

DISCOVERY

Newsletter of Research and Scholarship

Bozeman second-graders show what they know about Antarctica

by Annette Trinity-Stevens

Emperor penguins are about as tall as a seven-year-old. Polar bears don't live in Antarctica. And if everyone wears bright red coats they're more likely to find each other in a whiteout.

Second-graders at Hawthorne School in Bozeman proudly demonstrated how well they know these and other facts about Antarctica recently when two scientists from Montana State University came to their classroom.

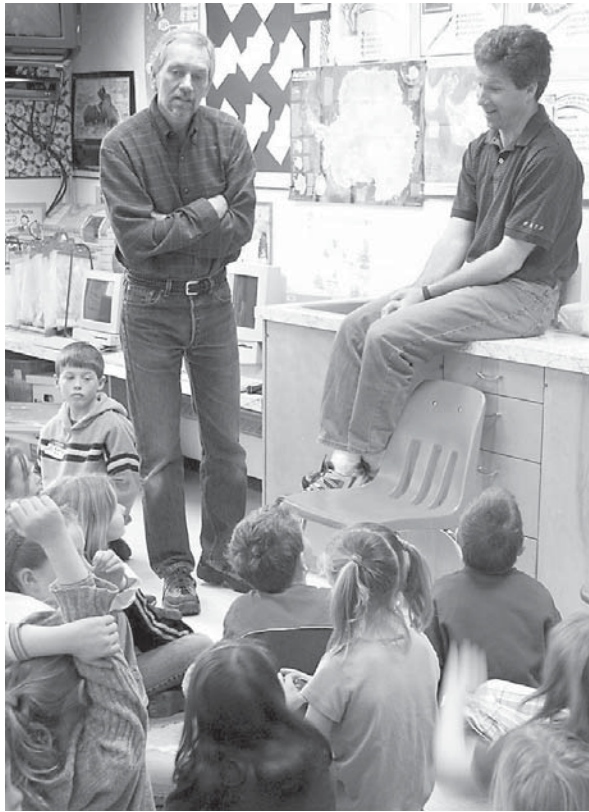
"You all have learned a lot," said MSU ecology professor Bob Garrott. "I think I had better get you into college."

Garrott and another MSU ecology professor, Jay Rotella, visited the school April 1 to wrap up their season of research on Weddell seals on the southernmost continent.

The two scientists spent a month last October tagging and studying the seals at the base of Mount Erebus in the continent's McMurdo Sound. While gone, Garrott sent e-mails and digital photographs twice a week to Hawthorne School where his wife, Diane, teaches.

Classrooms at Chief Joseph Middle School and West Yellowstone also received the dispatches. Schools in California, Florida, New York and Vermont received e-mails from Rotella.

Diane Garrott said she created an entire Antarctic curriculum for her students that included films, books and other resources. But the students especially liked the regular notes



MSU ecologists Bob Garrott (left) and Jay Rotella talk with Bozeman elementary students. (MSU photo by Jeanine Lintner)

from her husband.

"They could not wait to get a new e-mail," she said. "For this age, it's really exciting to meet a scientist and find out what they know and bring that into bigger discussions about Antarctica."

The students learned that Antarctica has only one active volcano and one species of insect. They learned how scientists core the ice to make sure it's thick enough to live and work

Antarctica continued on page 2

Technology Transfer Office adds new staff

by Becky Mahurin

The Technology Transfer Office is continuing to evolve. Nick Zelver has joined the office as a technology transfer specialist. Many of you remember that Nick served as Industrial Liaison for the Center for Biofilm Engineering for several years. In that position, Nick was responsible for developing and maintaining relationships with the center's industrial associates and other companies interested in sponsoring research. Nick then moved to TechLink, where he specialized in forming partnerships between companies and federal research labs. Nick executed several CRADA's and licensing agreements during his tenure at TechLink.

We are pleased to have Nick back on campus in 302 Montana Hall. Nick's licensing expertise will be fully utilized in his new position. He is already working with several MSU technologies to assess their market and commercial potential.

The TTO has received 19 invention disclosures in the fiscal year beginning July 1, 2002, and has licensed 11 technologies since then. We are also participating in start-up companies based on MSU technologies. We expect even more activity now that Nick will be devoting most of his time to licensing MSU technologies.

