

CONFLUENCE

THE COLLEGE OF LETTERS AND SCIENCE • MONTANA STATE UNIVERSITY • 2008 - 2009 • VOLUME 5



PUTTING HOPE INTO ACTION:
At home and around the world

Dear friends and colleagues,

Last spring Jane Goodall, the world-renowned primatologist, environmentalist and humanitarian, visited the MSU campus to deliver the Wallace Stegner Lecture. She imparted a message of hope for our imperiled planet, and found cause for optimism in the power of the human brain, the resilience of nature and the indomitable human spirit.

Since joining the College of Letters & Science I have been amazed by how many of our people are engaged in projects that are improving the human condition worldwide – physically, spiritually and intellectually. The faculty, staff and students of L&S are committed to creating useful knowledge to enhance lives and living conditions, stimulate minds and imagination, and address environmental and health issues.

In this issue of Confluence, you'll read about biochemists who are addressing blood disorders across the world, and ecology faculty and staff raising money to help Kenyans afflicted by war. You'll learn about microbiologists developing cutting-edge clean drinking water technology, Spanish faculty and students assisting the growing Latino population in Bozeman, and a psychology professor partnering with others to address a variety of health concerns on the Crow Reservation.

Jane Goodall views students as one of the great reasons for optimism for the earth. I wholeheartedly agree with this sentiment. I find that our students possess integrity, determination, and a strong work ethic, and they give freely of their time to community and volunteer efforts. With the support of their parents and our L&S family, who give to the College in so many ways, there is no limit to their potential to affect positive change in the world.

As you read this issue of Confluence, and enjoy these highlights of faculty, staff, student, and alumni accomplishments, we hope you'll be inspired to learn more about what is happening across the college. You can visit our website at www.montana.edu/lettersandscience for frequently updated news. Please join us for any of our public events, discussion groups and learning opportunities, or visit us on campus to meet our faculty and students.

Best regards,



Paula M. Lutz
Dean



MSU News



TABLE OF CONTENTS



2

Putting Hope
Into Action

6
Hablando
Español en
Bozeman



8

Health
Partnerships

10
Students



12

Faculty &
Staff

14
Research



16

Outreach

18
Alumni



20-29

Department
Highlights

30
Philanthropy

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Thank you to MSU News Service and Linda McGurk.

Putting Hope into

At Home and Around the World



JODY SANFORD



Action



“TO SERVE THE PEOPLE AND COMMUNITIES OF MONTANA BY SHARING OUR EXPERTISE AND COLLABORATING WITH OTHERS TO IMPROVE THE LIVES AND PROSPERITY OF MONTANANS.”



This phrase, part of the university's mission statement, reflects our responsibility to the state and people of Montana. The faculty, staff and students in the College of Letters and Science are certainly doing their part to further this component of the university's

mission. They are engaged in a wide range of activities and research projects that are improving and enriching lives in Montana.

Microbiology faculty and students are collaborating with tribal communities to improve drinking water quality (see sidebar page 5). The Department of Modern Languages and Literatures has initiated a wide variety of projects in the Bozeman area to address language barriers for the growing Latino population (see page 6). The Psychology Department is involved in a partnership to address men's health in Montana tribal communities (see page 8).

Increasingly, the people of L&S are also going global with this mission. Their work has great potential for improving lives – and addressing critical health and environmental issues – around the world. During her spring 2008 visit, Jane Goodall reminded us that we are part of a global community, and that each individual, through his or her choices, can impact the future of the planet. Goodall also talked about her reasons for hope that humankind will solve the problems it has imposed on the Earth. The following are some recent examples of how the faculty, staff and students of L&S are putting this hope into action around the world.

In the spring of 2008, MSU microbiologists learned that their research about pollution in the Ganges River had reached the Supreme Court of India. According to the researchers, the river contains untreated sewage, cremated remains, chemicals and disease-causing microbes. “Wastewater treatment is critical to protecting human health from waterborne diseases,” said Tim Ford, former head of the Microbiology Department. “Getting regulators and legislators to

understand the importance of not discharging untreated human waste into the Ganges River is critical to moving forward.”

Ada Giusti, a professor of French, took four students to Mali, Africa during spring break 2008. They implemented health, economic and agricultural development projects to support Malian villagers in their efforts to eradicate malaria in their community. The students tested the effectiveness of native plants used by the village midwife to fight malaria.

They developed a business plan with the village women who wished to sell handmade products in order to buy mosquito netting. Finally, they organized an educational poster contest at the village school, intended to assist students in teaching their own parents how to combat the spread of malaria.

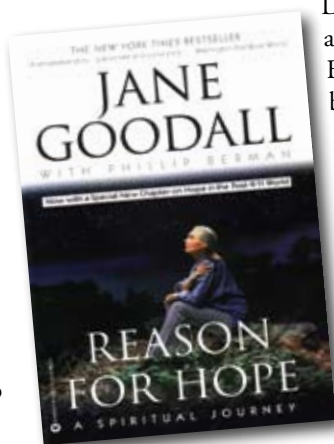
“WE’RE ADDRESSING SOME OF THE MOST CHALLENGING ISSUES OF OUR TIME, SUCH AS PUBLIC HEALTH AND GLOBAL CLIMATE CHANGE.”

– DEAN PAULA LUTZ

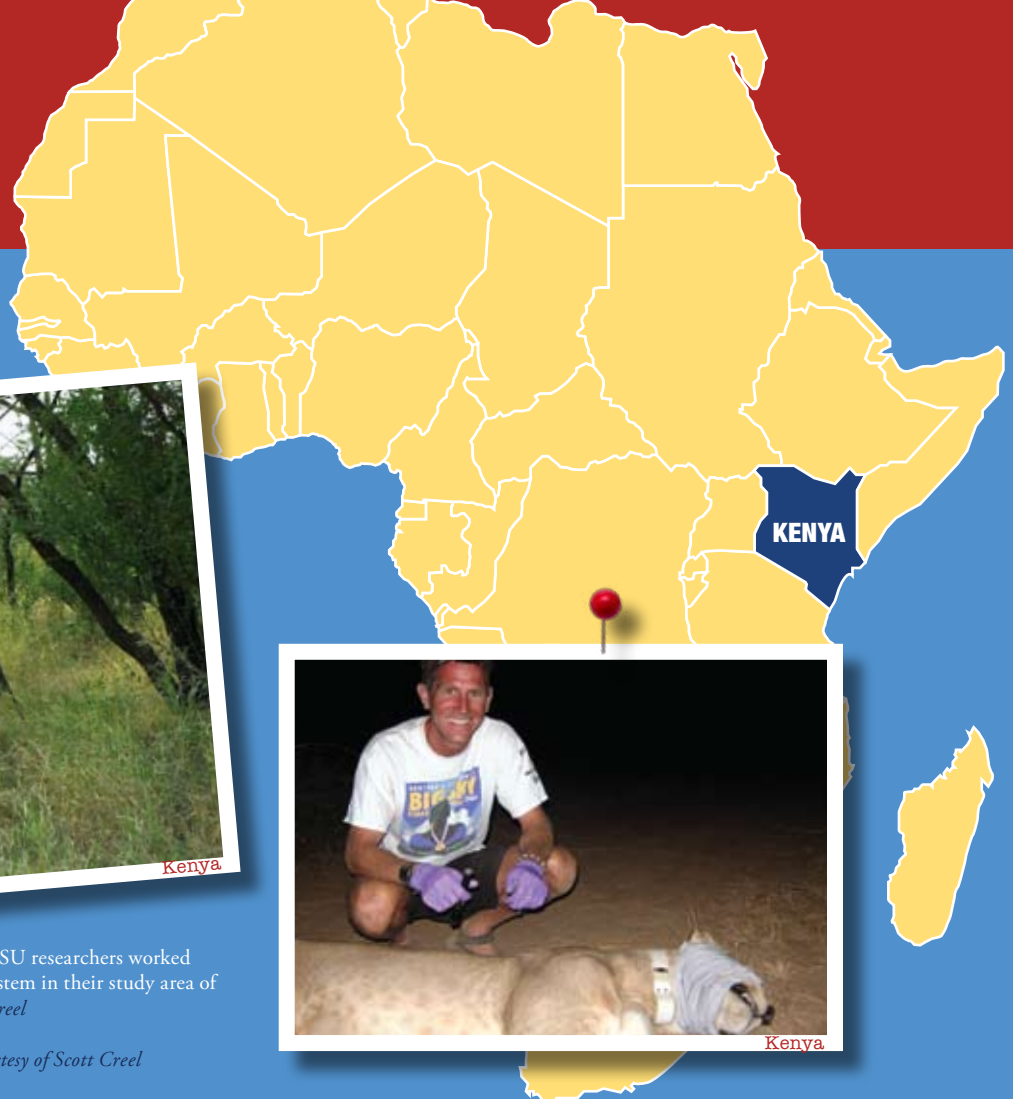
In the spring of 2008 the Physics Department hosted an international workshop on the sun's influence on global climate. Approximately 100 scientists from around the world gathered on the MSU campus. “The sun is the main source of energy in the solar system. Understanding how variations in its magnetic and radiative output influence our climate and space environment is the primary focus of this workshop,” said MSU physicist Dibyendu Nandi. “Achieving this understanding is important for protecting our technologies in space and on Earth and is essential towards understanding the natural and man-made causes of global climate change.”

Finally, Susan Gibson, a faculty member in cell biology and neuroscience and in the WWAMI program, traveled to the Darhad Valley in Mongolia to participate in a health services project as part of the MSU Bioregions program. Gibson was accompanied by several students, and they are working on a community health project with the local physicians in the rural area.

“I’m so proud of the work the people of L&S are doing around the world,” said Dean Paula Lutz. “We’re addressing some of the most challenging issues of our time, such as public health and global climate change.”



Photos courtesy of Steve Hammer, Ada Giusti, Kelsey Meyer, Mari Eggers and Susan Gibson



(Pictured left) These are some of the people MSU researchers worked with last summer while setting up a camera system in their study area of Olkiramatian, Kenya. *Photo courtesy of Scott Creel*



(Pictured right) Scott Creel, Kenya. *Photo courtesy of Scott Creel*

LENDING A HELPING HAND

Ecology researchers raised money to assist a man they met while in Kenya studying how predator-prey communities function inside and outside of the Olkiramatian-Shompole Community Conservation Area.

Ecology professor Scott Creel and graduate student Paul Schuette went to Kenya during the summer of 2008 to set up their research project. While there, they lived with a Kenyan couple who employed Sampson Karanjah Nicodemus. Nicodemus lost his home and business in the post-election violence that swept Kenya at the end of 2007. Controversy about the outcome of the election and lingering conflicts over land led to clashes and resulted in machete attacks, deaths and arson. Hundreds of thousands of Kenyans were displaced.

