



 **Fermilab Friends for Science Education**



**FERMILAB FRIENDS FOR  
SCIENCE EDUCATION**

**ANNUAL REPORT**

2010



P.O. Box 500, MS 226  
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Chris and Liz Quigg

*April 15, 2011*

Dear Fermilab Friends for Science Education:



*Piermaria Oddone, Director  
Fermi National Accelerator Laboratory*

I am always hugely impressed with the remarkable K-12 science education program that you have helped us to create. It has a lasting and positive impact in our neighboring communities and beyond. Without your support we could have never achieved the breadth and excellence that are the hallmarks of our program. It has been a model for other institutions and for our sponsoring agency, the U.S. Department of Energy. Over the last decade we have reached hundreds of thousands of students and tens of thousands of teachers—a fantastic record that benefits the nation.

This winter, we have gone through very difficult months at the laboratory not knowing our budget for the current fiscal year, which started more than six months ago. The FY2011 budget debates in Washington are now largely over and the outcome for the laboratory and the entire DOE Office of Science is better than we thought a few months ago. But this was only the first skirmish in the long process to get the nation's federal budget under control. We can expect that funding for education programs at institutions like ours will be under pressure and highly competitive.

The constancy of the support of Fermilab Friends for Science Education has anchored our science education program and has permitted us to design new, creative ways to engage our youth in scientific inquiry. The support of Fermilab Friends for Science Education is now more important than ever in seeding these initiatives so that the next generation of young scientists may flourish.

Sincerely,

A handwritten signature in black ink, reading "Piermaria Oddone". The signature is written in a cursive style and is enclosed within a thin black rectangular border.



## FROM THE FFSE PRESIDENT

*April 18, 2011*

Dear Friends,

Tweeting and social networking have become an increasingly prominent part of our world. You may wonder if this really means you. If nothing else, relationships and communication are more prominent. Looking back over 2010, Fermilab Friends has certainly worked at improving our communication and relationships. In addition to sustaining programs, we tried to be more aware of the many ways we can improve communication and thus, relationships.

December 2010 was the first FFSE members-only tour. Board members Cynthia Marler, Mike Knapp and David Harding hosted over thirty friends to see the Fermilab Industrial Center “magnet factory.” Led by docents Mary Jo Murphy and Felicia Svoboda, the group enjoyed an informative presentation by David, a tour by our knowledgeable docents and a behind-the-scenes tour. Plan to join us for the next members-only prairie tour this fall on September 17, 2011.

In 2010, the board began discussions to redesign the FFSE website to improve communication with our members and potential donors. Kevin Munday, Xeno Media, provided design consultation. Liz Quigg, Education Office, provided technical expertise to implement the design and make the site a reality. LaMargo Gill assured accuracy with expert editing. Please visit our new site and discover the enhanced features.

Thanks to the new design inspiration of our web site, we are coordinating all communication tools, including our new membership brochure, newsletter masthead and annual report design. As our newsletter editor, Anne Mary Teichert brings her creativity and technical capabilities to most of these projects. Along with Maureen Hix, Eileen Pasero, Gayle Millman and LaMargo Gill, we have a well-designed and thorough annual report.

Many people play a part in making our organization vibrant and outstanding. We never overlook the reason for Fermilab Friends—the relationship we have with the Fermilab Education Office. Through members, staff, support and programs, we all work together. Whether we’re in touch by e-mail, Twitter, on a social network or in person, our goals can best be achieved when we foster strong relationships. Stay in touch with us.

Thank you for your continued support in 2010. We look forward to even more improvements in communication and programs in the year to come.



*Susan M. Dahl, President  
Fermilab Friends for Science Education*

*Susan Marie Dahl*



## PROGRAMS IN 2010

### NATIONAL LAB DAY

*"I want to persuade you to spend time in the classroom, talking and showing young people what it is that your work can mean, and what it means to you...."* President Obama to the National Academy of Sciences, April 2009

National Lab Day is a response to the President's challenge. With typical enthusiasm, Fermilab didn't settle for a one-day celebration: scientists visited classrooms for a full week in early May, reaching out to more than 2,000 students in the Chicagoland area.

