of Outreach Science Educator Ana Houseal (see page 32) and SMTC Coordinator Sylvia Parker. In addition, the center offers scholarships and, under the leadership of Wyoming State Science Fair Coordinator Erin Stoesz, hosts the science fair each year.

Inclusive outreach: As a full-time professor, Leonard will be able to focus more on her research. She spearheaded one of SMTC's current grant projects, ITEST Visualization Basics, which brings robots and scalable game design to classrooms. Now, Leonard and her colleagues are submitting a new ITEST grant titled "The Bessie Coleman Project: Using Computer Modeling, Robotics, and Flight Simulation to Create STEM Pathways." STEM stands for science, technology, engineering and mathematics.

In partnership with the University of Maryland-College Park and Temple University, the new project aims to provide unique learning opportunities for underrepresented students in Wyoming, Colorado and Pennsylvania. It's named for the first African-American woman to receive a pilot's license. Participants in after-school programs and summer camps would use blended 3-D computer modeling and robotics clubs to develop problem solving and computational thinking, robotics competitions to develop motivation and persistence in computer programming, flight simulation software to apply computer modeling to aviation, and field trips and guest speakers to inform students about STEM/STEM-related careers.

Leonard sees working with children as a long-term investment. "Just like retirement investments, you don't see the fruit of that for years," she says, but it's well worth the investment.

Graduate student David Lausch gains hands-on experience in teaching, technology and research in the College of Education.

A FOUNDATION OR THE FUTURE

By Micaela Myers

Doctoral student David Lausch taught K–12 students all over the world, including Kuwait, Dubai and Japan. One day, he hopes to help international higher education students transition to U.S. universities using distance technologies. At the University of Wyoming, he's able to combine his interests—learning distance technology platforms, teaching at the college level and researching international student experiences.

"UW is an amazing university," Lausch says. "You can take advantage of a lot of unique opportunities. Graduate assistantships are plentiful. Affordability was a huge thing, and the opportunity to teach in higher education my first year was fantastic."

Pioneering connections: Originally from La Verne, Calif., Lausch earned his master's degree at UW and returned to California to teach before pursuing his Ph.D. in adult and postsecondary education. At UW, his graduate assistantship involves helping facilitate the use of ECHO (Extension for Community Healthcare Outcomes) and WyCEL (Wyoming Center for Educational Leadership) to provide training and support to K–12 school administrators across the state.

The ECHO program uses videoconferencing technology to link specialist teams at UW with

practitioners throughout the state. While ECHO projects started in health care, UW is pioneering the format for education (see page 35). The WyCEL program advances education by providing professional development to educational leaders throughout the state.

"Wyoming is so spread out, you'd have to drive vast distances to meet up with a colleague," Lausch says. "Now, education leaders across the state have the opportunity to get professional development through didactic training and case presentations weekly. This model has the potential to not just become national but international."

Plans for the future: In addition to teaching and working on ECHO and WyCEL, Lausch researches international students in higher education, looking at the systems of support for these students. He serves on the College of Education's International Education Committee, and last year he received College of Education and Cheney scholarships to conduct research in Australia.

Lausch hopes to connect everything he's learned at UW as a professor: "I see my research plus ECHO as a way we could support international students, engaging them before college and finding them a cohort—a diverse social group of people from all over that includes domestic students." The technology could also help prepare them for American academics by connecting them with their future professors and departments.

Lausch even thinks UW's strong foundation in distance education could help the university open satellite campuses around the world: "We already have that distance formula, it works, and we have the infrastructure."

Introducing the **Trustees Education Initiative**

RECOGNIZED

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With private funding and impressive leadership, the recently launched UW Trustees Education Initiative aims to lift the UW College of Education to national pre-eminence.

By Micaela Myers and UW Communications

Every year, hundreds of University of Wyoming College of Education students proudly cross the graduation stage, collect newly earned degrees in 17 teaching content areas, and head out across the state and around the country to begin the important task of educating our children. This scenario has been repeated for more than 100 years, with thousands of graduates impacting generations of students, especially here in Wyoming.

Most would argue that few jobs are more important. As such, the

UW Board of Trustees launched the UW Trustees Education Initiative in November 2014, aimed at lifting the college to national pre-eminence in preparing professional K–12 teachers, counselors and administrators.

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"The Trustees Education Initiative illustrates the university's commitment to providing the highest quality education in preparing future teachers," UW President Laurie Nichols says. "Education will play such an important part in Wyoming's future, and preparing top-notch educators for the state's K–12 schools is a crucial part of the university's role in this effort."

"Through extensive evaluation and adaptation of national best practices, the initiative will recommend, and the college will prepare and graduate, preeminent K-12 professional educators," says UW Trustee David Palmerlee, who also serves on the initiative's board. "These highly skilled K-12 teachers, counselors and administrators will spread throughout Wyoming's K-12 system, ultimately resulting in high school graduates who are among the most skilled and best educated in the nation. These highly skilled professional educators will enrich the education of each and every K-12 Wyoming child. Across the state of Wyoming, these high school graduates will drive Wyoming's cultural and economic engine into the future."

Funding for the Future

In January 2016, the initiative received critical funding with an initial grant of \$5 million from the Daniels Fund, which was founded by cable TV pioneer Bill Daniels.

"The Trustees Education Initiative has sparked a statewide movement that is set to transform the College of Education at the University of Wyoming," says Linda Childears, president and CEO of the Daniels Fund. "With the alignment of state and local government, school officials and the business community, we believe it represents a unique opportunity to make a change that will help build an exceptional K–12 education system and allow children to excel. The Daniels Fund is pleased to support the initiative, and we hope it will create a model for the rest of the nation."

During 2016–18, the grant is funding a strategic planning phase that's already underway, including hiring an executive director to work in tandem with the dean of the College of Education to lead the Education Initiative and the hiring of expert research consultants to work with teams composed of faculty, K-12 personnel and other stakeholders. These teams will evaluate eight of UW's existing educator preparation programs by studying research literature and promising programs across the country. Additionally, town hall regional meetings will be held across the state to assess and solicit input about effective teaching practices, and the components of effective professional educator preparation curricula that will best serve Wyoming's K–12 educational system.

The goal of the Education Initiative's first phase is to produce a strategic plan to transform UW's entire suite of educator preparation programs. The plan developed and approved by the Education Initiative Board and the UW trustees would be implemented by the College of Education in the second phase in 2018–21.

"This will be an unprecedented effort on the part of the college and its many stakeholders," College of Education Dean D. Ray Reutzel says. "We are excited to get started on what most certainly will be an amazing and productive journey."

Funding for the third, fourth and fifth years of the Daniels Fund grant will be contingent upon UW obtaining \$2 million in matching funds for each of those years. The university will work with the UW Foundation, which played a key role in securing the current grants, to pursue additional private funding for the Education Initiative.

Strong Leadership

The Education Initiative Board includes trustees, UW administrators, College of Education representatives, K–12 educators, first lady Carol Mead and others. Ex-officio members include Superintendent of Public Instruction Jillian Balow and Wyoming Community College Commission Executive Director Jim Rose.

"I'm honored to be a part of the Trustees Education Initiative because I believe in the capacity of our College of Education to rise to the occasion to cultivate highly skilled educators," says Carol Mead. "The initiative is an opportunity to elevate the college nationally, which will not only serve its students but the university and the state. I hope we can raise the bar for colleges of education all over the country by setting an example of excellence here in Wyoming."

Board member Judy Catchpole, former Wyoming superintendent of public instruction, sees this as the college's time to shine: "For far too long, the College of Education has quietly excelled at preparing Wyoming's professional educators without drawing its work into the spotlight. With the college's new Literacy Research Center and Clinic and now the Trustees Education Initiative, the spotlight has never been brighter.

"Wyoming's children are the ultimate beneficiaries of the College of Education's work," she continues. "They will receive better teaching, improved relationships and innovative programming in literacy and beyond, thanks to the resources and processes associated with the initiative."

Balow says that the initiative is celebrated for the opportunities it presents: "I have profound respect for the faculty—new and seasoned—in the College of Education. It is no surprise to me that the Trustees Education Initiative is embraced as a way to go from being great to being the best."

Palmerlee hopes that, through the initiative, the state will positively impact every child in Wyoming: "I have long believed that the state of Wyoming can and should reach out and touch every student in our K–12 educational system to provide the best possible education, child by child. The only way that can be accomplished is to put the best possible teachers, counselors and administrators in our Wyoming schools. The initiative is solely devoted to that objective."

Current efforts combined with future changes will strengthen the college's four pillars—Recognized, Distinctive, Connected and Impactful—Reutzel says. On the following pages, you'll learn more about each of these pillars and the exciting work underway at the UW College of Education.



Distinctive

UW College of Education student Jacob Greenley works with students Blair and Keegan during the UW Lab School's Summer Odyssey Program.

The UW Trustees Education Initiative brings the opportunity to create distinctive programs and opportunities for the College of Education.

By Micaela Myers

Mary Kozlowski was in the fourth grade when she decided to become a teacher. A classmate's death had sent the entire class spiraling, but one very special teacher connected with them, helped them to grieve and inspired them to move forward.

"He had such a big impact on my entire life. I'm eager to have that impact on other students," says Kozlowski, a Laramie native who graduated with her degree in elementary education this past May.

Kozlowski calls her education at the University of Wyoming "amazing," especially the accessible professors who were extremely supportive. She also notes with gratitude how well-prepared she feels to begin life a as a third-grade teacher this fall.

Many of the teachers in Wyoming are home-grown graduates of UW. With every teacher who graduates, hundreds of young lives are impacted—meaning the teacher, counselor and educator preparation that takes place here makes a huge difference in the quality of education across the state. The UW Trustees Education Initiative creates an opportunity for the College of Education to take its existing programs from good to great with careful evaluation of best practices. In the process, distinctive changes and programs will emerge to better serve the state while lifting the college to national pre-eminence. Although no changes have been predetermined before the Trustees Education Initiative planning process, here we look at some areas of known need and exciting options that may be evaluated as part of the two-year planning process. (To learn more about the initiative, see page 22.)

Meeting the Need for Special Education Teachers

College of Education Dean D. Ray Reutzel says a shortage of special education teachers in the region is one of the most pressing needs that will be evaluated during the Education Initiative planning phase.

"We need to look at how we provide special education in the state, and we need to talk about how we begin to close that gap and meet that need," he says. "Right now, UW offers special education as a graduate-only program."

The University of Wyoming certainly could be a center for a national instructional facilitators program.

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– Jubal Yennie

Jubal Yennic, superintendent of Albany County Schoe District 1, stands outside the newly opened Laramie High School.

Reutzel says program faculty in special education may look at alternatives, such as offering special education as an undergraduate program or offering a dual-degree option for teacher education students to add special education as a major.

Preparing Instructional Facilitators

In 2006, Wyoming created an instructional facilitators (IF) program, in which the state provides grant money to help fund IF positions in each school district. In part, the role of an IF is to coach and mentor fellow teachers, including providing professional development. These individuals must have five years of teaching experience and Wyoming certification, as well as a master's degree or national certification.

Many states across the nation fund similar facilitator or coaching positions. However, training and roles vary. "Someone who was successful teaching 7-year-olds doesn't necessarily have the skills to mentor other teachers," Reutzel says. He adds that there aren't programs at universities to prepare or train these individuals: "I'm looking at this as a potential place where Wyoming could lead the pack and create something that everyone knows needs to be created."

Jubal Yennie, superintendent of Albany County School District 1, agrees: "There's a definite need. The University

Mary Kozlowski graduated in May and feels well prepared to begin teaching third grade this fall.

of Wyoming certainly could be a center for a national instructional facilitators program. The reason it's very valuable is because we don't have a clear expectation of what these folks can do. If we can define that, we can provide greater instruction in the classroom and get better results for our students."

Working with Yennie, the College of Education will look into creating a graduate program or a certificate as part of a master's program for IFs.

Offering Administrators a Strong Foundation

In a rural state like Wyoming, school leaders such as superintendents must possess a wide array of skills. "Wyoming has a unique problem in that we have a lot of small school districts without a large central office staff, so there's not an ability to specialize," Reutzel says. "You must be a great instructional leader as well as have this whole suite of business skills. There's not room in one degree to get all the skills they need—a master's degree in school leadership is great for one, and the MBA is great for the other. Better yet would be some kind of degree combination."

Reutzel plans to explore options for a joint degree or distinctive program that would give Wyoming's school leaders the diverse preparation they need to work in small, rural settings.



Wyoming K–12 teachers John Ripley and Emily Beth "Willow" Curtis learn to program Lego robots during a Technology for Mid-Level Math course.



I see these as central pillars upon which the whole of teacher preparation gets built—STEM and literacy.

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– D. Ray Reutzel

Capitalizing on Areas of Excellence

UW's Tier-1 Engineering Initiative and Science Initiative are well underway, and the College of Education has a strong history in science, technology, engineering and mathematics (STEM), as illustrated in the Science and Mathematics Teaching Center (SMTC). STEM is a natural extension of the SMTC that the college could build upon. Likewise, with the Literacy Research Center and Clinic on campus, literacy education is a rising area of excellence in the college that will be integrated into new or improved educator preparation programs.

"It makes sense on this campus is to have really strong STEM preparation for our teacher education students and really strong literacy preparation," Reutzel says of these foundational areas. "I call those disciplines the languages of learning. If you can read, write and do math, you can access every other discipline."

The College of Education is also building a strong relationship with the School of Energy Resources (SER). Science education faculty members have and will collaborate with SER on a number of initiatives. In addition, Alan Buss, professor of elementary and early childhood education, now serves on the Science Initiative leadership team to collaborate and help share the college's expertise in science education.

On the literacy side, Reutzel hopes every teacher education student will eventually receive clinical training at the Literacy Research Center and Clinic: "Our students need that type of preparation, and the literacy center is uniquely suited to do that both in terms of its facility and its personnel.