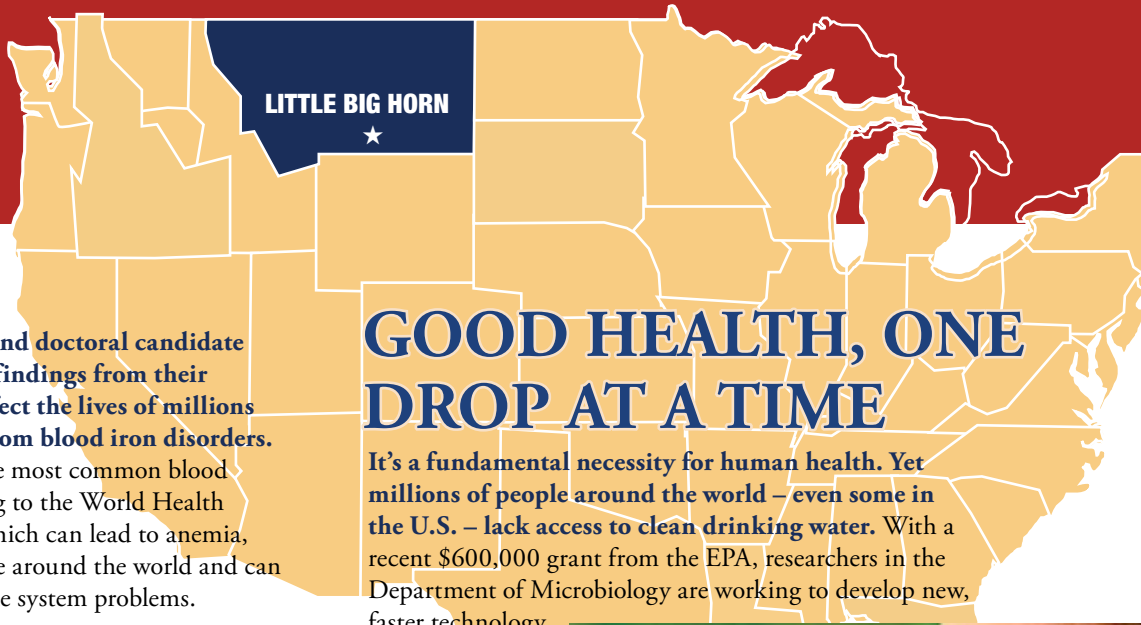
Nicodemus lives in a suburb of Nairobi. His wife, daughter and niece lived near Mombasa on the coast. It's common in Africa for men to live away from their families so they can work at jobs that pay enough to support them, Creel said. Because of the violence, however, Nicodemus lost his business. His family was displaced twice.

"They lost their home, their chicken coop and all of the chickens that they were using for income, and they were no longer in a position to put the kids through school," Creel said.

Thanks to donations of almost \$5,000 from the MSU community and others, Sampson's family is back on their feet, with enough to cover school fees and supplies for both daughters, and with a donation to the Kenya Red Cross to assist other refugees living in tent cities.

Excerpted from Evelyn Boswell, MSU News





IRON MEN

Biochemist Martin Lawrence and doctoral candidate Anoop Sendamarai published findings from their research that could one day affect the lives of millions around the world who suffer from blood iron disorders.

Iron irregularities are some of the most common blood disorders in the world. According to the World Health Organization, iron deficiency, which can lead to anemia, affects more than a billion people around the world and can cause developmental and immune system problems.

Conversely, having too much iron, a condition called hemochromatosis, can also hurt the body by releasing destructive free radicals, Lawrence said. Hemochromatosis affects about one in every 300 people and is most common in people of northern European ancestry. Left untreated, it can lead to early death, often by age 50.

“We’re struck by how many people have too much or too little iron,” Lawrence said. “Iron is essential. You can’t live without it, but it’s a double-edged sword. Too much of a good thing can kill you.”

The pair studied Steap3, a protein involved in regulating the body’s absorption of iron. The results of their work, which were published in the *Proceedings of the National Academy of Sciences*, could allow pharmaceutical companies to someday design drugs to regulate iron levels in the blood.

Excerpted from Michael Becker, MSU News



MSU News



MSU News

GOOD HEALTH, ONE DROP AT A TIME

It’s a fundamental necessity for human health. Yet millions of people around the world – even some in the U.S. – lack access to clean drinking water. With a recent \$600,000 grant from the EPA, researchers in the Department of Microbiology are working to develop new, faster technology for detecting pathogenic bacteria in our water supply.



Barry Pyle and his research team will use novel, laser-based screening methods that can locate a single cell of a pathogen in a cupful of water, and lead to faster detection of outbreaks of waterborne disease. The water sampling will be done in collaboration with students at Little Big Horn College, effectively training the next generation of Native Americans in water-testing technology and helping them improve the quality of life on the reservation.

“A number of environmental health issues have been discovered on the Crow Reservation and in other tribal communities in relation to their water supplies,” says Pyle, microbiologist and principal investigator of the three-year grant. “One of our objectives is to provide data and assist them in understanding the situation, so they can work to protect and improve their water supplies.”



Lab Manager Susan Broadway (left) and statistician Albert Parker with the ScanRDI solid phase laser cytometer. Photo courtesy of Steve Hammer

But the benefits of the project could reverberate well beyond Montana’s tribal communities, says Pyle. “This is a global problem. If the methods we develop are proven to be robust and reliable, they could be applied globally as well.”

By Linda McGurk



MSU senior Abby Guilbert teaches Spanish to first graders in Susan Stephens' Morning Star classroom. *MSU News*

Hablando Español en Bozeman

by Linda McGurk

Some stay in hiding and live in constant fear of being deported. Others struggle to assimilate and learn English in the face of prejudice and blatant racism. The challenges are many for the Latinos who are trying to put down roots in the Gallatin Valley, drawn here by the construction boom and the hope of creating a better life for their children. But faculty and students from MSU's College of Letters and Science are working to bridge the cultural divide and improve the lives of Latinos in the Gallatin Valley.

"Bozeman and the Gallatin Valley will face a choice; whether to work with the Latino community or whether to force it into segregation with all those ramifications," says Bridget Kevane, professor and department head in the Department of Modern Languages and Literature. For Kevane the choice is obvious, and recently she received the Provost's Excellence in



Outreach Award for her work to help Mexicans and other Spanish-speaking immigrants integrate into the community.

A native from Puerto Rico and fluent Spanish speaker, Kevane collaborates with local grassroots groups and taps some of her students to identify and meet the needs of the Latino population. Some of her first projects included translating signs in the Gallatin Valley Food Bank into Spanish and helping spearhead a bilingual story-time at the Bozeman Public Library. She's also set up free tutoring classes for Spanish speakers wanting to learn English and helped establish a basic Spanish course for the Bozeman Police Department.

But the public school system, which is desperately short on Spanish speakers and lacks resources to handle the sudden influx of Latinos, is where Kevane is most passionate about making a difference. Aside from advising students at Bozeman High School, she supervises MSU students who mentor Latino children in Bozeman schools.

"You run into these situations where you have a sixth-grader who barely understands English and a teacher who doesn't know any Spanish, and they're

"Bozeman and the Gallatin Valley will face a choice; whether to work with the Latino community or whether to force it into segregation with all of those ramifications"

- Bridget Kevane

CORO

Coalición de Organizaciones de Recursos

La misión de CORO
CORO se esfuerza en facilitar el diálogo y fortalecer la conciencia comunitaria sobre los cambios de la composición étnica y cultural en el condado de Gallatin y los alrededores.

¿Qué es CORO?
CORO es una comunidad abierta de proveedores de servicios y de individuos interesados con el fin de proveer integración, enlace y apoyo para individuos con capacidades limitadas en el condado de Gallatin, Montana, como también a la difusión de la conciencia cultural de dichos grupos a la comunidad en general.

¿Quién es CORO?
CORO representa a un grupo diverso de proveedores de servicios en los condados de Park y Gallatin, incluyendo escuelas, clínicas, centros de salud, agencias gubernamentales, bibliotecas, el banco de alimentos, United Way, el hospital y otros.

Contacte a CORO
15 East Main Street, Suite A
Belgrade, MT 59714
Tel (406) 922-0823
Email: coromt@gmail.com

Encuéntrenos en el Internet
www.coromontana.org o googlepages.com

Recursos para hispano-hablantes en el condado de Gallatin

Bozeman Adult Basic Education
Educación para adultos y clases de inglés para extranjeros
1218 Durston St., Bozeman, MT 59715
Lláme al: (406) 585-8673, pregunte por Eilen

Bozeman Deacons Hospital
Emergencias y servicios médicos comprensivos
915 Highland Blvd., Bozeman, MT 59715
Lláme al: (406) 585-5000, pregunte por servicios de interpretación

Bozeman Job Service
Listado de empleos, asistencia y recursos de empleo
123 N. Wilson, Bozeman, MT 59715
Lláme al: (406) 582-9200 pregunte por Teri o Michele

Bozeman Public Library
Alquiler libre de libros, películas y acceso al uso de computadoras e Internet
626 East Main Street, Bozeman, MT 59715
Lláme al: (406) 582-2400, pregunte por Mary Ann o Jenn

Bozeman Public Schools
Contacto para padres con niños inscritos en una escuela pública de grados K hasta a 12
404 West Main Street, Bozeman, MT 59715
Lláme al: (406) 522-5003, pregunte por Jeanne

Community Health Partners - Belgrade
Centro médico comunitario
19 E. Main St., Belgrade, MT 59714
Lláme al: (406) 922-0820, pregunte por Claire

Consulado de México
Servicios consulares para nacionales de México
185 South 200 West, Suite 300
Salt Lake City, UT 84101
Lláme al: (801) 521-8502

Gallatin Community Clinic
Centro médico comunitario
214 E. Mendota Blvd., Bozeman, MT 59715
Lláme al: (406) 585-1300, pregunte por

The Language Center
Servicios de traducción, interpretación y otros
PO Box 5139, Bozeman, MT 59717
Lláme al: (406) 581-4778, pregunte por

Montana Legal Services Association
Asistencia legal gratis para gente con ingresos
616 Helena Ave., Ste. 100, Helena, MT 59601
Lláme al: 1-866-686-4574

Montana Migrant Council Office
Asistencia médica y otra ayuda para trabajadores de campo
3318 3rd Ave. North, Billings, MT 59105
Lláme al: (406) 248-3149, pregunte por Maria

The Network
Refugio para mujeres y niños que son víctimas de la violencia doméstica en Bozeman
Abierto 24 horas, todos los días de la semana
Lláme al: (406) 596-4111, pregunte por un intérprete de español

Rural Employment Opportunities
Servicios de educación, empleo y entrenamiento
PO Box 831, Helena, MT 59624
Lláme al: 1-800-546-1140 o (406) 442-7850, pregunte por Marty o Toni

Siona Family Health Care
Cuidado médico para la mujer y la familia
201 W. Madison, Building #2, Belgrade 59714
Lláme al: (406)388-7035, pregunte por Marybeth

Social Security Administration
Servicios de jubilación e incapacidad para ciudadanos de EE.UU.
3205 N. 27th Ave., Bozeman, MT 59718
Lláme al: 1-800-772-1213, marquee 2 para español

THRIVE & the Parent Place
Apoyo con el cuidado de niños
400 E. Babcock, Bozeman, MT 59715
Lláme al: (406) 587-3940, pregunte por Sally

United Way
92 N. Broadway, Belgrade, MT 59714
Lláme al: (406) 388-1300, pregunte por Kathy



Erin Raley, MSU News

MSU students translated this brochure into Spanish for the Coalition of Resource Organizations (CORO). CORO works to facilitate dialogue and better community understanding of the changing ethnic and cultural makeup in the Gallatin Valley.

totally dependent on (the MSU student) to do the translations,” Kevane says. “It’s pretty makeshift but Bozeman hasn’t experienced anything like this before.”

One of Kevane’s students, Katie Thompson, is helping Latino children in the classroom as well as translating documents for the Bozeman Head Start program. A native Montanan, she’s excited about the outreach work. “I want to be a positive ambassador for Montana in the Latino community and let them know that this is a welcoming place,” she says.