The Fermilab Education Office coordinated the effort and offered several training sessions where new volunteers could learn techniques from veteran presenters and become familiar

with equipment used in the ongoing classroom presentation program.

The volunteers then traveled to schools and engaged students with hands-on presentations about electricity and magnetism, force and motion, light and color, space and time, and the physics of sports. Other presenters spoke to student assemblies, presenting an overview of Fermilab and explaining the excitement of a career in science.

To underscore the importance of this effort, the lab's director, Pier Oddone, took time out of his vacation in Hawaii to speak with students at Punahou High School in Honolulu, a QuarkNet participant and President Obama's alma mater.



Fermilab Deputy Director Young-Kee Kim engages students at Rosary High School in Aurora.



Fermilab scientist Al Sondgeroth demonstrates force and motion at Annunciation BVM School in Aurora.

### FERMILAB FAMILY OPEN HOUSE

Fermilab's 6th Annual Family Open House drew about 2,000 visitors to Wilson Hall on Sunday, January 21. Young and old spent the afternoon experimenting with hands-on exhibits, chatting with scientists and touring Fermilab facilities.

The primary purpose of the open house is to introduce children to scientific ideas in an exciting, enjoyable atmosphere, and the day certainly met that goal. Numerous hands-on activities, including a walnut-cracking collider, a make-and-take telescope station and a light show, provided plenty of opportunities for fun and learning.

Many Fermilab scientists and supporters volunteered time during the day. Michael Cooke and David Schmitz provided

an entertaining look at some basic principles of physics; Jerry Zimmerman, a.k.a. Mr. Freeze, once again dazzled and informed hundreds of visitors with his cryogenic shows; FFSE board member Michael Knapp offered visitors an overview of Fermilab from a middle school teacher's point of view; magnet specialists from the industrial area explained the construction of superconducting magnets; and two teams of scientists took turns on the 15th floor fielding questions of all types.

If the hundreds of children happily clutching "bug boxes" with built-in magnifiers as their take-home gift were any indication, the day was a great success at encouraging interest in science. A short video is at <http://wn.com/FermilabEducation>.



## PROGRAMS IN 2010

### STEM CAREER EXPO

Hundreds of teenagers and parents from Kane and DuPage Counties gathered at Fermilab on April 7 for the third annual STEM Career Expo. The evening was an opportunity for high school students in Kane and DuPage counties to connect with scientists, engineers, technicians and mathematicians and learn about career opportunities in those fields.

The students talked with professionals at their display tables and attended panel discussions about STEM careers. They gained knowledge about jobs and the educational background

required to succeed in them.

Event organizers include the Fermilab Education Office and educators and career specialists from Kane and DuPage County schools. FFSE sponsored the event, along with Batavia High School, Geneva Community High School, the Kane County Regional Office of Education, the Society of Actuaries, and West Chicago Community School District Foundation.

This year's event attracted more than 600 high school students, an increase over last year's 500 attendees.



*Tim Rupp of Fermilab's Computing Division presents information about cyber security.*



*Chemical engineers from the U.S. Nuclear Regulatory Commission explain their jobs to students.*

### FAMILY OUTDOOR FAIR

About 350 visitors ignored gray and rainy weather to attend the Family Outdoor Fair in June. Their reward was a chance to enjoy more than a dozen displays and hands-on activities related to the natural environment at Fermilab.

In its third year, the fair included many "old favorite" activities, such as catching "pond critters" for examination under a magnifier; combing the woods and prairie for treasures on a scavenger hunt; examining prairie soil core samples; printing animal tracks; examining fossils; and observing Fermilab's bison herd.

Specialists from the Northern Illinois Raptor Rehabilitation and Education Center returned for a second year with falcons,

hawks and owls to answer questions about the habits of their beautiful birds.

Fermilab's fourth through sixth grade "Junior Prairie Rangers" helped set up displays and worked on various stations as part of their ongoing stewardship and commitment to educating the public.

As in years past, the fair's aim was to engage first through seventh grade students in outdoor activities to keep them active and learning during the summer. Scout groups were especially encouraged to attend.

