

At PPPL THIS WEEK

TUESDAY, JUNE 3

Princeton University Commencement

11 a.m. ♦ Main Campus

UPCOMING EVENTS

June 4

GFDL seminar

12 p.m. ♦ Wenchang Yang
(Lamont-Doherty Earth Observatory)
Smagorinsky Seminar Room

East African precipitation and droughts:
from decadal variability to annual cycle

June 11

PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Magnetic Reconnection
Vassilis Angelopoulos, UCLA

June 18

PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Nuclear Winter
Alan Robock, Rutgers University

June 19

PPPL Patent Award Dinner

6 p.m. ♦ Prospect House,
Princeton University

June 25

PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Cosmic Microwave Background (CMB)
Dr. Renee Hlozek, Princeton University

Inside...



TFTR

page 2



STEM Fair

page 3



Café Menu

page 6

PPPL Director Stewart Prager to continue to lead the Laboratory

By John Greenwald

Stewart Prager, who has completed his first five-year term as director of PPPL, has agreed to continue in that position. "I was originally drawn to the prospect of leading a large laboratory and a terrific staff," Prager said, "and to helping shape the national program in fusion and plasma physics. All those reasons still stand."

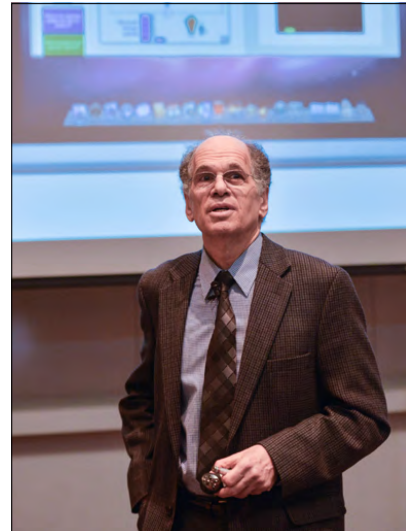
A. J. Stewart Smith, Princeton University vice-president for PPPL, hailed the expansion of Laboratory programs and collaborations under Prager and welcomed the director's agreement to stay on. "Stewart Prager has broadened the activities of the Laboratory while guiding PPPL through extremely trying budget times," Smith said. "With a steady hand on the tiller, he has also contributed outstanding leadership and vision to U.S. and international plasma physics."

Prager has worked closely within the research community to help develop strategies for the U.S. fusion program. "He's been a guiding light," Smith said.

The U.S. Department of Energy (DOE) has recognized PPPL's strong performance under Prager by extending the University's current contract to manage the Laboratory to 2018, with a further extension to 2019 likely. The contract had originally been set to run from 2009 to 2014. Princeton has managed PPPL for the DOE since the Laboratory was founded in 1951.

Credits all departments for recent PPPL successes

Prager credited PPPL's science and engineering advances over the past five years to all departments throughout the Laboratory. "The staff has produced many



PPPL Director Stewart Prager at last month's State of the Lab address.
(Photo by Russ DeSantis).

continued on page 2



Girl Scouts at PPPL:
See Pages 3 to 5 for
more on the STEM Fair.

Arturo Dominguez, a postdoctoral fellow in Science Education, shows younger Scouts a plasma speaker at the Girl Scout STEM Fair on May 17. From left to right are: Maddie Marsola, Maureen Lepold, Cary Logan and Julia Cunniff, all third graders from Ewing.

Stewart Prager

continued from page 1

accomplishments,” he said, “many of which helped pave the way for the future of the Laboratory.” He cited as examples the “very significant results for the National Spherical Torus Experiment (NSTX),” which is currently undergoing a \$94-million upgrade, “and the ultra-important authorization of the upgrade and the superb progress on its construction.”

Prager noted further advances ranging from a new partnership between the Theory Department and the NSTX research group to new programs in astrophysics and low-temperature plasmas, new collaborations with superconducting fusion facilities around the world and new links to other parts of the University in fields that include plasma astrophysics and material sciences. “Every sector of the Laboratory has contributed,” Prager said, “with key accomplishments from every department.”