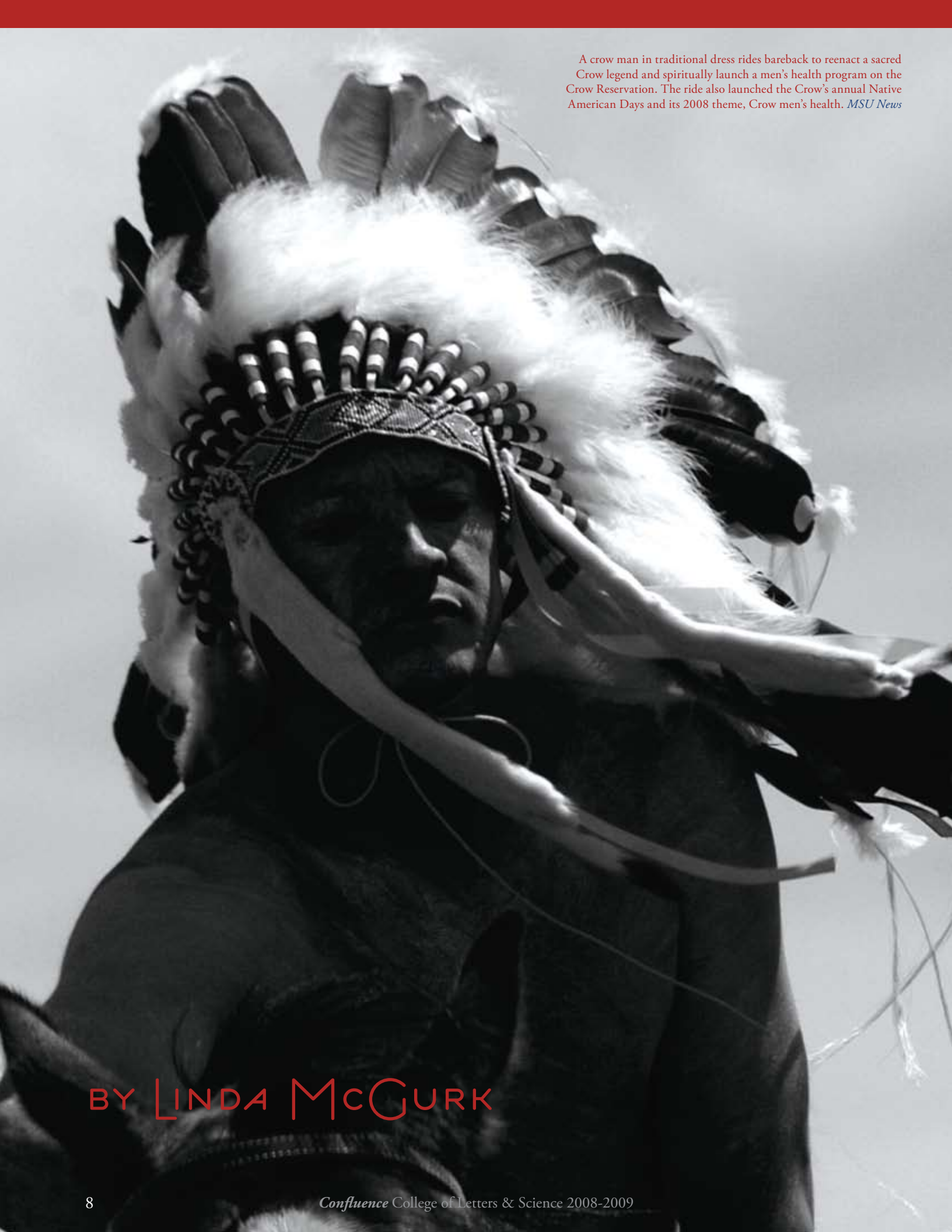
Having studied abroad in Spain and Costa Rica, Thompson says she can identify with some of the difficulties Latinos face when they come to a foreign place like Montana. “Hopefully I’ll make it easier for them to be in an English-speaking community, and they’ll know they always have a safe friend to come to.”

The outreach efforts benefit the students as well, and not only by advancing their language skills. Seeing upfront the difficult choices Latinos have to make and the struggle they go through to provide for their children helps put a face on the whole immigration debate, Kevane says. “The students come in with these preconceived notions about Latinos, and this changes them dramatically. They’re willing to give of their time and they form bonds with these families. Some say its life changing.”



“I want to be a positive ambassador for Montana in the Latino community and let them know that this is a welcoming place.”

- Katie Thompson



A crow man in traditional dress rides bareback to reenact a sacred Crow legend and spiritually launch a men's health program on the Crow Reservation. The ride also launched the Crow's annual Native American Days and its 2008 theme, Crow men's health. *MSU News*

BY LINDA MCGURK

HEALTH PARTNERSHIPS: BUILDING A HEALTHY DIALOGUE

American Indians have good reason to be skeptical of academics and scientists. After all, researchers used to come to the reservations and collect data without explaining how it was going to be used or sharing the results. “There’s been a lot of research done with Native American communities where they didn’t feel involved and didn’t feel like they had a voice,” says Mike Babcock, a professor in the Department of Psychology. “People were exploited and treated like lab rats, and I think they’ve had enough of that.”

The desire to address some serious health issues on the reservations – but doing it in a respectful way and in partnership with the communities – inspired several MSU faculty to found the Center for Native Health Partnerships in 2007. Funded by a five-year, \$6.5 million grant from the National Center on Minority Health and Health Disparities, the center uses an approach known as community-based participatory research (CBPR) to tackle obesity, diabetes, cardiovascular disease, cancer and other health problems among American Indians.

The center builds on the success of Messenger of Health, a CBPR project spearheaded by the new grant’s principal investigator, Dr. Suzanne Christopher, and women on the Crow Reservation. Through Messengers, Crow women spread information about cervical cancer and Pap smears using traditional and culturally appropriate communication networks. “I think CBPR is a bit of a revolution. It’s such a different way of doing research – it’s really about solving problems,” says Babcock, who has sponsored Native American students in his lab

for the past 15 years and is a co-PI of the grant along with Dr. Linda Hyman and Sara Young.

For the first pilot projects, researchers from MSU and other institutions across the state are teaming up with Native American communities to investigate Crow men’s health, water and food contamination on the Crow and Ft. Belknap reservations, asthma risk factors for children on the Blackfeet Reservation and diabetes prevention among Crow and Blackfeet women. And that’s not all. “We might provide funding not just for research, but for somebody who wants to go into the community and start a dialogue about some of the health concerns people have,” says Babcock.

“I THINK CBPR IS A BIT OF A REVOLUTION. IT’S SUCH A DIFFERENT WAY OF DOING RESEARCH – IT’S REALLY ABOUT SOLVING PROBLEMS.”

–MIKE BABCOCK

The center also employs community organizers on four of Montana’s seven reservations. “Right now I’m a go-to person,” says Tammy Rider, a community organizer and member of the Ft. Belknap Reservation. Rider is helping members of her community become healthier by promoting fitness, better nutrition and cancer screenings, and by collaborating with several existing health programs on the reservation. “I think one of the challenges is to get the community to participate and get people to take responsibility for their own health. Some people tend to put their health on the backburner,” she says.



Mike Babcock *MSU News*

Babcock says building trust and partnerships between researchers and tribal communities “is not going to happen overnight,” but if the project is successful, it could go a long way toward improving the health and life expectancy for Montana’s 60,000 Native Americans. As word about the project is starting to get out, Rider can tell it’s resonating with her people. “I’ve received a lot of good feedback,” she says. “Having MSU here makes people feel like the university is invested in this region. It empowers the community.”

FLYING HIGH WITH SUCCESS



MSU News

Ellie Rudy, a junior in cell biology and neuroscience, won her second indoor national championship in the pole vault at the NCAA Indoor Track and Field Championships in March. Rudy's winning height of 14 ft., 1.25 inches tied with another competitor. Rudy, however, won the event by virtue of fewer misses. Last year Rudy won her first national indoor championship at the same height, but by virtue of a jump-off.

"I am so excited that I won clean this time – no jump-off," said Rudy who is from Woodland Park, Colorado. "I wanted to win by clearing a higher mark, but I'm happy with a clean win. I'm glad we didn't have a jump-off because my wrists were starting to hurt."

"It's just terrific for her and for Montana State," head MSU coach Dale Kennedy said. "I can't think of a better

representative of our program and our university. She has that great smile on all the time – the officials love her, even her competitors, I think, love her too."

Rudy now shares an MSU distinction with distance runner Shannon Butler as a two-time NCAA champion, and is also the only female MSU athlete to win an NCAA championship. She also joins former Bobcat Shannon Agee Jones as the only female two-time All Americans.

She still has both an indoor and outdoor season left after 2008 so Rudy will return in 2009 to attempt to become MSU's first three-time NCAA champion.

Excerpted from Chris Syme, MSU Athletics



Photo courtesy of MSU Athletics

PHYSICS STUDENT WINS PRESTIGIOUS INTERNATIONAL SCHOLARSHIP

SPIE, an international society advancing an interdisciplinary approach to the science and application of light, provides scholarships to outstanding students based on their potential for long-range contribution to optics and photonics. Nikolay Makarov, a doctoral student in physics, is the 2008 recipient of the D.J. Lovell Scholarship. The scholarship, which is the Society's largest and most prestigious, awards \$11,000 annually.

Nikolay, who is Russian, holds a master's degree in applied mathematics and informatics from Saint-Petersburg State University of Informational Technologies, Mechanics and Optics in addition to his master's degree in physics from MSU. He works in Dr. Aleks Rebane's research group which studies the absorption and emission of light where the light intensity is very high - a trillion times greater than the brightness of the sun. Such high intensity light is routinely created in some laser beams and is of great interest for various technological applications including data storage, telecommunications, medicine and national defense.



Photo courtesy of Nikolay Marakov

"After getting my master's in Russia, I knew that there were no opportunities for experimental science in Russia and I wanted to do experiments; I wanted to see that whatever I study does work and exist in reality," Makarov said. "I knew that science receives much more funding in the US. I applied to MSU to go to one of the best labs in nonlinear optics and to one of the most beautiful places in the world."

"At MSU I use both theoretical simulations and experimental measurement to get the best out of science. I'm impressed by the diversity of problems we are solving in the lab."

Nikolay is also an avid photographer who spends much of his spare time outdoors taking pictures with his collection of high-end digital cameras. The search for suitable storage materials for future terabyte optical disks is one of the applications of Nikolay's light absorption research. According to Dr. Rebane, "This project is a priority for Nikolay because the current availability of digital storage space for all of his photos is insufficient."

MICROBIOLOGY STUDENT IS A STAR



MSU News

Crystal Richards, a microbiology graduate student from Bozeman, has received a fellowship from the U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program.

The EPA fellowship will provide a monthly stipend, cover all tuition, and includes a small expense account for

school related supplies and travel to conferences. The total award is \$37,000 per year for up to three years. Richards received one of only 35 fellowships awarded in 2008, and is the only student in Montana to receive this award this year. "This year funding at the EPA was especially tight, so I was fortunate to make the cut," said Richards. "The application process was somewhat laborious, requiring statements of my career objectives and experience, a personal interest narrative and an in depth research proposal."

For her research Richards is examining water and biofilms as an exposure pathway to pathogenic bacteria on the Crow Reservation. "This research will likely result in a greater understanding of the presence and distribution of pathogenic bacteria in drinking water in rural communities in Montana," said Richards. "This research could lead to improved water quality in rural and underserved areas such as Indian reservations in Montana."

"This fellowship will not only provide funding for my research until I graduate in 2010, but will allow me to travel to conferences that are important for networking and dissemination of our research."

Margaret "Mari" Eggers, also a graduate student in microbiology, won the same fellowship in 2006. Eggers is in the third and final academic year of her fellowship.

FULBRIGHT AWARDED TO EARTH SCIENCES STUDENT



MSU News

Brent Leavell, a master's degree student in geography, received a Fulbright grant to conduct research in Indonesia. He will spend November 2008 through August 2009 learning how the Indonesian culture supports its economy, especially in traditional village markets. Based on the islands of Bali and Java, he will

spend considerable time interviewing,

observing and surveying villagers. He will also ask them to draw what's important to them, a research technique known as mental mapping.

He started traveling to Indonesia in the early 1990s when his sister lived there, and he has returned at least a dozen times, Leavell said. At one time, he had a business there. He designed kites and met with Indonesians who turned his designs into "pieces of art that flew." Then he sold the hand-painted kites at museum science centers and high-end specialty shops in the United States.

"Each time I returned, I just became more impressed with the culture there," Leavell said. "I built a network of

friends. Also I find it very fascinating for how people are so tied to their religion and traditional way of doing things."



Photo courtesy of Brent Leavell

Leavell is a graduate of Oregon State University and worked as a river guide for 20 years before enrolling at MSU. As an MSU student, he sought out Indonesian students and organized the Global Culture Club to build cultural awareness through adventure. He also researched Indonesian-related topics through MSU's Undergraduate Scholars program and as a graduate student.

The Fulbright will allow him to delve deeper into a country that has become increasingly dear to him, Leavell said.

Sally O'Neill, Fulbright adviser at MSU, said, "They (the Fulbrights) are hard to get. They are very prestigious, especially for certain countries. You are up against competitors from all over the United States." Leavell is one of two MSU students who received Fulbright grants in 2008.

