the Bulletin

BROOKHAVEN NATIONAL LABORATORY

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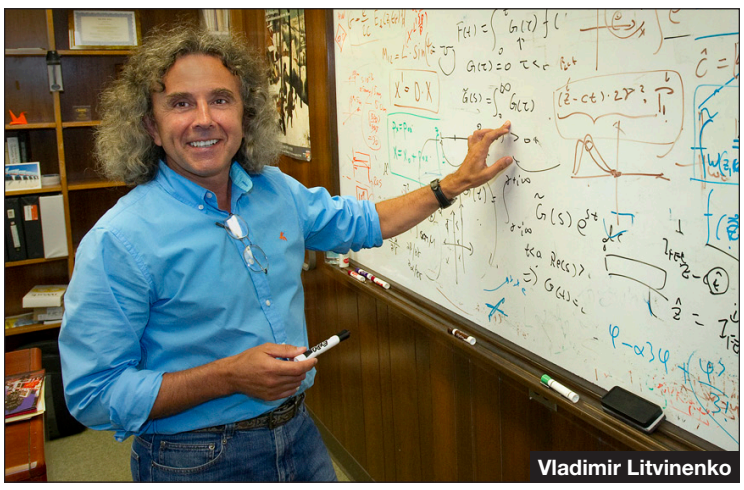
481st Brookhaven Lecture, 11/14

'From RHIC to eRHIC: Challenges and Opportunities for Accelerator Science'



Roger Stoutenburgh D2320611

The Relativistic Heavy Ion Collider (RHIC) at Brookhaven Lab has been extremely productive during its first 10 years of collisions. At RHIC, a new state of matter — quark gluon plasma — has been created. World records have been broken. RHIC scientists have published 300 refereed papers cited more than 30,000 times. New detectors upgrades have been completed. And researchers at RHIC are gearing up for more.

Right now, in light of projected budget constraints, the DOE and National Science Foundation's Nuclear Science Advisory Council is awaiting recommendations from the Tribble panel to implement priorities that were determined in the 2007 long range plan for nuclear science. While the panel's recommendations could have major implications for the RHIC program, scientists at Brookhaven are making preparations for the machine to have a stunning future. This could include adding an electron ring and other accelerator components to the existing RHIC accelerator complex to create eRHIC: an electron-ion collider, where scientists could probe even deeper into the substructure of the atomic nucleus and its smallest components, quarks and gluons, to learn more about how they interact. And the technologies required to work at these frontiers of scientific discovery take years to develop.

On Wednesday, November 14, join Vladimir Litvinenko of the Collider-Accelerator Department, for the 481st Brookhaven Lecture, titled "From RHIC to eRHIC: Challenges and Opportunities for Accelerator Science." All are invited to attend this free talk, which is open to the public and will be held in Berkner Hall at 4 p.m. Refreshments will be offered before and after the lecture. Visitors to the Lab ages 16 and older must carry a photo ID while on site.

During his talk, Litvinenko will describe the cutting-edge developments accelerator physicists are planning along the path to new, exciting science at RHIC. He will explain new techniques, including coherent electron cooling, generating a high-current, polarized electron beam, and ways of suppressing a myriad of potential instabilities.

To join Litvinenko for dinner at a restaurant off-site after the talk, contact Pamela Manning, *manning@bnl.gov*, Ext. 4072.

Litvinenko earned a Ph.D. in physics from Novosibirsk State University in Russia in 1977. He worked at the Institute for Nuclear Physics in Novosibirsk from 1975 until 1991 and, while there, he earned a Ph.D. in physics and mathematics in 1989. He was a faculty member of the Physics Department at Duke University from 1991 until 2006. In 2003, Litvinenko joined Brookhaven Lab's Collider-Accelerator Division, where he is now senior physicist with tenure and the deputy head of the Accelerator Research & Development Division. The Lab awarded Litvinenko with a Science & Technology Award, one of the highest accolades given to Brookhaven employees, in 2011. Litvinenko also joined the Department of Physics and Astronomy at Stony Brook University in 2003. There, he is presently the Brookhaven Professor of Physics and co-director for the Center for Accelerator Science and Education that provides training for scientists and engineers to advance the field of accelerator science.

— Joe Gettler

East Coasters Brave Hurricane Sandy, Keep Neutrino Project On Schedule

Hurricane Sandy hit the night before an important project review, but scientists, engineers, and project personnel didn't let that stand in their way.

This story, written by Kathryn Jepsen of Fermilab Office of Communication, appeared online on November 5, in Symmetry, a joint Fermilab/SLAC publication.

Physicist Milind Diwan of BNL has devoted much time and energy to neutrino research over the years, but perhaps never so literally as he did last week.

Diwan is co-spokesperson of the proposed Long Baseline Neutrino Experiment (LBNE), which aims to measure properties of neutrinos and test understanding of their role in the universe. LBNE was scheduled for an important review at Fermi National Accelerator Laboratory, just outside Chicago, at the end of October. Diwan had tickets to travel from his home on Long Island on Monday, October 29 — the day Hurricane Sandy hit the East Coast.

His flight was canceled.

About 30 scientists, engineers, and other project personnel who meant to attend the review are based at BNL, and still others live elsewhere on the East Coast. Many of them flew out by Sunday, but Diwan and 14 others who planned to travel on Monday were stranded.

This was a meeting they did not want to postpone. "It was very important that we attend this particular milestone," Diwan says.

More than 300 scientists from about 60 institutions participate in the LBNE collaboration. The review, scheduled since July, would examine whether the experiment was ready for DOE's second stage of approval, Critical Decision 1. The collaboration had done some major reconfiguring at DOE's request since passing the first stage of approval in January 2010, and they needed a successful review to move forward.