“A splendid job of guiding the Laboratory”

Prager’s productive leadership is admired both inside and outside PPPL. “Stewart Prager has done a splendid job of guiding the Laboratory into innovative new areas of research and enhancing collaborations with the main campus,” said Princeton University President Christopher L. Eisgruber. “Under his guidance, PPPL has made and will continue to make vital contributions to fusion energy and plasma physics research that will generate tremendous benefits to society,” Eisgruber noted.

“What comes to mind when one thinks of Stewart is his wisdom,” said Steven Cowley, chief executive officer of the UK Atomic Energy Authority and a member of the PPPL Advisory Board that meets twice a year to help guide and support the mission of the Laboratory. “He’s wise about the process of managing people, wise about the science of fusion and wise about the political implications. That’s what you need in a leader.”

Prager joined PPPL in 2009 from the University of Wisconsin-Madison, where he had led the Madison Symmetric Torus fusion experiment and a center that stud-

ied laboratory and astrophysical plasmas. He arrived at PPPL as the head of a new management team that included Adam Cohen and Michael Zarnstorff, deputy directors for operations and research, respectively.

The team took office shortly after DOE had cancelled PPPL’s unfinished National Compact Stellarator Experiment (NCSX) — now known as QUASAR— when construction costs exceeded the initial projections for the innovative fusion facility. But DOE showed confidence in Princeton’s ability to manage PPPL by awarding the University a new five-year contract that began in April, 2009.

Shepherds the NSTX upgrade


To replace the cancelled NCSX facility, Prager shepherded a three-year application process that won DOE approval for the NSTX upgrade, which the Laboratory had proposed before he arrived. The upgrade began in late 2011 and will make the NSTX the most powerful fusion facility of its kind in the world when the work is completed around the end of this year.

Other projects launched during Prager’s tenure include a new facility to investigate magnetic reconnection, an explosive process that is found throughout the universe; a plasma nanotechnology laboratory, and fledgling activities in mass separation using ideas from plasma physics.

PPPL is also a key contributor to ITER, the huge international experiment that is under construction in France to demonstrate the feasibility of fusion power. The Laboratory participates in design and fabrication for ITER under contract to US ITER, a DOE Office of Science project managed by Oak Ridge National Laboratory. In addition, ITER-related research is a key focus of experimental and theoretical activities throughout the Laboratory.


“The past five years have been exciting and fulfilling ones for me,” Prager said. “The future looks bright, thanks to all that our staff has accomplished, and I very much look forward to the next five years.”

Breakfast for Bikers



Some of the members of PPPL’s bike team had a bagel breakfast on May 28 to celebrate their accomplishments as part of the Federal Bike-to-Work Challenge in which team members agreed to bike to work at least four times during May. The Department of Energy came in fourth, ahead of the EPA, as of May 18. From left to right are: Robert Sheneman, Jeanne Jackson DeVoe, Larry Dudek, Chris Cane, Theresa Gillars, Matthew Parsons, an undergraduate intern from Drexel University, Morgan Styer, Kathleen Lukazik, and Nelson Neal. Others who signed up but are not shown here are: Michael Zarnstorff, Jacob Schwartz, William Fox, Carol Ann Austin, Lane Roquemore, Rich Torraca, Daren Stotler, Ahmed Diallo, Dick Majeski, Paulette Gangemi, Ben Tobias, David Johnson, Eric Meier, Matthew Parsons and Tony Bleach. The group decided to extend the biking challenge over the summer.

Perspectives on TFTR’s DT experiments.



