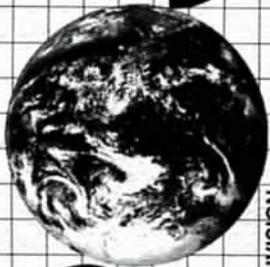


# EROS DATA

EROS DATA CENTER, SIOUX FALLS, SD



# ER

U.S. GEOLOGICAL SURVEY, NATIONAL MAPPING DIVISION

## EROS Data Center & Flandreau Indian School Form Partnership



Signing: (Front l. to r.): **Ron Gourneau**, Principal, Flandreau Indian School; **Don Lauer**, Chief, EROS Data Center; **Barb Ryan**, USGS Associate Director, Operations. Students from Flandreau Indian School (back l. to r.): **Vernalyn Beraring**, Wyoming; **Mandy Gallagher Horn**, Montana; **Molly Kvistad**, California; **Carlo Poowegup**, Utah; and **Pedro Alamo**, Iowa.

Administrators from the U.S. Geological Survey EROS Data Center (EDC) and the Bureau of Indian Affairs (BIA) Flandreau Indian School (FIS) signed an agreement January 22, 1998 in the EDC auditorium to share cultural and technological resources to improve learning and advance cultural diversity. EDC outreach staff initiated the educational partnership between FIS and EDC in November 1997. After EDC staff drafted a formal proposal in December 1997, five FIS students and two administrators visited EROS in late January to participate in the symbolic signing ceremony to officially launch the partnership.

The goal of the partnership is for EDC staff to provide FIS with available USGS resources to improve the quality of education in the Earth and physical sciences, math, and computer science while furthering cultural diversity. According to the agreement, EDC scientists and professional volunteers will serve as lecturers and mentors for FIS students. FIS teachers will attend EDC sponsored teacher training workshops. FIS students may perform at EDC functions, such as the EDC 25th Anniversary celebration in September. And finally, EROS

staff will provide FIS staff and students excess furniture and computer equipment as needed.

The FIS, established in 1871 as part of a church mission, is located 30 miles north of EDC. The school boards 350 students in grades 9-12 from states as far east as Michigan, and every state west of South Dakota. As Native American students and educators at this facility receive training, technological support, and educational materials from EDC staff, it is hoped this unique partnership will expand and grow. More importantly, it's hoped this educational partnership will serve as a model of goodwill and cultural exchange. ☺

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## UP FRONT

This year, 1998, is a major milestone in the history of the EROS

Data Center - it's our Silver Anniversary. The general public first learned about us in a news story published in 1966 covering an announcement by the Department of the Interior of a new program called EROS—for Earth Resources Observation Satellite. The Secretary of the Interior wanted to build, launch and operate an Earth observing satellite with the goal of making a geologic photomap of the entire United States and its territories.

Interior was never allowed to build such a satellite, but NASA did, and it was called ERTS, for Earth Resources Technology Satellite, which was later renamed Landsat. Interior's EROS also was renamed Earth Resources Observation Systems. Six years later, in 1972, another Interior press release announced the acceptance of a master plan for a Data Center near Sioux Falls to support EROS' mission. That facility would be "...a key installation in the use of remote sensor data from aircraft and spacecraft for purposes of resources and

environmental surveys." The spacecraft, by the way, would collect data using television and other remote sensing equipment, beaming down thousands of pictures each year (according to the press release). In the summer of 1973, a group of "downtowners," who had been working out of rented space in the center of Sioux Falls, threw open the doors to a brand new EROS Data Center.

We've come a long way since those earliest days. Later this year we will celebrate the journey. We are calling September 14-20 EROS Week. Our theme for the week will be "Exploring a Changing Planet." We will do more than just congratulate ourselves; instead we will use the celebration for educational purposes. Classroom activities, designed for middle school students, are being prepared. Students will be able to use a pair of satellite images to see the changes that have occurred in and around Sioux Falls over the past 25 years and to learn how satellite data can help us understand our changing planet. Dr. Mary Cleave, a former astronaut and mission specialist on the Space Shuttle and now a research scientist for NASA, will be our special guest and will be an active participant in the week's events.

The celebration will culminate on Saturday, September 19, with an Open House. Displays, demonstrations and

tours are being planned. Special educational activities will be available to visiting school age guests.

