PPPL PRINCETON PLASMA PHYSICS LABORATORY
A Collaborative National Center for Fusion & Plasma Research
U.S. DEPARTMENT OF ENERGY
WEEKLY
October 6, 2014

At PPPL THIS WEEK

WEDNESDAY, OCT. 8

PPPL Colloquium
4:15 p.m. ◆ MBG Auditorium

Plasma Mediated Effects on Biological Cells

Mounir Laroussi - Old Dominion University

UPCOMING EVENTS

October 15

PPPL Group Photo Shoot
11 a.m.◆Meet in Lobby at 10:50 a.m.

PPPL Colloquium
4:15 p.m. ◆ MBG Auditorium

Large Scale Superconducting Magnets for a Variety of Applications

Joseph Minervini - M.I.T.

October 27-31

56th Annual Meeting of the APS Division of Plasma Physics
New Orleans
http://www.aps.org/

November 19

PPPL Colloquium
4:15 p.m. ◆ MBG Auditorium

Antibiotic Resistance: A Global Challenge

Ramanan Laxminarayan - Princeton University, Princeton Environmental Institute

Frank Malinowski, left, and Leanna Meyer on duty at Booth 6.

Guest Corner

The 2014 PPPL Emergency Exercise

By **Fran White** - Head, PPPL Site Protection, ESH&S

PPPL conducted its annual Lab emergency exercise on Sept. 18. The purpose of the exercise was to test the effectiveness and efficiency of the emergency preparedness program, as well as to detect areas that might present opportunities for enhancement. The goal, also, was for PPPL to continue to identify key scenarios as a basis for the testing. As Adam Cohen, Deputy Director for Operations, noted, "In addition to testing out the incredibly important and valuable emergency response functions, we have tried to create exercise scenarios from which we can evaluate areas of programmatic interest and impact, and thus learn how to improve. Lithium is a key focus and working with lithium is a core competency for us here at PPPL."

With the increased focus on lithium here at PPPL, the 2014 PPPL Emergency Exercise Committee decided to test lithium and its associated risks, as well as our emergency response program.

Further, the committee wanted to incorporate observations from last September's unannounced DOE emergency exercise as bases for testing, as well as recommendations received this Spring from the DOE Emergency Management (EM) Support Visit. These recommendations included restructuring the Emergency Response Organization's structure and obtaining credentialing for senior response managers from FEMA for National Incident Management Systems (NIMS).

We also focused on finding ways to use the lessons learned from the exercise to improve safety at the Lab. These will be shared with all staff, and, specifically, emergency responders, and members of the Lithium Experts Committee.

The Committee at Work

The committee, composed of volunteers from Engineering, ESH&S, Best Practices, Research and Site Protection, as well as the DOE Site Office, quickly got to work in June. At the first meeting, participants viewed a compelling presentation on the dangers of lithium using an actual event that occurred at a DOE laboratory and discussed the plausibility of potential accidents here at the Laboratory.

Over the course of the next three months, the committee met weekly to establish exercise objectives, design and deliver training requirements, and satisfy logistical requirements (including exercise timetables, assignments, observers' checklists, and to conduct safety briefings). Robin Izzo, Director of Environmental Health and Safety at Princeton University, helped us to refine the scenario.

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Inside the Emergency Services Communications Center, from left, Dolores Stevenson, Twylen Hicks, Fran White, Sue Hill, Mark Hughes and Robin Izzo.

I am the Lab

You've no doubt seen the work of Michael Gonzalez at PPPL but just never realized it. If you've ever taken an online training course at PPPL, you've seen Gonzalez's creativity. He's the one responsible for the GET training, which all PPPL employees take every day. And if you've ever attended the holiday skit then you've gotten to see Gonzalez's other creative side as he performs in the skit, where he has had a recurring role as Deputy Director for Operations Adam Cohen. He has performed parodies of "Bad Moon Rising" by Creedence Clearwater Revival, the doo-wop classic "I Wonder Why" by Dion and the Belmonts, and a Blues Brothers-inspired rendition of "Soul Man." He is also multi-talented in his off time as a community theater performer.

Name:

Michael Gonzalez

What is your position at PPPL?
I am a Senior Human Resources Generalist.

What department are you in?
The Office of Human Resources.