Dale Meade, who served as deputy director of PPPL during record-setting deuterium-tritium experiments on the Tokamak Fusion Test Reactor, led off a seminar on TFTR and its historic accomplishments. Meade traced the timeline for the ground-breaking experiments from concerns over the 1973 oil embargo to the start of TFTR construction in 1977 and the world-record heating and fusion power that TFTR produced in the 1990s. Joining Meade in the talks were Rich Hawryluk, who led the TFTR project and now heads the ITER and Tokamaks Department, and Mike Bell, who led physics operations for TFTR. Hawryluk discussed the extensive preparations and frequent revisions the Laboratory made in planning for the DT experiments, and the impact of the experiments on future DT research on ITER. Bell provided planning and operational perspectives on the DT experiments, beginning with the status of tokamak physics in the early 1980s. A complete video of the seminar can be found here: https://mediacentral.princeton.edu/id/1_browoyif and slides of each talk are available on the “FIRE Place” website, <http://fire.pppl.gov/>.

Sparking Girls' Interest Is Aim of STEM Fair at PPPL

By Jeanne Jackson DeVoe

Girl Scouts got to build robots and solar cars, do chemistry experiments, work with electric circuits and find out what it's like to be an inventor as part of a Girl Scout STEM Fair on May 17 at PPPL.

The all-day event brought some 240 Girl Scouts in grades three to twelve from throughout New Jersey to the Laboratory where they took part in hands-on activities with scientists and engineers from PPPL and elsewhere in New Jersey. More than 50 PPPL staff members, 23 Girl Scout leaders and 10 others volunteered for the event.

"This is one of the first of its kind with the Girl Scouts having the resources of a national laboratory," said Ginny Marino, the CEO of the Girl Scouts of Central & Southern N.J., which sponsored the event. "It's a wonderful opportunity."

Sparking the interest of Scouts

The STEM Fair was aimed at sparking the interest of Girl Scouts in the STEM fields. Studies show that many girls lose interest in math and science in middle school. Only 20 percent of female freshman say they intend to major in a STEM field. A 2012 report by the Girl Scouts entitled "Generation STEM: What Girls Say About Science, Tech-



A group of Brownies works on an experiment. From left clockwise: Manai Malik, Sana Borkar, Isha Trivedi, Nishika Solanki, and Nadya Budha, all third graders from Edison.

nology, Engineering and Math" found that girls who are exposed to STEM fields are more likely to be interested in going into those fields.

Kushi Varshney, 12, of West Windsor, said she thinks more girls would be interested in STEM if they were involved in more STEM activities. "I like science a lot," said Kushi. "Many girls don't like science but once they learn about it they find it's very interesting."

Mackenzie Martinovitch, 13, of Winslow, N.J., said most of the girls she knows aren't interested in science. "Most girls want to be actresses or singers or go into media," she said.

"They might not be introduced to this stuff," agreed her friend, Kyra Varnavos. "But how things work is really important."

The younger Brownies and Juniors from third to fifth grade took part in hands-on plasma demonstrations and



Atiba Brereton, a diagnostic engineer, looks on as Mackenzie Keane, left, a fourth grader from East Brunswick, and Shreya Joshi, a fifth grader from West Windsor, try their hands at a cryogenics experiment at the Girl Scout STEM Fair.

learned that plasma, a hot electrically charged gas, is the fourth state of matter. They got to steer robots, learned how to put out real fires, and watched a cryogenics demonstration.

The Cadettes, Seniors and Ambassadors from grades six through twelve could choose to take two workshops out of a dozen topics ranging from electronics to energy and inventing. They also took part in fire safety and robotics demonstrations. There was a mini college fair during lunch and the day ended with a "Her Story in STEM Panel," made up of young women in the STEM fields.