While we have had open houses, educational outreach activities and displays in the past, we are also going to try some new things for this celebration. For example, a juried art show will give local artists an opportunity to express what "exploring a changing planet" means to them.

Finally, a special commemorative book is being published by the Center for Western Studies at Augustana College. The author, Rebecca Johnson, has written for general audiences a number of excellent works on scientific endeavors. Rebecca has studied our history and has written a new work titled "What It Took: A History of the U.S. Geological Survey's EROS Data Center." That book will be completed before we begin EROS Week.

Volunteer committees have been working on a range of events and activities which will be both challenging and fun. We have accomplished a lot over the last 25 years, so let's celebrate!

Donald T. Lauer

## Employee Testifies Before SD Legislature

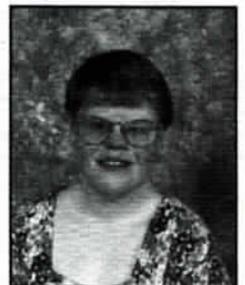
It is not everyday that a person testifies before a committee of the South Dakota Legislature. And it is even more rare to be asked to testify. For **Brandi Wahl**, EDC Copy Center employee, that is exactly what happened.

The Legislature's Appropriations Committee considered cuts in spending for disabled persons in the State. Under South Dakota law, students with disabilities are funded by their local school district until they turn 21. Many developmentally challenged people need

and require additional guidance and training in basic life skills beyond age 21. Sioux Vocational Services, a private, non-profit agency providing training to disabled persons in South Dakota, asked Brandi to testify as an example of how the funding helped to provide her with the resources to be productively employed. Brandi utilized the program and is now successfully employed at EDC, where she works in the Copy Center. According to Sioux Vocational, money spent in training the students to be self-sufficient and manage their daily needs is well worth it in the long run. Skills Sioux Vocational students work on include shopping, cooking, maintaining their living quarters, finding a job and getting to and from work. This type of training has proved to be less expensive than having a person in some type of supervised institutional care. Brandi demon-

strated her success to the committee through her personal testimony.

According to legislative sources, Brandi's testimony caused committee members to reconsider funding for training challenged persons who turn 21 during the year. Aside from being "very, very nervous," Brandi considered the whole experience educational. "I was very impressed with what they (the Legislature) were doing," said Brandi. She was not impressed, however, with the long (4 hour) drive from Sioux Falls to Pierre. ☺



Brandi Wahl

# EDC Holds Annual Meeting

by Lisa Kurtz

The EROS Data Center (EDC) Annual Meeting was held January 21, 1998 at the Sioux Falls Convention Center. The purpose of the Annual Meeting is to recognize the achievements and challenges of all EDC employees during the previous year.

The meeting was called to order by **Mark Barber**, outreach technical area leader, who served as emcee for the afternoon.

**Don Becker**, EDC audio video specialist, began the meeting by entertaining EDC employees with a "Year in Review" - a video presentation featuring EDC activities and new employees.

EDC Chief **Don Lauer** recognized the outstanding Team Leadership Contributions and Group Achievement awards. The recipients included:

- **The Landsat 7 Image Assessment System Project** for the development of state-of-the-art algorithms for the Landsat 7 Geometry Processing Subsystem and Level 1 Product Generation System and providing radiometry technical support to NASA.
- **GLOBE and KidSat Educational Outreach**, for contributions to EDC's successful educational outreach support to the Sioux Falls School District provided by the Global Learning and

Observations to Benefit the Environment (GLOBE) and KidSat Programs.

- **NDCDB Digital Orthophoto Quadrangle (DOQ) Ingest**, for hard work and determination in supporting the DOQ Ingest Project.
- **National Landsat Archive Production System (NLAPS) Implementation and Production**, acknowledging the accomplishments of the many individuals supporting NLAPS.

The program included guest speaker Barb Ryan, Associate Director for Operations, USGS. Ryan praised EDC staff for the work they perform on behalf of the USGS.



**Barb Ryan**

"EROS Data Center serves as an exceptional example of good government response of customer service, scientific excellence and effective data management," said Ryan.

Following Barb Ryan, Lori Hunhoff presented **Ron Risty** with this year's John Hunhoff Volunteer of the Year Award, as a memorial to her husband, John, who died of cancer last summer.