Please briefly describe your job.
I'm responsible for the development and administration of Laboratory-wide training projects and activities in the areas of safety, technical skills, Lab policies and procedures, and leadership development. I support PPPL's mission by working to ensure that all PPPL staff has the required training available to enable it's members to perform the incredible research we do at PPPL. Part of my role is to maintain the administration of the Training Qualification program for the Lab. This is an ongoing process throughout the year, so I try to plan my project schedule so that I can manage up to two projects at a time and balance it with my other new responsibilities. Recently, my role was expanded to include additional responsibilities supporting PPPL's goals in staffing and diversity and exploring ways to leverage technology/social media for the continuous improvement of our staffing process.

When a manager has identified a training need, we meet to discuss the goals of the training and the overall scope of the project. The first challenge is deciding the best format to present the information and ensure the participants understand the content. Web-based training modules can be convenient, but are not always the most effective method. Training can also take place in a classroom or it could be on the job training.

The next phase is the development of the content, and then I get to work on the training materials. If it's web-based training, I use tools such as Adobe Captivate, Photoshop, DreamWeaver, Articulate Studio and Audacity for editing audio to build the module.

The length of the development process depends on a few factors, including the amount of content to be trained, the subject matter expert's schedule and availability, and the elements to be included in the training. For example a web-based module with audio narration and embedded video clips, interactive flash animations and a multiple choice test would take longer to build than a "read-only" module that only require users to submit an electronic training acknowledgment form. The typical project takes two months, but based on available resources, it can often take several months.

How long have you been at PPPL?
I've been at PPPL for seven years.

What is the most fun thing about your job?
The fun part of my job is getting to think and work creatively to build solutions that meet the ever-changing training needs of the Lab. I get to collaborate with brilliant subject matter experts from various disciplines across the Lab, such as Engineering, Procurement, Safety, Quality Assurance, etc. The diversity of training projects keeps my job from ever getting dull! I believe strongly in the importance of PPPL's mission and it's very rewarding to know that my efforts are contributing to our PPPL team objectives.

What was your most memorable experience at PPPL?
During my first year at PPPL I was recruited to play (Associate Director for Engineering and Infrastructure) Mike Williams in the Lab's infamous annual Holiday Skit entitled "Physicist on the Roof." I've been an active theater performer since college, so I welcomed the chance to participate in the Broadway-musical style satire of PPPL. It was great fun and a treat to see so many PPPL'ers gathering together to enjoy the festivities. As a new employee at the time, I didn't recognize all the people's names or fully understand all the jokes in the script, but I did feel a great sense of relief when I saw the Lab's senior management sitting in the audience laughing loudly along with everyone else. I've been in every skit since and they get funnier every year!

Where do you live? I live in Columbus, N.J.

Where did you grow up? I grew up in Freehold, N.J.

What would you like to tell us about your family? (Spouse, kids, pets?)
I'm the proud father of twin daughters named Nina and Simone, age 13. They are honors students at Northern Burlington Regional Middle School, and are very active in drama club, chorus, the National FFA Organization, and the school newspaper and yearbook committees. They keep me young by constantly reminding me how wondrous our world is.

What do you like to do when you're not at work?
My hobbies include acting in community theater. My most recent role was Etienne the nosy butler in the French farce "A Flea in Her Ear," by Georges Feydeau. I also enjoy photography, digital music production, video editing, sailing, and cycling. I'm a film buff. My favorite movie recently was "Boyhood" directed by Richard Linklater and "The Grand Budapest Hotel," directed by Wes Anderson. My favorite movie is the original "Planet of the Apes." Other favorites I enjoy watching again every year are "Young Frankenstein," "Pulp Fiction," "Memento" and "The Usual Suspects." I like listening to a very eclectic blend of musical styles and attending music and film festivals.

Each year, my family and I volunteer in community service/fundraising projects including Community Urban Gardening events with the University's Employee Resource Group Latino Princetonians, Princeton-Blairstown Woodcutters Weekend, and the Susan G. Komen Race for the Cure.

What do you tell your friends and family about PPPL?
When people ask me about PPPL I tell them it's a great and very interesting environment to be in every day. It's a community of genuinely kind and friendly professionals where these amazing scientific minds have been brought together to research, build, experiment and explore some of the most complex mysteries of the universe, to develop fusion as a safe, clean, source of energy for the betterment of all humankind. Then I ask, "What do they do where you work?"