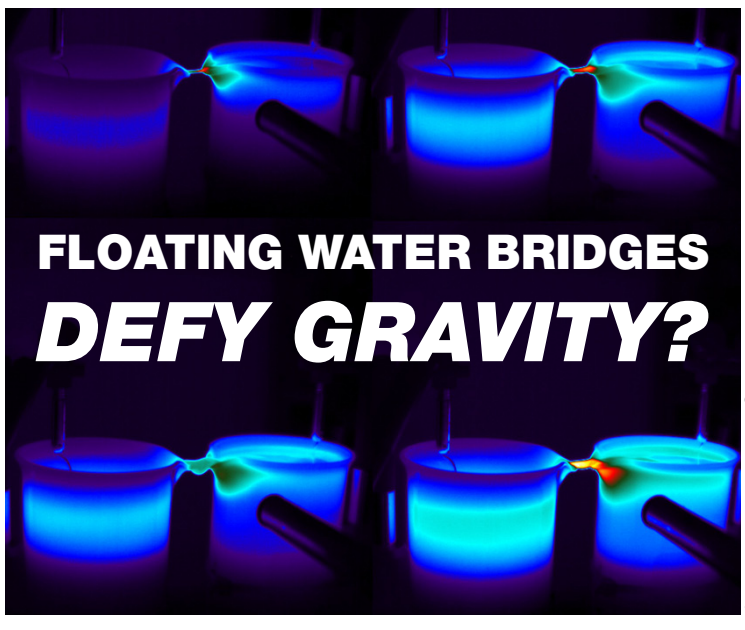
"I tried to change my reservation for Sunday when I saw my [Monday] flight was canceled," says Penka Novakova, LBNE's far detector project controls specialist and a resident of Port Jefferson on Long Island. "There were no seats. On Amtrak, there was only one seat on Monday. And then the trains were canceled, too."

The marooned BNL employees, along with others in places such as Connecticut and Washington, D.C., made plans to call in to the review from work or home. But that was while they still had electricity. "It was clear that we were going to have power failures," Diwan says.

On Monday, as participants prepared for the review, it began to rain on the East Coast. "The wind picked up, and it slowly increased in intensity," Diwan says. "Eventually it was howling." Gusts began to snap tree limbs.

That evening, reviewers and reviewees held hostage by the hurricane called their colleagues at Fermilab and elsewhere to…

See ***Neutrino*** *Project on p. 2*



Lawrie Skinner, Argonne National Laboratory

Left: Infrared thermal images of the floating water bridge setup at the Advanced Photon Source at Argonne National Laboratory. The color scale goes from 24°C (dark purple) to 50°C (bright yellow). The four quadrants show the water bridges with different thicknesses and temperatures. The bottom left image shows a water bridge immediately before collapse, due to reduced voltage.

The term "floating water bridge" may sound nonsensical, but it's a logical name for a phenomenon that occurs when two beakers of water set slightly apart are zapped with high-voltage electricity and the water molecules jump across the gap to connect and form a thin thread of water. The molecular structure that suspends this liquid bridge has stumped scientists for over a century. Now, a team of scientists has peered into floating water bridges with high-energy x-rays using the Advanced Photon Source (APS) at Argonne National Laboratory. Their work, "Floating water bridges and the structure of water in an electric field," was published recently in the *Proceedings of the National Academy of Sciences*. BNL science writer Chelsea Whyte spoke with BNL chemist John Parise of the Photon Sciences Directorate, who worked with the team at APS to explore this unexplained phenomenon.

Q: For this experiment, you set up a floating water bridge and used the APS to shine a beam of x-rays through the water. What exactly were you looking for?

R.S. D1730508

John Parise

A: We were looking specifically for alignments in the water molecules that were different from alignments of the molecules in liquid water. We've recently finished a study where we'd gathered some of the best data ever taken on liquid water, so we had those data to compare with directly. That's one of the things this paper on floating water bridges does — it looks for small differences between liquid water and the water in this water bridge.

Q: What were you expecting to find?

A: We started out thinking, gosh, there's got to be some structure in this. If it's not collapsing under the influence of gravity, there must be some alignment of the molecules. When you fire a beam of high energy x-rays through it, you'll get a diffuse ring of x-rays on the other side, and you can detect these using an x-ray sensitive detector. But you should see modulation of the intensity around the ring that tells you that instead of the water molecules being randomly oriented that there's a predominant orientation. Theoretical calculations tell us that the alignment, if it exists, should be along the bridge direction.

Q: How did the APS help you test for that alignment?

A: One of the powerful things about high-energy x-ray scattering is that you can take a lot of images vertically across the floating bridge or horizontally along the bridge very rapidly. Synchrotron radiation is so bright that you can take large numbers of images while the bridge is still stable. Plus, you can image the temperature — so you can take images of the part of the bridge that's hot, the part that's cold, the skin, and that type of thing.

Q: So, what did you find?

A: As soon as we took our first shot, I said, "That looks awfully even. It just shouldn't be like that." The result is that there's just no quantitative difference between the liquid water and the water in this floating bridge. I was very surprised.

It turns out that you need an awful lot of high voltage to align a significant number of water molecules, and that's not happening with these water bridges. But we only know that now, after we've done the experiment.

The conclusion is that this water bridge must be stabilized by a very thin layer of water, and it's basically surface tension holding it together — the surface tension across the top and bottom of that bridge.

Q: Did you think your findings were wrong?

A: Well yeah! But we did many, many tests and they all revealed the same thing. Of course, then we started to think that this was a sheath, that in fact the voltage was affecting only the molecules at the surface.

Q: What does this experiment and your research into the nature of water tell us?