**Larry Murtha** and **Rod Beck** presented the 1998 Peer Awards for remarkable acts of teamwork and dedication based upon nominations submitted by peers to the Peer Awards Committee. Peer Award re-

ipients included: **Danielle Ehlen, Colleen Fiegen, Darrin Foell, Doug Hollaren, Shar Van Beek, Greg Zylstra, Zheng (Jane) Zhang, Jeff Kautz, Connie Haugen, Mary Johnson, Cheryl Liester, Jan King, James Storey, Terry Towns, Julia Towns, David Tarrell, Kristine Machmiller, Vicki Neuheisel, Lou Ogren, Mike Rechtenbaugh, Deb Anderson, Treva Houska, Tim Beckmann, Tim Baltzer, Sue Delaney, Dennis Bell, Jane Burckhard, Irene Callahan and Carla Lynn.**

The first EDC Outreach Ambassador of the Year Award recognized the dedication, passion, and effort of **Dave Greenlee**, who helped communicate the EDC story to the general public, educators, and students during the past year.

Several EROS employees who completed academic degrees during 1997 were also recognized at the annual meeting. They include: **Robb Campbell, Dana Larsen, Dave Hartzell, Tom Albright, Jenn Willems, Ray Oberg, Brad Schroeder, Zheng (Jane) Zhang, Dan Akkerman, Julia Towns, Terry Towns and Mike Rechtenbaugh.**

In an effort to promote awareness and support among EDC staff about the value of Continuous Measurable Improvement (cm), the cm Assistance Team and its sponsors presented the 1997 cm Awards. Beneficiaries included the **PDS Evaluation Team** for improving the efficiency of the Product Distribution System, and the **cm Recruiting Team**, for using cm principles to study and significantly improve the EDC recruiting process. ☺



1998 Peer Award Recipients: (front l. to r.) **Jane Burckhard, Doug Hollaren, Lou Ogren, Jane Zheng, Tim Baltzer, Cheryl Liester, Treva Houska, Mary Johnson, Jeff Kautz, Deb Anderson, and Colleen Fiegen.** (Back l. to r.) **Greg Zylstra, Tim Beckman, Irene Callahan, Vicki Neuheisel, Kris Machmiller, Jan King, Connie Haugen, Mike Rechtenbaugh, Carla Lynn, Sue Delaney, Dennis Bell, Danielle Ehlen, Char VanBeek and Terry Towns.**

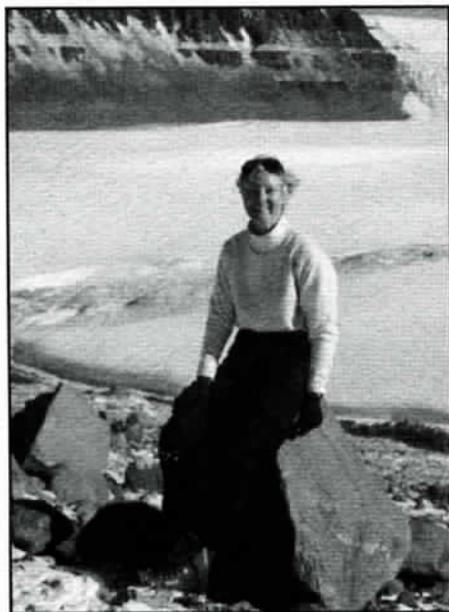
## Science on Ice

by Rebecca Johnson

Like rifle fire, the sounds of the glacier cracking and snapping woke me every morning at 3 am. That was when the chill shadow of the tallest mountain looming over our camp crept across the ice, causing it to cool and contract. Lying cocooned in my sleeping bag, I'd listen to the glacier and watch the mercury in the thermometer hanging on my tent flap plummet to -15 F or below. A strange and wonderful awakening — one I enjoyed many times this past November in Antarctica.

As a science writer, I have had the great privilege of working in Antarctica three times on grants from the National Science Foundation. Antarctica is the coldest, driest, highest and most inaccessible continent on Earth. It is also a focal point for scientific research. During this past austral summer season (November 1997 through January 1998) I was there to work with several groups of scientists and gather information for a book I'm writing for young adults on polar paleontology.