Urging girls to pursue their passion

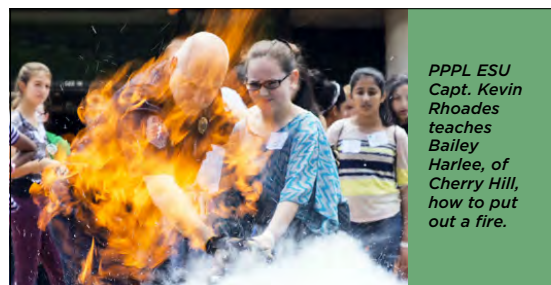
The young women in STEM fields in the panel discussion urged the Scouts to pursue their passion for science. "My suggestion to you is to really think about what you enjoy, not what other people think you should be doing," said Claire E. White, an assistant professor of Civil and Environmental Engineering and the Andlinger Center for Energy and the Environment.

We all have our passions," said Kristina Tatum, a researcher at Rutgers Cancer Institute of New Jersey. "It's holding true to yourself and your interests and knowing someday you will be doing something that's your passion."

The panel discussed the importance of finding mentors and advisors who can help young women in their careers. They also told girls that they can try various paths in different fields and would likely have several different types of jobs in the STEM field.

"Don't be afraid," said Laura Stiltz, director of research programs and advising for underserved women in STEM at the Douglas Program for Rutgers Women in STEM. "And don't be afraid of what other people think. It took me a long time to go after what I really like."

At the end of the day, Theresa Gillars, a senior staff accountant at PPPL and the lead organizer of the event at PPPL, said she was very happy with the event. "I can't believe how wonderful this fair is, it's unbelievable," she said. "It's much more than I anticipated. The talent here is amazing."



PPPL ESU Capt. Kevin Rhoades teaches Bailey Harlee, of Cherry Hill, how to put out a fire.

STEM Fair

continued from page 3

The following are excerpts of essays written by the eight Scouts in the Media & Communications workshop taught by Jeanne Jackson DeVoe, of PPPL, and Catherine Zandonella, of Princeton University. The young writers learned about basic news writing, ethics, and interviews. They interviewed Girl Scouts, leaders and organizers, and wrote their stories the day of the event.

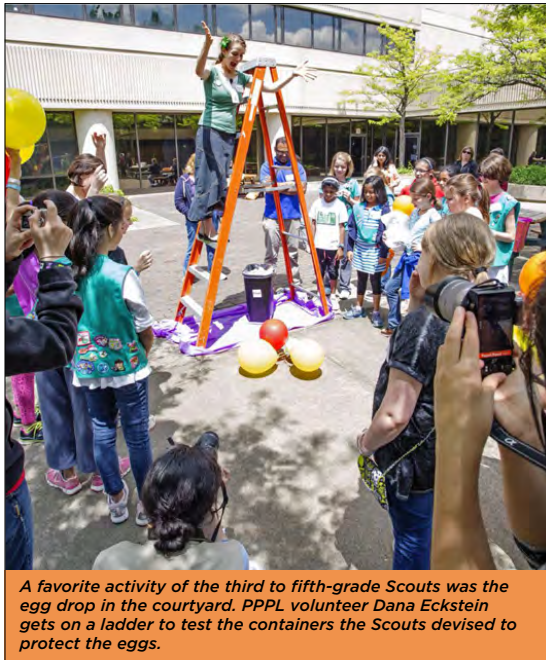
Seeing science and technology upfront and personal

By Anna Schotzberger, 9th grade, Browns Mills, Troop #22137

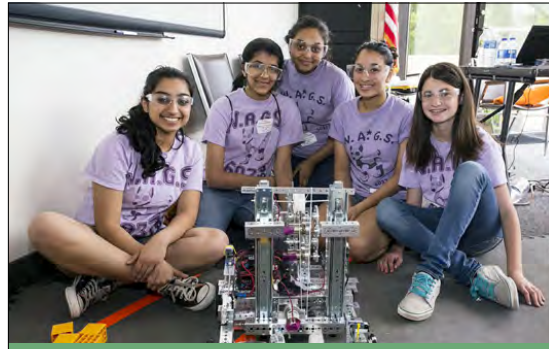
There was a Girl Scout STEM Fair on May 17. STEM stands for science, technology, engineering, and mathematics. It was held at the Princeton Plasma Physics Laboratory (PPPL). They held the event to expose young girls to the STEM program and to get them to see the science and technology upfront and personal.