A: Well, we wouldn't be able to exist without water having the properties that it has. Life on Earth wouldn't exist. And it's…

See ***Water Bridges*** *on p. 2*

Calendar
of Laboratory Events

- *The BERA Store in Berkner Hall is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347, or Christine Carter, Ext. 2873.*

— REGULARLY —

Weekdays: Free English for Speakers Of Other Languages Classes
Beginner, Intermed., Adv. classes, various times. All welcome. Learn English, make friends. See *http://www.bnl.gov/esol/schedule.asp* for schedule. Jen Lynch, Ext. 4894.

Mon. & Thurs.: Yogalates
Noon–1 p.m. at the Rec Hall (Bldg. 317). Registration required. Ext. 2873.

Mon. & Thurs.: Kardio Kickboxing
12:15–1:15 p.m. in the gym (Bldg. 461). $5 per class. Ext. 2873.

Mon., Tues., Thurs., & Fri.: Tai Chi
Noon–1 p.m., B'haven Cntr (Bldg. 30), N. Rm. Free. Adam Rusek, Ext. 5830, *rusek@bnl.gov*.

Mondays: Pilates
5:30-6:30 p.m., Rec. Hall (Bldg. 317), Registration required. Ext. 2873.

Tuesdays & Wednesdays: Zumba
Tuesdays: Noon–1 p.m., in gym (Bldg 461). Wednesdays: 5:15–6:15 p.m., at the Rec Hall (Bldg. 317).

Tuesdays: Hospitality Welcome Coffee
10:30 a.m.–noon at the Rec Hall (Bldg. 317). Meet over coffee. Children welcome. Ext. 2873.

Tuesdays: Free Knitting Lessons
2-4 p.m. Rec. Hall, Bldg. 317. All are welcome. Free materials & instruction.

Tuesdays: Toastmasters
Two monthly meetings: 1st & 3rd Tuesdays, 5:30 p.m., Bldg. 463, Room 160. Guests and visitors welcome. *www.bnl.gov/bera/activities/toastmstrs/*.

Tuesdays: Aerobic Fitness
5:15–6:30 p.m. Rec Hall (Bldg. 317).

Tuesday & Thursday: Aqua Aerobics
5:30–6:30 p.m., at the pool (Bldg. 478).

Wednesdays: Ballroom Dance
Hour-long sessions begin at 5:30, 6:30, and 7:30 p.m., Brookhaven Center (Bldg. 30). Vinita Ghosh, Ext. 6226.

Wednesdays: Play Group
10 a.m.–noon. Rec Hall (Bldg. 317). Parents meet while children play. For events, see *http://www.meetup.com/BNL-playgroup* or call Ext. 2873.

Wednesdays: Yoga
Noon–1 p.m., B'haven Center (Bldg. 30). Free. Ila Campbell, Ext. 2206, *ila@bnl.gov*.

1st Wednesday of month: LabVIEW
1:30–3 p.m., Bldg. 515, 2nd fl. Seminar Rm. Free technical assistance from LabVIEW consultants. Ext. 5304, or Terry Stratoudakis, (347) 228-7379.

Thursdays: BNL Cycletrons Club
5 p.m., Brookhaven Center. First Thurs. of month. Andy Mingino, Ext. 5786.

Thursdays: Reiki Healing Class
Noon–1 p.m., Call for location. Nicole Bernholc, Ext. 2027.

Thursdays: Postdoc Social Night
6:30 p.m. ASAP Lounge (Bldg. 462). *www.bnl.gov/asap*.

Thursday: Judo Class
7:30 p.m. Gym (Bldg. 461). Tom Baldwin, Ext. 4556.

Fridays: Family Swim Night
5–8 p.m. Pool (Bldg. 478). $5/family. Ext. 2873.

Local High School Sisters Win Major Award For Studies At Brookhaven

On Friday, October 19, two young scientists, sisters Shweta and Shilpa Iyer, were investigating new methods to generate what just may be the sustainable fuel of the future: pure hydrogen. The abundant and power-packed element tends to stay locked up tight within larger compounds, and distillation can be difficult. One of its most common carriers is water, H_20, and the Iyers work to efficiently pry free those hydrogen atoms with a technique called water splitting. The sisters, who conduct their research at Brookhaven National Laboratory, were auditioning custom catalytic compounds that, if successful, could help spark a hydrogen economy.

Meanwhile, their father Srinivasan Iyer, who works at a nearby Lab building, received an exciting call from his wife. The breaking news was about Shweta and Shilpa, but the young researchers' cell phones failed to get reception in the chemistry lab where experimental catalysts broke water into bits. Phone in hand, Srinivasan ran across the site to find his daughters and share the good news. As soon as he arrived, the sisters ran out of the building shedding tears of surprise and joy.

Shweta and Shilpa Iyer, high school students and twin sisters from Port Jefferson Station, had just won regional finalist honors in the Siemens Competition in Math, Science & Technology, one of the country's most prestigious contests for high school research. The 16-year-old sisters each won $1,000, and will now advance in the competition for a chance to win scholarships worth up to $100,000. Shweta and Shilpa now join six other Long Island students and a total of 93 regional finalists across the country.

"We were overwhelmed, of course," Shilpa said. "We never expected to make it this far, and it's just so exciting to get this kind of honor."

Shilpa has always wanted to pursue a career in the sciences, either in research or in management to facilitate breakthrough research, and the experience at BNL only served to bolster that commitment. Shweta, however, only considered a career in science after doing hands-on work at the Lab that actively addressed the nation's growing energy needs.

"Actually working on real problems in a real lab changed my perception," Shweta said. "It's exciting to see how this research could impact the future of energy."

In BNL's Chemistry Department, researchers work on ways to improve electrolysis, the process of splitting water into hydrogen and oxygen with electricity. By optimizing the reaction with customized catalysts, researchers can advance the possibility of an economy built on renewable hydrogen fuel. Research associate Wei-Fu Chen works as the sisters' advisor and mentor, and he managed to teach them more than just the ins and outs of cutting-edge catalysis.