"I see these as central pillars upon which the whole of teacher preparation gets built—STEM and literacy."

Improving Student Teaching Experiences

Each fall, teachers across the state welcome new classes of students. Those first few hours, days and weeks are key to setting the stage for the entire school year: the expectations, the procedures and the all-important sense of community. Unfortunately, current student teachers don't get to experience this in the traditional spring semester of student teaching. The possibility of a fall or a yearlong student teaching internship, as well as creating partnerships with more districts in the state, are some of the distinctive ideas being considered as part of the Education Initiative planning phase.

"I feel very prepared, but one thing I don't feel prepared

for is the first day of school and the first week of school because that's the most important time. That would be the most beneficial for us to see as student teachers," Kozlowski says.

Reutzel and the College of Education plan to explore the possibility of a yearlong student teaching internship, with the second semester possibly partially paid. Additional training for mentor teachers is another area he would like the college to explore.

In the distant past, UW's student teachers worked in districts throughout the state. In the mid-1990s, the cost of travel for supervisors meant the college reduced its district partnerships. Today, the college partners with seven school districts in Wyoming, but the hope is to use technology and other means to re-engage and place student teachers in schools throughout the state.

Leslie Rush, professor of secondary education and associate dean of undergraduate programs, explains that the college employs school district facilitators in each of the current seven districts and also sends UW College of Education faculty members out for supervision: "It's been good for our students, because they get a lot more support through the process. However, we are leaving out all those other districts, which have amazing teachers and great students and administrators that we'd love to work with. The initiative brings the opportunity for us to be able to say, 'How can we provide that same level of support to districts all over the state and maybe nationally?'"

Sarah Hackworth pursued her master's degree in natural science education through the UW Science and Mathematics Teaching Center's partnership with the Teton Science Schools, graduating in May. She completed her student teaching at Kelly Walsh High School in Casper, teaching 10th grade biology. This fall, she begins work as a sixth-grade science teacher in Sheridan. Hackworth likes the idea of UW expanding its student teaching opportunities to more districts. In addition to student teachers sharing the latest practices in the field with classroom teachers in those districts, she sees many benefits to the student teachers themselves: "If students know they want to teach in a really rural area, they could student teach in one. Or, if they know they want to work with English-language learners, they could go to Jackson where they're doing really amazing things with ELLs."

Providing support for student teachers in communities throughout Wyoming will be key. Reutzel and Rush also hope to better engage practicing teachers throughout the state, and they see regional centers or point people at each of the community colleges as one way to accomplish that.

"Having a faculty member like our district facilitator who could work with school districts in each community college service area and provide professional development and support and also be there to work with student teachers would be great," Rush says. "It's also a great way to help us increase our partnerships with school districts around the state as well as community colleges."

Sheridan County School District 2, one of the top performing school districts in the state, hosts about 20 UW student teachers each year. Craig Dougherty, superintendent of the district, hopes to increase partnerships among UW, his district and Sheridan College. He believes that the district has a lot to offer future teachers, including its collaborative model, in which teachers work together for greater classroom success.

"We think that's a really powerful model, and we would like to share that," Dougherty says. "We're a part of this initiative. We think it is the most exciting thing to hit the University of Wyoming, and we believe that we can help in the preparation of great teachers."

Looking Toward the Future

During this strategic planning phase of the Trustees Education Initiative, distinctive programs and program changes such as those outlined above will be carefully considered. Practices and programs that show the most promise for Wyoming can then be implemented.

"I see it as an opportunity to investigate what we're currently doing, what we could be doing and put some great new things in place with additional resources to support them," Rush says.

Whichever options are pursued, exciting updates and opportunities are on their way for the College of Education.



In July, Gov. Matt Mead (left), Senate President Phil Nicholas and House Speaker Kermit Brown toured the College of Engineering and Applied Science, as well as visited the Engineering Summer Program for Teachers, which brought 48 Wyoming teachers to campus to learn about incorporating engineering and technology into their classrooms.

62 YEARS

The teacher education program has been continuously accredited by NCATE since 1954, making it the longest continuous accreditation among western U.S. colleges or schools of education.

LET'S MEET

The College of Education hosts key conferences, including the UW School Law Conference for School Administrators, the annual literacy conference, and the first English as a Second Language Conference in Casper in April 2016.

\$10 MILLION

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The UW Literacy Research Center and Clinic has programmatic support of more than \$10 million in endowed and excellence funds.

COLLEGE OF EDUCATION BY THE NUMBERS RECOGNIZED

The College of Education is the second oldest college at UW, established in 1914. Today, the college is on the rise with national recognition and a Trustees Education Initiative to take it to new heights of excellence. Here are a few fun facts and stats about this celebrated college that produces many of Wyoming's beloved K–12 teachers and administrators.

TOP 14%

UW's elementary education program ranked 107th out of 788 elementary education programs by the National Council on Teacher Quality, placing it in the top 14 percent of these programs nationwide.

TOP 11%

The college is ranked 153rd out of 1,400 graduate schools of education nationally by U.S. News and World Report, placing it in the top 11 percent of all graduate schools of education in the nation.

100

The College of Education celebrated its 100th anniversary in 2014 and visited each of the 23 Wyoming counties.

50%

UW's College of Education students are drawn primarily from the top 50 percent of the university's student body, as measured by entering grade-point averages following completion of general education requirements. They achieve among the highest grade-point averages at the university.

17

The College of Education offers bachelor's degrees and certification programs in 17 different teaching content areas.

1,509

Total enrollment in the college in 2014–15 was 1,509, with 375 students graduating, including 95 master's degrees and 25 doctoral degrees.

NATIONAL RECOGNITION

In preparation for the 2016 accreditation process, the College of Education's academic programs received the highest possible rating during comprehensive reviews. The undergraduate English education program and the Master of Arts in special education degree received "National Recognition" designations from their respective specialized professional associations.

NO. 2

UW's adult education Ph.D. online program was ranked No. 2 in the nation by Go Grad.



FACULTY STATS

Last year, UW's College of Education faculty members produced 92 refereed articles, 48 book chapters or books, and two creative works—technologies. In addition, there were 104 national or international presentations at conferences, five editorships and 14 memberships on editorial boards. Faculty members also brought in \$8 million in external funding.



Impactful & Connected

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UW's College of Education is home to programs that reach every corner of the state.

By Micaela Myers

A first-year Wyoming teacher knows just how to use the school's new 3D printer to teach the children this latest technology. Four-year-olds in Teton and Sublette counties are ready to learn to read and write. Teachers in Campbell County are using a brand-new science curriculum tailor-made for their district. High school teachers all over the state know what's needed for the kids in their classes to be prepared for college and career. All of this and more is the result of the connected and impactful programs currently offered at the University of Wyoming's College of Education. Here, we introduce you to five of these outstanding programs, reaching everyone from the state's youngest residents on up to teachers and school administrators.

A New Generation for Science Education

As a teacher in Campbell County prepared for his usual seventh-grade science lesson on weather and climate this past school year, he was ready to spend the period breaking down the misconceptions about Earth's distance from the sun. It's something he does every year. But this year, the students were well beyond the lesson. They were able to easily, confidently and correctly explain why we have seasons. And the teacher was able to move on to more complex concepts.

Science scores in Campbell County School District 1 (CCSD) are going up, and more measurable results are on the way. In the meantime, stories like this are now the norm, thanks to a new K–12 science curriculum being developed via a Wyoming Department of Education Math and Science Partnerships Grant that helped CCSD work with Outreach Science Educator Ana Houseal from UW's Science and Mathematics Teaching Center.

"The students are just so much better prepared," says Christy Mathes, CCSD secondary science facilitator and a science teacher at Sage Valley Junior High in Gillette. "For example, seventh-grade students are able to build an electromagnetic crane to test magnetic fields instead of starting at the basics. They're able to actually apply the knowledge they learned in elementary school."

The overhaul of the science curriculum was inspired by a combination of poor science MAP test scores and motivation to get ahead of Wyoming's new science standards, which are entering the final phase of approval. With the district completing rollout of the entire K–12 lesson plans in 2017–18, CCSD is well ahead of most districts in the state and nation in creating a place-based adaptation of the new science standards.

"When we took our teachers to the MSP (Mathematics and Science Partnerships) conference in 2015, they were talking to teachers from all over the country, and those teachers couldn't believe we were doing this," Houseal says. "Everybody else is about five years behind."

Wyoming's new science standards

Students at Hillcrest Elementary School in Gillette work on a science project creating chemical reaction rockets using Alka-Seltzer and vinegar during a summer session led by Recluse School Principal Chris Rashleigh.

are based on the national Next Generation Science Standards, Houseal explains. The standards include three dimensions to learning science: cross-cutting concepts, which help students explore connections across the four domains of science (physical, life, earth/space and engineering); science and engineering practices; and disciplinary core ideas.

The format improves student learning, and the teachers are also more engaged, Houseal and Mathes report.

"Not every kid is going to love science, but every kid needs to be a critical thinker, and every kid needs to be able to troubleshoot situations and come up with solutions," Mathes says. "Regardless of what career you go into, those are life skills. Science gives



us the perfect opportunity for that as we've begun to implement this threedimensional learning model."

Houseal says that the project with CCSD can provide an example for other districts: "One of our goals is to have sample exemplar lessons from each grade level available online and also discussion on what things need to be considered when people are thinking about embracing this."

However, the district's curriculum is strongly place based and therefore not a cookie-cutter curriculum. Jodi Crago-Wyllie, Science Center Director and CCSD's elementary science facilitator, says: "What we have done here is something very special to Campbell County and northeast Wyoming. It's difficult to hand over a curriculum and

ACROSS WYOMING

As the outreach science educator for UW's Science and Mathematics Teaching Center, Ana Houseal and her team have also provided professional development trainings in Uinta, Fremont, Platte and Johnson counties—in addition to Campbell County. The professional development included two years working on the science standards with Uinta County School District 1 and focused trainings related to energy development in Fremont and Platte counties.

During a year of work with Johnson County School District 1 (JCSD), Houseal and her colleagues helped elementary school teachers understand the new science standards and develop specific science units around them.

"Ana is amazing. She taught science in such a way that our teachers got it. They understood it, and they're able to put into practice what she taught them," says Jeanie Iberlin, associate superintendent of JCSD. "I think kids are loving science more because it's more hands-on and connected to the bigger picture, bigger ideas, bigger concepts. That's thanks to her."



have true buy-in by a district if they don't understand the process and don't have those place-based connections."

Mathes and Crago-Wyllie appreciate the expertise of Houseal and her project team, which includes UW colleagues Pete Ellsworth, Alan Buss, Jeff Lockwood and Franz-Peter Griesmaier and graduate students Tayla Fulcher, Sarah Hackworth and Martha Inouye.

"The level of expertise in working with the university is fantastic," Mathes says, adding that the work in turn informs the education of future teachers studying at UW, as professors bring the findings back to the college classroom.

Partnering for College and Career Success

In Wyoming, a unique collaboration brings educators from all sectors to the table. Several times a year, teachers and administrators from school districts across the state come together with personnel from all seven Wyoming community colleges, the University of Wyoming's College of Education and College of Arts and Sciences, the Wyoming Education Association, Wyoming Professional Teaching Standards Board and the Wyoming Department of Education to democratically work to improve teacher education and renew public schooling as part of the Wyoming School-University Partnership.

"Everybody who is a player in Wyoming public education has a seat at the table," says Director Audrey Kleinsasser.

The partnership began in 1986 with a focus on placing UW's student teachers at sites throughout the state, but a decade ago its focus shifted to helping Wyoming's K–16 students succeed as they transition from one level of schooling to the next, particularly from high school to college.

"These Lost in Transition meetings are designed to bring high school faculty, community college faculty and university faculty together to bridge that transition from high school to post-secondary, which is critical," says Diana Clapp, superintendent of Fremont County School District 6 and current chair of the partnership's governing board. "The meetings are very much about what students need to know and be able to do to be successful at the next level."

As part of this focus, the partnership created tri-fold subject charts for high school students and their parents. The charts identify the differences between and expectations of high school and postsecondary classes in mathematics, world languages, writing, social science and science. These five subjects correspond to the Hathaway Success Curriculum and also the ACT college entrance exam that Wyoming juniors take. Meetings for each of these disciplines are held each year to help teachers of all levels focus on student learning and success in each of the subject areas.

The partnership also emphasizes preparing socially engaged citizens. "Through our meetings, we continue to focus on the purpose of public schooling in the United States—to help kids be prepared for life and work in a democracy," Kleinsasser says.

"I use the example that our democracy is always one generation from extinction—it's not innate," Clapp adds. "It has to be developed, taught and exercised in order to endure."

The ideals of democracy are also practiced in the meetings, where everyone has an equal voice at the table.

The fact the meetings don't take place in Laramie helps UW with vital outreach and statewide engagement. The Wyoming School-University Partnership also co-sponsors professional development events throughout the state—for example, the annual fall UW Literacy Conference and, this past spring, the first statewide English as a Second Language Conference. "When I have a need clear out in Fremont County, I know a name, I know a face, I know someone who can get me connected," Clapp says.

Kleinsasser says: "The partnership helps the university be visible about its work and to enable people to play a role in the work of education because we're all in this together."

Professional Development via Distance Technology

On almost every Tuesday this past spring, educational leaders from across the state gathered via distance technology to learn, network and problem-solve thanks to UW ECHO in Educational Leadership, a partnership between the Wyoming Center for Educational Leadership (WyCEL) and UW Project ECHO.

ECHO stands for Extension for Community Healthcare Outcomes, and UW is pioneering the technology for the education sector, reaching about 100 administrators this past year—with plans to greatly expand in coming years.