There were other events like robotics, chemistry, invention and many others. These hands-on experience for the young Girl Scouts could help them realize that maybe they would want to join the hunt to save the world with plasma physics for energy. "I think more women are needed in plasma science," said John DeLooper, the head of best and practices and outreach at PPPL. He also said that this was to look for more women to go into STEM programs. There are many science, engineering, and math careers out there.

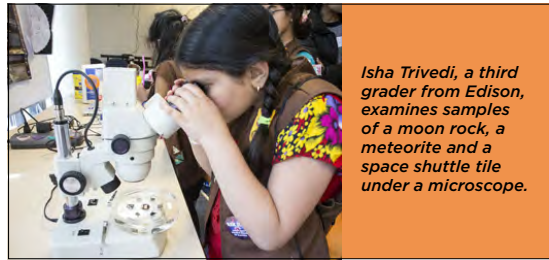
Simone, one of the Girl Scouts at the STEM Fair, said she came to learn more about technology, and science, and math. She may be interested in a career involving math. PPPL also had other things to offer Girl Scouts like fire safety. They got to try on the gear that a firefighter would wear, practice using a fire extinguisher and water hose, and also check out an ambulance. Stephanie Fuzes, a 10-year-old Girl Scout at the fair said she had "a very good time" and liked the egg drop best. She said she learned a lot and liked most of it but would not choose the science and math career path.



A favorite activity of the third to fifth-grade Scouts was the egg drop in the courtyard. PPPL volunteer Dana Eckstein gets on a ladder to test the containers the Scouts devised to protect the eggs.



The WAGS (We Are Girl Scouts) Robotics team from the West Windsor-Plainsboro School District shows off their robot. From left to right: Nikita Nangia, Nithi Subbaian, Anusha Chinatalapati, Anisha Amurthur, and Caroline Cardinale.



Isha Trivedi, a third grader from Edison, examines samples of a moon rock, a meteorite and a space shuttle tile under a microscope.



Patricia Hillyer, a 7th grade teacher in the Matawan-Aberdeen School District who often works with PPPL's Science Education Department, shows Brownies an experiment in which marbles are dropped into flour and cocoa at various heights to simulate a meteor strike on Earth.

"The learning was the best thing about the STEM Fair"

by Amirah Savage, 6th grade, Hamilton Township, Troop #71687

The Girl Scouts came up with the STEM Fair and 250 girls attended. They learned about STEM (science, technology, engineering, mathematics). They learned stuff from robotics to inventing. The STEM Fair was at the U.S. Department of Energy's Princeton Plasma Physics Lab.

"I think the learning was the best thing about the STEM Fair," said Thaanvi Malgireddy. The girls learned a lot. Emily Ta said, "Robotics was the most interesting. In the robotics section, they had different types of robots, from ones that walk to ones that throw basketballs to you." Andrew Slemmon said, "It takes about 20 minutes to 20 months to make a robot."

Some activities were robotics, media & communications, photography, chemistry, computers, electronics & electricity, energy, engineering, and inventing. Did you know all these activities had to do with science? In the beginning, the Scouts watched "Star Power," then they went to their first elective, then their second elective. All in all, the STEM Fair was fun. All the girls had a good time. You should come next year.

continued on page 5

STEM Fair

continued from page 4

Interactive STEM Fair

By **Olivia Coyne**, 9th grade, Browns Mills, Troop #22137

As Girl Scouts were walking into the building and getting their nametags, we watched a short video on plasma. The Girl Scouts grades fifth and below went and did some activities while the girls sixth through twelfth had a convention. The date is May 17th and we are all here at the Princeton Plasma Physics Lab to do a STEM Fair.