A short video of the day's activities is at <http://wn.com/FermilabEducation>.



# CONGRATULATIONS TO HONOREES!

## DIRECTOR'S AWARD

FFSE's Director's Award annually honors the more than 200 members of the Fermilab community who contribute their time and talents to Fermilab's education programs.

The Director's Award of \$1,000 is made possible by an anonymous donor and recognizes one volunteer whose contributions are exceptional, even among the many outstanding volunteer supporters of Fermilab's K-12 education programs.

This year's nominees were **Roger Dixon, David Harding, Todd Johnson, Don Lincoln, Tom Peterson, Erik Ramberg, Jamie Santucci, David Schmitz, Chris Stoughton and Herman White**. Each received a certificate of appreciation at the Volunteer Reception on November 2.

**Michael Cooke** of DZero received the 2010 Director's Award at the ceremony. His citation explains the honor: "Fermi National Accelerator Laboratory recognizes the exceptional and varied contributions of Michael Cooke to our K-12 edu-



*Michael Cooke and son with the Director's Award certificate.*

cation programs.

"Outstanding among his efforts is his work with classroom presentations. In addition to presenting to hundreds of students each year, he has refined, enhanced, and restructured one of our most popular presentations.

"He is always an eager and willing contributor to events such as LabFest, the FFSE Open House, DASTOW, and Fermilab field trips. His dedication to these and other programs and his generosity with his time enhance the Laboratory's reputation in both education and science research."

Presenting the award, Fermilab Director Pier Oddone remarked, "These volunteers are our ambassadors to the community. Fermilab might not find out for thirty years what you've done—until some kid grows up and becomes our funder or director."

## FERMILAB SCIENCE AWARD FOR HIGH SCHOOL STUDENTS

Every year FFSE underwrites an award program for outstanding science students attending high schools in DuPage and Kane Counties. Nominated by school faculty, each winner receives a certificate and a book at their school's award ceremony. This year's winners were:

**Andrew Scott, Tyler Kennell**, Aurora Central Catholic High School; **Joe Keres, Ryan Franklin**, Aurora Christian School; **Anthony Grzeda, Michael Chiaro**, Benet Academy; **Sarah Smith, Matt Laurich**, Burlington Central High School; **Hinna Fatani, Mohamad Abdallah**, College Preparatory School of America; **Jack Sombeck, Quinton Ford**, Downers Grove South High School; **Matthew Farbota**, Elgin Academy; **Pat Pawlowski, Matt Pawlowski**, Glenbard South High School; **Adin Lykken**, Glenbard West High School; **Evan Macayeal, Aimee Mori**, Hinsdale Central High School; **Dan Zangri, Linda Sun, Rahul Puranmalka**, Hinsdale South

High School; **Liana Nicklaus, Alex Munoz**, Illinois Mathematics and Science Academy; **Tessa Kuipers, Kasey Ostarell, Olivia Fabrizius**, KaneLand High School; **Jay Shah, Ryan Jorgensen**, Lake Park High School (East Campus); **Geordan Pflug, Naiomi Gunaratne**, Lisle High School; **Ryan Smith**, Larkin High School; **Kavya Pai, Rishi Sriram**, Metea Valley High School; **Hannah Payne, Alexander Przepiorka**, Montini Catholic High School; **Taisia Karaseva, William Sterrett**, Naperville Central High School; **Aneesh Tyle, Chris DeJager**, Neuqua Valley High School; **Rachel Maley, Lindsey Whiting**, Rosary High School; **Dylan Kapp, Mark Taylor**, St. Charles East High School; **Bradley Hemmingsen, Jacqueline Boyle**, St. Charles North High School; **Dan McCarthy, Dean Quaranta**, St. Francis High School; **Lina Vixyckack, Carly Schneider**, Streamwood High School; **Jacintha Sales, Setu Patel**, Wheaton North High School; **Hanaa M. Siddiqi, Ryan Frederickson**, Wheaton Warrenville South High School; **Alex Senese, Liz Trumbull**, York Community High School.