Excerpted from Evelyn Boswell, MSU News

MIDDLE EAST MEETS WEST

For the fourth year in a row faculty from the English Department coordinated the academic component of the Middle East Partnership Initiative (MEPI) program, part of the U.S. Department of State's public diplomacy initiative. Professors Gretchen Minton and Kirk Branch, in coordination with the Office of International Programs, hosted 17 participants from 14 different countries in the Middle East and North Africa during the summer. MSU is one of five U.S. campuses hosting the MEPI program.

Each campus offers a six-week program that includes leadership development workshops, as well as multidisciplinary seminars to expand their understanding of American society and culture. Outside of the classroom students were able to experience American culture firsthand by attending Music on Main in downtown Bozeman, horseback riding, dining with local host families and working at a food bank in Seattle. The students also traveled to Glacier National Park and spent the night in teepees on the Blackfeet Reservation.

"In terms of a public diplomacy program it strikes me as a resounding success," said Minton. "The students were great ambassadors, and were warm, friendly, articulate and smart. They illustrated the importance of face-to-face contact to set aside stereotypes."

"It was one of the best experiences of my professional life," said Branch. Minton and Branch will attend a follow-up conference in Cairo in February.



Photo courtesy of Gretchen Minton



Photo courtesy of John Borkowski

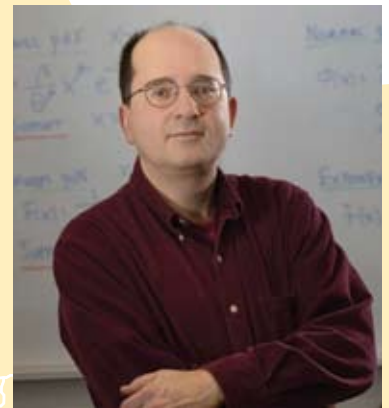
STATISTICS PROFESSOR RECEIVES A FULBRIGHT LECTURE AWARD

During summer 2008 John Borkowski taught and mentored students in a new doctoral program at Thammasat University in Thailand. He has worked to develop collaborations between MSU and Thammasat, and has given numerous professional presentations at other universities in Thailand.

"It's a great opportunity," Borkowski said. "I would never have imagined four years ago that I would be doing this."

Borkowski's trip was his fifth and longest trip to Thailand. Each trip has added to his appreciation and understanding of the Thai people and culture, Borkowski said. He said he finds "the people gracious and wonderful hosts eager to expose you to the beauty and cultural history of the country."

His experiences have also made him more aware of critical issues for teaching effectively in Thailand, Borkowski added. He teaches in English, but he has slowed his pace and changed the way he presents materials, such as avoiding colloquial American expressions and chooses simple phrasing. Teaching statistics to a roomful of students who speak English as a second language has helped him understand the challenges faced by international students.



MSU News

Excerpted from Evelyn Boswell, MSU News

BIG SKY POLITICS

David Parker, a political science professor who specializes in American politics, has been serving as a political commentator for the local media. He has been frequently interviewed by local Bozeman television stations KBZK and KTVM about various topics related to the presidential campaigns. He provided election night analysis and commentary for KBZK in June and for the general election in November.



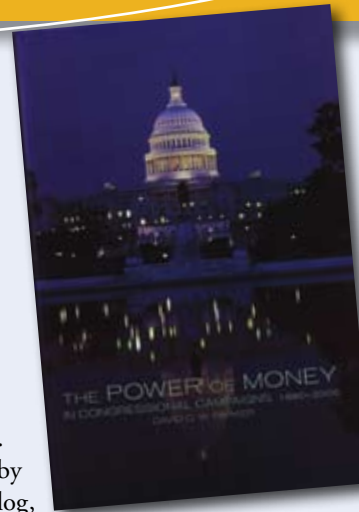
MSU News

Parker, who joined the Political Science Department last summer, is the author of *The Power of Money in Congressional Campaigns, 1880-2006*, a book published by the University of Oklahoma Press earlier this year. In the book he examines the historical development of party, interest-group and candidate power in the American congressional election process. He proposes a new theoretical model based on the need for candidates to accumulate enough financing and reputation to compete successfully.

Parker believes that new technologies, such as cell phone texting, e-mailing, blogging and Web pages, have personalized politics. He likens the current presidential campaign techniques to those used in campaigns in the late 19th century.

Parker is also the primary contributor to a political blog (<http://bigskypolitics.blogspot.com>) created and maintained by political science faculty at MSU. The blog, called Montana Politics, is “devoted to the politics of the New West generally, and to politics in Montana specifically.”

In regards to the 2008 presidential election Parker said, “I think the general election will come down to one question and how voters perceive themselves in regards to that question – are you better off now than you were four years ago? It should be a very interesting campaign.”



IN MEMORIAM

John Montagne, an early member of the earth sciences program at MSU, died on June 15, 2008. He was 88. Always an avid outdoorsman, his love of wild places greatly influenced his professional and academic pursuits.

Montagne, who was born in White Plains, NY, studied at Dartmouth College and participated in the famous Dartmouth Outing Club. As a geology major, he attended the University of Wyoming Geology Field Camp during the summer. He graduated early from Dartmouth in response to the call for military service at the outbreak of World War II. He joined the newly created U.S. Army Mountain Troops 10th Division because of his interest in the outdoors and mountain environments. He later returned to the University of Wyoming to earn his Ph.D.

Dr. Montagne helped to create the first university course on snow avalanches in the US, and was instrumental in developing the snow science program at MSU. This led to establishment of the biannual International Snow Science Workshops which merge theory and practice. He was a founding member of the American Avalanche Association, and served as its president from 1990 to 1994.



Snow science pioneer John Montagne poses in front of Glogglöckner in the Austrian Alps during World War II.

Photo courtesy of the Montagne family

“My memories of John will always be related to teaching and learning in the field,” said longtime friend and colleague, Steve Custer. “He was always looking for new ways to collect data, assess the avalanche hazard and make an informed decision.”

Montagne’s teaching focused on hands-on experience in the field, and his geology summer field course attracted students from throughout the U.S. During the school year his courses had frequent field trips into one of the best learning laboratories for geology in the world.

Karl Birkeland, another longtime friend and former student, said, “To me, as important as John’s accomplishments was the example he set for those around him. John was an amazingly nice person, in addition to being an avalanche pioneer.”

FIGHTING GLOBAL CLIMATE CHANGE

Geologists David Bowen and David Lageson traveled to northern Montana during summer 2008 to study the potential for geologic carbon sequestration at Kevin Dome. The study was funded by a \$157,000 grant from the Montana Board of Research and Commercialization to Montana State University's Big Sky Carbon Sequestration Partnership.

The study is a part of the partnership's Validation Phase research activities being funded by the U.S. Department of Energy's National Energy Technology Laboratory.

Carbon sequestration is the process of capturing carbon dioxide from point sources, such as a power plant, and storing it permanently in deep underground geological formations. Carbon sequestration is seen as a viable strategy to help stabilize global carbon dioxide emissions and reduce the impacts of climate change.

Kevin Dome is a subsurface dome-shaped rock structure located between Shelby and Sweetgrass. Several oil and gas fields are present on the dome and CO₂ is naturally trapped in a deeper geologic unit. This study will evaluate the potential of the dome as a storage site for man-made carbon dioxide emissions. The scientists will use existing well logs, core samples and a variety of subsurface data, including

seismic surveys, to characterize the porosity, permeability, thickness, areal extent, and structural features of the dome.

The similarity of Kevin Dome to other large domes in Montana and Wyoming make this an important research opportunity with regional significance, according to MSU scientists.

"We are very appreciative for the support of the Montana Board of Research and Commercialization as well as that of the Department of Energy in this research," said Bowen. "Clean coal technology could be an important component of Montana's economic future."

The Big Sky Carbon Sequestration Partnership is one of seven regional partnerships funded by the U.S. Department of Energy to work on the best approaches for capturing and permanently storing greenhouse gases. The Big Sky partnership relies on existing technologies from the fields of engineering, geology, chemistry, biology, geographic information systems and economics to develop novel approaches for both geologic and terrestrial carbon storage in this region.

Excerpted from Evelyn Boswell, MSU News

SCHIZOPHRENIC LINK

A possible link between schizophrenia and the parasite *Toxoplasma gondii* has long been suggested, says MSU microbiologist Sandra Halonen. To investigate the theory, Halonen received a grant from the Stanley Medical Research Institute for a two-year pilot study. Halonen will receive brain tissue from the institute's brain bank. Some of the donors had schizophrenia and others didn't. Halonen and technician Woody Cranston will examine

the tissue for *Toxoplasma gondii*, a parasite that people mostly hear about in relationship to cat litter. Pregnant women are warned not to change cat litter because it could contain *Toxoplasma gondii*, a threat to their unborn children. Evidence of the parasite, if present in the brain tissue, will show up during staining or in molecular tests, Halonen said.



By Evelyn Boswell, MSU News

EXCAVATING THE PAST

Susan Cohen, associate professor in history and philosophy, has been directing an archaeological excavation of Tel Zahara, a small settlement site located in the central Jordan Valley in Israel. Along with professional archaeologists and students from the U.S., Poland, Denmark and Australia, she has spent approximately four weeks each summer, 2006-2008, excavating the site. MSU students have participated in the excavation, and another field season is planned for the summer of 2009. Cohen expects to spend another 4-5 years working at the site.



Photo courtesy of Susan Cohen

Cohen's research focuses on studying urbanization and urban-rural relations in the Middle Bronze Age (ca. 1950 - 1550 BC) in Canaan (modern Israel/Palestine), and the relationship of Middle Bronze Age Canaan with ancient Egypt. This includes looking at settlement patterns, processes of urbanism, and trade relations and patterns. The archeological team has excavated the remains of two very large Roman buildings, one of which has a complex drainage system associated with it, and some architectural remains from the Hellenistic and Persian eras. At the end of the 2008 season they located the Middle Bronze Age settlement, and all future excavation at the site will now focus on uncovering and analyzing that settlement.

"It is a long, slow process to properly uncover archaeological remains, and because the era in which I am most interested is often in the lowest parts of a site, it also usually takes multiple years to reach the target strata," said Cohen. "Right now we are finishing up the later eras and preparing to get started on the Middle Bronze excavations."

Cohen has been awarded a sabbatical for the entire academic year. She plans to work on a National Endowment for the Humanities grant proposal to fund future seasons of excavation. She'll also process materials excavated in previous seasons, prepare the architectural plans of the excavated buildings and work on the first volume of her final report.



Photo courtesy of Susan Cohen

2008 Faculty and Staff Awards

L&S Dean's Award for Meritorious Research

Dana Longcope, Physics
David Large, History and Philosophy

L&S Outstanding Teaching Awards

Amy Thomas, English (Tenure Track)
Shae Thompson, Mathematical Sciences (Adjunct)
Ariana Paliobagus, English (Graduate Teaching Assistant)
John Wixson, Mathematical Sciences (Graduate Teaching Assistant)

Kathy E. Griffith Employee Excellence Award

Nancy Poole, Political Science
Peter Masse, Chemistry and Biochemistry

President's Excellence in Teaching Award

Susan Cohen, History and Philosophy
Steve Holmgren, Chemistry and Biochemistry

President's Excellence in Outreach Award

Bridget Kevane, Modern Languages and Literatures

Cox Award for Creative Scholarship and Teaching

Valerie Copié, Chemistry and Biochemistry

Charles & Nora L. Wiley Award for Meritorious Research

Mary Cloninger, Chemistry and Biochemistry

James & Mary Ross Provost's Award for Excellence in Teaching and Scholarship

Gordon Brittan, History & Philosophy

The Meritorious Technology/Science Award

W. Randall Babbitt, Physics

Anna K. Fridley Distinguished Teaching Award by Phi Kappa Phi

Robert Rydell, History and Philosophy

Retiring Faculty (and the year they joined MSU faculty)

Gordon Brittan, History and Philosophy (1973)
Katherine Hansen, Earth Sciences (1983)
Michael Myers, Modern Languages and Literatures (1992)
Paul Trout, English (1972)
Theodore Weaver, Ecology (1969)

LEARNING FROM THE LEGACY OF HIROSHIMA AND NAGASAKI

The Department of Sociology and Anthropology brought the “Hiroshima-Nagasaki Atomic Bomb Commemorative Experience” to Bozeman and Montana State University. Tomomi Yamaguchi, an assistant professor of anthropology, organized the events which included a talk by Shigeo Sasamori, 76, an atomic bomb survivor. Sasamori was joined by Steven Leeper, chairman of the Hiroshima Peace Culture Foundation in Japan.