What is one thing you'd like PPPL'ers to know about you or your job?
I enjoy learning new technologies and collaborating with others. My role enables me to do both. I welcome the opportunity to continue taking on different interesting projects and exploring practical solutions.

If you have suggestions of other people to profile at PPPL, please email Jeanne Jackson DeVoe, jjackson@pppl.gov

Emergency Exercise

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The committee worked through the summer to complete all of the facets necessary for a successful exercise. The final scenario was based upon a simulated lithium accident in L-111 that resulted in injuries and created an adverse environmental situation requiring first response, then call-up of the Emergency Response Organization (ERO) and activation of the Emergency Operations Center (EOC).

September 18, 2014

Even with a great plan, the committee had a number of dates and checked the weather daily to make sure our chosen date would work. The exercise began on Thursday, Sept. 18 at 12:45 p.m., when the exercise team met with several graduate students in the hallway outside L-111. The students, who had received ESH&S safety training some three weeks earlier, were asked a series of safety questions by various committee members including what actions they would take if confronted with a lithium emergency in L-111.

Despite the large group of observers, these students did an outstanding job. They correctly answered that they would keep the door closed and would call "3333" immediately and report the incident. They knew that they would need to provide as much information about the accident as possible, including location and kind of emergency, and they knew they would need to follow emergency instructions precisely.

One of the students was asked if he should enter the room to find out more information to report. The student responded, "No, I don't have the training to enter the room or to deal with this situation, so I would stay outside and report whatever I could find out from here."

As part of the exercise, the student made an actual emergency call to 'report' the incident. During the call, the Communications officer recorded the information provided by the student, then instructed the student to pull the nearest alarm station and immediately evacuate the building. This set the exercise in motion for everyone else at PPPL.

Lab Wing Evacuation

With the fire alarm in the Lab Building activated, about 75 staff members evacuated quickly and quietly, and assembled at the designated location in the Lower Parking lot. Emergency Services Officers responded with our fire engine and ambulance, and established an Incident Command (IC) Post. Two fully equipped officers wearing SCBAs (Self-Contained Breathing Apparatus) entered the building, proceeded to L-111, and conducted search and rescue operations.

As part of the rescue operations, Incident Commander (IC) Bob Lamb directed emergency responders and requested mutual aid medical assistance at the scene. Capt. Howard Caruso led the Lab Wing rescue team.

Martin Donohue, the on-duty Facility Manager, also responded to the IC, assessed the 'emergency,' and requested call-up of the ERO and activation of the EOC.

Upon learning of the emergency, other PPPL subject matter experts, including those from Environmental Services, Safety, as well as the Alternate Facility Manager responded to the 'scene' to render support and assistance.

(A note about the role of the Facility Manager (FM) in an emergency. The FM is not only responsible for investigating non-routine issues at PPPL on a daily basis, but in an emergency, the FM takes a central role in on-scene assessment, resource allocation, and reporting. Reporting responsibilities are not just to PPPL but also to the DOE. The FM also may play a central role in emergency management, mitigation, recovery and after-action investigation, depending on the incident.)

Martin Donohue responded to the IC and activated the ERO. Although he has extensive private industry experience in safety matters, Donohue was still facing his first emergency exercise at PPPL. He noted that "[although] it was the first time I was involved in the ERO, it was obvious that because of previous exercises, most people knew what to do, and that is the essence of the exercise. Performing these tasks under non-emergency conditions allows you to develop the 'memory' to do it by rote when the real emergency arises."

Booth 6 and Communications Center Support

The Booth 6 and Communications Center support teams were activated as emergency response force multipliers. Frank Malinowski, Barry Jedic, and Leanna Meyer — all of whom have undergone training in Booth 6 procedures — responded to Booth 6, donned high visibility vests, and relieved the fully-trained Emergency Services Officer so the officer could respond to the scene of the emergency. They prevented any traffic from entering the campus during the emergency (except for mutual aid teams who simulated being spirited through the gates). They provided the Emergency Services Communications Center (ESCC) with updates on Booth 6 activities.

Sue Hill responded immediately to the Emergency Services Communications Center (ESCC) and provided the communications officer with assistance in making emergency notifications, denoting assignments, answering phones, and keeping an operational timeline for the emergency.