"We had this stereotype of the scientist as this out-of-shape old man with oversized glasses, sitting hunched over a messy desk," Shilpa said. "But Wei-Fu is really cool. He's not at all what we expected."

Chen worked with Shilpa and Shweta to develop new water-splitting catalysts that combine reactive metals with biomass materials pulled from common plants. The efficacy of these newly synthesized bio-metal hybrids surprised all three researchers, and the results themselves will be detailed in forthcoming scientific papers and patents.

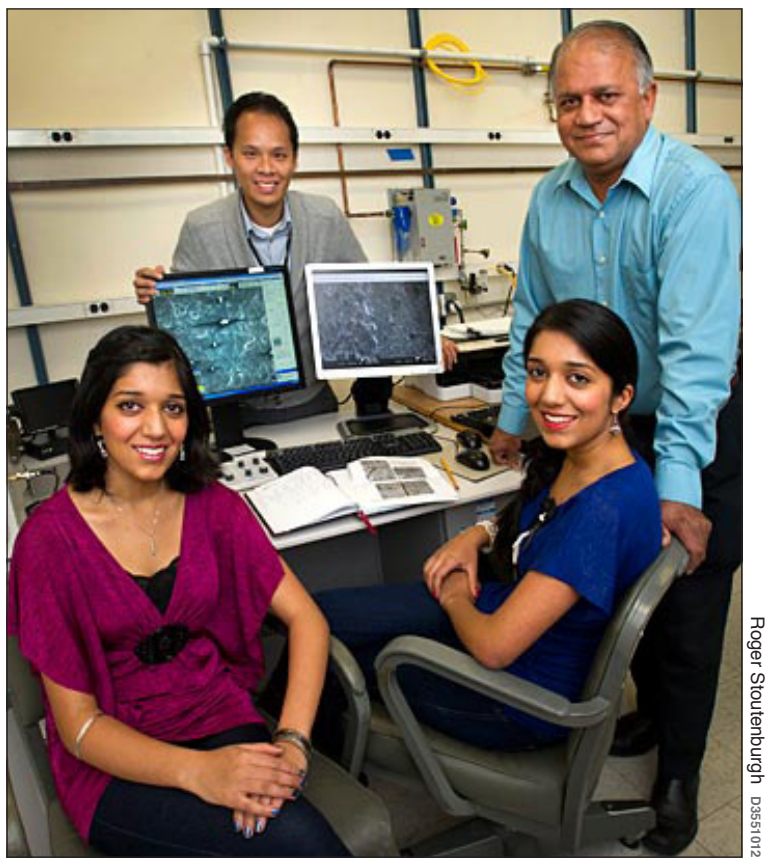
"I've learned a lot from these two," Chen said. "They ask the kinds of inventive and original questions that we don't usually get from trained chemists. Shweta and Shilpa challenge me to think in different ways, and I'm really thankful for that."

The twins' father, Srinivasan, is a systems architect in the Information Technology Division. He encouraged his daughters to explore science, but never pushed them down that career path. He did help arrange for this mentorship program with Chen, but only after Shweta and Shilpa expressed interest in energy research.

"I could not be more proud," Srinivasan said. "They are exceptional girls. I'm grateful that they have this opportunity to come to Brookhaven and work with Wei-Fu on such important research."

The sisters, seniors at Comsewogue High School, are now preparing to present their research against other regional finalists at Carnegie Mellon University in Pittsburgh, Pa., on the weekend of November 16. The winners of that competition will advance to the national finals at George Washington University in Washington, D.C., the first weekend in December.

"We've learned so much from Wei-Fu and this experience," Shweta said. "It is an honor to come this far and to be involved with this innovative technology." — Justin Eure



Roger Stoutenburgh D3551012

In the foreground, students Shweta (left) and Shilpa Iyer sit at a scanning electron microscope workstation. Research associate and advisor Wei-Fu Chen stands in the back (left), joined by the sisters' father, Srinivasan Iyer, who works in Brookhaven Lab's Information Technology Department.

Arrivals & Departures

— None —

Final Edition of The Bulletin on Friday, 11/30, New Newsletters Coming Soon

In place of The Bulletin, BNL will publish a weekly email newsletter called Brookhaven This Week. Current Lab staff and anyone with a *bnl.gov* email address are subscribed automatically. BNL will also publish the new Brookhaven Digest, a weekly printed publication that will be addressed and delivered to the approximately 400 Lab employees who do not have regular access to BNL computers.

Retirees, Community Members, Media, & Elected Officials: Sign up online to receive Brookhaven This Week: *http://1.usa.gov/VDvOWk*.

Open Enrollment for Benefits: Deadline Extended to 11/20

Open Enrollment for medical and dental benefits, reimbursement accounts (dependent daycare, and transit commuter, etc.), and the vacation buy plan began on Monday, Nov. 5, and continues through Tuesday, Nov. 20, at 5 p.m. (extended date due to storm).

***Water Bridges** from p. 1*

…all up to something as simple as the fact that water is a very peculiar sort of liquid, in many ways. These water bridges are a result of the geometry of the molecules and hydrogen bonding. It's fascinating behavior and understanding the phenomenon at a deep level tells us something fundamental about liquid water.

One aim of our research is to look at things under extreme conditions and see whether extreme conditions can be used to manipulate those materials. Anything that tells you about how you can manipulate matter, especially liquid matter, and how you can direct it to go in this direction rather than that direction is potentially useful fundamental knowledge.

Q: What more do you hope to learn about floating water bridges?

A: The next thing to do is to look very carefully at the surface and try to use more surface-sensitive techniques. That would be potentially a great thing to look at with the National Synchrotron Light Source II at Brookhaven National Laboratory, which will have much finer beams than the APS. At APS and especially at NSLS-II, we can do some small angle x-ray scattering studies to see if there's any organization in the skin.