Early in the season, I joined a team of four paleontologists and two mountaineers on an expedition to an extremely remote part of the continent. Our goal was to collect fossils in the mountains around the Shackleton Glacier, a huge river of ice that flows through the



Rebecca Johnson

Transantarctic Mountains at 85 degrees South. We flew in on a ski-equipped LC130 Hercules cargo plane, along with enough food and fuel to last a month. For 3 weeks, the seven of us were completely alone in a world of ice and rock, 350 miles from the South Pole.

The mountainous interior of Antarctica is stunningly beautiful, but utterly lifeless. There are no animals, no plants. Nothing moves except the clouds in the sky.

The sun never sets during the summer, so it is light around the clock. Working in subzero temperatures, we put in long, hard days looking for fossils. Wearing heavy packs, with crampons strapped to the soles of our mountaineering boots, we walked for miles across wind-polished glaciers that rose like flying buttresses to meet steep ridges of black volcanic rock. High above the ice, we crept along rocky ledges where one slip meant death hundreds of feet below.

But the long treks were usually worth the effort, because on several mountain tops we found outcrops of sedimentary rock — the remains of ancient lake beds. Between paper-thin layers of stone were fossilized remains of small animals that crawled, squirmed, and burrowed in the muddy bottoms of the freshwater lakes that dotted the landscape 250 million years ago, back when Antarctica enjoyed a more temperate climate than it does today.

It was thrilling, almost eerie, to be one of the first people ever to set foot in these places. We discovered hundreds of fossils, several of which turned out to be new species. Despite the intense cold, the primitive living conditions (no shower for 3 weeks!), and the physical challenges, it was hard for me to leave when the Herc returned to pick us up. Even now, months later, I miss the sound of the glaciers in the early morning hours and the pristine beauty of that frozen frontier.

\*\*\*Rebecca Johnson is a freelance science writer based in Sioux Falls. She writes articles and books about science and scientists for young people and adults. Since June, 1997 she has been writing a history of the EDC. The book will be published in time for the Center's 25th Anniversary celebration this September. ☺

## Employee News

### New Faces

**Jason Saylor** - Logistics Technician  
**Dean Tyler** - Scientist  
**Steve Herrer** - Database Administrator  
**Lowell Johnson** - Systems Analyst  
**Bret Kortie** - Systems Engineer  
**Ron Faust** - Production Monitor  
**Kim Johnson** - Systems Administrator  
**Brent Johnson** - Senior Data Specialist  
**Michael Fleming** - Senior Scientist II  
**Sharon Johnson** - Photo Lab Technician  
**Suzette Burckhard** - Visiting Scientist from SDSU  
**Lance Buechler** - Resource Planner  
**John Dvorsky** - Scientist I in Santa Barbara, CA  
**M. Sean Chenoweth** - Scientist I  
**Lauri Sohl** - Computer Operator II  
**Debra Riley** - Purchasing Agent  
**Jeff Prince** - Systems Administrator  
**Keith Alberts** - Computer Operator III  
**Mike O'Brien** - Electronic Engineer  
**Mike Budde** - Government Student in SAB  
**Deanna Reynolds** - Staff Assistant  
**Steve Hitterdahl** - Computer Operator  
**Todd Huntley** - Ingest Operator  
**Linda Fountain** - Photo Lab Technician  
**Diann Woltdt** - Clerk  
**Kristi Kline** - Primary Systems Engineer  
**Royce Reit** - Systems Test Engineer  
**Diane Damm** - Receptionist/Tour Guide  
**Martin Skye** - Production Scheduler  
**Michael Schuldes** - Senior Systems Engineer

**Do you have an interesting story you would like to share?**

If so, how about becoming a "Guest Writer" for the next issue of the EROS Data!  
 Contact Laurie Ortega @ ext. 0 to submit your story.

**Kim Gaspar** - Government Student in SSB

**William Jiricek** - Security Guard

**Mary Glodt** - Assistant Contract Administrator

**Cindy Jurgensen** - Secretary II, SSB

## USGS Awards

**Jane Westgaard** - Jane received an On-the-Spot award for her willingness to format, edit and 'package' drafts of the EDC quarterly and annual reports on short notice.

**Doris Johnson** - Doris was given an On-the Spot award in recognition of her outstanding secretarial support to the Office of the Chief during a time of critical need.

**Rita Tornow** - Rita was given an On-the-Spot award for outstanding secretarial support to the Office of the Chief during a time of critical need.