Call-Up of Emergency Response Organization

The ERO and EOC were activated and over 40 trained members of the ERO were notified to respond via PTENS. Responding personnel included the Emergency Director, Planning Chief, Safety Officer, Public Information Officer, and the DOE officer, all of whom responded promptly and EOC activation operations started quickly.

Throughout the next hour or so in the EOC, briefings were conducted and a myriad of issues – most notably life safety, property, and environment issues - were discussed and managed by the ERO, led by the Emergency Director, Mike Williams. Other unexpected issues arose in this simulated exercise, including additional "injuries," the loss of the radio system, and a D-Site pump failure that imperiled equipment. Members of the press corps also 'arrived' at Booth 6 to interview senior managers at PPPL about the 'emergency.'

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Alternate Facility Manager John Lacenere, center, briefs ESU members (from left) Bob Lamb, Chris Pietsch, Capt. Howard Caruso and Jamie Dunnigan, while Angie Capece observes.

Emergency Exercise

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As Emergency Director, Williams is a key point for decision making in the ERO. He commented that, "It always strikes me that, although activities in the EOC occasionally appear chaotic, our efforts always come together in teamwork and accomplishing the mission at hand."

The exercise format also provided for occasional 'pauses in the action' for updates, progress reports, and other group discussion points. The pauses were helpful for both deliberation and reflection. As Williams later noted during the after-action debriefing, "I thought the pauses and discussions were very effective in ensuring that the entire EOC group understood the array of issues we were assessing and resolving."

The ERO is like an Orchestra

Effectively managing an emergency requires a myriad of skills as well as teamwork to accomplish the mission. As noted by John DeLooper, who serves as Planning Section Chief in the ERO, "Emergency planning needs to be practiced just like musicians need to rehearse before a concert. By planning and training for various scenarios, in essence each scenario is a 'different' song, the PPPL team members can address any emergency issue in a seamless manner – just like an orchestra playing beautiful music."

Throughout the exercise, the ERO worked very effectively in identifying problems and devising solutions as a team. Kitta MacPherson, the Public Information Officer in the PPPL ERO, was in charge of quickly drafting a press release. "What struck me was, despite the emergency conditions, the sense of calm that prevailed in the EOC and how everyone stepped seamlessly into his or her role and started working together to protect the safety of our staff and visitors," she observed.

The PPPL ERO continued to manage the emergency throughout the better part of an hour. Near the end of the exercise and after all life safety issues were resolved, the group was given a robust lithium briefing by Robert Kaita, a PPPL project manager and key member of the PPPL Lithium Experts Committee, so that the ERO could begin to devise and implement stabilization and mitigation plans.

The exercise was then concluded at approximately 2 p.m. after the Emergency Director assigned a recovery manager to oversee clean-up operations in L-111.

At the after-action debriefing conducted shortly after the exercise, there was a robust discussion involving approximately 40 persons about all facets of the exercise. Exercise controllers, observers, and participants shared observations, ideas, and concerns. Notable and commendable actions and events were highlighted, and areas for improvement were denoted.

Adam Cohen, center, speaks during the after-action briefing while Mike Williams, left, and Jim Graham listen.

Robert Kaita, left, provides a lithium briefing during the Lab emergency exercise.

The highlight of the exercise was everyone working together to enhance staff safety at the Lab. Jerry Levine, who served as the Safety Officer during this exercise and oversees safety programs at PPPL, observed, "I have participated in a number of exercises and even some real emergencies over the years, and I thought the responses by ESU and the people in the EOC during this exercise were really great. Everyone stayed organized and on point throughout the event, and communications were very smooth. I also was heartened to hear of the proper actions taken during the exercise by our graduate students, some of whom had just completed our annual safety course for new graduate students."

Dolores Stevenson, an observer in the Communications Center and Deputy Head of the Site Protection Division, remarked that "the Laboratory and DOE have always been supportive of our Emergency Response Organization. Our officers and the Laboratory staff benefit greatly from these types of exercises by utilizing emergency response training and skills on a periodic basis."

Also sharing thoughts during the debriefing were two Princeton University staff members: Robin Izzo, Director of EHS, and Twylen Hicks, Associate Fire Marshall, Public Safety Department – both of whom spent the afternoon with us.