Water is a quantum liquid, the universal solvent, and it is essential to biology. The arrangement of water molecules in electric fields and at charged surfaces has important implications in electrochemistry, mineralogy, and biology.

And once we understand this phenomenon in water, the obvious thing is to move on to other solvents. You can form bridges with other materials that are quite different from water and have much lower surface tension — the most likely explanation of the water bridge stability at this stage — but they all seem to have one thing in common: hydrogen bonding.

Water's many unusual properties depend on its unique molecular interactions, and its structure has long been a matter of debate. Understanding the "how" of the water bridge stability may allow us to manipulate liquids, including water, with electric fields. — Chelsea Whyte

***Neutrino Project** from p. 1*

…create contingency plans in case they lost contact. Thirty minutes into their conversations, the lights went out. Their landlines suddenly cut off, and they could no longer charge their cell phones.

The next day, the first day of the review, most Long Islanders were still without power. "It was dark and deserted," Novakova says. "Apocalyptic."

But the stranded were not willing to give up on taking part. Novakova had given her presentation slides to a colleague who was able to reach Fermilab. Diwan spent the entire day calling into the meeting on his cell phone, listening to one presentation at a time and then reviving his battery with a hand-crank charger.

"It takes a lot of cranking," he says. "You need to crank for a good 15 minutes to get one bar of charge."

Novakova and Diwan were not the only LBNE collaborators to take extra measures to make sure the LBNE review went on through the hurricane. Other review participants, at least one of whom spent the night in a shelter, charged phones in their cars or called from neighbors' homes. "They were very active," says Elaine McCluskey, LBNE project manager, who participated from Fermilab.

The next day, BNL reopened, giving people without working phones or electricity the chance to call in to the review. Novakova carpooled in with colleagues to avoid emptying her tank during the storm-related gasoline shortage.

On Thursday, November 1, the review committee at Fermilab held their closeout session, in which a series of reviewers gave their opinions on different aspects of the project. Each presenter commended the LBNE collaboration members on their thorough preparation and evident commitment to making the review — and the experiment — happen.

One by one, they concluded their talks with the same recommendation: DOE should advance LBNE to the next stage of the approval process.

"A lot of people have put their sweat and blood into this, and it shows," Diwan says.

A board at DOE will now take the reviewers' conclusions into consideration and could make their decision about LBNE as early as December. If they send the project to the next stage, the scientists will receive additional funds and the go-ahead to start their next phase of design, prototyping, and testing.

Until then, LBNE scientists have the reassurance that even a hurricane cannot hold them back.

Smooth Sailing Ahead for BNLer Lou Gerlach

If you asked Louis Gerlach what he values most about his career it would be hard for him to give just one answer. After all, he has had two simultaneous, important jobs — one at Brookhaven Lab and another in the United States Navy.

"I think the best answer would be that I try to run a tight ship in both places," said Gerlach. "My Navy training and my job at BNL have played important roles in every aspect of my life. They have complemented each other, and both have always been learning experiences that I respect and value."

Gerlach, a property representative and research space manager in the Global & Regional Solutions Directorate (GARS), began his career at the Lab 34 years ago working on reactor safety programs.

Gerlach — with BNLers Don Farnam, Mike Paquette, retiree Pete Palamidis, and John Passaro — is also a founding member of the Brookhaven Veterans Association (BVA). He often serves as the bugler playing the well-known military tune known as "Taps."

"I have been involved in many activities and Lab experiments," said Gerlach. "As the familiar slogan says, my work at BNL has always been an adventure."

Gerlach first became interested in the sea when he joined the Naval Sea Cadet Corps at 10 years of age. At 17, immediately following his high school graduation, he enlisted and headed to "boot camp" in Great Lakes, Illinois. Based on his test scores, Gerlach was assigned to Radarman "A" school, and soon thereafter reported for duty onboard the U.S.S. *Intrepid*, CVS-11, now decommissioned. The renowned ship was an aircraft carrier that suffered many torpedo attacks during World War II, and Gerlach was a member of the decommissioning crew. The *Intrepid* currently houses the Intrepid Sea, Air, and Space Museum in New York City.

During his first four years of active duty, Gerlach traveled to many European ports in countries, including England, France, Italy, Greece, Scotland, and Norway. He has traveled above the Arctic Circle, where his job as a radarman kept him busy searching for and tracking enemy submarines and aircraft. That cruise earned him and his fellow shipmates the Naval "Blue Nose Certificate." He has spent time at sea on at least 13 different ships and proudly displays baseball caps with their logos on a shelf in his BNL office. But there is one baseball cap that does not sit on that shelf. It's a cap Gerlach received as a gift from fellow BNLer and Navy man Joe Gadbois that boldly states "USN Retired." Gerlach says he didn't place that cap on his head until after October 10, 2012, when his military status officially changed.

Gerlach is quick to add that without the support of his wife Wendy and his family, his life would have certainly been different. "Sure, I was off doing good deeds and serving my country, but I missed many weekends with Wendy and my kids," adds Gerlach. "Luckily, they understood how important my service to our country is to me, and they willingly stood by and encouraged me while I spent weekends at the reserve centers and training exercises."

Now holding the title of Master Chief, the Navy's highest enlisted rank, Gerlach has a Navy uniform embellished with many gold stripes and medals that distinguish a career spent at sea. Among his honors are the Meritorious Service Medal, Navy Achievement Medal with Gold Star, Navy Commendations Medal, Global War on Terrorism Service Medal, Outstanding Volunteer Service Medal, Navy Rifle Sharp Shooter Medal, and Naval Sea Service Ribbon.

Roger Stoutenburgh D2131012

Louis Gerlach displays his collection of military challenge coins, in particular, the personal coin he designed for his upcoming retirement from the United States Navy.