Continuing through the day, our group Communications/Media, went out to interview some young ladies and three adults. Some girls I met were Fiona, Hannah, Sia, Anjalie and Aash. Fiona is age 11. Her troop number is 80162 and so far she has really liked the robotics portion of the fair. She told me, "I came because it sounded fun and really interesting." Another girl was Hannah. She's 11 in Troop 80162, and she also really liked the robotics portion of today. She came because she loves learning and wanted a new experience.

Sia is 11 in Troop 83401 and really loved the robotics, Lego building, and basketball shooting robot activities. When I asked why she came, she told me it's because she wanted to gain more knowledge in science, technology, and plasma.

Anjalie was a very quiet girl but seemed very enthusiastic to be here. She's 11, in fifth grade, and wants to become a biologist when she's older. Her troop number is 72802 and she's a junior. I asked for one word to describe herself, and she said, "creative." Her favorite part about today was the egg drop and she likes the activities her Girl Scout troop does all the time.

Aash was a very outgoing, sweet girl. She's 10, in fourth grade, and a Junior, Troop #80374. She loves the camping and adventures the Girl Scouts have. Aash wants to become a person in NASA when she's older. Her favorite thing that she liked about today was the egg drop. Two words that Aash described herself as were, "adventurous and athletic."

Girl Scouts at PPPL

By **Yeeling Tai**, 6th grade, Ewing Township, Troop #71687

Girl Scouts came to PPPL to learn about STEM. About 250 girls came to this program to teach girls, get them more into plasma, science, engineering, and more.

Some girls did robotics and got to make solar-powered cars. "It brings out my inner nerd," said Laura Near, a Cadette.

Sherya Joshi, a Junior, said her favorite part of the day was, "The Great Egg Drop." She said she thinks that PPPL is fun and it's "a place to learn and have fun."

Some girls did photography. Some did media, some did chemistry, some did engineering, and many exciting things.

This program was meant to get girls more into science. "We're trying to get girls to understand that science is in Girl Scouts," said Cheryl Rowe-Rendleman. She said she thinks "the more girls they can get in these fields, the better." 📷

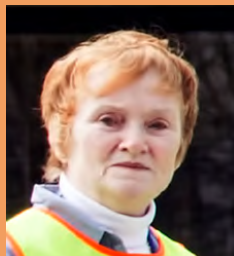


Congratulations!

PPPL bids a fond farewell to ...



Dawn Horner
A buyer in Procurement
29 years at PPPL



Maureen Abbott
Nurse Administrator
11 years at PPPL

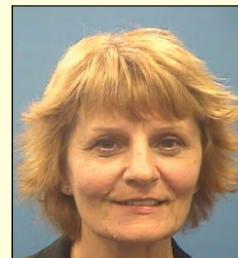


Rod Templon
Head of Procurement
33 years at PPPL

PPPL welcomes new employees!



Michael Churchill
Associate research physicist
Theory and Computation



Ewa Kontor
Accounts payable clerk
Business Operations



Beth Leman
Graduate administrator
Office of the Director



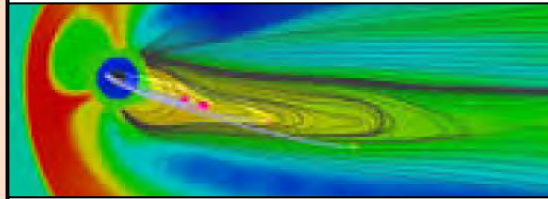
Adam Salom
Management technician
Engineering & Infrastructure



An interview for ITER video

Kenny Suleimanagich, right, a reporter for Mashable.com, came to PPPL on May 28 to film interviews with Rich Hawryluk, left, and Dave Johnson, for a video about ITER, the international fusion experiment. Al Von Halle gave Suleimanagich a tour of PPPL, during which he filmed B roll at the NSTX-U coil winding facility and other sites.