The commemorative also included an exhibition of thirty posters developed by the Hiroshima Peace Memorial Museum concerning the damage wreaked by the nuclear bombs in Japan. The posters featured images of the mushroom clouds, the decimated cities and medical effects. The



collection of posters conveyed the reality of the atomic bombings and heightened awareness of the need for peace.

The lecture and exhibitions were accompanied by a film series entitled, “Scars and Legacies: Hiroshima, Nagasaki, Apocalypse.” The first film shown was Steven Okazaki’s 2007 documentary, *White Light, Black Rain*. Sasamori was one of the survivors featured in that film.

Finally, Yamaguchi collected 1,000 origami cranes to send to a museum in Hiroshima. Paper cranes have become a symbol of peace since the end of World War II, Yamaguchi said.

Yamaguchi hopes the Hiroshima-Nagasaki events will show people the lingering effect of the atomic bombs, a subject not talked about often, she said.



KIDS CATCH ENTHUSIASM FOR VIRUSES

“Is it OK if I stay in from recess so that I can keep working on my project?” How many times do you think a 5th grade teacher hears this question? Well, if students have just been introduced to the nanoscale world of viruses, it might be more than you think.

Dr. Brian Bothner, chemistry and biochemistry, regularly leaves the confines of the laboratory to visit schools across the Gallatin Valley. Dr. Bothner has developed a learning module that includes a short movie, pictures of viruses, discussion and model-building of viruses for hands-on learning. Each student uses a foldable paper template to make a 3-D model of a virus particle. The template was designed by Jonathan Hilmer, a graduate student in Bothner’s lab, and represents a human rhino virus, the major cause of the common cold. At the end of the day, the kids get to take a virus home to show their parents. Fortunately, with this virus, the only thing they’ll catch is enthusiasm for learning about the world we live in.



Photo courtesy of Brian Bothner

the exciting world of viruses,” said Bothner who is a faculty member of the Center for Bio-Inspired Nanomaterials and the Thermal Biology Institute. “Kids in particular are fascinated by viruses.”

In the past two years, Bothner has presented this learning experience to over 500 junior high students, 50 elementary school students and 50 secondary educators. The module has also been part of formal education settings such as the MSU Master of Science in Science Education (MSSE) program, as well as informal settings such as Science Saturdays at the public library.



Photo courtesy of Brian Bothner

“The world in which we live is becoming more technical and scientific all the time. If I can teach people something about viruses, and the world in which they live, then I have been successful,” Bothner said. “But even more importantly, if I can show kids that science, scientists and learning can be fun, now that’s a good day.”

“The goal of our informal education effort is to expose and engage people in

MSU OFFERS UNIQUE SEMINAR ON POWWOW PLANNING

The Department of Native American Studies offered NAS 470, a seminar titled “Powwow Leadership,” to teach students how to deal with change in their personal lives and professional pursuits. During the fall semester, nine American Indian students, ranging from freshmen to seniors, majoring in a variety of disciplines, learned how best to prepare for the 34th Annual MSU Powwow while optimizing their own leadership capabilities. *MSU News*

This course was co-taught by the MSU American Indian Council (AIC) co-advisors, Jim Burns, Native American Student Advisor, and Dr. Jioanna Carjuzaa, associate professor of education.

Powwow Leadership is designed to give students the opportunity to explore leadership mentor relationships, improve active listening and communication skills, build teamwork, develop trust, facilitate groups and manage change. “The heart of this course is the on-going coaching and real-time feedback the participants receive on their own leadership, focusing on their powwow fundraising activities,” said Burns. “This course helps students understand that effective leadership is the foundation for organizations and groups, and is the key in helping them set and meet their fundraising goals.”

The AIC and student leaders are charged with raising an impressive amount of money to keep the annual powwow – the largest student sponsored event at MSU – free to the public.



MSU News

POLITICS FROM AN ECONOMIC PERSPECTIVE

The Department of Agricultural Economics and Economics sponsored a series of seminars examining the presidential candidates’ positions on major policy issues from an economic perspective. The faculty of the DAEE conducted the seminars which were held during the fall semester.

Topics discussed included: immigration policy, taxation, health policy, financial market regulation, climate change policy, entitlement programs and energy policy. The faculty will also conduct two post-election seminars to evaluate whether the political markets, and economic and statistical models, accurately predicted the results of the election.

The seminars were part of an undergraduate economics course, but were open to the public.



Joel Schumacher, one of the DAEE faculty who participated in the seminar series. *MSU News*



BURNING THROUGH STATE FUNDS

By Linda McGurk

Every year, wildfires in Montana ravage hundreds of thousands of acres, threaten homes and put firefighters' lives on the line. The cost of fighting fires quickly adds up to hundreds of millions of dollars, and it's the taxpayers who end up footing the bill. But thanks to a new study by two L&S alumni, Montana lawmakers may rethink the way the state handles fire suppression costs and new housing developments in fire-prone wildlands.

The study confirms what many have long believed but nobody had previously tested scientifically: Home development in fire-prone areas is adding significantly to

the already hefty cost of fighting wildfires. "This relates to our pocketbooks," says Patty Gude, an MSU graduate (M.S. ecology '04) and researcher with Bozeman-based non-profit Headwaters Economics. "We are currently spending millions of dollars on home protection and it's possibly going to increase in the future. The question is if we really want to continue to subsidize this with our tax dollars."

The study, conducted by Headwaters on behalf of the Montana Legislature's Fire Suppression Interim Committee, found that the cost to protect homes threatened by wildfires in Montana amounted to \$55 million in 2006, and \$36

“Firefighters from all over the West are called in to work on these fires and they are risking their lives to protect an increasing amount of homes in this area. Firefighters die every year, and that’s a high price to pay.”

–Patty Gude



Tony Cookson
Photo courtesy of Tony Cookson



Patty Gude
Photo courtesy of Patty Gude

million in 2007. It also shows that the cost of protecting homes often exceeds \$1 million per fire and that each home located within a one-mile radius of the fire adds on average \$8,000 to the total suppression cost.

Gude used data from 18 fires in 2006 and 2007 as a basis for the study, and partnered with MSU graduate Tony Cookson (B.S. economics, '04, M.S. statistics, '08) to crunch the numbers. “We made a model and put in all the variables that could affect a wildfire, like wind, temperature, humidity, infrastructure and the amount of homes that were threatened, among other relevant variables. Then we put them in a race to see which variables were strong enough to stay in the model,” explains Cookson. “It turned out houses matter. We were a little surprised to see how clearly the data spoke.”

As researchers, Gude and Cookson are not in the business of making policy recommendations and both say their most important contribution was to show the true cost for saving houses in the line of fire. But the legislature seems poised to cut its firefighting costs and could use the study’s findings to pass legislation that restricts construction in fire-prone areas and shifts more financial responsibility from the taxpayers to insurance companies and home owners.

“It is my personal belief that we should leave it up to people to build where they want, but if they decide to put up a home in a fire-prone area they should have to pay the price,” said Cookson, who’s currently pursuing a Ph.D in economics at the University of Chicago.

Gude notes that some of that cost, however, can’t be measured in dollars and cents. “Firefighters from all over the West are called in to work on these fires and they are risking their lives to protect an increasing amount of homes in this area. Firefighters die every year, and that’s a high price to pay.”

For a copy of the study, go to:
www.headwaterseconomics.org.

Upper Left: A home under construction in Montana’s Upper Bitterroot Valley narrowly escapes the Gash Creek Wildfire in 2006.

Photo courtesy of © www.kestrelaerial.com

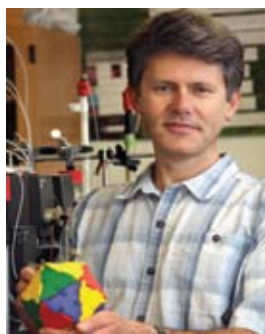
LETTERS & SCIENCE

DEPARTMENT HIGHLIGHTS



CHEMISTRY & BIOCHEMISTRY

Trevor Douglas, a pioneer in the field of nanotechnology, was named a Distinguished Professor of the College of Letters and Science. The three-year appointment recognizes faculty members with a record of internationally-respected scholarship, excellence in teaching, and contributions to their profession, the state of Montana and Montana State University. Douglas, who joined the MSU faculty in 2001, received his Ph.D. from Cornell University. He did postdoctoral research at Bath University in the United Kingdom. He has published more than 115 scientific papers, and his research is routinely published in the most prestigious journals including "Science," "Nature" and the "Proceedings of the National Academy of Science." Douglas has secured several patents and provisional patents for MSU, and has done extraordinary work in fostering collaborative, interdisciplinary research at MSU. He is a co-founder and current director of the Center for Bio-Inspired Nanomaterials, and has been involved in 25 funded grants with other MSU faculty. He received the University Merit Award for Research in 1999 and the Outstanding Faculty Award for Teaching in 1996.



Trevor Douglas *MSU News*

Construction of the new Chemistry and Biochemistry Building was completed in September 2007. The \$23 million building covers 89,613 square feet, and contains labs for organic, inorganic, physical chemistry and biochemistry. It has shared facilities for fermentation, tissue culture and protein crystal growth. It houses mass spectrometers, laser instruments, x-ray diffraction equipment, magnetic resonance spectrometers and more. The building was designed by L'Heureux Page Werner, PC of Great Falls, and was built by Dick Anderson Construction of Great Falls. Construction of the Chemistry and Biochemistry Building was funded completely without state funds. According to Laura Humberger, assistant vice president for financial services, the university issued bonds to construct the building. Repayment is being made with Facilities and Administrative Indirect Cost Recoveries derived from grant funding. "The building will help MSU fulfill both its educational and research missions," said David Singel, Interim Department Head.

CELL BIOLOGY & NEUROSCIENCE



Photo courtesy of Gary Strobel

Angie Mitchell, a junior in cell biology and neuroscience, has been working in the lab of Gary Strobel since the beginning of her sophomore year. Strobel, a professor in plant sciences and plant pathology, scours the world for exotic plants that might contain beneficial

microbes. Mitchell traveled to Ecuador in the spring, becoming the first MSU undergraduate to join one of Strobel's expeditions. Mitchell collected unusual plants during the two-week trip through jungles, rain forests, tropical dry forests, cloud forests and a mangrove swamp. She also spent part of her time advising 17 undergraduate students from Yale University on how to analyze the plants they collected. Mitchell's trip was funded by the Hughes Undergraduate Biology Program at MSU. Mitchell said the trip gave her five new plants to study, as well as friends and plenty of adventures. Her time in the lab will prepare her for graduate school and a career in medical research, she said.

The Research Experience for Undergraduates (REU) Program in cell biology and neuroscience is a 10-week summer research program for students with an interest in biological science, but with little or no research experience. Students gain invaluable research experience by working on projects in cell development, cell biology or neurobiology. The program, which began in the summer of 2005, consists of an initial two week hands-on lab session that teaches participants important biological research techniques. For the remaining eight weeks, students use these newly learned skills by working in the lab of a faculty member on an NSF or NIH-funded research project. The program provides a \$4,000 stipend, residence hall lodging or a housing stipend, a food allowance and travel stipend. The program provides students with much-needed research experience and allows them to be competitive for jobs, graduate school or professional school when they graduate. The 2008 program ran from June 2 to August 8.



Photos by Meagan Snodgrass

EARTH SCIENCES

Paleontologist David Varricchio was part of a team that discovered a new meat-eating dinosaur from Argentina with a bird-like breathing system.