"Every one of these medals tells a personal story and holds a poignant memory for me," he said. Gerlach also displays a large collection of military challenge coins. Challenge coins are small medallions bearing an insignia. They are used in the military to acknowledge outstanding service, build morale, and commemorate events. While gently selecting each coin from its display case, Gerlach is proud to explain where each came from and how they ended up in his collection. For his upcoming retirement, Gerlach designed his own personal challenge coin that he will share with the special guests at his retirement ceremony.

"Looking back, I have had a charmed life," said Gerlach. "Experiencing the world and sharing true camaraderie with my fellow military friends is something I will always cherish. I wouldn't change one minute of my life, but now it's time to move on to the next phase. I will surely miss my shipmates at the reserve centers, but I will have the opportunity to spend more time with my wife, kids, and grandkids. I am really looking forward to that."

But, don't worry. Gerlach vows to remain active. He will continue to volunteer in the honor guard at Calverton National Cemetery. And, just in case he isn't busy enough, he will continue to be an active member of the Kings Park Fire Department, as he has been for the past 27 years.

Ahoy, Master Chief! May you have fair winds and following seas! — Jane Koropsak

Holiday Shopping for Science Toys At BNL's Science Learning Center

The Science Learning Center (Bldg. 935, formerly known as the Science Museum) will be open for holiday shopping for all sorts of science toys — fun, intriguing, beautiful — on three Fridays: November 30, December 7, and December 14, from noon to 2 p.m.

EAP Talk Ahead, 11/14

'Bring Out the Best In Others'

The Lab community is invited to attend a talk by Jude Treder-Wolff of Magellan on "Bring Out the Best in Others." Sponsored by the Employee Assistance Program headed by Nancy Losinno, the talk will be given at noon on Wednesday, November 14, in Berkner Hall, Room B. The speaker will address topics such as increasing your "emotional intelligence"on the job, and getting along with others more effectively. RSVP by emailing *nlosinno@bnl.gov*.

Reminder: BSA Scholarship Entry Deadline Is 11/15

Fifteen scholarships in the amount of $2,500 are offered annually by Brookhaven Science Associates to children of eligible BNL employees. All scholarships are awarded competitively and are renewable for up to a total of four years of study toward an academic degree. Selection is made by an independent committee appointed by Scholarship and Recognition Programs (SRP) of the Educational Testing Service.

Obtain application forms from the Human Resources & Occupational Medicine Division, Bldg. 400. Completed forms must be sent to SRP no later than November 15, 2012.

In addition, Stony Brook University will provide matching $2,500 scholarships for all winners of 2013 BSA scholarships who are admitted to SBU and enrolled as full-time undergraduates subject to the terms and conditions of SBU Scholarships.

For more information, see the letter sent to all employees, and The Bulletin of September 21, 2012 (available online at *www.bnl.gov/bnlweb/pubaf/bulletin/pages_10-19/oldbb_12.asp*), or contact Leesa Allen, Ext. 2700, *leesa@bnl.gov*.

BWIS Wine & Cheese Party, 11/29

Brookhaven Women in Science (BWIS) invites the BNL community to a Wine & Cheese Party to be held on Thursday, November 29, from 5:15 p.m. to 7 p.m. in the Recreation Hall, Bldg. 317, in the apartment area. BWIS holds this event annually to thank all who have helped with and supported BWIS programs, and to welcome new members and introduce the new executive board to the Laboratory community.

Both men and women are welcome to join BWIS. Information about BWIS and its work to to promote the advancement of women is available at the BWIS website: *www.bnl.gov/BWIS/*.

Talk on Financial Planning for College Costs, 11/15

The Lab community is invited to attend a talk by Craig Ferrantino, Director of the Foundation for Personal Financial Education, on "Financial Preparation for College Costs," at noon on Thursday, November 15, in Berkner Hall, Room B. Seating is limited, so register by calling Ext. 7516 or at *https://intranet.bnl.gov/eventreg/*.

Catch Up on BERA Trips, Events

Buy tickets for trips at the BERA Store in Berkner Hall, weekdays, 9 a.m.-3 p.m. Information about BERA is at *www.bnl.gov/bera/*.

Book Fair: Mon. & Tues., 11/26 & 27, 10 a.m. 2 p.m. Berkner lobby. Books, stationery, early learning tools, more.

Do-as-You-Please in New York City: Sat., 12/1, dep. Lab 10 a.m., dep. midtown 7 p.m. $10/person, under 3 free on lap.

BERA Holiday Party: Fri., 12/7, in newly renovated Hotel Indigo in Riverhead. $60/person full buffet, bar, DJ, at Hotel Indigo, Riverhead. Stay the night for $72 (plus tax) with full breakfast.

Ballroom Dance Club Lessons: New Series

The BNL Ballroom Dance Club will start a new series of four lessons on Wednesday, Nov. 14, in the North Ballroom at the Brookhaven Center. Classes will be November 14 and 28, and December 5 and 12.

5.30 p.m. Beginner Foxtrot 6.30 p.m. Intermediate Tango
7.30 p.m. Intermediate Foxtrot

The cost is $30 per person for each four-week series. The beginner class will be a continuation of the previous series. Both intermediate classes will be revision classes with perhaps some new material. For registration information contact Vinita Ghosh, Ext. 6226, *ghoshvj@bnl.gov*; Arup Ghosh, Ext. 3974, *aghosh@bnl.gov*; or John Millener, Ext. 3853, *millener@bnl.gov;* or go to *http://1.usa.gov/MNg6Zq*.

BSA Noon Recital, 11/14

On Wednesday, November 14, Stony Brook Opera will present a semi-staged program titled "Great Romances: Myths, Fairy Tales, and Literary Classics," at noon in Berkner Hall. The concert, sponsored by Brookhaven Science Associates, is free and open to the public. Visitors to the Lab age 16 and over must bring a photo I.D.