COLLOQUIUM



MAGNETIC RECONNECTION

VASSILIS ANGELOPOULOUS

UCLA

Wednesday, June 11

4:15 p.m. (Coffee/Tea at 4 p.m.) • MBG Auditorium

2014 Annual PPPL Bluefishing Trip

Aboard the 80' Suzie Girl



Date: Friday August 8th 2014 • Departure: 5pm SHARP!
Location: Belmar Marina Hwy. 35, Belmar, NJ 07719

Cost: \$75 Per person • All inclusive

Money due by Friday July 25th NO REFUNDS

Cost includes everything:

Rods, Bait, Fish Cleaning, Food, Beverages, Prizes etc.

All you need to do is show up!

Contact Andy Carpe ext. 2118 acarpe@pppl.gov Bob Tucker Jr. ext. 3190 ritucker@pppl.gov

Site Protection Division • TIP OF THE WEEK •






KEYS

The Site Protection Division maintains a hierarchical standard key system so that access to work areas can be matched to the key holder's legitimate need based upon tasks and responsibilities. Contact the Badge Office (Badge@pppl.gov) when keys are needed for office doors, cabinets, and desks. All requests for keys should be approved by the requestor's supervisor. Keys are made on site by SPD staff and can usually be available on the date of request. If you are in possession of a key or keys that you do not use, please return them to the Badge Office. If you transfer your keys to another PPPLer, please notify the Badge Office. Requests for lock repair are handled via the PPPL Facilities Work Order request system.

BROCK Café Menu

BREAKFAST 7 a.m. • 10 a.m.
CONTINENTAL BREAKFAST 10 a.m. • 11:30 a.m.
LUNCH 11:30 a.m. • 1:30 p.m.
SNACK SERVICE until 2:30 p.m.

— MARK GAZO, Chef Manager

	MON. 2	TUE. 3	WED. 4	THU. 5	FRI. 6
COMMAND PERFORMANCE CHEF'S FEATURE	 Italian Baked Breaded Chicken Breast with Stuffing and Vegetable	 Cheese Tortellini with Sundried Tomatoes and Creamy Pesto Sauce	 Beef Stew served over Egg Noodles	 Southern Fried Chicken with Fries & Coleslaw	 Tilapia Piccata served with Rice Pilaf and Vegetable
EARLY RISER	Huevos Rancheros	Spaghetti & Egg Frittata	English Muffin Breakfast Pizza	Cowboy Breakfast Sandwich	Eggs Benedict-wich
COUNTRY KETTLE	Mexican Black Bean Soup	Chicken Noodle	Cream of Potato	Beef Mushroom Barley	Gazpacho
GRILLE SPECIAL	Flank Steak Soft Tacos	Pulled Pork Sandwich with Onions & Pepperjack Cheese	Seafood Quesadilla	Turkey Salisbury Steak with Baked Potato Wedge and Gravy	Provence Veggie Sandwich
DELI SPECIAL	Grilled Portobello Mushroom with Tomato & Fresh Mozzarella	Roast Beef & Cheddar with Onions & Horseradish on Onion Roll	Spinach Salad with Grilled Chicken, Sliced Apples, Candied Walnuts	Egg Salad BLT	Spring Chicken Salad with Grapes, Walnuts & Celery on a Croissant
PANINI	Smoked Ham, Pepperjack, Peppers & Onions on Ciabatta	Baked Potato with Bacon, Cheddar Cheese & Sour Cream	Chicken Patty with Peppers, Onions, Buffalo Sauce & Blue Cheese	BBQ Tofu Torpedo	Turkey, Provolone, Bacon and Tomato Ciabatta

MENU SUBJECT TO CHANGE WITHOUT NOTICE

 VEGETARIAN OPTION

[CLICK HERE FOR A PRINTABLE WEEKLY MENU](#)

WEEKLY

Editor: Jeane Jackson DeVoe ♦ Layout and graphic design: Gregory J. Czechowicz