Lessons Learned

The key takeaway from the exercise is that emergency response at PPPL is very effective. But there is always room for improvement. Several lessons were learned and these will be incorporated into future policy, performance, and facility enhancements to improve the emergency preparedness program at PPPL. Great job to everyone who planned and participated in the exercise!

Thank you to the members of the 2014 PPPL Emergency Exercise Committee: Angie Capece, Dina Christie, Larry Dudek, Jamie Dunnigan, Charlie Gentile, Jim Graham, Dolores Stevenson, Julia Toth, Mike Viola and Fran White.

What to do in an emergency at PPPL

If confronted with an emergency situation:

- **Immediately call extension 3333 to report the emergency.**
- **Report the location and type of emergency.**
- **Listen to and follow the officer's instructions carefully.**

If requested to evacuate a building:

- **Move quickly to leave your office.**
- **Turn off the lights (and computer if possible).**
- **Close the door.**
- **Move quickly and quietly to your evacuation assembly area and wait for further instructions.**
- **Avoid emergency areas until the emergency has been terminated.**

Princeton writers talk fusion in science writing workshop

The Princeton University staffer looked squarely at Angela Capece and asked her question:

"What kind of research do you do?"

The audience, perched in a conference room in an office tower overlooking main campus, listened closely as Capece, an associate research physicist at PPPL, launched into a simple explanation of fusion and how certain experiments are aiding its advancement.

More questions followed. Over the next few minutes, Capece conveyed some of the details of her work and the gist of a research paper that she will be presenting later this month at the annual meeting of the American Physical Society's Division of Plasma Physics. The members of the audience, all campus communicators, had to pay attention. Within minutes, they knew they were going to be required to write a portion of a news story all about Capece's work.

The science communicators — 15 University staff from departments across campus — were participating in a workshop called "Translating Science and Technology," part of the Princeton Writes program. The session, led by Kitta MacPherson, director of communications at PPPL, and Steve Schultz, director of communications at Princeton's School of Engineering and Applied Science, was designed to bring a journalist's eye to the task of translation. Participants were taught how to ask the right kinds of questions for the stories, web posts, and press releases they need to write. They also learned ways to organize and convey technical concepts in a clear, compelling way.

"I so much enjoy learning about faculty research and writing about it for a broad audience that I wanted to help colleagues around the University feel more confident in doing the same sort of thing," said Schultz, who, along with MacPherson has worked as the lead science writer for the University and as a science journalist. "It turned out to be very rewarding because the participants were all so accomplished in what they do and brought so many good ideas and questions to the conversation."

Though daunting, Schultz said, translating scientific and technical information for lay readers is a critical need at a research institution such as Princeton. In day-to-day operations and in external communications, engaging others in the work of the University helps move projects forward and advance the University's mission, he added.

Capece, whose current research adds to the understanding of how lithium conditions the volatile edge of fusion plasmas, enjoys talking about fusion and research and explaining it to the non-scientific public as much as to fellow researchers. "I thought the workshop was enlightening from the perspective of a researcher, as it helped me understand how science writers approach their story," she said. "The more I know about what the writer is looking for, the better equipped I am to communicate my message. This is a win for everybody — reader, writer, and researcher."

The session is the third in a 10-part, yearlong specialized communications curriculum taught primarily by campus communicators. "Each 90-minute session explores a different aspect of telling Princeton's myriad stories through the written word, addressing the challenges and opportunities presented by various media, genres, processes, and messaging considerations," said John Weeren, the longtime speechwriter for former University President Shirley M. Tilghman. Weeren founded Princeton Writes a year ago and serves as its director.

In addition to the specialized communications curriculum, the program is offering workshops that cover topics ranging from how to use the written and spoken word effectively to specific challenges, such as taking meeting minutes and crafting recommendation letters.

To register for additional workshops, running between Oct. 10 and Dec. 12, please visit Princeton Writes' website at https://pwrites.princeton.edu/classes/, which contains a link to the University's Learning Center, enabling official registration.

PPPL's Angie Capece at center, with Steven Schultz at left and Kitta MacPherson at right.

Please fill out the Diversity & Inclusion Survey!

Please fill out the Diversity and Inclusion Working Group's survey at https://www.surveymonkey.com/s/KJRT9TJ. The survey will take just five to ten minutes and will help the Diversity Committee learn more not only about diversity at PPPL but also about the work environment in general. The Diversity & Inclusion group will use the survey to develop a strategic plan in this area.