As MSU continues to experience increases in research funding, we expect more invention disclosures and more licensing opportunities to develop. Nick, Denlyn Atherton and I are here to assist you in this process. Please call 994-7868 with any questions you may have or to discuss inventions.

Becky Mahurin directs the Technology Transfer Office at MSU-Bozeman.

SNAP!

MSU-Bozeman Students on Themselves



I decided to go to college to gain a degree that would give me many career opportunities. Business allows you to enter a broad range of industries.

My favorite place to study is the SUB when a test is the next day.

I have wanted to meet Gary Payton for a long time. He is a basketball player and his desire to win and love for the game is really enjoyable to watch.

I spend time with my family, fish and watch MSU football to relax.

My favorite class outside of my major was Music 210.

I am a member of Beta Gamma Sigma, Golden Key and a volunteer for Big Brothers Big Sisters and Gallatin Valley Christian Church.

Got a student to Snap? Email your suggestions to snap@montana.edu

Name	Chad Becker
Major	Business
Management	Hometown
Fairfield, MT	Age
23	

MSU researcher looks at pros, cons of temporary workers

by Evelyn Boswell

The number of temporary workers and independent contractors has risen dramatically in the past 10 years, much faster than the number of permanent employees, says Dan Moshavi, assistant professor of management at Montana State University-Bozeman.

"Absolutely," agrees Greg Donaldson, owner of Express Personnel Services in Bozeman.

Companies and workers alike appreciate the flexibility of temporary work, Donaldson said. Companies can bring people in for immediate short-term needs without having to go through an extensive hiring process. Workers enjoy being able to work the hours that best suit them.

Companies also like temporary workers and independent contractors – together known as the contingent workforce – because they often don't have to pay benefits and other costs associated with permanent employment, Moshavi added. Companies like temporary workers, too, because they buffer permanent workers from things like layoffs. Many of the laws that protect permanent employees don't apply to temporary workers or independent contractors, Moshavi said.

Companies use temporary workers to find good permanent workers, as well, Moshavi said.

"We do know that more and more organizations are using temporary work as a screen for permanent work," said Moshavi, who advises his students to consider temporary work as a way to enter an organization. "Seventy-two per-



Amy Norden, a temporary worker at Buffalo Restoration in Bozeman, cleans smoke residue and odor from the contents of a home that suffered fire and smoke damage.

cent of temporary workers who are looking for permanent employment obtain regular, full-time jobs as a result of working in temporary positions."

Temporary work and independent contracts have many advantages, but they raise significant issues, too, Moshavi said.

"From the individual's side, studies suggest that temp workers are not treated as well as permanent workers," Moshavi said. Many don't receive benefits, for example, and are the first to go when work is slow.

From the company's side, organizations should consider things like level of commitment, length of time they can use temporary workers, and worker classification.

"There are cases where temporary workers might be less committed to an organization than permanent workers," Moshavi said. "So even though it costs less (to hire temporary workers), will that hurt you in terms of getting work done?"

Companies like Microsoft have been sued for classifying workers as independent contractors when they were actually employees, Moshavi continued. The Internal Revenue Service (IRS) uses several criteria to determine if someone is classified correctly, including degree of supervision and method of payment.

Businesses who use temporary employees need to understand their responsibilities, Donaldson said. Just because a worker isn't permanent doesn't mean the company doesn't have some liability. If the company hires a temporary roofer, for example, it still needs to supervise his or her safety. The employment agency isn't liable for everything.

Evelyn Boswell is a writer for the Office of Research, Creativity and Technology Transfer.

Antarctica continued from page 1

on. They read about how to tie down an outhouse so it doesn't blow away during a blizzard.

"They loved that story," Rotella said with a sideways grin.

But they still had a few questions for the scientists during the recent classroom visit.

"Did you guys ever get time to play and make igloos?" asked one girl.

Yes, they made igloos, Rotella answered, to use for shelter if they were caught in a blizzard away from their huts.

And for fun they occasionally cross-country skied.

"Can you catch a cold there?" wondered another.