"The innovative part of this project is taking something that's been very successful in medicine and transferring it to education," says WyCEL Director Mark Stock. "The ECHO project's philosophy is to de-monopolize knowledge—the notion of bringing the knowledge to the people instead of people to the experts."

The training is done via videoconferencing, with two large screens able to accommodate up to 100 people and their images simultaneously. The first 30-minutes period is a didactic training—a presentation by a local or national expert followed by a specific strategy. Then, a case presentation by one of the Wyoming participants opens the floor to discussion and brainstorming solutions, and members of the project staff follow up with the presenter afterward.

Among other things, the project's goals are to increase capacity of superintendents to implement best practices and to establish an effective



platform for distance educational leadership training, mentoring and management.

Dan Espeland, superintendent in Converse County School District 1, served on the original committee that helped establish the project and has attended the weekly trainings. "We have very few opportunities statewide for staff development for our principals and superintendents," he says. "I think this online format has worked really well. It's offered a good opportunity for people to discuss and ask questions about current educational issues."

Espeland says he's already in the process of implementing some of the things he's learned through the trainings and discussions, and he looks forward to next year's topics.

The Wyoming Accountability in Education Act demands accountability on the part of schools and also stipulates providing a system of support—a need that ECHO fulfills. Funded by the Wyoming Department of Education, the ECHO project serves as a premier support system for school administrators, Stock says. The efficacy of the program is being tested via set metrics, and Stock is confident of positive outcomes.

For schools that aren't meeting state expectations, WyCEL also offers an Executive Leadership Coaching project that assigns experts to mentor personnel at the schools. The pilot program served seven schools this past spring, and Stock hopes the number of schools will double next year.

In addition, WyCEL's Principal Academy currently serves 20 principals with in-person and distance training over a yearlong period. Stock hopes to offer an ECHO project for principals, assistant principals and instructional facilitators in the future, saying: "We are currently the only ECHO Project for Educational Leadership."

In addition to leading the field in ECHO projects for the education sector, Stock sees WyCEL's programs as an important part of UW's presence across the state and says that the networking that takes place during trainings serves as another benefit for participants.

"Our state is a widespread state with a lot of things going on, and I think this has been a great opportunity for many of our administrators and facilitators." Espeland says. "Any time we have discussions on educational topics with other administrators around the state, I pick up new ideas and new programs that are being successful."

Bringing the Language of Learning Statewide

In Teton County, Jorge Moreno, the father of a 4-year-old Head Start student, receives a text message that reads: "When you're bathing your child, point out the letters on the shampoo bottles. Ask your child to name them & tell you the sounds that they make."

Moreno tries the tips with his son and finds bath time is no longer so boring for Jayden. "He was finding out the letter sounds, and it was a review of what he's studying in school," Moreno says of the early literacy text messaging program. "On top of that, it was encouraging us to start practicing reading with our kids."

The program sends three texts a week. After the original eight-month study by Stanford University, it was shown to increase parental engagement in home literacy activities and to encourage parents to ask teachers questions. Most importantly, the children who participated scored higher on a literacy assessment.

Here in Wyoming, the early literacy

text messaging pilot program was a partnership among the UW Literacy Research Center and Clinic, CEPA Labs at Stanford University, and the Children's Learning Center Head Start and preschool classes in Teton and Sublette counties. The program was made possible with funding from the John P. Ellbogen Foundation, the Donne and Sue Fisher Fund for the Advancement of Literacy, and another local family foundation.

Now, the program is poised to go statewide, with new enrollments beginning in August 2016.

"Sometimes parents are just trying to survive, and there's not a lot of spare time in their day," says Victoria Gillis, one of two Wyoming Excellence in Higher Education Endowed Chairs in Literacy Education. "These text messages give information about how you can use bath time, or setting the table, or sorting laundry or a trip to the store as a chance to embed literacy activities."

Isabel Zumel, assistant director of Teton County Library, and Leticia Liera, director of Head Start for the Children's Learning Center, read about Stanford's program and called upon UW's Literacy Research Center and Clinic for help implementing it here.

"We were interested in this because our school district is seeing that literacy skills and language acquisition for nonnative English-speaking children is a big challenge," Zumel says, adding that the program is multilingual. The Wyoming program targeted English- and Spanishspeaking families of 4-year-olds in Head Start and preschool programs. A three-month initial implementation wrapped up this past spring, and the early results are resoundingly positive.

"The parents were very excited to be working with UW because we are far away," Liera says. "It gave them the

PROFESSIONAL DEVELOPMENT PARTNERSHIPS

The UW Literacy Research Center and Clinic works with school districts across Wyoming to offer tailored professional development. For example, Wyoming Excellence in Higher Education Endowed Chairs in Literacy Education Victoria Gillis and Cynthia Brock have worked with Fremont County over the past three years as part of the district's Teacher/Leader Quality Partnership Grant.

"Last year, I taught a course on active learning and how you create a classroom that is learning centered," Gillis says. "This year, we're focusing on embedding lessons on vocabulary into an active learning framework."

"These teachers are some of the most dedicated, hardworking educators I've ever worked with in my 20 years," Brock says.

By partnering with districts, the center can help provide connected ongoing professional development opportunities tailored to each district's needs.



Jayden Diarte, Lionel Martinez Tzompa and Gael Lopez, three participants in UW's Literacy Center and Clinic texting program, celebrate graduation from their Teton County Children's Learning Center Head Start program in June. COURTESY OF LETICIA LIERA

message that the development of their children was important enough for the state that the university was also involved. It was a win-win situation for everyone."

Zumel says the texts were easy for parents to understand and apply: "It opened them up to be hungry for information about early literacy because they could directly see the benefit with their children as they were doing the activities. It even encouraged some of these families to start doing their own research on literacy skills."

The program is very cost-effective, and Liera and Zumel hope all the Head Start programs and public libraries in the state will adopt it in the coming school year.

The texting program is only one of many outreach programs spearheaded by the UW Literacy Research Center and Clinic, which opened in the spring of 2014.

"The center has a maintained its vision for statewide engagement engaging in research, clinical services, teacher education and professional development," says Executive Director Dana Robertson.

The center provides K-12 literacy tutoring on site, conducts important literacy research studies with UW doctoral students, offers grants for new and interdisciplinary research, provides hands-on learning for pre-service teachers and offers an annual literacy conference. It also provides professional development opportunities to districts across the state, and Robertson spearheaded a needs assessment for the early grades in collaboration with the Wyoming Department of Education in order to focus on clearly delineated needs of grades K-3 in Wyoming schools.

In the future, Robertson says that the center plans to open satellite clinics in each region of the state where education undergraduate and literacy graduate students will take advantage of the practicum experiences and offer tutoring services. The center also plans to offer online video training modules in literacy education.

The center's work spans the

disciplines and grade levels, including a study on the language used in math problem solving. As Robertson says, "Literacy is the language of learning in every discipline."

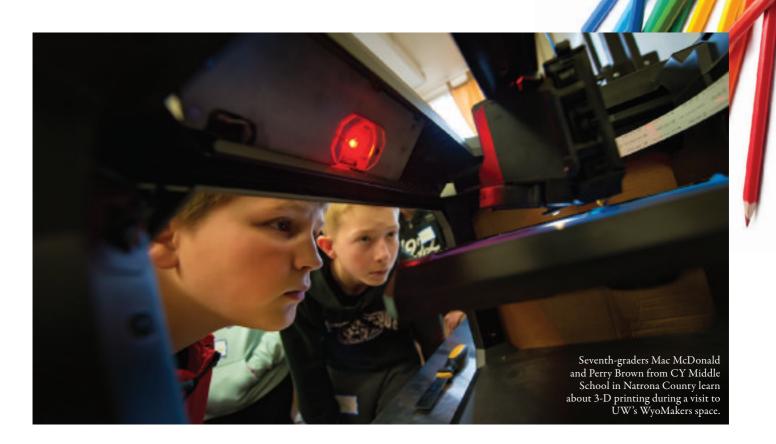
Creativity and Technology Merge in the Makerspace Movement

At Jackson Hole High School, students of the Digital Fabrication Lab otherwise known as the "FabLab" brainstorm, research, create and refine solutions for real-world problems in their community, including helping the library create a more functional space for teens and the re-establishment of a local park.

The lab is part of the makerspace movement that's been gaining momentum since the 1970s and is now rapidly entering the field of education.

"It's an avenue to keep children engaged, to get them to really want to learn and go a little deeper to solve problems," says FabLab teacher Samantha Smith, who earned her master's degree in instructional technology and design at UW. "Jackson Hole High School and our FabLab were one of only 39 makerspaces in the entire country when we first implemented it three years ago. I am very proud of the fact that our school was one of the first."

UW is one of the few universities in the nation immersing pre-service teachers in the makerspace movement via WyoMakers within the College of Education and other makerspaces on campus. As defined by the Department of Education: A makerspace provides students the materials and environment that they need to create, invent, tinker and explore, helping them build vital career skills,



including critical thinking, planning, communication and problem solving.

Tonia Dousay, assistant professor in the College of Education Department of Professional Studies, spearheaded the creation of WyoMakers as part of her Mary Garland Early Career Fellowship in 2014. The space includes 3D printers and a plethora of digital creation tools. It's designed to help preservice teachers learn to use the latest technologies and tools available so that they can incorporate them into their future classrooms.

"Last semester, we became part of the MakeSchools.org alliance of university-based makerspaces, headed by Carnegie Melon University," Dousay says. On the first conference call, she was the only one representing a college of education. "We don't have enough maker education in colleges of education. I'm going to be working on my National Science Foundation CAREER application to focus on how we can create programs to better engage pre-service teachers and even offer summer enrichment for in-service teachers to use these facilities."

Dousay also works to support makerspaces across the state: "We've created the Wyoming School-Based Maker Network. It's a Wyoming forum to show which schools have spaces and what they do have in them. That way schools can connect and share tools and resources."

In May of this year, Dousay was awarded the International Society for Technology in Education Award for Advocacy for her work in creating WyoMakers, championing the movement in higher education and working with Wyoming schools.

"I am incredibly grateful for the opportunity to work with amazing educators across the state of Wyoming and here at UW who actively change the way we teach and think about teaching," Dousay says. "These outstanding practices and people are what enable me to advocate for change and hold up as good examples for the world to see."

WyoMakers was the first makerspace at UW, but now there's a makerspace in the Visual Arts Building and two in progress: one in Coe Library and one in the planned Engineering Education and Research Building. Dousay also gives guest presentations for classes across campus and is teaching a class open to all first-year students this fall, Making, Hacking and Tinkering: Creating in the Modern World. As in Smith's classes, the students will identify a realworld problem and work to design and refine solutions for it.

Dousay already gets calls from former students—now teachers themselves—seeking additional guidance as they begin to incorporate into their own classrooms the creativity, technology and project-based learning inspired by the maker movement.



UW Trustees Education Initiative Director Selected

An experienced administrator who has helped lead education reform efforts in Ohio has been selected to direct the University of Wyoming Trustees Education Initiative, aimed at elevating UW's College of Education to national pre-eminence in preparing K–12 teachers, counselors and administrators.

Rebecca Watts, currently the associate vice chancellor of P-16 initiatives with the Ohio Department of Higher Education, has been named executive director of the UW Trustees Education Initiative. She is scheduled to begin her work at UW Sept. 19.

"This is an incredibly difficult and challenging position, requiring in-depth knowledge of professional educator preparation at the college level as well as a thorough understanding of K–12 education," says Dave Palmerlee, UW trustee and chair of the Trustees Education Initiative Board. "Dr. Watts bridges this gap in such a way as to give us great confidence in her leadership and abilities going forward."

Palmerlee says Watts was selected from a strong field of candidates after interviews with members of the Trustees Education Initiative Board, Superintendent of Public Instruction Jillian Balow, College of Education faculty and staff members, and members of Wyoming's P-12 education community.

Watts has held her current position with the Ohio Department of Higher Education since 2012. Before that, she was the chief of staff to the president of Ohio University, a position she took after serving as deputy to the president of Murray State University in Kentucky. She also worked as the public information officer for the Illinois Board of Education superintendent.

Watts holds a bachelor's degree from Sangamon State University in Springfield, Ill.; a master's degree from the University of Illinois-Springfield; and a doctorate from Ohio University.

"Dr. Watts brings a lifetime of leadership experience spanning both higher education and P–12 reform," College of Education Dean Ray Reutzel says. "She will be an articulate spokesperson for the Trustees Education Initiative, having demonstrated an ability to bring a wide array of stakeholders together to achieve a common cause. I believe she will do just that with this initiative. She has my support and that of the college in moving this agenda forward in a bold way."

Turn to page 22 to learn more about the UW Trustees Education Initiative.





School of Energy Resources

The University of Wyoming's School of Energy Resources is a dynamic institution committed to pursuing energy research and education that prepares UW students and Wyoming's energy industry for the ever-changing needs of the state.

Learn about our new Carbon Engineering Initiative that focuses on the development of novel techniques to convert Wyoming's vast coal resources into value added products.

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GO FOR GOLD



uwyo.edu/ser



UW College of Education graduates make big impacts on their students and communities.

By Christopher Miller

In Casper, at-risk students learn math through construction. Kids from Laramie earn top awards at Denver's Music in Parks. A Cheyenne MATHCOUNTS team wins state for the first time ever. All of these achievements and countless others are thanks to the homegrown talent of University of Wyoming College of Education graduates. Here, we feature eight of those graduates, but they are just a small sampling of the thousands of alumni affecting young lives across Wyoming and around the world.



JENNIFER MELLIZO B.M. in music education ('00), M.A. in music education ('06), Ph.D. in curriculum and instruction ('16). From: Edgar, Wis.

Work: 16 years as a teacher. "Currently I teach K–8 general music, band and choir and direct the musical theater program at the UW Lab School in Laramie. I have taught at the Lab School for 14 years."