COLLOQUIUM

Plasma Mediated Effects on Biological Cells

MOUNIR LAROUSSI
Old Dominion University

Wednesday, October 8

4:15 p.m. (Coffee/Tea at 4 p.m.)
M.B.G Auditorium, Lyman Spitzer Building

SPD•TIP•OF•THE•WEEK•

Fire Prevention Week
October 5 - 11

The Site Protection Division would like to remind everyone that this week is Fire Prevention Week.

The theme for Fire Prevention Week 2014 is "Working Smoke Alarms Save Lives. Test Yours Every Month!" and focuses on the importance of smoke alarm safety, testing of smoke alarms, and installation locations.

Please join us on Monday, October 6 in the LSB Lobby and LSB Circle Driveway to hear about fire safety. We will have fire extinguisher and fire hose demonstrations as well as an information table with displays, posters and turn-out gear. Activities will take place between 11 a.m. - 1 p.m. We hope you join us on Monday.

Thank you.
The Site Protection Division

Make your flu vaccine appointment today!

Influenza is a contagious disease caused by a virus. It can be spread by coughing, sneezing or nasal secretions.

By getting the flu vaccine, you can protect yourself from influenza and may also avoid spreading this illness to others.

Please call the **OMO** at extension **3200** to make an appointment.

Thank you.
OMO Staff

COLLOQUIUM

Large Scale Superconducting Magnets for a Variety of Applications

JOSEPH MINERVINI
Massachusetts Institute of Technology

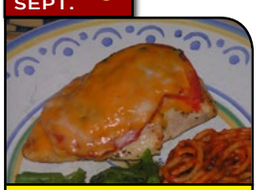
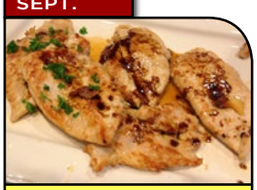
Wednesday, October 15

4:15 p.m. (Coffee/Tea at 4 p.m.)
M.B.G Auditorium, Lyman Spitzer Building

BROCK Café at PPPL 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. 6 SEPT.	TUE. 7 SEPT.	WED. 8 OCT.	THU. 9 OCT.	FRI. 10 OCT.
					
COMMAND PERFORMANCE CHEF'S FEATURE	Chicken Trattoria	Create Your Own Sautéed Chicken Bar served over Pasta	Fresh-Carved Roast Beef	Baked Breaded Boneless Pork Chop	Vegetarian Vegetable Cacciatore
EARLY RISER	French Toast Snickerdoodle served with Side of Sausage	2 Eggs any style with Hash Brown Casserole	Assorted Quiche	Apple Pancakes served with Homemade Turkey Sausage	Pumpkin Cranberry Pancakes
COUNTRY KETTLE	Chicken Wild Rice	Pasta Fagioli	Sausage Lentil	Three Bean Vegetarian Chili	New England Clam Chowder
GRILLE SPECIAL	Hot Pastrami & Cheddar with Deli Mustard on French Bread	Bratwurst Torpedo with Braised Cabbage & German Potato Salad	Homemade Tuna Burger on a Kaiser Roll with Lettuce & Tomato	Grilled Cheese with Turkey & Tomato	Veggie Burger Stacker on a Kaiser Roll
DELI SPECIAL	Grilled Eggplant Parmesan with Caesar Salad	Egg Salad, Cheddar Cheese, Lettuce & Tomato on a Croissant	Southwest Slow-Cooked Pork Torta	Fresh Seafood Salad served on a Multigrain Roll	Smoked Turkey with American Cheese on a Kaiser Roll
PANINI	Smoked Ham with Grilled Pineapples & Peppers on Ciabatta	Peppers & Scrambled Egg Torpedo with Cheese and Hash Browns	Chicken Parmesan Sandwich	Baked Spinach Pie served with Greek Salad	Taco Quesadilla

MENU SUBJECT TO CHANGE WITHOUT NOTICE

VEGETARIAN OPTION

CLICK HERE FOR A PRINTABLE WEEKLY MENU

WEEKLY

Editor: **Jeanne Jackson DeVoe** ◆ Layout and graphic design: **Gregory J. Czechowicz**
Photography: **Elle Starkman** ◆ Webmaster: **Chris Cane**

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