The researchers recovered numerous vertebrae, ribs, pelvic elements and skull parts in 1996, and when analyzing the bones 12 years later realized that several of the bones contained pockets, which indicated air sacs instead of marrow inside the bones. It's not unusual to find such pockets in the vertebrae of meat-eating dinosaurs, but this dinosaur also had pockets in its wish bone, belly bones and the ilium, the major bone in the pelvis, Varricchio said. A press release from the University of Chicago said the discovery may have revealed how birds evolved their unusual breathing system. Among land animals birds have a unique way of breathing. Their lungs actually don't expand. Instead, birds developed a system of bellows, or air sacs, which help pump air through the lungs. The new dinosaur, called *Aerosteon riocoloradodensis*, was thought to be 85 million years old. Approximately 30-feet long, it was found along the banks of Argentina's Rio Colorado.



Photo courtesy of David Varricchio

Research from ancient sediment cores indicates that a warming climate could make the world's arctic tundra far more susceptible to fires than previously thought.

Post-doctoral researcher Philip Higuera is the lead author on a paper recently published in the online journal *Public Library of Science ONE*. The findings, which summarize a portion of a four-year study funded by the National Science Foundation, are important given the potential for tundra fires to release organic carbon – which could add significantly to the amount of greenhouse gases already blamed for global warming. Higuera and his co-authors examined ancient sediments from four lakes in a remote region of Alaska in and around Gates of the Arctic National Park to determine what kind of vegetation existed in the area after the last ice age, 14,000 to 9,000 years ago. The world's high latitude tundra and boreal forest ecosystems contain roughly 30 percent of the planet's total soil carbon. Currently, much of the carbon is locked in permafrost. But a warming climate could cause the permafrost to melt and release its carbon stores into the atmosphere where it would contribute to the greenhouse effect.



Photo courtesy of Melissa Chipman

ECOLOGY

Findings from 16 years of Montana State University research in Yellowstone National Park are described in a new book titled, *The Ecology of Large Mammals in Central Yellowstone: Sixteen Years of Integrated Field Studies*.

The research – half of it done before wolves were reintroduced and half since then – was conducted by teams of scientists led by MSU ecologist Robert A. Garrott. The book describes in 30 chapters and 736 pages findings from several studies that dealt with bison, elk, wolves, climate and more. Some of the research addressed controversial issues that arose during the course of the fieldwork. The book was published by Elsevier in its Academic Press Terrestrial Ecology Series and edited by Garrott, P.J. White and Fred G.R. Watson.



Bob Garrott (right), and graduate student Shana Dunkley, scan the Firehole area of Yellowstone National Park for wolf activity. *MSU News*

Christopher S. Guy, assistant unit leader for the Montana Cooperative Fishery Research Unit at Montana State University, received two awards for a textbook he co-edited with Michael L. Brown of South Dakota State University. The book, titled *Analysis and Interpretation of Freshwater Fisheries Data*, contains 18 chapters co-authored by 39 authors. Published by the American Fisheries Society in the fall of 2007, the book is intended for upper level undergraduate students, graduate students and working professionals. The book provides a frame of reference to encourage appropriate sample design, analysis and interpretation of freshwater fisheries data. For his work, Guy received a scientific excellence award for furthering the mission of the Cooperative Research Units, a program of the U.S. Geological Survey, and a meritorious service award from the American Fisheries Society.

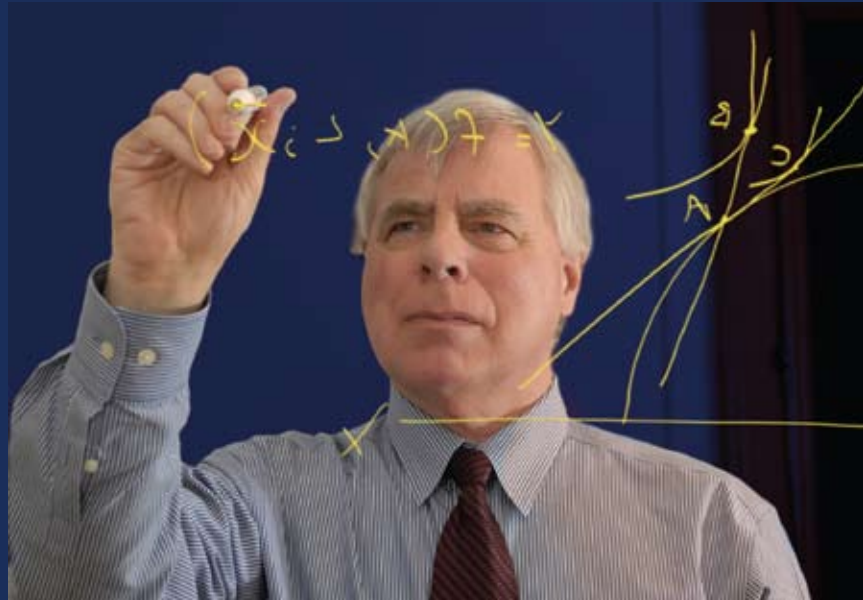


MSU News

AGRICULTURAL ECONOMICS & ECONOMICS

In February, the Montana Council on Economic Education (MCEE), in cooperation with the Department of Agricultural Economics and Economics, hosted a one day workshop on international trade issues for high school teachers from across the state. The program, based on presentations by faculty members, focused on the “big issues.” Myles Watts led a discussion about international trade, and suggested ways teachers can explain the law of comparative advantage to their students. Vince Smith shared information about whether or not trading with other countries is a major cause of unemployment. In another presentation, Smith shared information about China’s changing wheat and flour industry. Jamie Brown described how exchange rates between currencies are determined, and how changes in exchange rates affect Montana agriculture, tourism and energy. Gary Brester provided insight about why international markets are so important for Montana cattle and grain producers. The participating high school teachers gave the program rave reviews, as did several members of the MCEE Board who were in attendance. Dr. Norm Millikin, the director of the MCEE, noted that partnership programs like this workshop serve as wonderful platforms for MSU and MCEE outreach to build relationships between MSU and Montana communities.

Last spring, seven outstanding economics students participated in a new seminar titled “Institutions, Property Rights and Economic Performance.” There is a broad consensus among economists that institutions – such as democracy and well-functioning legal systems – play a central role explaining why some countries are so much wealthier than others. However, much research and debate persists about how countries with poor institutions can establish better ones. In addition to reading both classic and cutting edge scholarly work, each student wrote an original research paper related to the role of institutions in explaining economic performance. Professor Rob Fleck led the seminar and oversaw the students’ research projects. The Charles G. Koch Charitable Foundation donated \$12,000 to provide scholarships to students in the seminar.



Faculty member Vince Smith participated in the MCEE workshop. *MSU News*

“There is a broad consensus among economists that institutions – such as democracy and well-functioning legal systems – play a central role explaining why some countries are so much wealthier than others.”



Photo courtesy of Rob Fleck

ENGLISH

Professor Susan Kollin spent 10 months as a Fulbright Lecturer in Egypt. She taught classes on U.S. writers, American autobiography and women's literature to undergraduate and graduate students at the American University in Cairo. One seminar was titled "Americans in the World/The World in America." She had lively discussions with students about U.S. foreign policy past and present, and the image that Americans have created for themselves overseas. Kollin describes Cairo as an amazing, intense, exciting and chaotic city with a population of about 21 million people, give or take a few million. Ramadan began shortly after she arrived. Schedules were shortened but it was not unusual for students to fall asleep during class. Many of them had been awake until late evening the night before, sharing a meal with family and friends, and then had gotten up at 4:00 to break their fast before daylight. Kollin was accompanied by her husband, Dan Flory, a professor in history and philosophy, who was on sabbatical to finish editing a book. Her two daughters also accompanied them. "Overall, it was a great learning experience for all of us," said Kollin. "We are looking forward to another opportunity to live abroad as a family."



Susan Kollin (bottom row, center) with students in Egypt
Photo courtesy of Susan Kollin

Michael Sexson was on sabbatical for the entire 07-08 academic year. During his sabbatical he worked on several projects, including the production a 50-minute film about children's chapbooks, primers and toy books from the 19th century. The film, titled *My Book and Heart Shall Never Part*, was written and directed by Lynda Sexson, a professor in history and philosophy. The film explores how these early children's books relate to the world today. "The film is a project on the subject of literacy, and it informs our modern definition of literacy," said Sexson. The Sexsons' granddaughter stars in the film and the project is described as a "grandma and grandpa operation." The film, which the Sexsons think will be of interest to graduate students and fourth-graders, and everyone in between, was funded with a grant from Humanities Montana. It premiered in Bozeman in October.



HISTORY & PHILOSOPHY



The Department of History and Philosophy hosted the Fifth Annual Michael Malone Memorial Conference, titled “Japan’s Natural Legacies: Bodies and Landscapes Realized, Idealized, and Poisoned” at the 320 Guest Ranch in Big Sky, Montana, in October 2008.

The conference was a joint project funded by the College of Letters and Science,

Harvard University’s Center for the Environment, Harvard University’s Edwin O. Reischauer Institute of Japanese Studies and the University of Notre Dame. The conference featured scholars from universities throughout the U.S. and beyond, including premier Japanese universities. Papers at the conference ranged from studies of climate change, copper mining, Japanese meteorology and mountaineering to beriberi and cholera, and riparian engineering on Japan’s largest river. The conference emphasized the importance of the environment in understanding Japan’s history, and to propose a new balance between nature and culture in the study of Japan, one weighted much more heavily on the side of natural legacies. Dean Paula Lutz welcomed the international guests by suggesting that the conference represented a “coming of age” for Montana State University’s Japan Studies Program. The proceedings from the conference will be published in a conference volume.

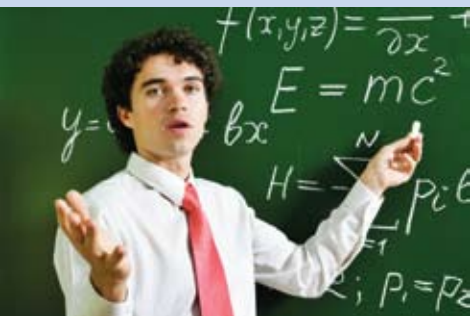
Billy Smith, a professor who specializes in early American history, was named a Distinguished Professor of the College of Letters and Science.

The three-year appointment recognizes faculty members with a record of internationally-respected scholarship, excellence in teaching, and contributions to their profession, the state of Montana and Montana State University. Smith, who has taught at MSU since 1981, is an accomplished academic who excels as a teacher and researcher, said department head Brett Walker. Smith has an exceptional record of publication and helped redesign the core courses required of all students at MSU. His many honors include the James and Mary Ross Provost’s Award for Excellence in Undergraduate Teaching, the Cox Award for Excellence in Teaching and Research, the Wiley Award for Research, and grants from the National Endowment for the Humanities, the American Philosophical Society and the American Council of Learned Societies. Smith has published eight books, including a major encyclopedia of early American history. He is writing *Ship of Death: The Voyage that Changed the Atlantic World*, to be published by National Geographic Books. Smith was recently elected to the prestigious American Antiquarian Society.



MSU News

MATHEMATICS



Approximately 12 to 20 new graduate students enter the mathematical sciences program each year, and are assigned to teach a course as a graduate teaching assistant (GTA). Many of these GTAs have no teacher training. To help

train these new GTAs to become more effective teachers, a workshop (funded in part through the MSU Provost’s Office) was designed based on effective teaching research literature. Through the workshop, GTAs learn to reflect on their teaching, engage their students, ask good questions and use formative classroom assessment techniques. Additionally, measures are in place to evaluate the program’s effectiveness. Outcomes will be used to formulate a model of GTA teacher training that can be used by other departments and other institutions of higher education across the nation.

The Department of Mathematical Sciences has established a colloquium series featuring scholars from around the country. In October the colloquium series brought James Hiebert, Ph.D. to campus.