Teaching Achievement: "Above all, I feel most proud that I have been able to create a learning environment in my classroom that allows all students to experience musical success. Music is inside all of us—I want my classroom to be a place where children develop a love of music that they will carry with them for the rest of their lives."

This year, Mellizo was named Teacher of the Year in Albany County School District #1.

Student Impact: "I traveled to Benin, Africa, on two different occasions to research music and to participate with Lab School students in several different service-learning activities, including efforts to support the International Center for Art and Music at Ouidah (CIAMO). I am very interested in global citizenship education and want my students to be dedicated, engaged and active citizens of their community, their country and their world." Elizabeth Becher poses with Worland Middle School Principal Ryan Clark after receiving her Teacher of the Year award. COURTESY PHOTO

> ELIZABETH BECHER B.S. in secondary language arts education ('13). From: Casper, Wyo.

Work: Three years at Worland Middle School. "I teach seventh-grade language arts. I don't have to work a day in my life. This is not work for me! I learn alongside my kids. I get to share my love of reading and writing with them. It is a creative, collaborative and fun environment. It is everything I wanted it to be and everything I could hope for."

UW College of Education: "One of my favorite quotes is, 'Some teachers taught the curriculum today, and some teachers taught students today.' The College of Education, in general, promotes uniqueness in our teaching. Never once was it, 'You have to do things this way'; it was, 'Here are some strategies—take the ones that work for you and implement your own style.' We learn in different ways, we teach in different ways, and there are effective ways to do that while staying true to yourself."

Teaching Achievement: "I was named Teacher of the Year in Worland. I've only been teaching for three years, so to receive such a distinguishing honor was surreal. Getting rewarded to do something that I love—you can't put into words how that feels."

B.S. in education ('86). From: Torrington, Wyo.

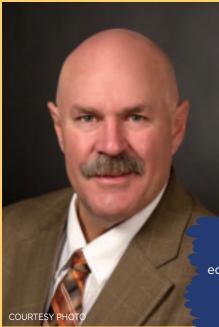
Work: 21 years as a teacher. "I've been at McCormick Junior High School in Cheyenne since 1994. I teach seventh- and eighth-grade math. When I was 35, I went back and got my master's degree in math from the University of Northern Colorado. I love seeing kids' mindset change about math. You can see them start to think about things in new ways. In this job, sometimes I think, 'Am I really getting paid to do this?' because it's so much fun. It's a great challenge and reward."

Teaching Achievement: "I coach a math competition team for MATHCOUNTS. We work on really great challenging problems that the kids wouldn't get to see otherwise. We won state this year. A Cheyenne team has never won state. I think the kids were proud because they worked so hard."

The winners then traveled to Washington, D.C., to compete in the national competition.

Community Involvement: "I'm involved with the UW Alumni Association—it's one of the things I'm passionate about. I think building relationships with our former students, our alumni and our friends of the university is critical to our growth and making our university better."





Work: School administrator since 1992. "I work as the superintendent of schools for Campbell County School District in Gillette, Wyo. The most significant rewarding aspect of being a public school superintendent is providing resources, training, time and support to our staff members working with students—allowing them to make a difference in the lives of each and every student in our district."

Student Impact: "Our board and community have decided that Campbell County High School is large enough to split into two comprehensive high schools. I feel fortunate to be the superintendent of Campbell County School District working with a board, administration, staff and community that recognize the additional high school is a positive factor for the 2,250 students in grades 9–12."

UW College of Education: "The College Of Education gave me a great

BOYD BROWN

B.S. in physical and health education ('87), M.A. in educational leadership ('92), Ph.D. in educational leadership ('08). From: Midwest, Wyo. foundation and preparation for all of the education positions I have held. I believe it helped me develop grit to persevere. The college provided me the theoretical knowledge to understand many aspects of education, along with practical knowledge to make me successful as a teacher and administrator."

Work: "I'll be teaching seventh- and eighth-grade science at Sheridan Junior High School. I started doing environmental education. I just loved getting

students excited about nature and getting them involved in their communities and local areas."

UW College of Education: "UW has a lot of great classes that encourage you to do something different. Kids don't just learn by sitting, and my professors were very encouraging toward my passion of getting students to learn through hands-on activities.

"The SWARMS (Sustaining Wyoming's Advancing Reach in Mathematics and Science) program is what allowed me to be in the College of Education in the first place. It's a program that pays tuition and fees, and then you work two years in a Title 1 school. I wouldn't have been able to afford coming back to school without it."

Student Impact: "I've had kids come up to me and hug me and cry and just say how much of a good time they had. That may have been their first experience really learning about nature and science and how everything works together. Just having that impact has been great."

RACHAEL ESH Teaching certificate ('16). From: Washington, III. Prior to earning her teaching credential, Rachel Esh worked at Monadnock State Park in New Hampshire. COURTESY PHOTO MISSY NACK B.A. in education ('92), M.S. in school counseling ('99). From: Newcastle, Wyo.

COURTESY PHOTO

Work: "After holding the position of elementary school counselor for 15 years, I will be moving to a school counseling position at Natrona County High School. I can't imagine anything more rewarding than building a relationship of trust with a person who is struggling and watching them reach acceptance of themselves and happiness in the world they live in."

Student Impact: From the parent of a former student: "There are kids who have the skills needed to function well at school but decide they would rather not. That was the case with my son, who wanted to stay home rather than go to school. Missy was there to comfort him. She helped him work through his troubles and gave him the encouragement he needed to get back on track. I have seen major differences at our school since Missy's involvement with our kids."

Community Involvement: "Most recently I have worked with Wyoming Food for Thought Project. They work to promote access to healthy food and sustainability. Last year, I provided second- to fifth-grade girls the opportunity to work with a local architect to design and build a garden plot at the Food for Thought site." ROBERT HILL B.S. in industrial technology education ('10). From: Casper, Wyo.

Work: Construction teacher since 2010. "I'm moving to a new place called the Pathways Innovation Center (in Casper). It is an academy-based environment where students take career and technical education courses that are integrated with core classes. I currently teach an integrated course with math and construction combined."

UW College of Education: "I learned quite a bit from UW faculty members Rod Thompson and John Kambutu. They were exceptional people." The College of Education also provided connections in the school districts that are helpful upon graduation, he notes.

Personal Achievement: Hill is most proud of building a construction program that helps out the local community and provides opportunities for careers in the construction industry. "We build industry projects with the students in our community—in the last seven years we've completed 80 projects including barns, garages, concrete jobs and cabins."

Student Impact: "I've worked with at-risk students for the last seven years. Building personal relationships and providing an opportunity for careers have been my focus. A lot of students don't know what they were capable of doing, so providing this opportunity can be a life-changing event. Having students become independent and productive is a primary goal."



Robert Hill (middle) with First Lady Carol Mead, Wyoming Gov. Matt Mead, Arch Coal CEO John Eaves and Wyoming Education Association President Kathy Vetter after receiving the Arch Coal Teacher Achievement Award in 2014. COURTESY PHOTO



Work: "I am starting my third year as a middle school counselor (Greybull Middle School). What I love most about my job is working with my terrific students. Watching students set goals for themselves and grow over the course of three years of middle school to achieve their goals is inspiring."

Community Involvement: "I am a volunteer for Big Horn County's victim advocacy agency. We are currently working with agencies from Washakie and Hot Springs counties to raise awareness of sexual violence in our communities."

Personal Achievement: "I was voted president-elect-elect of the Wyoming School Counselor Association. I am excited to represent school counselors

SCHAREN COLLINGWOOD M.S. in school counseling ('14). From: Shell, Wyo.

around Wyoming at the national conference of the American School Counselor Association."

Student Impact: "I have implemented an individual academic planning intervention for any student who earns a D or an F during the school year. Any student who earns a D or an F meets

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with me, and together we set goals for the student for the upcoming quarter. I monitor the students' progress toward their goals. At the end of the 2015–16 school year, not one student at Greybull Middle School earned an F as a final grade for the fourth quarter."



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THE / e / re / goming PROJECT



Artwork produced by Wyoming fourth graders for the We Are Wyoming project.

By Tamara Linse

Kids learn by doing. So, what better way to learn about the world they live in than through art and writing?

We Are Wyoming is a three-year statewide project in which fourth-graders make art and write and talk about Wyoming landscapes, counties, history, artists and ways of life. It is a two-day standards-based unit facilitated by University of Wyoming College of Education Professors Allen Trent and Pete Moran that incorporates social studies, visual art and language arts and even includes a local field trip.

"One of the things we were amazed by was how much the kids knew about their local communities," Trent says. "They were little experts. How do you capitalize on that as a teacher?"

"It's an integrated art, geography, reading, writing, history kind of project," Moran adds.

The Everett D. and Elizabeth M. Lantz Distinguished Professorship in Education was awarded to Trent and supported Moran and him as they traveled to all 23 of Wyoming's counties to offer this unique combination of art and history to schools of low socioeconomic status. The program fits well with the Lantz Professorship's purpose of supporting a state-funded faculty position that attracts and retains an outstanding education scholar and teacher with a proven track record and national reputation. The support may supplement salary and/or go to discretionary funds to enhance research and teaching. This fund was established in 2005 by Phil Lantz, national security authority and UW alumnus, in honor of his parents.

Trent and Moran spent the first year planning, contacting schools, obtaining permissions and organizing materials. The second year was spent traveling the state and visiting schools. The final year, 2015–16, was spent sharing the results with teacher education classes and at literacy conferences. The project will also result in a number of publications.

Groups of students ranged in size from 14–65. Trent taught the smaller groups, while Moran often joined him for the larger ones.

Student projects included designing county quarters on baking rounds, much like state quarters, that capture the spirit of where they live. To emphasize social studies, students completed a map mural, where a map of Wyoming was cut up on a grid, and each student decorated one portion of the grid.

Students also engaged with and wrote about the artwork of six contemporary Wyoming artists ranging from representational to abstract. Students created a Wyoming history timeline that included



UW professors Pete Moran (left) and Allen Trent. Trent holds the Everett D. and Elizabeth M. Lantz Distinguished Professorship in Education. COURTESY PHOTO

Lantz Professorship supports kids learning about history and culture through the arts.

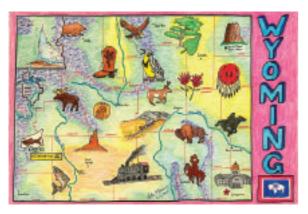
artwork and facts. All students maintained sketchbooks throughout the two days. Finally, teachers at the schools arranged field trips, which included county historical societies, local museums, national forest and walking tours.

The learning goes on long after the two-day visit. Students explore one topic in depth during those two days, but on the project website there are 34 more topics that teachers can explore later with their classes.

A UW faculty member since 2000, Trent served as associate dean of the College of Education from 2011– 13. His research interests include teacher education, multicultural education, arts-integrated education, qualitative and action research, and professional development. Trent taught in Ohio elementary schools for 10 years while earning his master's degree in teaching from the University of Dayton and his doctorate from Ohio State University in curriculum, instruction and professional development.

Moran is an associate professor in the Department of Elementary and Early Childhood Education. He earned his bachelor's degree at UW before going on to earn his master's and doctorate from Kansas State University. His teaching interests include school desegregation, the history of education, and using documents and census data in teaching elementary social studies.

To view student artwork and learn more about the project, visit https://sites.google.com/site/wearewyo.



Model Wyoming map mural by Professor Moran.

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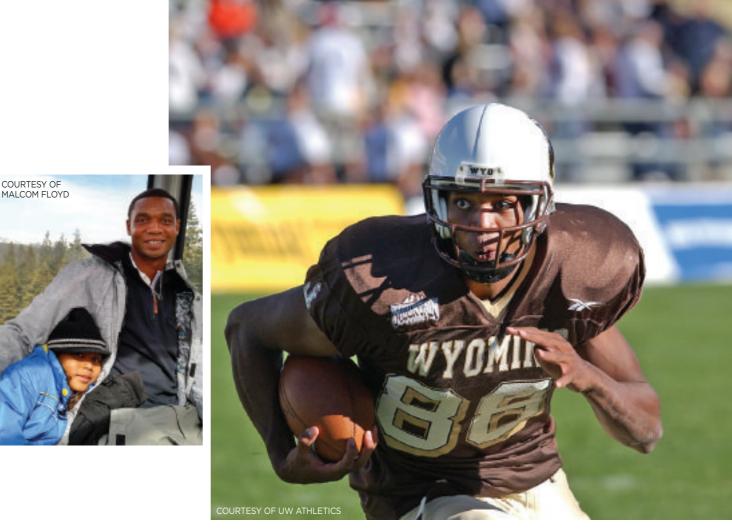
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PRO SUPPORTS FUTURE STUDENT-ATHLETES

UW alumnus Malcom Floyd played in the NFL for 12 years, and he's given back in hope of helping other student-athletes reach the same potential.

By Jessica Robinson

"Playing football created more avenues for later on in life," says Malcom Floyd. "I played 12 years in the NFL. I would have never thought I'd play that long. I was hoping I'd get an opportunity to play—I wanted to be like my brother [also named Malcolm, but with a second L]. It definitely created a more dynamic future for me and being able to support my kids without any worries. I'm just really thankful for the university giving me that opportunity."

Floyd attended the University of Wyoming from 1999 to 2004. He redshirted as a freshman. As a sophomore, he was chosen first-team All-Mountain West Conference by *Football News* and *Sporting News*. As a senior, he was an All-Mountain West Conference honorable mention. He finished his college career with 186 catches for 2,411 yards and 14 touchdowns. He graduated in 2004 with a degree in health sciences, minoring in African-American studies.

Floyd had never been to Wyoming before coming to school here, but he was familiar with the area because his brother Malcolm, who played for Fresno State, played against Wyoming. His older brother went on to play for



the Houston Oilers and the St. Louis Rams as a wide receiver. The younger Floyd always considered himself fortunate to be able to play a sport he loved and to attend school on a scholarship. He explains that "getting a degree was a huge stepping stone in life."