Love scenes from French opera and operetta, including Offenbach's *La belle Hélène* (the myth of Helen of Troy), Massenet's *Cendrillon* (Cinderella), Gounod's *Roméo et Juliette* (Shakespeare's star-crossed lovers), and Massenet's *Werther* (from Goethe's *The Sorrows of Young Werther*), conducted by David Lawton, staged by Metropolitan Opera soprano Jennifer Aylmer. Translated texts will be presented by overhead projection.

Calendar

— WEEK OF 11/12 —

Monday, 11/12

Veterans' Day Observed
Lab closed. No Bulletin this week.

Wednesday, 11/14

COSTCO Wholesale
11 a.m.-1 p.m. Berkner Hall lobby. COSTCO advantages.

***BSA Noon Recital: Opera**
Noon. Berkner Hall. Stony Brook Opera's semi-staged performance. Sponsored by Brookhaven Science Associates, free, open to the public. Visitors to the Lab age 16 and over must bring a photo I.D. See below.

***Employee Assistance Program Talk**
Noon. Berkner Hall, Room B. "Bringing Out the Best in Others." See notice below, left.

***481st Brookhaven Lecture**
4 p.m. Berkner Hall. Vladimir Litvinenko, Collider-Accelerator Department, will talk on "From RHIC to eRHIC: Challenges and Opportunities for Accelerator Science." Free, open to the public. All visitors to the Lab age 16 and over must bring a photo I.D. See p. 1.

Thursday, 11/15

***Talk: Prepare for College Costs**
Noon, Berkner Hall, Room B. See notice at left.

Thurs. & Fri, 11/15 & 16

Bake Sale for United Way
11 a.m.-3 p.m. Bldg. 400 lobby.

— WEEK OF 11/19 —

Mon.-Wed., 11/19-21

***BNL Art & Crafts Show**
11:45 a.m.-1:15 p.m. daily. Berkner Hall, Room B.

Monday, 11/19

Sam's Club
11 a.m.-1 p.m. Berkner Hall lobby. Memberships, renewals.

***BNL Art & Crafts Show Reception**
5 p.m. Berkner Hall, Room B. With refreshments. All are welcome to this exhibition. Visitors to the Lab of 16 and older must carry photo ID. See p.4.

Thursday, 11/22

Thanksgiving Day. Lab Closed

Friday, 11/23

Lab Closed for Floating Holiday
No Bulletin this week.

— WEEK OF 11/26 —

Mon. & Tues., 11/26 & 27

BERA Book Fair by Books Are Fun
10 a.m.-2 p.m. Berkner lobby.

Tuesday, 11/27

IBEW Meeting
6 p.m. Centereach Knights of Columbus Hall, 41 Horseblock Rd., Centereach. A meeting for shift workers will be held at 3 p.m. in the union office. The agenda includes regular business, committee reports, and the president's report. Note: Next month's meeting will be Dec. 18.

Classified Advertisements

Current job openings and a statement of job placement policy at BNL are available on the homepage at *www.bnl.gov/HR/careers/*. To apply for a position, go to *www.bnl.gov* and select "Search Job List." For more information, call Ext. 2882.

Motor Vehicles

10 PIAGGIO 50 CC SCOOTER – 110 mi. Gar'd since new, in excel cond, white, 110/mi/gal. $1,600 neg. Mark, Ext. 8190.

08 VW JETTA – 66K mi. excel cond, a/t, a/c, 4-dr sedan, 4 cyl turbo, 2.0L, all pwr, htd lthr seats, m/roof, rear spoiler, alloy wheels, tinted wndws, more, Dealer service. $12,500 neg. Ext. 4364, 241-2580.

08 TOYOTA COROLLA – 61K mi. excel cond a/t, a/c, abs, c/c, am/fm, cd cass. $10,500. Elad, Ext. 8917, 718-288-5748 or ekoren19@hotmail.com.

05 FORD THUNDERBIRD – 49.5K mi. Black w/ black interior, anniversary edition, convertible w/ detachable hard top. Excel cond. $24,000 neg. Ext. 7114.

04 CHEVROLET AVEO LS SEDAN – 55K mi. engine 1.6L 4 cyl. Fuel Inject., white, 35mpg, a/c, p/s, p/b, a/t, fm/cd/mp3, excel cond. $7,000. slaketrac@gmail.com.

Furnishings & Appliances

BEERTENDER – Like new w/orig box, Krups Model B100, $90. Paul, Ext. 2899 or porfin@bnl.gov.

CEILING FAN – 52" 5 White blade fan w/ brass trim, light kit, reversable motor. Excel cond. $25. Ext. 5225 or lnelson@bnl.gov.

GAS GRILL – Weber E310, new, never used, $400. Paul, 831-2069.

MATTRESSES – new, king memory foam, comparable to TempurPedic. 578-4057.

PETIT GODIN COAL BURNING STOVE – $175. new ~1977. Used for 10 yrs, then stored. Will also burn wood. V. decorative. Pics. Robert, Ext. 2131 or rtodd@bnl.gov.

TV CABINET – black, 31Wx59Hx22D, 2 drawers at bottom, pics, $40. skessler@bnl.gov.

WALL UNIT & TABLE – solid oak unit 48" x 6', v/heavy, excel cond, $175; also, round oak kitch tbl w/4 chrs, gd cond, pic, $100. Ext. 3681, 922-0104, teich@bnl.gov.

Audio, Video & Computers

RAPTOR HARD DRIVE – Western Digital Raptor 10K rpm drive, 300 GB, Serial ATA connctn, fastest drive short of SSD, no bad sectrs, perf cond, $40. shrey@bnl.gov.

Sports, Hobbies & Pets

HOME GYM – Bowflex Revolution, almost new cond, owners manual, assembly instructs and fitness guide incld. Edward, 578-4057 or racered55@gmail.com.