Dr. Hiebert is the Robert J. Barkley Professor of Education at the University of Delaware, where he teaches teacher preparation, professional development and doctoral studies. He presented a lecture titled “What Can We Learn From Research About Effective Mathematics Teaching?” His presentation summarized a few key findings from research on teaching and learning mathematics in the U.S. and in other countries. The findings point to several aspects of mathematics teaching, at any level, that are critical for students’ learning and that could be improved. Dr. Hiebert directed the portion of the Third International Mathematics and Science Study (TIMSS) that compared mathematics teaching in the United States with that in other countries and is currently a principal investigator on the National Science Foundation-funded Mid-Atlantic Center for Teaching and Learning Mathematics.



Photo courtesy of James Hiebert

MODERN LANGUAGES & LITERATURES

The Department of Modern Languages and Literatures (MLL) is developing a major in international studies that will build on the current strengths of interdisciplinary programs and expand curricular offerings. The department is the recipient of a Title VI grant from the U.S. Department of Education to support the effort. The grant provides \$173,000 over a two-year period and involves in-kind matching funds from MSU. Patty Simpson, associate professor of German studies, is principal investigator and project director. The primary goal of the project is to foster professional and curricular development within the department and across disciplines. Brett Walker, chair of the Department of History and Philosophy, is co-director of the grant project. His expertise is especially important in establishing an interdisciplinary Asian studies program.

The money is earmarked for undergraduate foreign-language instruction and international studies. To launch the project, MLL hosted an international studies workshop on campus in early September, and is piloting a gateway course to be offered in spring 2009. A key element of the grant enables MLL to begin building a program in Chinese language and culture. "We are absolutely thrilled to have received this grant," said Bridget Kevane, chair of the department. "The competition for these funds is intense, so it is really a testament to Patty Simpson's work and the department's current dynamic status that we were successful. The whole department is working together on this project and it is very, very exciting."

Last year Ada Giusti, associate professor of French, designed a capstone seminar on Malian culture and literature. In this course students studied the customs, religions, languages and literature of this West African French-speaking country. Through the reading of essays, short stories, novels and poetry composed by Malian authors, students learned how citizens of this vast country deal with issues related to extreme economic poverty, post-colonization, women's rights, rural and urban life, and the tensions between the modern world and traditional life styles and practices. The discussions that emanated from these texts were eye-opening to students and invited them to reflect upon how these same issues were addressed at home.

An exciting component of this course was the opportunity for students to travel to Mali during spring break 2008, to implement health, economic and agricultural development projects to support Malian villagers in their efforts to eradicate malaria in their community. The four students that took up this challenge learned and applied grant writing skills to fund their projects. Eva Mends, majoring in French and biomedical science, tested the effectiveness of native plants used by the village midwife to fight malaria. Megan Matzick and Kelsey Meyer, both majoring in French and business, developed a business plan with the village women who wished to sell handmade products in order to buy mosquito netting. Alonzo Antonucci, French and global studies major, organized an educational poster contest at the village school, intended to assist students in teaching their own parents how to combat the spread of malaria.

Photos courtesy of Ada Giusti and Kelsey Meyer



MICROBIOLOGY



Barbara Hudson, director of the Clinical Laboratory Sciences Program, received the 2008 National Omicron Sigma Award from the American Society for Clinical Laboratory Sciences. She was recognized for outstanding service, dedication and commitment to the profession for developing the training program in clinical laboratory sciences at MSU. The program began last summer with students attending classes at MSU, then working in hospitals around Montana. Medical technologists test blood, grow cultures and do other lab work that lead to diagnoses. Hudson, who serves as the program director, said she spent five years laying the groundwork for the new program, so she was ready when the Montana State Legislature appropriated funding through the workforce development program and the Office of the Commissioner of Higher Education. She applied for a grant and in 2007 received a \$557,000 training grant and \$265,000 for equipment. Montana hospitals also supported the program. Eight hospitals together contributed \$300,000 in matching funds. Sixteen hospitals donated a total of \$63,000 in cash.

MSU News

Microbiologist Matthew Fields spends his days trying to understand how interactions on a microscopic scale could change how we think about energy production, climate change and even soil contamination. Fields

studies the physiology and behavior of microbes, the tiny organisms that have inhabited virtually every square inch of the earth's surface for the past 3.5 billion years. "Microbes have global impacts," Fields said. "They can grow fast and in large numbers, and there is always power in numbers." Fields is particularly interested in how that power can be harnessed for human use. Last year, he received a five-year \$1.65 million grant from the Department of Energy to study how microbes living together interact. The grant is part of the Virtual Institute for Microbial Stress and Survival, a project led by the Lawrence Berkeley National Laboratory. Fields' work involves researchers at MSU and five other universities across the country, as well as scientists at three national laboratories.



MSU News

NATIVE AMERICAN STUDIES

If literary merit can be measured by an appreciative audience, then up-and-coming writer M.L. Smoker has already arrived. Enrolled on the Fort Peck Indian Reservation in northeastern Montana, Smoker was on campus in September to give her first public poetry reading in Bozeman. Interspersed with jokes, autobiographical snippets, and serious talk of inspirations and influences, Smoker's poetry tells intensely personal stories about life and loss in a multicultural Montana. Always poignant but never indulgent, these poems take up the great Montana literary tradition of insisting on the metaphysics of the local while grounding it all within a clear-eyed sense of history that is at once tragic and hopeful. *Another Attempt at Rescue* (Hanging Loose Press 2005) is Smoker's first book of poems. Her work also appears in *The Wide Open* (University of Nebraska Press 2008), *Geography of the Heart: Montana's Women Writers* (Far Country Press 2006) and *Hozho: Walking in Beauty, Native American Stories of Inspiration, Humor, and Life* (eds. Paula Gunn Allen and Carolyn Dunn Anderson 2001).

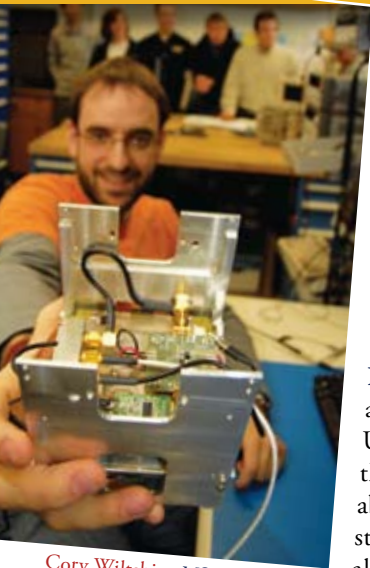


Photo courtesy of M.L. Smoker



Photo courtesy of Steven Hunts

Henrietta Mann, special assistant to Montana State University President Geoff Gamble and professor emeritus in Native American Studies, was honored with a 2008 National Indian Education Association Lifetime Achievement Award. NIEA recognizes individuals who have demonstrated exceptional achievement or performance in providing quality instruction to American Indian, Alaska Native and Native Hawaiian students. Mann is currently on a one-year leave serving as the inaugural president of the Cheyenne and Arapaho Tribal College in Weatherford, Oklahoma. Mann, a Cheyenne tribal elder, plans to return to MSU in January 2009. Mann has been at MSU since 2000 when she was named the first endowed chair for the MSU Native American Studies Department. Mann and Gamble established MSU's Council of Elders, composed of leaders of all of Montana's tribes. Mann is also fundraising for a planned \$10-million Native American Studies Center, \$2 million of which is targeted as scholarships for Native American students. A native of Hammon, Oklahoma, Mann received her bachelor's degree in education from Southwestern Oklahoma State, her master's from Oklahoma State and a doctorate from the University of New Mexico. She has also taught at Harvard and the University of California, Berkeley.



Cory Wiltshire MSU News

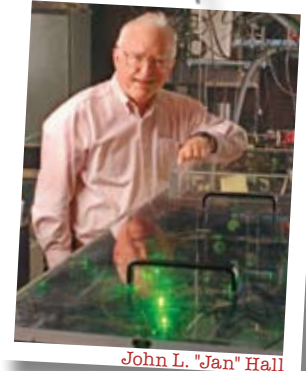
PHYSICS

A satellite made by physics students to commemorate the 50th anniversary of the first U.S. satellite has moved another step closer to space. MSU's satellite, called "Explorer-1 Prime," was one of three recommended to fly on a NASA rocket. The others were made at the University of Kentucky and the University of Colorado-Boulder. All the satellites are metal cubes measuring about four inches per side. That size, a standard adopted by several universities, allows the cubes to ride in an enclosed

box that can be attached to a rocket. If selected, the MSU satellite will hitch a ride with a larger satellite and probably launch in mid-June from Vandenberg Air Force Base in California. The satellite could join the Glory mission on its ride into orbit, one of several NASA missions related to global warming. A significant factor in MSU's selection was the heavy involvement of MSU students. About 40 students, mostly undergraduates, have been involved with the project since it began.

Students should pursue something "totally fun" that interests them, is useful to others and transforms their tiny corner of the world, a Nobel Prize winner said on his latest visit to MSU. The Physics Department sponsored John L. "Jan" Hall's September visit to campus. Hall, from Boulder, Colorado, won a 2005 Nobel Prize in physics for

his work in optics, lasers and precise measurements. He spent 44 years conducting research at the National Institute of Standards and Technology, working in laser technology, opto-electronic development and precision measurement. He shared the Nobel Prize with Theodor W. Hansch of the Max-Planck-Institute in Germany and Roy J. Glauber of Harvard University. Professor Rufus Cone said this was at least the third time Hall has visited MSU. Besides speaking to faculty and students, he came to learn about MSU's work with optical crystals and student research projects. "He has influenced people all over the world," Cone said. "He made contributions that are far beyond what he is recognized for."



John L. "Jan" Hall

Photo courtesy of University of Colorado at Boulder, Office of News Services

POLITICAL SCIENCE

Franke Wilmer is on sabbatical for the Fall 2008 semester in order to complete a textbook under contract with Lynne Reinner Publishers. *International Human Rights: Past, Present, and Future* introduces advanced undergraduate, early graduate and law students to contemporary international human rights development by framing them within the theoretical and historical context of the state and states' system. The

book will contain several unique sections. There is a section examining how concepts of human rights and human dignity can be found in all of the world's major religious traditions, including Taoism, Confucianism, Hinduism, Buddhism, Judaism, Christianity, Islam and indigenous peoples' cultures. There is a chapter on genocide that includes seven case studies including Armenia/Turkey, the Holocaust, Cambodia, Rwanda, Yugoslavia, Darfur and the case of indigenous peoples in settler states. The book frames human rights questions within the disciplinary parameters of social science broadly and political science in particular. It addresses enduring philosophical issues like liberalism and democracy, as well as contemporary challenges involving terrorism, torture, war and the laws of warfare, and humanitarian intervention.

The Local Government Center, in conjunction with MSU Extension, published a new handbook intended to help citizens who serve on boards and committees.

"Serving on County Boards, Districts, Commissions and Committees in Montana: A Handbook for Members, Local Government Officials and Citizens" is a 45-page resource for people supervising, serving on or interested in public boards across the state. Among the topics covered in the handbook are Montana's open meetings law, code of ethics, board liability, information on wrongful discharge, discrimination, making motions and use of *Robert's Rules of Order*. The handbook also provides details on the creation, purpose, membership requirements, authorizing language and funding information for 43 distinct boards, committees, commissions and districts in Montana. It refers to the Montana Code Annotated so that readers can obtain more detailed information about legislative statutes or Justice Department opinions. The handbook addresses not only legal requirements, but also provides suggestions on how best to run a meeting to encourage public input.



PSYCHOLOGY

Whether reading a book, attending a lecture or engaging in a conversation, our understanding critically depends upon our ability to utilize the current context to guide us through the recognition of each new word in a sentence. With a \$225,000 grant from the National Science Foundation, Dr. Keith Hutchison, and his colleague David Balota from Washington University in St. Louis, are investigating a wide range of both individual differences and item differences that may influence the use of context during word recognition. Differences between words include their frequency and spelling-to-sound regularity, as well as ways in which word pairs are related such as pairs sharing similar meanings (e.g., mouse-rat) and pairs commonly associated (e.g., mouse-cheese). Potentially important differences between individuals include reading ability,



Keith Hutchison Photo courtesy of Keith Hutchison

vocabulary, age, degree of attentional control and circadian rhythms. Researchers at four institutions will give word recognition and other cognitive tests to nearly 1,000 participants in Bozeman, Nebraska, New York and Missouri. In the end, a database will be created that will aid researchers throughout the world to advance theories and computational models of the processes that allow humans to use context in the comprehension and production of language.