Floyd says: "I came from Sacramento, and it didn't snow, so it was a culture shock, but at the same time, I think it made me a more diverse individual as far as building character. I became successful, and Wyoming did a great job of putting me in a position to be successful, and I'm really thankful for that."

After college, Floyd played for the San Diego Chargers, where he remained from 2004 until he retired in 2015. He was a wide receiver and ended his career with 321 receptions for 5,550 yards.

His donations to UW have benefited

student-athletes by supporting the Cowboy Joe Club and the High Altitude Performance Center. The center will be funded by a \$24 million private support campaign and a \$20 million state of Wyoming matching program.

This public-private partnership will expand the current 48,000-squarefoot Rochelle Athletics Center into a 114,000-square-foot premier collegiate athletics complex, solidifying Wyoming's

"I became successful, and Wyoming did a great job of putting me in a position to be successful, and I'm really thankful for that."

reputation as a state committed to excellence—producing student-athletes who succeed in the classroom, compete at the highest level on the field and define a lasting legacy for the state.

The new High Altitude Performance Center will ensure that UW capitalizes on its greatest competitive advantage: physical training for young men and women at 7,220 feet. The thin air of the Rocky Mountains provides an opportunity for Cowboys and Cowgirls to gain unique conditioning that cannot be achieved at lower elevations.

"The one thing I hope with me giving back is that I could open up some doors for the future or current student-athletes and give them opportunities to be successful in life," Floyd says. "I hope I could at least help out one—hopefully many—by giving what I gave."

UWAA PRESIDENT'S LETTER

Growing up in Laramie, I always assumed that Homecoming was just about the football game. In the early 1980s, I was one of those kids in the south end zone at homes games tossing a football around while pretending to be Scott Runyan, Kevin Lowe or Jay Novacek. We all knew that Homecoming meant the crowd would be bigger, the town would be busier, and the game would be a little more important than most—we just didn't know exactly why.

Today, I know Homecoming to be not just about the game but about the people and their experiences that made the University of Wyoming so great. Homecoming is about YOU, the alumni and friends who love being associated with UW. It's a weekend to celebrate your relationship with the university and the friends you made while a student or friend to the school. Homecoming is a reunion when you get to reconnect with your past and share the bond that belongs to those of us who call ourselves Cowboys and Cowgirls.

The 2016 Homecoming celebration will mark the first for our new president, Laurie Nichols. During the first few months of her tenure with us, Nichols took the time to meet with UW faculty and staff, with legislators and educators around the state, and with alumni and friends across Wyoming. Through this series of engagements, she has listened and developed a feel for what makes UW so special. She understands our commitment to our mission as the state's land-grant institution, and she also knows the depth of passion in our alumni and supporters around the world. As the president of the UW Alumni Association board, I'm excited to see that Nichols values the work the alumni association currently does and the work we are determined to do moving forward. We strive to reach and engage as many of our 120,000 alumni as we can. Our goal is to connect

their passion for UW into advocacy for the university. Nichols knows that alumni advocates positively impact recruitment of prospective students, offer career guidance and connections for graduates that lead to internships and jobs, and share the pride and distinction of UW to the world.

Homecoming this year is set for Oct. 1-8 with the timeless theme, "Once a Cowboy, Always a Cowboy!" Activities scheduled for the week include the new All Alumni & Friends Reunion & Pep Rally, Homecoming preregistration to receive a 2016 Homecoming gift bag, and a new twist to our 50th Club Reunion. We will honor the class of 1966 and invite all alumni to attend who have graduated earlier. See page 59 for more Homecoming details and how to register for events.

If you haven't been to Laramie in a few years, you are in for a wonderful surprise. The campus my dad knew in the early 1970s was basically the same campus I enjoyed in the 1990s. There wasn't a great deal of change during that time span. The spirit of that campus still lives as you walk around campus today. However, just like you and me, the campus has evolved. Laramie has grown, and the campus has advanced into a world-class university for learning and educational growth. Aspects of the campus have been remodeled, while others are completely new. Stand in the middle of Prexy's Pasture, though, with that Wyoming air surrounding you and the distinctive sandstone architecture of the buildings, and you'll be right back in that Cowboy state of mind.

Fall is one of the best times to be in Laramie. All of us at the University of Wyoming and the Alumni Association invite you to come back home. Enjoy the crisp fall air, that big blue sky, and spend time being on campus. We want you to share your experiences, meet new friends and celebrate the fact that it's true: "Once a Cowboy, Always a Cowboy!"

Proudly Yours in the Brown & the Gold,

Doug Mader, B.S. '98



Doug Mader, B.S. '98, President



Tim Wilson, B.S. '98, President Elect



Phil Petersen, B.S. '86, Immediate Past President

UWAA LEADERSHIP

2013-2017 Term

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Christian Lasher, B.S. '95, Southwest Area
Jane Farrell, B.S. '77, J.D. '80, North/South Dakota
Marie Geis, B.A. '75, Platte County
Mary Lou Heink, Exp. '66, Southeast Area
Brett McCoy, B.S. '98, Johnson County
Kathleen McKinley, B.S. '86, Laramie County
Lea Schoenewald, B.M. '75, Hot Springs County
Jeff Silbaugh, B.S.P. '75, Weston County

2015-2019 Term

Stephen Briggs, B.A. '00, Natrona County
Donald Crank, B.S. '98, Cer. '01, Lincoln County
Alex Obrecht, J.D. '13, Denver Metro Area
Laura Dandridge, B.S. '97, Converse County
Catherine Del Paggio, B.S. '83, Southeast Area
Stacy Deru, B.S. '98, Utah
Michelle Gams, B.S. '93, Montana
Lee Golden, B.A. '63, Northwest Area
Lance Goede B.S. '88, B.S. '89, M.S. '95, Freemont
County
Jennie Gray, B.S. '98, Sublette County
Chris Haakinson, B.S. '12, Young Alumni

Karen Kerns, B.M. '80, Southwest Area Michael Rheiner, B.S. '92, Nebraska Wendy Davis Schuler, B.S. '74 Uinta County Laurie Wasserburger, B.A. '78, M.A. '05, Niobrara County Sherrod France, B.S. '71, Treasurer

2016-2020 Term

Oaklee Anderson, B.A. '12, Sheridan County Charlie Brown, B.A. '69, Colorado Abby Butler, B.S. '10, Young Alumni Brent Daly, B.S. '90, B.S. '92, Campbell County Tom Delaney, B.S. '65, M.S. '68, **Big Horn County** Cadi Duggar, B.S. '14, Park County Tim Eisenbarth, B.A. '83, Goshen County Rod Everett, B.S. '70, Teton County Myron Gnall, B.S. '96, Northeast Area Mark Mader, B.S. '71, Albany County Richard Shupick, B.S. '99, Northeast Area Kermit Sweeny, M.S. '89, Washakie County Kris Thorvaldson, B.S. '93, Carbon County Bill Valdez. B.S. '94. Northwest Area Sean Valentine, B.S. '12, MBA '13, Sweetwater County

DISTINGUISHED ALUMNI

Calendar of Events

Sept. 8, 2016: Cowboy Road Series: Upstream Brewing Company at Old Market, Omaha, Neb.

Sept. 9, 2016: Cowboy Road Series: Buzzard Billy's, Lincoln, Neb.

Sept. 10, 2016: Cowboy Joe Club Pre-Game Hospitality, Lincoln, Neb.

Sept. 15-17, 2016: UWAA Board of Directors meeting, Laramie, Wyo.

Sept. 22, 2016: Cowboy Road Series: Arbor Brewing Company Microbrewery, Ypsilanti, Mo.

Sept. 23, 2016: Cowboy Joe Club Pre-Game Hospitality, Ypsilanti, Mo.

Oct. 1, 2016: Cowboy Joe Club Pre-Game Hospitality, Fort Collins, Colo.

Oct. 7, 2016: 50-Year Club Reunion (1966 and earlier), Marian H. Rochelle Gateway Center, Laramie, Wyo.

Oct. 7, 2016: All Alumni and Friends Reunion with Pep Rally, Marian H. Rochelle Gateway Center, Laramie, Wyo.

Oct. 7–8, 2016: Homecoming registration, Marian H. Rochelle Gateway Center, Laramie, Wyo.

Oct. 7-8, 2016: UW Alumni Band Reception and Homecoming participation. Please contact Lori Dockter for details at uwmom1@yahoo.com.

Oct. 8, 2016: Homecoming Parade and Cowboys vs. Air Force

Oct. 21, 2016: Cowboy Road Series: Silver Peak Grill & Taproom (Downtown), Reno, Nev.

Oct. 22, 2016: Cowboy Joe Club Pre-Game Hospitality, Reno, Nev.

Nov. 12, 2016: Cowboy Joe Club Pre-Game Hospitality, Las Vegas, Nev.

Nov. 26, 2016: Cowboy Joe Club Pre-Game Hospitality, Albuquerque, N.M.

Jim Nielson

UW Distinguished Alumnus



Distinguished Alumnus Jim Nielson (B.S. '54, business administration) believes in sharing his resources—time and finances—and he's given both to the University of Wyoming.

"I like to help with education," Nielson says. "It helped me. I like to give some of that back. I'm a strong believer in our University of Wyoming."

He grew up on a farm near Cody where they had sheep, cows and horses, and raised hay, grain and, one year, peas. Nielson and his family would rush every summer to harvest their crops so that they could receive peak prices from a Cowley vegetable cannery.

Nielson graduated from UW in 1954 with a degree in business administration. He credits his education for preparing him for his life and career. He formed many lifelong friendships with people he met at UW and throughout the state.

"It's still small in comparison to most of the state universities in this country," Nielson says. "You can still be an individual, and you can still know your instructor and be able to sit down and talk with them. It's more personal."

He continues, "My education hasn't just stopped with the time spent in Laramie. I have been able to go back and talk with instructors and have personal contacts with the university to this day."

After graduation, Nielson spent three-plus years in the U.S. Navy as a commissioned officer in the Supply Corps, then joined Husky Oil, a company that was founded by his father. He did everything from roughnecking to marketing, exploration, refining and eventually serving as executive vice president of exploration and production and president and CEO. Husky Oil's Nielson family interest was sold in 1979 to the national oil company PetroCanada. After this, Nielson was the president and CEO of JN Oil and Gas Co., a partnership with the principals and founders of Winn-Dixie (1979 to 1992).

In 1992, Nielson became the founder and president of Nielson & Associates Inc., an oil and gas company in Cody. He served as a board member for the Wyoming Pipeline Authority for 28 years, serving under four governors, and is a former director of the Denver branch of the Kansas City Federal Reserve. He has also served as president of the Rocky Mountain Oil and Gas Association in Denver and has been involved in many other boards in Wyoming, Colorado and Houston.

Nielson is a strong advocate for Wyoming. Aside from the energy industry, he believes in tourism as a major industry and feels the state can do a better job of marketing itself to visitors. Wyoming has a lot to offer, with Yellowstone National Park located 96 percent in Wyoming, Grand Teton National Park 100 percent in Wyoming, Devil's Tower, various Native American cultures and rich history. He wants tourists to visit so they can appreciate and experience the year-round beauty of the state he calls home.

Sandy Postel

UW Distinguished Alumna



UW Distinguished Alumna Sandy Postel (M.S. '96, natural science) is retired Boeing vice president of manufacturing, quality and production system strategy. She credits her groundbreaking success to her ability to translate difficult concepts into clear and understandable language in short, her teaching skills.

"My approach was always to ask the people who are experts—who are the people actually doing the work—and then listen to them. Then apply what the strategy is going to be and teach it," Postel says.

Her accomplishments at Boeing include introducing new technology into the manufacturing shops, improving the fire-worthiness of airplane interiors, introducing the Japanese concept of lean manufacturing to 800 engineers and the quality management division, writing technical papers, teaching seminars, and performing troubleshooting and change management wherever in the world Boeing needed her.

"Boeing valued my teaching skills," Postel says. "All I was really doing was listening to the guys who were the experts, and I didn't pretend that I was the expert."

She has also been a leader and mentor to women and minorities in the industry through the Society of Women Engineers and Boeing's diversity strategy leadership team.

Sandy credits her education for her excellent teaching and communication skills.

After earning a bachelor's at Purdue, she came to UW and earned her master's in natural science from the Science and Mathematics Teaching Center. There were 800 applicants that year, but only eight were chosen. She was one of those eight.

"I always wanted to be a scientist," Postel says, "but I also was drawn toward teaching. I think I was a natural engineer, but in 1971 that was never an opportunity that I saw in front of me—or was even posed to me. Back then, I thought engineers were guys with slide rules on their belts no calculators in those days. "The Science and Math Teaching Center taught some real fundamentals," she says. "When you're teaching elementary kids and you're thinking about science curriculum, there is a lot of real fundamental communication. Break it all down. Don't make it too complicated. But then you have to learn it yourself, really understand it, in order to break it down and explain it to other people. That was the joy of learning, for me. The Science and Math Teaching Center totally reinforced that for me."

After earning her master's, she taught for three years in Kentucky, but she found that it didn't allow her much creativity. When her brother got a job at Boeing in Seattle, she helped him move, and the rest is history.

"Boeing gave me the opportunity to be creative in technology and bridge that gap between technology and education," Postel says. "And then it became a leadership issue, too, because I was a good communicator—they didn't have many engineers who were technical who understood how to communicate clearly. I just started getting promoted, and I was the only woman."

Postel expresses her sincere appreciation in receiving the UW Distinguished Alumna Award and in reconnecting with her alma mater.