**Arlys Johnson** - Arlys received an On-the-Spot award for outstanding secretarial support to the Office of the Chief during a time of critical need.

**John Boyd** - John received an On-the-Spot award for his effective leadership skills in proposing an international wideband data exchange format for Landsat 7.

**Dave Carneggie** - Dave received an On-the-Spot award for effective leadership skills working with EROS staff and NASA to coordinate and exchange Landsat 7 data in wideband data format.

**Ron Beck** - Ron received an On-the-Spot award for his exceptional organizational skills in support of the ASPRS Conference.

**Terry Towns** - Terry received an On-the-Spot award for her outstanding secretarial support to the Office of the Chief during a time of critical need.

**Robin Koopman** - Robin received an On-the-Spot award for her outstanding secretarial support to the Office of the Chief during a time of critical need.

**Shar Van Beek** - Shar received an On-the-Spot award for her outstanding ability to handle difficult working situations.

**Geny Austin** - Geny received a Quality Step Increase for her willingness to accept added responsibility.

**Carolyn Hieb** - Carolyn earned an On-the-Spot award for her efforts in helping develop an Interagency Agreement between the U.S. Corps of Engineers and the USGS.

**Dan Wray** - Dan received an On-the-Spot award for his volunteer effort in clearing out damaged and outdated equipment/furniture stored in the warehouse and pole barn.

**Doug Spelhaug** - Doug received an On-the-Spot award for his successful work with the customer billing interface between PBA and the various EDC branches.

**Geny Austin** - Geny was given an On-the-Spot award for her successful conversion of the old NMD Estimate of Expenditures report to an entirely new design. ☺

## Systems Analyst Kirk Evenson Publishes Article

**Kirk Evenson**, EDC Systems Analyst, may have a second career as a writer. Kirk recently wrote an article which was published in MainFunction. Brought to you by Microsoft and South Western Educational Publishing, MainFunction is a resource of information for teachers and students of computer programming and the Internet. MainFunction, which has a distribution of around 40,000, is available on The Net and through a printed newsletter. MainFunction can be found at



**Kirk Evenson**

<http://www.mainfunction.com/> and the article at [http://www.mainfunction.com/issues/winter\\_98/skills.html](http://www.mainfunction.com/issues/winter_98/skills.html).

The article, titled "Skills Needed to Become a Software Development Professional," is a call to computer students to educate themselves, not only in programming skills, but in communication and interpersonal skills. Kirk, a former high school biology teacher turned programmer, is a strong advocate of computer science in the classroom. He feels that it is the perfect tool for integrating all school subjects into one class project. Kirk also believes that being able to communicate your thoughts and ideas as well as the ability to work as a member of a team are important skills - just as important as the ability to design a code or program a computer. These thoughts are clearly

expressed to future software development professionals in his article.

Kirk became interested in computer programming when, as a biology teacher, he wanted to put his students' grades on computer. He taught himself to program using an Atari 800 (which later evolved into the Nintendo video game system). He found that he was pretty good at it and enjoyed programming. He was hooked and later returned to school to major in Computer Science. Kirk has been employed as a Systems Analyst at EDC for 7 years. Kirk continues to teach part time at National College in Sioux Falls and feels that his future plans may include a return to teaching at the high school level, where he would like to pursue his dream of using computer science as the perfect integration tool. ☺

# Out of Africa

by Lisa Kurtz

**L**arry Tieszen, deputy manager, EDC International Program, recently returned from a month long international trip, where he participated in the February 1998 meeting of the Greater Horn of Africa Climate Outlook Forum in Kenya, Nairobi, Africa. He presented research by Jim Verdin and the Famine Early Warning System (FEWS) project. Over 150 people representing disciplines such as meteorology and world aid programs from several countries of the world attended the conference. The diverse group relied on an open exchange of information to reach a consensus on the climatic trends of East Africa and determine how past weather patterns are likely to affect future weather patterns, land use, and food supplies.

One objective of the meeting was to determine the correlation between land cover changes and the strength of the El Niño phenomenon.

"Because meteorologically we've been able to identify at least eight El Niños during the period of the archive," explained Tieszen, "we're able to analyze indicators of the magnitude of the El Niños' effect on land cover. We can establish statistical relationships, if they exist, between the El Niños' strength and the performance of the land cover, in this case, East Africa."