Yes, came the answer, you could catch a cold if a co-worker had one but not from the cold weather itself.

"How long can seals stay under water?"

Probably up to 40 minutes, thought Garrott, although another student who had done his own reading said 73 minutes was more like it.

The scientists showed slides and video footage they took themselves, which drew high-pitched "ohs" from the children every time a big-eyed baby Weddell seal came into view. Rotella

also had a stuffed Adelle penguin on hand that several students skipped the first few minutes of recess in order to gently pet.

As a reward for their hard work, each student received a plastic yellow flipper tag fashioned into a key ring.

"Thank you all for learning so much about Antarctica," Garrott said as he dropped the tags into outstretched hands. "I'm really proud of you."

Annette Trinity-Stevens is the director of research communications at MSU.

Summer Reading

by Jan Zauha

Summer stretches luxuriously in front of you. How will you enjoy it? If pleasure reading features high on your agenda, use the Web to plan a menu of book consumption for the coming months. Sites designed to whet the reader's appetite abound, including those featuring recommended reading lists, literary awards, reviews, book group guides and discussions, and, of course, book shopping opportunities.

Reading lists are a useful, if controversial, way to whittle down your choices in the universe of books. Remember the furor over the Modern Library's "100 Best" [www.randomhouse.com/modernlibrary/100best.html] lists that came out in 1998? Although you may not agree with their pick of the 20th century's greatest, the very inclusion of a title is bound to pique your interest, something Random House was accused of banking on, in fact. Libraries, booksellers, associations, educators, and others routinely produce recommended reading lists of perhaps purer pedigree. The Hungry Mind Review's 100 best [www.bookspot.com/lisHungry100.htm] offers some contrast, as does the list compiled by the students in MSU Professor Michael Sexson's English 300 class [www.montana.edu/wwwpb/univ/msu100.html]. Lists like these can remind you of notable titles, but don't necessarily help you distinguish the works that would best suit your own tastes. Bestsellers and other lists on sites such as Overbooked [www.overbooked.org] focus on choosing more current titles, often with popular buying patterns as a guide.

Award lists, on the other hand, promise a more critical basis for title selections. Harvesting titles from the nearly 90 years of Pulitzer Prize [www.pulitzer.org] winners usually ensures a certain level of quality. Literary tastes, however, are subject to fashion, so reading the 1929 winner for fiction, *Scarlet Sister Mary* by Julia Peterkin (Bobbs), may be more of an historical exercise than diving into the 2003 winner for fiction, *Middlesex* by Jeffrey Eugenides, would



be. Other lists of awards are gathered at BookSpot [www.bookspot.com/lists], including not only the prestigious name awards but also the lesser-known genre and age group awards.

Reading reviews before you commit to a title is another way to increase your satisfaction. The Web offers a wealth of review resources – something from almost every point of view and critical level. The beauty of the up-to-the-second culture of the Web is that those who prefer the latest fiction can read about it even before it's released. Bookreporter [www.bookreporter.com] and other sites provide substantive reviews of forthcoming books. Booksellers like Amazon [www.amazon.com] and Barnes & Noble [www.bn.com] offer editorial/critical reviews when a book is new or forthcoming and include reader or customer reviews once the book has been out for a while, providing a rich (and sometimes amusing) combination of professional and consumer reviews.

Book groups have enjoyed tremendous popularity in the past few years. Even if you don't want to commit to one, their lists and discussion resources can be very useful. See The Friends of the MSU-Bozeman Libraries Book Group [www.lib.montana.edu/about/friends/bookchat.html] for current and past selections. Bozeman Public Library [www.bozemanlibrary.org/libsvc.html] has a monthly book club as well. ReadingGroupGuides [www.readinggroupguides.com] touts itself as the "online community for reading groups" and has gathered over 1,000 discussion guides from various publishers.

If you find Web sites or topics that you think might be of interest to the MSU community, please send me an e-mail message at jzauha@montana.edu.

Jan Zauha is the reference team leader for the MSU Libraries.

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For more information, call 994-5607 or visit www.montana.edu/wwwvr.