## FRANKLIN AWARD AND SCHOLARSHIP

FFSE and the Franklin Fund partnered again in 2010 to offer a \$1,000 scholarship for one college-bound student in each of Kane and DuPage Counties.

The scholarship is an effort to encourage and support student interest in science and to recognize outstanding achievement. Any senior in Kane or DuPage County who has been honored with the Fermilab Science Award is eligible.

Selection criteria include grades; participation in activities such as science clubs, academic competitions or talent search-

es; original work, and internships.

This year there were six finalists from Kane County high schools. **Liana Nicklaus** (Illinois Math and Science Academy, Aurora) received the award from FFSE board member Gary Johnson during her physics class on May 27.

Eleven students from DuPage County high schools applied for the award. **Daniel McCarthy** (St. Francis High School, Wheaton) was the recipient.

## PROGRAM SCHOLARSHIPS

Five teachers received FFSE-funded scholarships that allowed them to attend workshops or field trips at Fermilab, and six families received Science Adventure scholarships during 2010.

Recipients were: **Sally Berlin**: Family Science Adventures; **Patricia Boersma**: Family Science Adventures; **Maria Gaffud**: Family Science Adventures; **Jacqueline Hogan**: \$400 toward

Chemistry Institute: Introductory Topics; **Amber Jonas-Schaaf**: \$100 toward bus for *Beauty and Charm* field trip; **Bridget Johnson**: Family Science Adventures; **Sharon Koenig**: \$225 toward *Particles and Prairies*; **Sheri Kopka**: \$400 toward Chemistry Institute: Introductory Topics; **Fernando Maldonado**: Family Science Adventures; **Hilda Montes**: Family Science Adventures; **Dawn Root**: \$100 toward bus for *The Prairie—Our Heartland* field trip.

# PROGRAM HIGHLIGHTS

## January

The Ask-a-Scientist and Get to Know Fermilab tours attracted 2,300 visitors of all ages to the lab during 2010.

The *Beauty and Charm* and *Phriendly Physics* field trips, offered through the Lederman Science Center, served 1,925 students from 36 schools in 2010.

## February

The Education Office, with support from an anonymous donor through FFSE, sponsored Fermilab's 6th Annual Family Open House on February 21. About 2,000 people enjoyed hands-on exhibits, light shows, tours, "make and takes," Ask-a-Scientist, and presentations, including the ever-popular cryogenic shows by Mr. Freeze.

## March

E-mail notifications about National Lab Day events and other educational opportunities were sent to 450 households.

## April

Approximately 700 high school students and parents from Kane and DuPage Counties attended the STEM (Science, Technology, Engineering and Mathematics) career fair on April 7 sponsored by FFSE. Nearly 60 STEM professionals representing diverse backgrounds came to speak with students and participate in panel discussions.

The 23rd annual Wonders of Science event once again featured the group "Weird Science" in a show in Ramsey Auditorium. About 600 visitors attended the show on April 18.

## May

Three National Lab Day presentation training sessions were offered at the Lederman Science Center. These sessions allowed new volunteer scientists to familiarize themselves with the equipment and techniques used in classroom presentations.

More than 2,700 students attended classroom presentations in this month alone, the highest number in three years.

## June

About 350 visitors took part in this year's Family Outdoor Fair. They observed hawks and falcons, studied critters in the pond, dug through logs for invertebrates and deciphered animal tracks. The Junior Prairie Rangers volunteered with set-up and worked the various stations to educate the public as part of their ongoing stewardship training.

## July

The Summer Secondary Chemistry, Biology and Physics Institutes drew 60 educators. All five of the science institutes received favorable evaluations from participants.

Twelve teachers and four newly hired docents attended *Beauty and Charm* and *Particles and Prairies* teacher workshops during the month.

The Fermilab Junior Prairie Rangers received Monarch butterfly caterpillars and placed them on milkweed plants from Fermilab seed to grow in their own backyards.

## August

The Lederman Science Center offered 42 Science Adventures to 543 students of all ages during the year. Adventures included *Nanotech Investigation*, *Lego Engineering*, *Blowin' in the Wind*, *Girls Scientific Salon*, *Animal Architecture*, *Club Invention*, *Traveling the Universe: Chart Your Course!* and *What is the Matter?*

## September

During fall, 4,344 students from 42 schools attended *Particles and Prairies* and *The Prairie—Our Heartland* field trips.