Professors Keith Hutchison and Michelle Meade were awarded a Research and Creativity grant from the College of Letters & Science to support their research programs on aging and memory.

Memory can be broadly defined as the mental processes involved with acquiring (or encoding) and later retrieving information. Although much is known about the general pattern of age-related cognitive decline, Professors Hutchison and Meade proposed a series of studies to further specify the nature of age-related changes in selective attention. Topics of investigation include (1) the ability to maintain intended actions in the face of distraction, (2) the advantages and disadvantages of remembering with a “partner,” and (3) differences in retrieval strategies between younger and older adults. Hutchison and Meade gave public talks at local senior centers providing an overview of age related changes and also tips on how to improve memory. These talks have provided a forum for informing older adults about the research and how they could get involved.



Michelle Meade

SOCIOLOGY & ANTHROPOLOGY

Ranchers near the southeast Montana town of Birney have known about Horseshoe Cave for many years. Ancient Native Americans might have used the mini-cave, or rock shelter, as early as about 9,000 years ago, said Montana State University archaeologist Jack Fisher. To learn more, Fisher, U.S. Forest Service archaeologists and four MSU anthropology students spent two weeks carrying out excavations at the cave in July 2008. They found stone artifacts, fireplaces and animal bones. Horseshoe Cave appears to have been occupied briefly by ancient peoples on numerous occasions in the past. Students on the team were Seth Alt of Bozeman, Eryka Thorley of Michigan, Dallas Timms of New Mexico and Clint Garrett of Texas. The project is funded by the August and Mary Sobotka Trust Fund, which is administered by the Montana State Historic Preservation Office.



Photo courtesy of Jack Fisher

Wade Cole joined the Department of Sociology and Anthropology in fall 2008.

He received his B.A. from Western Washington University and his Ph.D. from Stanford University. He currently teaches a course on political sociology. Wade’s research projects include cross-national analyses of human rights treaty ratification, the effect of those treaties on subsequent practices, and the origins of indigenous peoples’ claims to sovereignty under international and national law. He is also engaged in research that compares tribal colleges in the United States with historically black colleges, focusing especially on the prevalence of culturally relevant curricula at these institutions. For one year, beginning in January 2009, Cole will be a National Academy of Education/ Spencer postdoctoral fellow. During this fellowship he will complete a book on the worldwide emergence of colleges and universities for indigenous peoples, and begin researching women’s and Hispanic-serving institutions in the United States.



Wade Cole

PHIL KOPRIVA'S LEGACY



Photo courtesy of the Kopriva family

In 1991, Phil Kopriva, a 1957 microbiology graduate, created the Kopriva Seminar Series and the Kopriva Graduate Fellowship with a generous gift to the College of Letters and Science. Kopriva, who died in 2002, set up the endowments to provide support and opportunities for graduate students in L&S, particularly in the biomedical sciences.

The Kopriva Seminar Series was established as a means of disseminating and discussing on-going scientific research occurring at MSU and around the country. The seminars focus on multi and interdisciplinary research in biosciences and biochemistry. "During my graduate school days some of the most informative and enjoyable times were the many and varied seminars and colloquia I either led or simply attended," Kopriva told *The Montana State Collegian* in 1999. "I wanted the Kopriva Seminar Series to provide students with experiences similar to mine. That is, to nurture and promote their professional, intellectual and personal growth and those ethereal things called memories."

Last spring the seminar series brought Byron Caughey to the MSU campus. Caughey, a biochemist, is a senior investigator and chief of the TSE/prion biochemistry section of the Laboratory of Persistent Viral Diseases, Rocky Mountain Laboratories, National Institute for Allergy and Infectious Diseases, National Institutes of Health in Hamilton. His research examines how rogue proteins, called prions, propagate and potentially lead to mad cow disease and its human equivalent, Creutzfeldt-Jakob disease.

In the fall of 2008 Theodore Berger, director of the Center for Neural Engineering at the University of Southern California, came to the MSU campus as part of the seminar series. Dr. Berger's current



Photo courtesy of Byron Caughey

research is focused on the hippocampus, a neural system essential for learning and memory functions. He is developing a computer chip implant that could eventually replace its biological counterpart. This would allow people with a loss of function in the hippocampus to regain the ability to form new memories.

The Kopriva Graduate Fellowship is awarded to recognize and support the research of an outstanding graduate student in the areas of physiology and/or biochemistry. The fellowships are designed to provide financial assistance to the selected graduate students. "Graduate school demands in studies and research are of a nature that they require full-time attention by the student," Kopriva said. "Many excellent students with a productive potential are lost to us because of financial needs."

In 2008 two graduate students in the Department of Chemistry and Biochemistry were awarded Kopriva Graduate Fellowships. Each student will receive \$5,000 that may be used for travel to meetings or classes, books, supplies, or any other materials or services in support of their Ph.D. research. Each student will deliver a Kopriva Student Research Lecture during the academic year.

Sunshine Silver will use her fellowship to study an enzyme found in spore-forming bacteria. The enzyme enhances the bacteria's resistance to ultraviolet light, making it very difficult to kill these organisms which can threaten human health with a number of diseases.



Sunshine Silver

Ramon Tusell's fellowship will be used to develop techniques for modeling protein functions in the human body. Each human gene codes for a specific protein molecule (chain of amino acids) that performs a specific task, but how the proteins achieve these tasks is not well-understood at the atomic level.

"Phil Kopriva was committed to supporting the development of young biomedical scientists and the fellowship is going a long way to doing that," said Paula Lutz, dean of the College of Letters and Science.



Ramon Tusell

UNIVERSITY FINANCES 101



In recent months, many MSU alumni have asked why the university is becoming more active in raising private contributions from its alumni and friends. Many remember the very low cost of their own education some years ago and wonder what has changed.

Dedicated team of Phoneathoners!

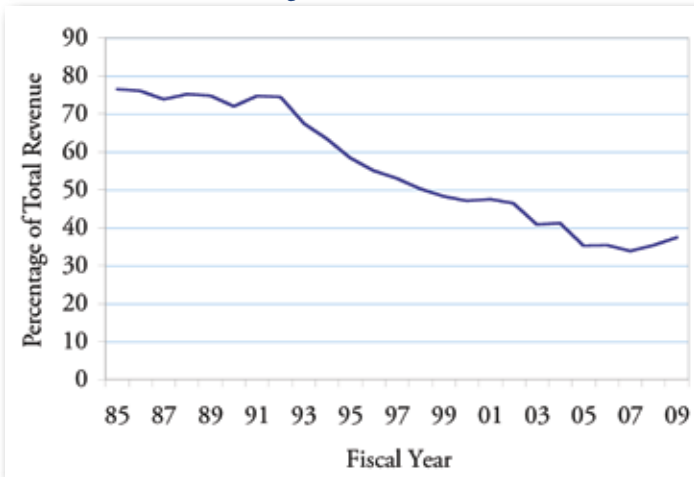
In Montana, and across the nation, public colleges and universities receive financial support from many sources. Historically, state governments have provided the largest proportion of funding for operating and capital expenses at public institutions.

Economic shifts in the U.S. during the past two decades have changed this picture, and the proportion of university revenues from state funding sources has been steadily declining across the country, forcing tuition increases to replace lost state funds. States across the country have had to balance the competing demands for resources that come from health and human services, the K-12 sector and corrections, along with higher education.

A 2008 report by the State Higher Education Executive Officers, the 54-year-old nonprofit association that focuses on the relationship between states and their institutions of higher education, found that state funding for higher education had declined significantly in the past 25 years. According to the report, state funding per student in 2007 averaged \$6,773. In 1981, state funding per student was \$6,094. In today's dollars, that's \$13,900, more than twice the state support universities now receive. MSU, which provides an excellent education with great efficiency, averaged \$4,386 per student in fiscal year 2007 – just 65 percent of the national average.

As illustrated in the graph, MSU received approximately 76 percent of its revenue from the state during fiscal year 1985. By fiscal year 2009 this number had fallen to 37 percent.

State Share of Funding for MSU: Fiscal Years 1985-2009



Source: Office of Planning & Analysis, Montana State University.

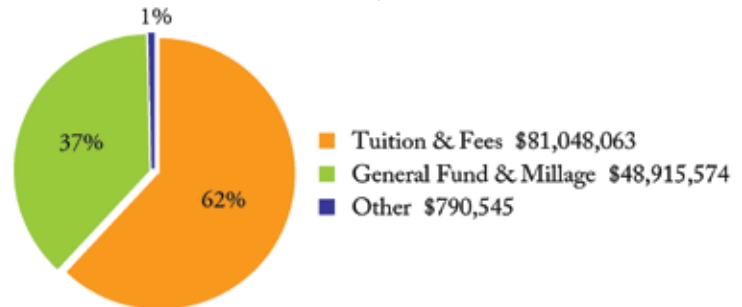
During the 2007 legislative session Governor Schweitzer and the legislature added an additional \$50 million into the base budget for campuses in the Montana University System for the current biennium. Of this, MSU received \$5.7 million for fiscal year 2008 and \$3.6 million for fiscal year 2009.

Like other public universities across the country, MSU turns to alumni and friends for additional support that makes possible not merely a good education, but provides the margin of excellence of which we are so proud.

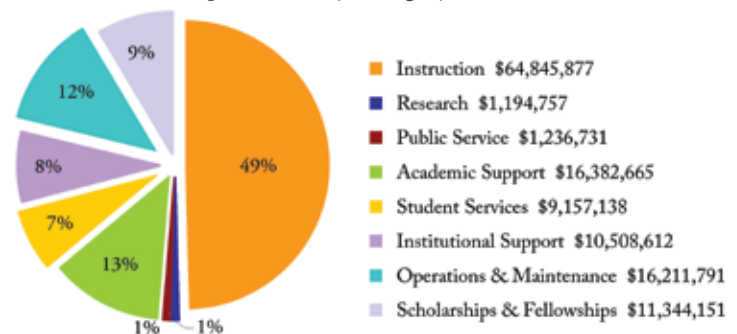
To that end, MSU encourages private gifts to supplement the university's revenues and help keep tuition affordable. Student callers like Brianna Hendrix, pictured above, will be contacting alumni through the fall months, asking for support for the College of Letters and Science Fund for Academic Excellence, or for departments within the College. If you receive a phone call from a MSU Phonathon student please consider donating. And keep MSU in mind when making decisions about your end of the year giving. Each gift is important, and each is an investment in the future.

If you would like to make a gift to the College of Letters and Science, please visit our web site at http://www.montana.edu/lettersandscience/giving_main.html for several convenient giving options. If you are considering a gift but need more information, please contact Anne Bryan, our development director, at 406-994-2092 or abryan@montana.edu.

MSU Revenues by Category: Fiscal Year 2009



MSU Expenditures by Category: Fiscal Year 2009



THE DEAN'S CIRCLE

The Dean's Circle recognizes alumni and friends whose cumulative lifetime gifts to the College of Letters and Science total \$10,000 or more. We are grateful to this growing group for its loyalty and tremendous support of the College.

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LETTERS & SCIENCE

ANNUAL GIVING

This report gratefully acknowledges the generosity of the many alumni and friends who provide vital support to the College of Letters and Science.

The College, like the University, operates on a fiscal-year calendar. Gifts listed in the Annual Giving section were received between July 1, 2007 and June 30, 2008. If you believe we have made an error, please contact the L&S development office so that we may recognize you appropriately and accurately in future publications 406-994-2092.

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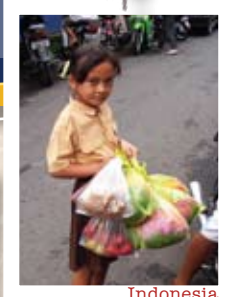
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