Keener Fry, executive director, and Laurie Nichols, UW president, at the Torrington, Wyo., community reception

During UW President Laurie Nichols's first months in office, she has spent a day or two of each week traveling around the state to meet with citizens, community college and public school leaders, legislators, alumni, media and others. Residents of these counties had the opportunity to meet Nichols during 10 public events throughout Wyoming hosted by the UW Alumni Association, local alumni and friends.

Theo Ratliff

UW Distinguished Alumnus



Theo Ratliff (Exp. '95) credits his mother for his coming to Wyoming. For as long as he could remember, she always told him and his siblings to not be afraid to explore new places, so when the recruiters came to convince him to come to the University of Wyoming from Alabama, he did. It also helped that he felt needed and wanted on the UW basketball team.

"I took the visit out there, and I fell in love with the environment and the landscape—the mountains and the trees," Ratliff says. "It's really a culture shock when you've never seen that type of beauty before."

He attended classes and played basketball at UW from 1992 to 1995. He's still the university's leading shot blocker with 425 blocks, and he holds practically all of the school's blocked shot records. He was an All-WAC first team selection for two years in a row. He won the Gene Benson Agency MVP Award twice, and he was inducted into the UW Athletics Hall of Fame in 2005.

"I did a lot of growing up going there," Ratliff says. "I was on my own for the first time, so many thousands of miles away from home. I had to do a lot of maturing—taking care of myself and making sure I pushed myself to get my schoolwork done."

When his career at UW was over, he was among the top 15 in scoring and rebounding. In 1995, Ratliff was drafted by the Detroit Pistons and was the 18th pick in the first round. He was the first WAC player selected that year. He played for the Philadelphia 76ers, the Atlanta Hawks, the Portland Trailblazers, the Boston Celtics, the San Antonio Spurs, the Charlotte Bobcats and the Los Angeles Lakers. He retired from basketball in 2011.

While playing in the NBA, he led the league in blocks per game three times. He ranked 18th in all-time career blocks and 13th in all-time career blocks per game as of 2011.

Ratliff has been a huge supporter of the University of Wyoming. He credits the skills and experiences he learned while going to school as preparing him for his career in the NBA. When he had the opportunity, he did what he could to give back to UW.

"I have a legacy as far as playing there, but I wanted to leave something there," Ratliff says. "Being able to go there for four years and also to develop my skills while I was there in order to go on to play in the NBA, I wanted to make sure I gave back to the younger generation that was coming up."

UW is not the only place Ratliff supports. He has been a generous contributor to numerous organizations, including the Boys and Girls Clubs of Metro Atlanta, UNICEF Tsunami Relief, NBA Read to Achieve and Hurricane Katrina Relief. He is also the founder of the Theo Ratliff Activity Center in his hometown of Demopolis, Ala., which serves over 6,000 individuals of all ages each month.

COWBOYROADSERIES

Wyoming Cowboys vs. Nebraska

Thursday, Sept. 8: Alumni & Friends Gathering -Omaha, Neb. - Upstream Brewing Company at Old Market from 5:00 p.m. - 7:00 p.m. @ 514 S. 11th St, Omaha, NE 68102

Wyoming Cowboys vs. Nebraska

Friday, Sept. 9: Alumni & Friends Gathering - Lincoln, Neb. - Buzzard Billy's - 3:00 p.m. until restaurant close @ 247 N. 8th St. Ste. 101, Lincoln, NE 68508

John D. "Dave" Bonner

Medallion Service Award Winner



Medallion Service Award recipient Dave Bonner (B.S. '62, journalism) has spent his life in service to his beloved Wyoming.

For more than 60 years, Bonner has been building community and Wyoming's future through his work as a *Powell Tribune* journalist, editor and publisher, his many volunteer hours supporting the University of Wyoming and his service to organizations throughout the state.

"The newspaper plays a role in making a community a better place to live," Bonner says. "We believe if you take care of the community, the community will take care of you. If you work hard for your community and make it a better place, you improve right along with your community."

Bonner began his journalism career in high school covering sports for the *Powell Tribune*. The Wyoming Press Association awarded him a scholarship to UW, and so he decided to pursue journalism as a career. At UW, he worked for the *Branding Iron* student newspaper, first as a reporter, then as sports reporter and then as editor of the paper.

"I got a wonderful education," Bonner says. "In the journalism department, you learn to be a community newspaperman. I learned how to do everything—from writing the stories to taking the pictures to actually printing the newspaper. That's where I learned to do what I love to do."

Upon graduation in 1962, he worked for a year at the *Riverton Ranger* before returning with his wife, Diane, to the *Powell Tribune*. He's been there ever since.

Bonner credits much of the *Tribune's* success to his very capable staff, many of them UW-trained journalism graduates: "The story of the *Powell Tribune* isn't just my story. Wonderful, wonderful people who have been key to our success. What a joy it's been to work alongside them."

Bonner has served his beloved alma mater for many years. He has spent countless hours as a member of the UW Board of Trustees, UW Foundation Board, the UW Publications Board, the *UWyo Magazine* advisory committee and the UW Alumni Association Board, serving as president of the trustees. He was also director of the Cowboy Joe Club and the Wyoming Sports Hall of Fame.

"I love the University of Wyoming," Bonner says. "We are a University of Wyoming family. I have five siblings. We all graduated from the University of Wyoming. My three kids and my wife are all University of Wyoming graduates. We believe in the university—we love the place."

Bonner also loves the Pokes and tries to make every game, though it's a day's drive each way. The Bonners are season ticket holders. His children Brad, Shelby and Toby wrote, "We know he loves us deeply, but we like to joke about how the Cowboys are his favorite!"

The Medallion Service Award, founded in 1968, recognizes outstanding service and dedication to the university. It is only awarded when merited.

"I am just thrilled and amazed and surprised and humbled to win the Medallion Service Award from the University of Wyoming. It has tremendous meaning for me," Bonner says.

Wyoming Cowboys vs. Nevada

Friday, Oct. 21: Alumni & Friends Gathering - Reno, Nev. - Silver Peak Grill & Taproom (Downtown) from 5:30 p.m. -7:30 p.m. @ 135 N. Sierra St., Reno, NV 89501

Wyoming Cowboys vs. Eastern Michigan

Thursday, Sept. 22: Alumni & Friends Gathering -Ypsilante, Mich. - Arbor Brewing Company Microbrewery from 5:30 p.m. - 7:30 p.m. @ 720 Norris St., Ypsilanti, MI 48198

2016-17 Scholarship Recipients

Community College Transfer Student

Carlos Garcia - Cheyenne, Wyo. Heather Townsend - Douglas, Wyo. Sarah Finch - Casper, Wyo.

Graduate Student Bethann Merkle - Laramie, Wyo.

Multicultural Alumni Chapter Scholarship Bethany Shotts - Cody, Wyo. Hailee Riddle - Buffalo, Wyo.

Premier Scholarship Trent Bronnenberg - Cody, Wyo.

UW Juniors and Seniors Jonathan Kephart - Brookings, S.D. Paige Leonard - Highlands Ranch, Colo. Richard Yang - Laramie, Wyo.

United States Veterans of War Kenneth Brenneman - Laramie, Wyo.

Charles A Viox Memorial Scholarship Anna Hepp - Worland, Wyo.

Fred Gray Memorial Scholarship Hannah Cranor - Gunnison, Colo.

Hershler/Skinner Family Memorial Scholarship Baylor Beers - Riverton, Wyo.

John and Helen Ilsey Family Foundation and Sheridan County Alumni Network Scholarship Tyler Myers - Sheridan, Wyo.

John P. Ellbogen Foundation Scholarship Laura Dale - Gillette, Wyo.

License Plate Funded Scholarship Jackson Linford - District III - Cokeville, Wyo. Fallyn Richmond - District I - Riverton, Wyo. Weston Fox - District VI - Antioch, Ill. Catherine Winnop - District II - Sheridan, Wyo. Jake Forkner - District V - Cheyenne, Wyo. Luanna Rochelle - District IV - Casper, Wyo. Haley Helmbolt - 2nd Bachelor's Degree - Brunswick, Maine Rachel Tighe - Community College Transfer Student - Riverton Hannah Wiley - Community College Transfer Student - Sheridan/ Gillette

Alyssa Sanders - Community College Transfer Student - Rock Springs Zachariah Pieper - Community College Transfer Student - Torrington Michael Arrospide - Community College Transfer Student - Laramie/Cheyenne

Austin Asay - Community College Transfer Student - Laramie/Cheyenne

Amberli Mosteller - Community College Transfer Student - Casper Shelby Brunson - Community College Transfer Student - Sheridan/Gillette

Anna Miller - Community College Transfer Student - Casper Cameron Collamer - Community College Transfer Student - Casper Kael Sweeney - Grandchild of UW Graduates Scholarship - Sheridan James Shupe - Non-Traditional Undergraduates - Cheyenne Bradley Lutz - Non-Traditional Undergraduates - Casper Brendon Edwards - Outreach - Douglas Joesie Bowdish - 5th and 6th Year Students - Laramie

Mary Lou Rechard Memorial Alumni Scholarship

Meghan Buscher - Pierre, S.D.

Out-of-State High School Seniors of UWAA Members Taylor Weddle - West Point, Neb.

Platte Valley Bank Alexandra Howell - Morrill, Neb. Hannah Jernigan - Cheyenne, Wyo.

Roberta M. Darnall Alumni Scholarship Janika Sweeney - Sheridan, Wyo.

UW Alumni Association Seattle Network Scholarship Logan Peck - Poulsbo, Wash.

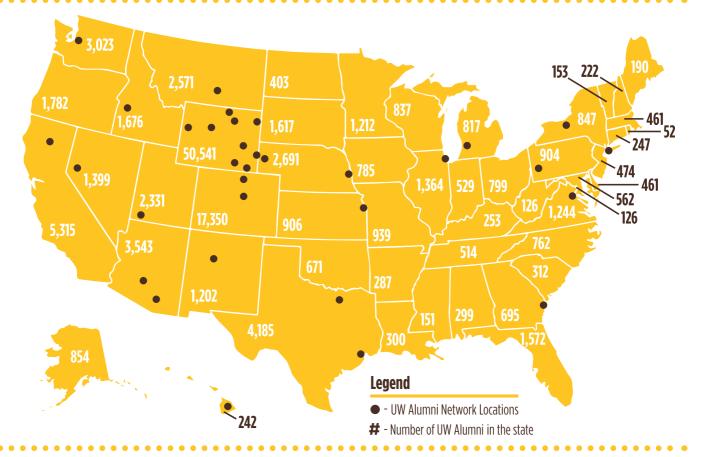
Wyoming High School Seniors of UWAA Members

Jace Anne Sharp - District V - Cheyenne, Wyo. Katie Miller - District I - Cody, Wyo. Blake Shields - District V - Cheyenne, Wyo. Bridger Helm - District IV - Casper, Wyo. Avery Ellis - District II - Sheridan, Wyo.

INSPIRING CONNECTIONS Community • Career • Scholarships

the world connecting through 1 of our 40 alumni networks and alumni activities.

gathered at over 150 events hosted by the UWAA and our UW partners.



alumni used career resources, including online webinars and videos, job postings and career fairs to make connections to internships and full-time jobs.

115 students were awarded \$171,000 in financial aid from the UWAA. New scholarships were established in Houston, Seattle, Sheridan County and New York City. recent graduates connected with 45 alumni in a variety of industries and professions through the new Cowboy2Cowboy informational interview program.

\$700,000

in scholarships funds have been generated during the first eight-year cycle of the Wyoming License Plate Scholarship Program.



Faith Kremer (B.A. '07), Angela Ver Ploeg (B.S. '08) and Mary Anne Barnes (B.S. '71) at the St. Louis Alumni and Friends Gathering



Lynn Cheney (H.D. '93) and Edward Murray (J.D. '83) at the UWAA Scholarship Reception and Auction in Casper, Wyo.

UWAA ACROSS THE USA



Jack Tennant (B.A. '10), Justyna Podziemska (B.S. '08) and Jason Straight (B.A. '06) at an evening with UW in New York City, N.Y.



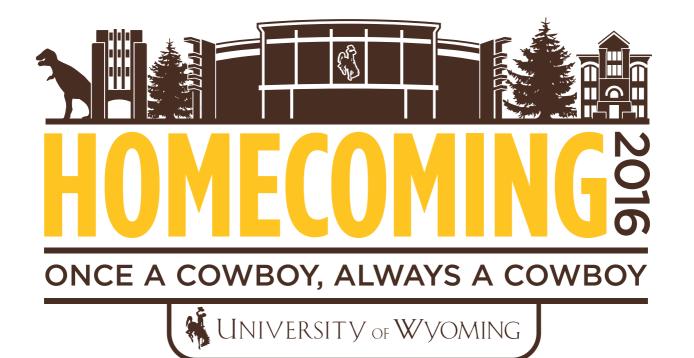
UWAA state of Utah Director Stacy Deru hosted an alumni and friends gathering at her home near Salt Lake City.



Steve Farkas (M.B.A. '11), Barry Sears (B.A. '93) and David Ungerman at an evening with UW in New York City, N.Y.



Reggie Slater (B.S. '92), Art Howe (B.S. '69), Katherine Crowley (B.S. '02, MBA '03) and David Mentock (B.S.P.E. '83) at the Houston Alumni Network Golf Tourney.



OCTOBER 1-8

The University of Wyoming Alumni Association welcomes **YOU** back to campus for Homecoming Oct. 1-8. Celebrate the brown and gold spirit as you reconnect with good friends, classmates and the UW community.