## October

Fermilab hosted a booth at the USA Science and Engineering Festival, held on the National Mall in Washington, D.C. on October 23-24. Visitors were three-deep at the Fermilab booth and totaled about 1,800 people.

## November

November 2 was the date for the annual Volunteer Reception and Director's Award presentation. Eleven nominees and about 75 staff members who volunteer their time for the Education Office were honored at this reception. Michael Cooke of DZero received the Director's Award.

More than 1,500 scouts from 93 troops earned badges at the Lederman Science Center this year. These include Scientist, Engineer, Science Sleuth, Making it Matter, and the Nuclear Science badge.

## December

Nearly 2,300 visitors from all over the globe enjoyed the hands-on exhibits at the Lederman Science Center during 2010.

Fermilab scientists reached 15,294 students at 106 schools this year through the Classroom Presentation outreach program.



*High school students on a field trip learn how the accelerator complex works from John Crawford, Associate Head of Accelerator Operations.*

## PERSONNEL

*The success of the 2010 FFSE education programs rests with these outstanding program leaders.*

**Deanna Andriano**, Batavia High School • **Michael Bachrodt**, Fremd High School, Palatine • **Sue Bober**, Schaumburg High School • **Maura Bridges**, West Chicago High School • **Georgia Brown**, Northern Illinois University, DeKalb • **James Browne**, Amboy High School • **SueZ Bruno**, Gates Elementary School, Aurora • **Jill Burke**, Western Springs School District 101 • **John Chamberlain**, Glenbard North High School, Carol Stream • **Trudi Coutts**, Naperville Community Unit School District 203 • **James D. Cox**, Clarendon Hills Middle School • **Laura Cox**, Glenbard South High School, Glen Ellyn • **Karl Craddock**, Fremd High School, Palatine • **Larry Cwik**, Seton Academy, South Holland • **Robin Dombeck**, Maple Middle School, Northbrook • **Sue Doser**, DuPage Area Occupational Education System • **Jason English**, Fremd High School, Palatine • **Todd Ernst**, Valley View School District 365U • **Amy Fehrman**, Johnson Elementary School, Warrenville • **Patricia M. Franzen**, Wild Enterprises, Metamora • **Susan Gloss**, St. Charles East and North High Schools • **Barbara Greenberg**, National Louis University • **Michael Heinz**, Niles West High School • **Mary Ann Janiak**, teacher, retired • **Randy Jones**, Glen Ellyn School District 41 • **Elizabeth Karnik**, Western Springs School District 101 • **Tanya Katovich**, Schaumburg High School • **Steve Keefe**, teacher, retired • **Nikki Kitzmiller**, Rotolo Middle School, Batavia • **Shari Klatt**, Geneva High School • **Tom Knutson**, Glenbard North High School, Carol Stream, retired • **Cindy Langemack**, DuPage Career Education Center, DuPage County • **Robert Lewis**, Downers Grove North High School • **Paul Madsen**, Rosary High School, Aurora • **Kristen Maier**, Barry Elementary School, Chicago • **Lee R. Marek**, University of Illinois, Chicago • **Jill Mueller**, West Chicago Middle School • **Mary Sue Offut**, SciTech and Field Museum volunteer, Aurora • **Glenda Peck**, Alice Gustafson Elementary School, Batavia • **Pat Pentek**, West Chicago Middle School • **Tom Redig**, Downers Grove North High School • **Barbara A. Romack**, Kaneville North Elementary School, Elburn • **Susan Sanders**, Glenbard West High School, Glen Ellyn • **Sharon Sloan**, Belvidere North High School • **Mary Van Slyck**, Bartlett High School • **Marsha Stierwalt**, Alice Gustafson Elementary School, Batavia • **Patrick Swanson**, Hoffman Estates High School • **Karen Weigt**, Kaneland John Stewart Elementary School, Elburn • **Wayne R. Wittenberg**, Benjamin Franklin School, Glen Ellyn • **Anna Zuccarini**, Crone Middle School, Naperville