MSU microbiology senior Sarah Faaborg

Montana student's aspirations bode well for rural health care

If Sarah Faaborg has her way, she'll be hanging a shingle outside a medical clinic one day, somewhere in rural Montana, announcing the town's new physician.

The name on the shingle will be hers.

Faaborg, 22, is on the alternate acceptance lists of four medical schools in the region, meaning if the students already accepted don't enroll by the May 15 deadline, then Faaborg has a spot. Two other medical schools have yet to notify her of her status.

The tall, sincere young woman from Malta graduates this May with a microbiology degree from MSU-Bozeman and with her heart set on addressing the state's shortage of rural physicians.

"For the longest time, it was hard for Malta to get health providers," Faaborg said, recalling trips to Havre, Glasgow or Billings for medical care. "So I would like to go to a rural area and help alleviate some of the stress of not having health providers, because I know what that's like."

Although she's hesitant to admit it, Faaborg has a nearly perfect grade point average and is recognized as one of the top scholars in the MSU microbiology department.

"She's an excellent student," said microbiology professor Cliff Bond. "I feel strongly that she'll get into medical school. She's first rate."

Faaborg said she didn't start college with her mind set on becoming a physician. She chose microbiology as her major based on a high school biology class that unveiled the microscopic world of things that make you sick. Viruses, in particular, fascinated her.

At MSU she took a class on careers in microbiology and decided she wanted to work with people. Later she became interested in medicine and decided to research what it's like going to medical school.

The rigorous—and expensive—application process hasn't dissuaded her, and of the four schools that have accepted her as an alternate she's hoping the University of Washington—through the WWAMI medical program—is the one that comes through.

After graduating from MSU this May, Faaborg may return to Glasgow where she worked with a physician last summer.

Young recognized with national award for mentoring

Sara Young, the driving force for programs that engage American Indian students in research at Montana State University-Bozeman, was one of 10 individuals nationwide to receive the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring this year.

Young received at a ceremony in April in Washington, D.C.

"Sara is recognized at all levels as a true catalyst for MSU's successful mentoring programs for American Indian students," said Jim McMillan, dean of the MSU College of Letters and Science. "She truly has made a difference in the lives and careers of a large number of students."

An enrolled member of the Crow tribe, Young directs the American Indian Research Opportunities (AIRO) program at MSU and guides the MSU research mentoring programs of the Montana Apprenticeship Program (MAP), the Initiative for Minority Student Development (IMSD) Program, and Leadership Alliance.

She also mentors American Indian students participating in several other programs on campus.

Her work at MSU has focused on creating a campus environment that supports Indian students as they earn their degrees.

"In the AIRO program, we remind students of why they make the sacrifice to leave their home communities to come to college, the reason is to better serve our people," she said. "Ninety percent of the students in AIRO want to



Award-winner Sara Young.

return to their home community to serve in a professional capacity."

Young's role has been to identify students who have the desire and potential to successfully participate in a research program; identify and encourage faculty members to be mentors for the students; and develop activities outside of the research arena which supplement the students' laboratory experiences and help remedy any problems that might arise along the way.

"Mentoring makes a significant impact on students," Young said. "I'd like to see mentoring programs established in all colleges at MSU."

Education has always been important to her, said Young, and she recognizes the importance

of role models.

"When I was in the sixth grade, I decided I wanted to go to college so I started looking at encyclopedias to learn more about college," she said. "I didn't have anyone to talk to about college. My mother didn't finish high school and didn't have much education, but she told me, 'What you learn can't be taken away from you.'"

Young knew that after she received her college education she wanted to first return home to Lodge Grass on the Crow Indian Reservation in southeastern Montana. "I wanted my own community to benefit from the education I had been given," Young said.

Young is constantly on the road, commuting from Bozeman to her home in Lame Deer on the Cheyenne Indian Reservation and traveling throughout Montana doing outreach work in reservation communities and the tribal colleges.

"We want the reservation communities to know that MSU will provide a welcoming environment for their young people," she said.

The Presidential Award is administered and funded through the National Science Foundation and goes to people and institutions who work with students in K-12, undergraduate or graduate level education. Young will receive a \$10,000 grant to go toward continuing mentoring activities at MSU.

The mentoring awards have been given annually since 1996.