SCHEDULE OF EVENTS

SATURDAY, OCT. 1 - The Big Event and Homecoming Kickoff
WEDNESDAY, OCT. 5 - Homecoming Sing (sponsored by Iron Skull)
OCT. 6-7 - Homecoming registration, Marian H. Rochelle Gateway Center
THURSDAY, OCT. 6 - UW President's Homecoming Recognition Dinner (invitation only)
FRIDAY, OCT. 7 - 50-Year Club Reunion (1966 and earlier)
FRIDAY, OCT. 7 - All Alumni and Friends Reunion with Pep Rally
SATURDAY, OCT. 8 - Homecoming Parade and Cowboys vs. Air Force

For more Homecoming information and to register for events, please visit **uwyo.edu/homecoming**

WYOGRAMS

Alumni, please email career, wedding, birth and death news to **uwalumni@uwyo.edu** and include photos if possible.

1940

Richard H. Bennett, J.D. '48, law, and wife, Margaret "Pegge" (Evans) Bennett Exp. '47, College of Arts and Sciences, celebrated their 70th wedding anniversary on March 7, 2016. They live in Lake Stevens, Wash.

1950

John Watts, B.S. '57, general agriculture, a member of the UW football team from 1954–56, was inducted as a member of UW's 24th Athletics Hall of Fame class.

1960

Jerry Durling, B.A. '67, M.A. '68, art, a member of the UW football team in 1965-66, was inducted into UW's 24th Athletics Hall of Fame.

Shirley J. Jacob, B.A. '61, English, was awarded the Commitment to Excellence Award by Casper College at the commencement ceremony on May 13, 2016.

Ivan McMurtry, B.S. '65, zoology, was named the 2016 Distinguished Alumnus at North Platte High School.



Jerry Palen, B.A. '69, economics, was recognized in the State of the State address by Gov. Matt Mead, after working 40 years as an artist.

Frank Shepperson, B.A. '64,

biology, a member of the UW rodeo team from 1961-64, was inducted as a member of UW's 24th Athletics Hall of Fame class.

1970

John W. Goff, B.A. '74, M.A. '78, history and journalism, was recognized with a regional Edward R. Murrow Award by the Radio Television Digital News Association.

Richard Gruber, M.P.A. '76, was elected to the Janesville, Wis., city council. He was appointed to the council after the resignation of another member.

Aaron Kyle, '76 Exp., engineering, a member of the UW football team from 1972–75, was inducted as a member of UW's 24th Athletics Hall of Fame class.

Terry Mackey, J.D. '70, received the honorary Order of the Coif award from the UW College of Law. A perennial faculty member of the Western Trial Advocacy Institute, Mackey enjoys a reputation as one of the top trial lawyers in Wyoming.

Pioneer Women in Athletics

The Intercollegiate Athletics Department hosted a reception June 25 within War Memorial Stadium's Wildcatter Suites to honor its Pioneer Women in Athletics. The reception recognized women who participated in sports at UW from 1950 through the early 1970s, prior to the passing of Title IX. These Cowgirls participated in several sports, including basketball, field hockey, skiing, softball, track and field, tennis and volleyball.



Gregory Dyekman, J.D. '80, was awarded the 2015 Law Alumni Association Distinguished Alumnus Award.

Keith E. McNinch Jr., B.S. '77, civil engineering, M.B.A. '84, is president of Pipeline Consultants PLLC in Broken Arrow, Okla.

Russell (Russ) Schnell, M.S. '71, Ph.D. '74, atmospheric science, the NOAA scientist received an honorary doctor of science degree from the 40,000-student body of the University of Alberta, Canada.

Mike Snigg, M.S. '79, zoology, retired after a 40-year career with the Wyoming Game and Fish Department. Snigg finished his career as regional fisheries supervisor.

Matt Vandeleur, B.S., '77, park administration, B.A. '85, middle school education, retired as the principal of the Neah Bay (Wash.) Senior and Junior High School.

Timothy Wilson, B.S. '76, accounting, retired after serving 38 years on the Board of Public Utilities and acted as director for 19 years.

1980

Scott Barella, B.S. '81, was appointed CTO at Utah Specific, a specialist in routing switches and control software.

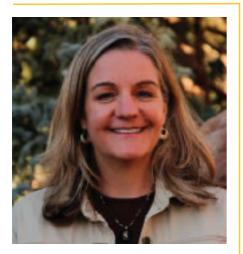


Brian Brown, B.S. '99, finance, was promoted to president of First Interstate Bank's Downtown Branch in Billings, Mont.

Janell Edman, Ph.D. '82, received the Association of Women Geoscientists 2015 Professional Excellence Award in the industry/ consultant category.

Kim Harvey, M.E.D. '83, retired after 41 years as a teacher at Cloud Peak Elementary School in Buffalo, Wyo.

Mario Ibarra, Exp. '80, is executive director of the United States Tennis Association in Wyoming.



Victoria Campbell, B.S. '91, business administration, was recognized as a one of the 2016 top women in energy by the Denver Business Journal.

Bruce Johnson, B.S. '86, chemical engineering, is an IWA Fellow of the International Water Association.

Karen Mobley, B.A. '83, art, will be the artist in residency at AIR Paducah, Ky., and has been a fellow at the Jentel Foundation for the Arts.

Benjamin Paolillo, B.A. '82, business education, M.E.D. '86, is the executive director of alumni affairs at Rose-Hulman Institute of Technology.

Steven Plambeck, B.S. '82, accounting, is a commercial team leader with Riverview Community Bank in Oregon, directing activities of the six commercial lenders.

Maurice Sessel, B.S '83, mechanical engineering, is the president of International Automotive Components North America.

Lynn Stetson, B.S. '83, finance, a member of the UW swimming team from 1980-83, was inducted as a member of UW's 24th Athletics Hall of Fame class.

Debra Thatcher, B.A. '80, elementary education, is the president of Umpqua Community College in Oregon.

Jeffrey Truchot, B.S. '86, political science, B.S. '89, journalism, joined the Wyoming Business Report.

1990

Cynthia Alexander, J.D. '98, joined the Dickinson Wright PLLC firm's Las Vegas office.

John Baldwin, B.S. '90, wildlife conservation and management, M.S. '93, zoology and physiology, is the district manager for the Mountain City-Ruby Mountains-Jarbidge Ranger District in northwest Nevada.



Kevin Rochlitz, B.S. '93, marketing, senior vice president of corporate sales and business development for the Baltimore Ravens, was recognized by SmartCEO as a recipient of this year's Executive Management Awards for creative management vision, leadership philosophy, innovative strategy and work ethic.

Leah (Sample) Barrett, B.S. '92, business administration, MBA '95, is the vice president for student affairs at Sheridan College.

Patricia Ann Owens, M.A. '91, American studies, was one of seven recipients nationwide of the George and Helen Hartzog Award for outstanding volunteer service.

Robert Hermann, Ph.D. '94, physics, received the 2016 Outstanding Teaching Award at Concordia University.

Mary Jo Rugwell, M.P.A. '91, is the U.S. Bureau of Land Management state director for Wyoming. Rugwell served as acting state director since January of 2015.

2000

Chris Cichosz, B.A. '00, criminal justice and sociology, is the director of security for Winona State University in Minnesota.



Melissa Lyon, B.A. '05, criminal justice, J.D. '08, was recognized as a one of the 2016 top women in energy by the *Denver Business Journal*.

Kyle Hagerty, B.S. '04, rangeland ecology, is a certified crop adviser for Hortau, which supports northeast Colorado, eastern Wyoming and western Nebraska.

Jessica (Bratka) Harriman, B.S. '01, animal science, started her own veterinary practice, Happy Tails, in Johnstown, Ohio.

Clinton Jasperson, B.S. '07, psychology, is CEO and founder of Thrivent Financial. Melissa E. McGee, B.A. '03, elementary education, was awarded the 2016 NBCC Foundation military scholarship.

Margaret McMillan, Ph.D., '03, geology, was named chair of the Department of Earth Sciences at University of Arkansas at Little Rock.

Darcee M. Snider, B.A. '07, communication/advertising, is a communications strategist with Gambel Communications in New Orleans.

2010

Heidi M. Davis, B.S. '14, nursing, is a registered nurse at Ivinson Memorial Hospital in Laramie. She specializes in medical/surgical nursing.

Binny Loveless, B.A. '13, English, received her M.A. in English from the University of South Dakota.

Laura Quist, B.S '12, kinesiology, earned her doctorate from Regis University in Denver.

Hanna Zavecz, Exp. '10, family and consumer science, a member of the UW women's basketball team, was inducted as a member of UW's 24th Athletics Hall of Fame class.

Weddings

Madison Brown, B.A. '10, J.D. '13, political science, and Weston Mankin, B.S. '09, marketing, 5/21/16.



Jeff Pivic, B.A. '08, math education, was named assistant athletic director for development at Oregon State University.

Torey Burrows, B.A. '13, elementary education, and Charles Schmidt, B.S. '11, M.S. '13, mechanical engineering and economics, 6/25/16.

Kaitlyn Jordan, B.S. '10, marketing, and Nicholas Rangel, B.S. '10, management, 6/22/16.

Lindsay Kowalski, Exp. '09, communication, and Tom Phelan, B.S. '06, business administration, 6/25/16.

Lauren Lewandowski, B.A. '12, elementary education, and Michael "Mark" Mischke, B.S. '13, wildlife and fisheries management, 6/8/16.

Charles Petzinger, B.S. '12, architectural engineering, and Claire Herbig, 5/24/16.



Stephanie Bachtelle Stacy, Exp. Ph.D. '18, psychology, and Kenneth Stacy, B.A. '12, criminal justice, 7/8/16. The wedding was in Estes Park, Colo. They were joined by many UW alumni, including Rachel (Stacy) O'Donnell, B.S. '05, business administration; Katelynn Bourassa, Exp. Ph.D. '18, psychology; Mark Robertson, B.A. '12, art; Patrick Owen, B.A. '12, art; and Daniel O'Donnell, B.S. '05, business administration. Photo by Kyle Spradley Photography.



Stephanie Spear, B.A. '11, elementary education, and Tyler Spear, B.S. '09, communication, a son, Matthew Scott, 5/23/15.

Arrivals

Marcus Neiman, B.S. '08, marketing, and Martina Neiman, a son, William Maximus, 3/22/16.

In Memoriam

Verl James Allred Jr., Exp. '69, of Salt Lake City, 2/27/16. Survivors include his wife, children and others.

Karla (Blaylock) Bartel, Exp. '60, of Sun City, Ariz., 12/14/15. Survivors include a son, a daughter, a granddaughter and others. Jae Robert Bing, B.S. '11, marketing, 3/14/16. Survivors include his parents and others.

Dean William Borthwick, B.S. '53, J.D. '56, 4/5/16. Survivors include his wife, three daughters, grandchildren and others.

Cody Austin Bremer, Exp. '15, 2/24/16, in Laramie. Survivors include his parents, sister and others.

Dr. Emery W. Brunett, Exp. '93, 7/4/16, in Laramie. Survivors include his wife, children, grandchildren and others.

Wilbur Lee "Bill" Carter, B.S. '55, marketing, of St. George, Utah, 2/29/16. Survivors include his wife, children and others.

Mike Collins, B.S. '80, agriculture mechanics, B.S. '81, social science, of Alamosa, Colo., 2/27/16. Survivors include his wife, son, daughter, father and others.

Lon F. Conner, B.S. '62, business administration, 6/5/15. Survivors include his wife, daughter, grandchildren and others.

Robert Virgil Cordingly, B.S. '71, microbiology, **M.S. '74,** agriculture economics, 2/10/16. Survivors include his wife, daughters and others. Warren Daley, Exp. '49, 3/20/16.

Robert "Bob" Darrow, B.S. '58, animal science, of Rochester, N.Y., 4/22/16. Survivors include his wife and three daughters.

Charles Richard "Dick" Deland, B.S. '50, engineering, M.A. '54, geology, 1/27/16.

William Dixon, B.S. '50, mechanical engineering, 2/15/16. Survivors include three daughters, four stepchildren, 10 grandchildren and three great-grandchildren.

Carol J. Dockter, B.S. '00, geology, of Rock Springs, Wyo., 6/5/16. She was a beloved wife, mother, sister, daughter, aunt, niece, cousin and friend.

George C. Earley, B.S. '50, chemistry, 3/2/16. Survivors include wife, brother and three children.

James Finnerty, B.S. '65, M.S. '73, chemistry and natural sciences, 6/8/16. Survivors include his wife, children, grandchildren, greatgrandchildren and others.

Eugene "Gene" Galloway, B.A. '62, sociology, **M.A. '71,** recreation and parks administration, 12/20/15.

Georgianne Flores (Etchison) Hutchison, B.S. '45, home economics, 2/18/16. Survivors include three daughters and others.



Richard Dick Campbell, Exp. '51, 4/6/16. After serving in the U.S. Army in Japan from 1945-47, he was honorably discharged and accepted an athletic scholarship to play football at UW. Campbell, a member of the UW Athletics Hall of Fame, captained the Cowboys to an undefeated season and a Gator Bowl win in 1951. After his professional stint with the Washington Redskins, Campbell started his long career in oil. He held many positions in his professional career, including director of First Interstate Bank, and director of Round Up Resources as well as serving on the UW Foundation Board. Campbell is survived by his wife, two sons and grandchildren.



Ina Goodman, B.S. '16, biology, 4/5/16. Ina was an inspiration to many. She had an unconditional love for the outdoors and enjoyed hiking with her mother. She spent her years at the university surrounded by her friends, Chi Omega sorority sisters and her fiancé, Zach. A candlelight vigil was held 4/12/16 to honor Ina on Fraternity Mall right across from her sorority house. Survivors include her mother, father, three brothers, fiancé and others.

George C. Earley, B.S. '50, chemistry, 3/2/16. Survivors include his wife, brother and three children.

Alan D. Irwin, B.S. '71, pharmacy, of Lake Orion, Mich., 04/01/2016. Survivors include his wife, two children, three grandchildren and a sister.