*Many Fermilab scientists give their time generously to education programs throughout the year.*

Mark Adams • Christine Ader • Michael Albrow • Maurice Ball • Leo Bellantoni • Halley Brown • Tom Carter • Alex Chen • Dave Christian • Penelope Constanta • Michael Cooke • Fritz DeJongh • Brian Drendel • Luciano Elementi • Ford Garberson • Lynn Garren • Vanessa Gaultney • Camille Ginsburg • Doug Glenzinski • Sten Hansen • David Harding • Elvin Harms • Anne Heavey • Samantha Kaushalya Hewamanage • Amber Johnson • David Johnson • Young-Kee Kim • Terry Kiper • Sharon Lackey • Leon Lederman • Hugh Lippincott • Lucy Litvinenko • Michael McGee • Tom Meyer • Dennis Nicklaus • Paul Nienaber • Heath O'Connell • Michelle Prewitt • Piermaria Oddone • Jennifer Pursley • Chris Quigg • David Ritchie • Rob Roser • Tim Rupp • Brittany Rutherford • Jamie Santucci • Niki Saoulidou • Dave Schmitz • Valena Sibley • Al Sondgeroth • Chris Stoughton • Diego Tonelli • Linda Valerio • Rod Walton • Jeremy Werner • Chris White • Herman White • Jim Zagel • Jerry K. Zimmerman

*Education Office staff administers and supports Fermilab programs.*

**Marjorie G. Bardeen**, Manager • **Ketevan Akhobadze**, Educational Facilities Coordinator • **Carol Angarola**, Program Administrator • **Susan M. Dahl**, Education Specialist • **LaMargo A. Gill**, Editor • **David Hoppert**, Laboratory Technician • **Nancy Lanning**, Public Information Specialist • **Laura A. Mengel**, Computer Specialist • **Gayle Millman**, Administrative Support Assistant • **Spencer L. Pasero**, Education Program Leader • **Robert Peterson**, Education Specialist • **Elizabeth K. Quigg**, Computer Specialist • **Sue Sheehan**, Education Program Leader • **Andrea Varry**, Administrative Support Assistant

*Docents facilitate student field trips and other Education Office activities and supervise the Lederman Science Center.*

Lynda A. Ballingall • Donna Blankenship • Maureen Boyer • Mary Campbell • Muriel Cease • Susan Dumford • Lori Haseltine • Maureen Hix • H. Ted Hoesel • Helen D. Huie • Jacqueline J. Krock • Dawn Miller • Wendy G. Mouche • Toni Mueller • Mary Jo Murphy • Gail Poisson • David R. Seymour • Bob Shaw • Mary Ann Stowell • Felicia Svoboda • Anne Mary Teichert • Yvonne Twomey • William Welch • Larry Welsh • Dorothy Yurs



## REVENUES AND EXPENSES

	2009 (audited)	2010 (audited)	28 years (1982-2010)
<b>Revenue/Contributions (\$000)</b>			
Public Agencies	\$ 1.0	\$ 0.0	\$ 4,236.2
Private Foundations	14.0	3.2	933.0
Membership	10.4	19.1	384.3
Other	210.8	85.5	705.8
<b>Total Revenue/Contributions</b>	<b>\$ 236.2</b>	<b>\$ 107.8</b>	<b>\$ 6,259.3</b>
<b>Expenses</b>			
Programs	207.4	\$ 98.6	\$ 4,612.0
Administrative Overhead	38.6	35.9	1,551.8
<b>Total Expenses</b>	<b>\$ 246.0</b>	<b>\$ 134.5</b>	<b>\$ 6,163.8</b>
<b>Change in Net Assets</b>	<b>\$ (9.8)</b>	<b>\$ (26.7)</b>	
<b>Reserves</b>	<b>\$ 122.8</b>	<b>\$ 84.6</b>	