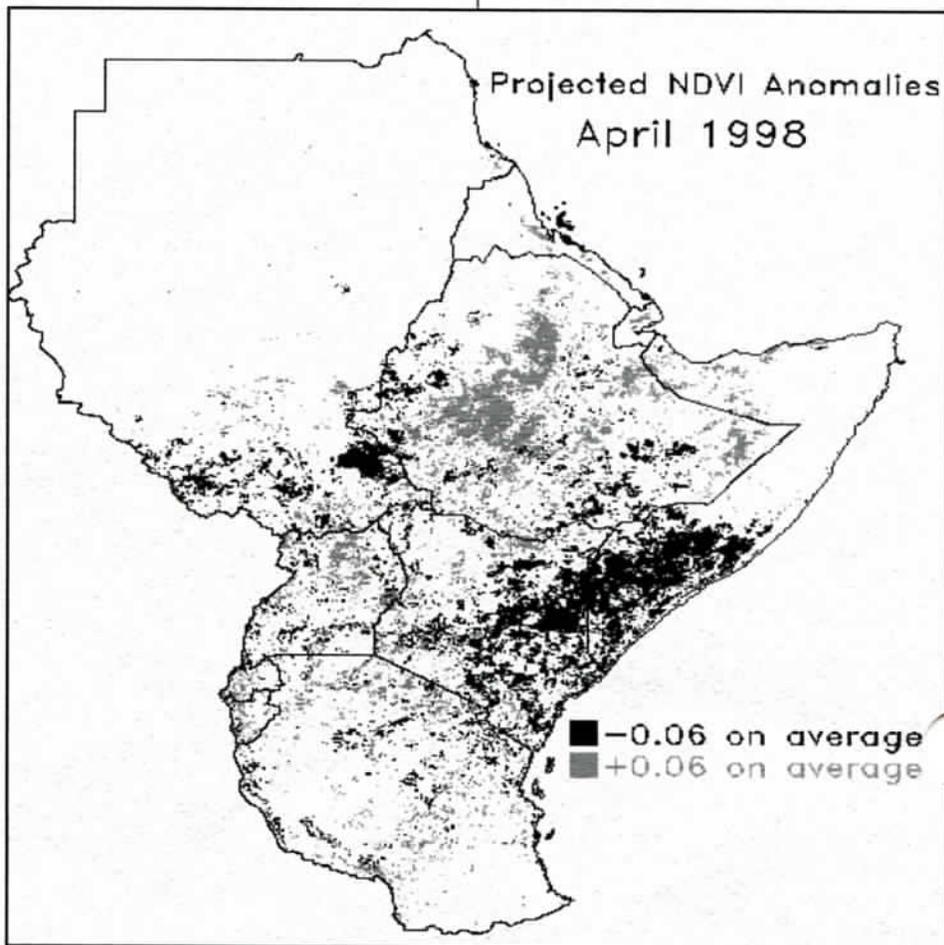
Identifying the areas of the world that will experience drought serves as an attempt to aid East Africa's food supply problems. The projections may perhaps indicate the extent of the impact of El Niño during the next growing season (March, April and May 1998).

"We basically projected what the impact of the El Niño should be on land cover, which is something more relevant than just precipitation estimates to the farmer and the decision makers who have to be concerned with food supply in this country (Africa)," Tieszen said.

The approach to the meeting uses the ability to base the El Niño phenomenon's historical information with climate projections of El Niño in the future and then to project the performance of the

Earth's land cover. The relationship between these variables and their estimated outlooks for the future gives

inhabitants of East Africa projected indications of future weather patterns, farm lands, and food supplies. ☺



## 25<sup>th</sup> Anniversary

*Open House on  
Saturday, September 19  
from 9 a.m. till 3 p.m.*

- Activities & Demos
- Clowns/Music/Tours
- Native American Dancers
- Employee Pig Roast

**Volunteers Needed!! Please contact  
Ron Risty @ ext. 6969 to sign up**

Writer: Laurie Ortega

Content Editors: Gene Napier, Mark Barber

Graphic Artist: Jan Nelson

Contributors: Don Lauer, Rebecca Johnson,  
Brandi Wahl, Larry Tieszen,  
Kirk Evenson, and Lisa Kurtz

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Mike Austad,  
Wendell DeGeus

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