Kendall L. Johnson, B.S. '55, rangeland management, of Rock Springs, 5/21/2016. Survivors include his wife, three children, fourteen grandchildren and six great-grandchildren. **George Mathews, B.S.' 49,** geology, 4/27/16. Survivors include his son, daughter and grandchildren.

Beverlee Jean (Thomas) Maude, B.S. '84, nursing, of Sheridan, 4/5/16. Survivors include her husband, a son, three daughters, nine grandchildren and others.

John Maher, B.A. '57, education, 6/1/2016. Survivors include his wife, two daughters, son, sisters, grandchildren and greatgrandchildren.

Robert R. McDougal, M.A. '80, M.S '99, art and geology, 2/21/16. Survivors include his wife and two step-daughters.

Mary Ann (Allen) Murphy, Exp. '58, 2/26/16. Survivors include her husband, children and other family.

Nellie O'Brien, B.A. '32, education, 6/2/16. Survivors include a son, daughter and grandchildren.

Don Randle, B.S. '90, animal science, **B.S. '02,** architectural engineering, of Cheyenne, 2/28/16. Survivors include his wife, children, granddaughter and others.

Richard "Dick" Rhoades, B.S. '57, geology, 3/29/16. Survivors include his wife, three children, three brothers, two sisters and grandchildren.

Charles Rogers, M.Ed. '65, education administration, 4/25/16. Survivors include his son, daughter, granddaughter and two greatgrandchildren. Albert L. Scharen, B.S. '52, crop science, 2/9/16. He is survived by his wife, two daughters and other family.

Pamela E. (Wood) Schmick, B.S. '71, business education, 3/27/16. Survivors include her husband, children and others.

Joseph "Joe" Shickich, B.S. '49, economics and math, of Casper, 05/20/16.

Richard R. Sinclair, B.A. '49, psychology, 10/22/2015. Survivors include his wife, daughter and son.

Carolyn K. Sorensen, B.A. '60, sociology, of Cody, 4/21/16. Survivors include her son and sister.

Helen Rose (Sulenta) Tanner, Exp. '61, nursing, 3/21/16. Survivors include her husband, children and others.

David Updike, B.S. '57, geology, 3/3/16. Survivors include his wife, two daughters and others.

Jay Whitney, B.S. '57, agriculture business, 4/9/16. Survivors include his two brothers, a sister, nieces, nephews and others.

Barbara Ann (Meike) Wolcott, Exp. '53, of Buffalo, 2/2016. Survivors include her husband, three daughters and others.

Alma L. (Rubeling) Wrakestraw, B.S. '49, home economics, of Torrington, 2/4/16. Survivors include her daughters and others.

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UW gallery

The Jon Schueler Collection

The UW Art Museum sets the stage for two 2017 exhibits featuring the work of abstract expressionist Jon Schueler.



By Nicole M. Crawford

Relationships among artists, artists' estates, art dealers, collectors and the University of Wyoming Art Museum are vital to developing and expanding the museum's permanent collection. The Art Museum worked closely with the Jon Schueler estate over that past two years, including two visits by the museum's director/chief curator and curator of collections to the artist's former studio in New York. As a result, the museum has added 19 paintings to the permanent collection, creating the largest collection of Schueler's work in a public institution in the United States.

The Jon Schueler estate facilitated the museum's first acquisition of Schueler's work by connecting the museum to a collector and well-respected art historian who generously donated a painting typical of the artist's later work. To build on this important acquisition, the museum worked closely with the estate's curator to increase Schueler's representation through an additional gift of significant paintings. Paintings considered by the museum's curators spanned Schueler's productive years and stylistic oeuvre. Selected works comprise his career's evolution and also stand on their own as representative of the artist's work.

Jon Schueler (American, 1916–92) was a second-generation abstract expressionist whose imagery depends on the existence of something observed. His focus is almost entirely on landscape, most particularly on "skyscape" or "lightscape." The paintings convey nature at a specific moment, such as the buildup of clouds with the filtered sun breaking through. Using a range of color to express light, from subdued grey to intense red, Schueler creates paintings that are not only full of life and movement but also are emotionally charged.

Schueler was born in Milwaukee, Wis., in 1916 and received his bachelor's and master's degrees from the University of Wisconsin–Madison. Following World War II, during which he flew missions over France and Germany as a B-17 navigator, he attended the California School of Fine Arts (1948–51). There, he was surrounded by a group of historically important artists who led to the development of the Bay Area figurative movement of painting. In 1951, Schueler moved to New York, which became his base until his death in 1992. However, these years were dotted with visits to Mallaig, Scotland, where the light and weather of the area became the hallmark for his signature style.

Through this acquisition, the Art Museum is able to share the legacy of Jon Schueler with the university community and the people of Wyoming. In 2017, the Art Museum will present two exhibitions of Scheuler's work: *Jon Schueler: Weathering Skies,* a national touring exhibition of watercolors organized by the Arkansas Arts Center (April 1–June 24), and a painting exhibition, *Jon Schueler: The UW Art Museum Collection* (July 1–Sept. 9).

The Art Museum depends on the relationships formed through opportunities such as these to support its mission of presenting world-class art and engaging students and visitors in discussions that broaden an understanding of diverse perspectives, viewpoints and cultures.

HumanitiesUNITED

By Micaela Myers

A University of Wyoming art professor is able to study at photography archives across the American West, and a history professor can travel to China to continue his fieldwork. These professors and many others are able to remain fully engaged in their fields, involve students in their research and bring their evolving knowledge into the classroom and throughout the state, thanks to support from the Wyoming Institute for Humanities Research (WIHR).

In 2013, humanities faculty from across UW united to form WIHR with the goal of promoting, showcasing and supporting humanities scholarship in Wyoming.

Founding Director Eric Sandeen, also a professor of American studies, says the institute works toward that goal by funding faculty research, connecting WIHR members with people and organizations across the state, and

further engaging with students through enhanced teaching, student research and internships.

An executive council drives the institute's work along with about 65 active members from a dozen different UW departments and programs, plus the American Heritage Center, the UW Art Museum, UW Libraries and the Wyoming Humanities Council. Sandeen says: "It's a large, very forward-looking group."

The institute helps faculty members from across disciplines collaborate. "WIHR put me in touch with many incredible scholars that I would otherwise never have met—both at UW, nationally and internationally," says Department of Art Associate Professor Rachel Sailor. "It truly provides the kinds of networks that can be hard to establish outside of specific disciplines. These connections have allowed me to begin collaborative projects abroad and in the state of Wyoming."

WIHR also offers several annual competitive research grants and serves as a clearinghouse for external funding sources.

"WIHR is critically important to those of us in the social sciences and humanities, because there are fewer and fewer

funding sources for faculty research," says Department of History Associate Professor Michael Brose.

Brose received grant money to travel to China and continue his research. "My publication record comes directly out of my ability to do research in China and other parts of East Asia," he says. "I teach a broad array of East Asian history and international studies courses, and I always bring new research findings into those courses."

As Wyoming's only land-grant four-year university in

The Wyoming Institute for Humanities Research aims to support humanities scholarship throughout the state. the state, UW is uniquely positioned to spearhead humanities scholarship across Wyoming, Sandeen says. WIHR works closely with the Wyoming Humanities Council and has several state-based projects underway, including continuing education at the Wyoming Women's Center in Lusk, a research project on Wyoming's community halls and a series of talks at community colleges. A distinguished lecture series also takes place on campus, and

this fall, WIHR will host its first international fellows— Professor Kirsten Schmidt from the Catholic University of Eichstaett-Ingolstadt in Germany, who is researching Western landscapes, and Professor Cathryn Halverson from the University of Copenhagen, who is completing a project on Western women writers.

Currently, the institute's funding is year to year, but if consistent funding can be secured, Sandeen has even bigger hopes for WIHR, including a program to bring community college instructors to UW to conduct research and teaching; a fellowship for Wyoming public practitioners, such as museum staff; and the ability to give UW faculty members a semester off to conduct research. One day, Sandeen hopes WIHR can also hire a full- or half-time director, and he has great plans for collaborations with the UW Art Museum.

"We're talking about some really path-breaking things with the Art Museum that could put us on the map nationally in terms of putting the arts and humanities together," he says.

Sandeen is enthusiastic about what the institute can accomplish: "It could be great for faculty recruitment. It's going to be great for the state. It's a wonderful opportunity."







COURTESY OF ANDREA GRAHAM



Faculty members across campus receive WIHR funding to continue their research. Top left: Associate Professor Rachel Sailor at her UW office. Top right: American studies Research Scientist Andrea Graham and colleagues conducting research for the *Art of the Hunt* exhibit that appeared at the Wyoming State Museum. Middle: Religious studies Lecturer Mary Keller's project "Heart Mountain as Icon of American Places" aims to represent the multiple layers of cultural presence foundational to the area; Grant Bulltail, Apsáalooke (Crow) pipe lighter, pictured here leading a ceremony on Heart Mountain, is part of an elders committee that oversees the presentation of Indigenous cultural information for the project. Bottom Ieft: Art Museum Curator of Collections Nicole Crawford and Associate Professor Isadora Helfgott led a short course in Cambodia as part of their ongoing project there. Bottom right: Associate Professor Michael Brose conducts research in China.



IMMERSED IN LEARNING

Alan Buss's research created a 3-D exploration of density, with more exciting programs on the horizon.

By Micaela Myers

At the Shell 3-D Visualization Center at the University of Wyoming, middle school students don 3-D glasses and enter the CAVE (Cave Automatic Virtual Environment). With the touch of a wand, giant water molecules come pouring in complete with the sound of rushing water, filling the ground up to knee level. A girl gets down on her hands and knees for a closer look. The children walk around, the water parting in front of them. They press a temperature button, and the molecules form a lattice, taking up more space as they freeze. As the children heat the water to boiling, the water molecules fly Left: Malik Watson, Anna Roesler and Madeline Bender, members of Andy Pannell's fifth- and six-grade UW Lab School class, experience water and oil molecules in 3-D thanks to Associate Professor Alan Buss's program (Buss, pictured right).

around the room like gas. Next up, they switch to oil molecules. The kids are able replicate them and see how much larger they are than a water molecule and how they don't stack nicely. Finally, the kids mix oil and water molecules in a virtual graduated cylinder. The tightly packed water molecules lift the larger oil molecules to the top, as the young students witness the property of density up close and personal.

"I think seeing it was much better than reading about it in a textbook because we could experience it," says seventh-grade UW Lab School student Leila Johnson, who was visiting as part of her technology class. "It surprised me how much larger the oil molecules were." "We learn best when we are immersed in something."

- ALAN BUSS

The program is the brainchild of Associate Professor of Elementary and Early Childhood Education Alan Buss. When teaching his seminar on strategies for teaching science, he noticed that even college students struggled with misconceptions about density and buoyancy.

"I thought, what can I do to immerse the students into an experience to better understand density?" Buss says. "How do I make something where they can actually see the reason and live the experience?"

Buss devoted his research sabbatical to creating the program with the help of Kyle Summerfield, the visualization center's lead programmer and artist. The project was no easy task, as Buss learned the challenges of programming.

"We had to figure out how to program a water molecule to behave like a water molecule," he says. "All the oil molecule models I could find were two-dimensional, so I had to go into Autodesk software and build the 3-D molecule atom by atom."

Buss will now research the effectiveness of this type of educational immersion. For example, middle school students who experience the program will take a quick survey on how it helped their understanding. With college students, Buss will evaluate how mental models change as a result of using computer-based models.

The program is already winning supporters. "We know that without visualization, there is no comprehension," says UW Lab School teacher Andy Pannell, who brought his class of fifth- and sixth-grade students to the CAVE. "This tool allows us to submerse ourselves in a virtual reality that is populated with exactly what we want our students to see and examine. It is a highly engaging tool."

Buss has even bigger plans for the future, including purchasing HTC Vive headsets that will allow him to take the CAVE experience on the road. He also hopes to move beyond his program into student-created models.

"What a great way to have visual understanding of a concept," says Teresa Strube, a dual-certified science and math teacher who accompanied her UW Lab School students to the CAVE. She sees limitless possibilities for the CAVE and portable 3-D headsets. As a teacher on the Wyoming Department of Education Science Standards Review Committee, Strube would like to see every standard created with a visual understanding.

As Buss says, "We learn best when we are immersed in something."



➤ SEPTEMBER

Sept. 2: 22nd Annual Cowboy Joe Club Golf Series Championship, Laramie

Sept. 2: Cowboy Kickoff concert featuring Kip Moore
Sept. 3: Cowboy football vs. Northern Illinois
Sept. 9-10 and 22-24: Women's volleyball
Sept. 16-17: Ag Appreciation Weekend
Sept. 17: Cowboy football vs. UC Davis
Sept. 17: Mid-Autumn Festival
Sept. 20: Pharmacy job fair
Sept. 27: Big job fair
Sept. 30: Cowboy Joe Club Auction (Cheyenne)

> OCTOBER

Oct. 1-8: Homecoming Oct. 8: Cowboy football vs. Air Force Oct. 13, 15, 25, 27: Women's volleyball Oct. 22: Art Museum gala, Wyoming Rocks! Celebrating Wyoming Resources & Wonders Oct. 26: Nursing and health professions job fair Oct. 28-30: Family Weekend Oct. 29: Cowboy football vs. Boise State

> NOVEMBER

Nov. 3, 5, 18: Women's volleyballNov. 5: Cowboy football vs. Utah StateNov. 12: Discovery Days for prospective studentsNov. 19: Cowboy football vs. San Diego State

> DECEMBER

Dec. 9: Last day of fall classes Dec. 12-16: Finals week

> JANUARY

Jan. 23: Spring semester begins



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Fine arts: uwyo.edu/finearts



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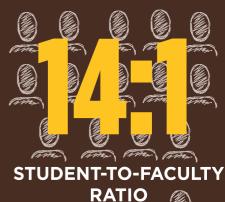






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