## ACKNOWLEDGEMENTS

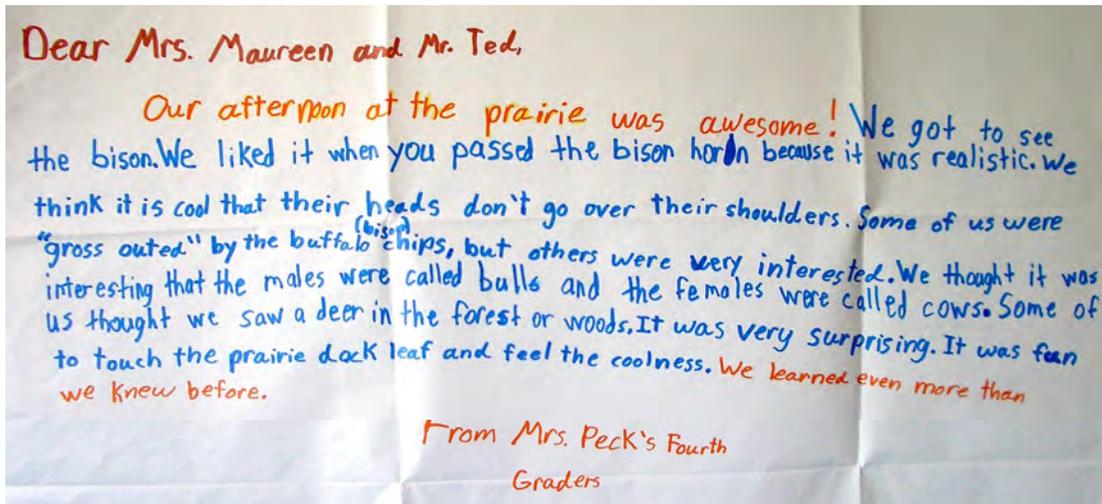
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## MAKING AN IMPRESSION

The docents who lead field trips occasionally hear back from visitors they have hosted. Here are some thank you notes received during 2010:



A "bison sized" thank you note (27" x 18") from fourth grade students on a Prairie—Our Heartland field trip.

In Fermilab there are a lot of workers there. There were engineers; there are nurses, physicists, and scientists.

There are a lot of flags in front of the Robert Wilson hall. The flags represent all the people that visited Fermilab. Even the schools visit Fermilab too. Fermilab is famous you know...

It's an awesome place to be...Of course there are so many discoveries that need to be found. The scientist that we talked to was very interesting to talk to. I felt like I was talking to a real scientist that knows what he's doing. Well I'm happy he answered my questions. Who knows I may see him in a couple years. If I study...

Sincerely, Kevin

...Then you told us how Fermilab makes anti matter. First they give an atom a lot of energy by speeding it up and then crashing it into a wall. The atom brakes and anti matter is made. You told us how if anti matter touches an atom they would explode but the explosion would be so tiny that if you had thousands of anti matter touch thousands of atoms, the energy given off would only be inuf to warm your cup of coffee. Then we went to talk to the scientist. I think this was my favorite part because it was exciting meeting someone so smart. He answered our questions and then you showed us the experiment with the liquid nitrogen. The balloon deflated because the particles slowed down. I also noticed that the fog was coming out because the moisture in the air was going from a liquid to a gas. Then we looked at the particle accelerator, which you told us was Fermilab's main work...I hope to go again soon with my family. Next time maybe I'll give them the tour.

Sincerely, Eric

Thank you for leading us through the prairie, my class had a Blast! You showed me some cool things like Big Blue Stem and the two other plants and flowers...

I learned that bison move in herds. The bison mom always stays by the baby. When the baby moves somewhere else the pack of bison follow the youngest one. I learned that compass plant led the Indians North and South. And you said that when plants are in shade they die out.

My question is how do Indians make tea out of plants when hot water was not even invented? Why do bison like to go in herds? How does prairie dock cool the pioneers' heads? What made Big Blue Stem so special? Who was the first person to find Big Blue Stem?

from Ben

Rod Smith, a teacher at Jefferson High School in Meriden, Kansas writes:

"Recently I attended the wedding of a former student who is working on her doctorate in bio-chemistry. I asked her if she could identify what caused her to 'go down this road.' Her response was the visit to Fermilab taken when she was a high school senior eight years ago! Thank you!!"



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