KARATE SPARRING GEAR – used but in excel cond, $40. Joseph, 603-6285.

MOUNTAIN BIKE – Giant Boulder SE, sm frame for 5'4" to 5'7" tall, new front derailleur, chain, gel seat, more, pics http://tinyurl.com/giantboulderse, $250. Ext. 5669.

Tools, House & Garden

75 GALLON TANK & STAND – Tank is free just pick it up; black iron stand/less than yr old/$40. Matthew, mvescovi@bnl.gov.

KEROSENE HEATER – portable, brand new in orig pkg and a can of fuel, $70/obo, u-pic-up, 3/mi from Lab. Gerardo, Ext. 7907 or martinez@bnl.gov.

LAWN MOWER – Snapper 5 hp recycling & grass catcher w/thatcher attachment. Gd working cond. Recently tuned up $50. Lloyd, Ext. 5225 or lnelson@bnl.gov.

LOVESEAT – Sage grn w/grn/cream large check back cushions. V. gd cond. Rounded arms. 71"w x 37"deep x 36"h (w/pillows). Pics. You pick up. $75 OBO. Ext. 7114.

PRESSURE WASHER – Troy Bilt, 6.5hp, 2350 psi, well maintd/$100. 475-8162.

Miscellaneous

DELL XPS 15 Z – Intel i5 2410M@2.3GHz, 6.0GB RAM, 500GB HD, 1/yr old, perf. cond, $829.99. Ext. 8804, rbhatt@bnl.gov.

GENERATOR – Generator needed to help clean up house at Oakbeach in Babylon, so if you would like to sell or rent yours please call. Ext. 7433, gerichten@bnl.gov.

MEDICINE CABINET – mirrored, 36Wx32Hx5D, $25. Vanity countertop w/sink & plumbing, 48Wx22D, $50. Karl, Ext. 3116.

PIANO – Wurlitzer spinet/consolette piano w/bench, gd cond/$250. 431-4551.

Car Pool

FROM FARMINGVILLE – Anyone looking to carpool from Farmingville (or meet there if your more out W) during this gas shortage? Please contact me. 525-6967 or glitter5187@hotmail.com.

Yard & Garage Sales

MANORVILLE – Sat 11/10, 11am-5pm furn & misc hsehold items, 6 Sheila Ct. Tom, 807-6311 or ar8892@optonline.net.

Wanted

110V AIR COMPRESSOR – needed for light duty. Pref. dual stage for light cutting, drilling & painting. 2hp min & 20 gall. min tank. Ext. 7443, porqueddu@bnl.gov.

APARTMENT – wanted in the Huntington vicinity, for single professional, non-smkr, no pets, Ref avail. 790-7872.

ARTIFICIAL HOLIDAY TREE, WREATH – needed for BNL United Way Fundraising event. Heather, Ext. 4138.

CHILDREN'S PLAYGROUND – looking for an outdr swing set in gd shape, please email details. Ext. 2585 or dorothyd@bnl.gov.

FIREARMS – Firearms, Wanted new or old. I will pay fair $$ depending on age and condition. Remember, no firearms on BNL property. Joe, 487-1479.

GRE MATH TUTOR – Looking for a math tutor for the General Revised GRE. Please contact with hourly price and availability. Jessica, 353-1750 or jecruz@bnl.gov.

HALLOWEEN CANDY – Please donate leftover wrapped candy to our Troops, place it in one of our bins located in Bldg 400, 490 or 197. Thank you. Joanne, jrula@bnl.gov.

HOUSEHOLD ITEMS – my friend's apt flooded, she lost everything (clothes, sz 4, dressers, kitchen & bathrm items). Anything you could spare would be great. Gabrielle, Ext. 7328 or gwilson@bnl.gov.

HOUSEHOLD ITEMS – My friend came home to 4' of water in her hse. She lost everything. Please donate furn, or anything. 796-7182 or minter@bnl.gov.

RIBBON AND BASKETS – needed for the Holiday Auction. If you would like to donate these items, please contact me. Many thanks. Linda, Ext. 7517.

TILE WORK – looking for someone do a small shower repair. Helen, Ext. 2531, 612-4568 or hsavage@bnl.gov.

Lost & Found

FOUND A RING – Call x7761 if you lost your ring nr bldg 477. Michiko, Ext. 7761.

Community Happenings

MUSICAL PLAY '9 TO 5' – presented by Riverhead Faculty & Community Theater at R'head High School, Harrison Ave, R'head. Nov. 9,10,16,17 at 8 pm., Nov. 11 at 2 pm. To benefit scholarships for students. 344-7477.

RIVER FRONT 24 RUN/WALK – 3rd Annual River Front 24 Endurance Run/Walk in Riverhead. Benefit: Suffolk County United Veterans, 11/10-11/11. Teams welcome. http://tinyurl.com/9242xow. riverfront24@gmail.com.

For Rent

CALVERTON – Waterfront 3bdrm hse, 1 ba, wood stove, lg deck, hse on sm lake w/ dock for kayak/canoe; nr hiking trails, nr LIE, 15 mins to Lab, new w/d, pets considered. $1,700/mo. Ext. 3242 or graetz@bnl.gov.

CORAM – priv rm & b/r, share lg home w/2 males, incls all, off st prkg, quiet, safe n'hd, 20 mins to BNL, furnd or unfurnd, be agreeable to backgrd/credit check, 1st mo rent/1 mo sec. $550/mo. Doug, 848-4381.

FARMINGVILLE – fully furnd oversized legal studio apt, l/r, lg bdrm, full kit/bath, priv ent/drwy/yd, util incl, own thermostat, int, no smkg/pets. 1 mo sec/rent, 12 min, to Lab. $900/mo. 732-2472.

MASTIC – Victorian 3 bdm hse, 2/full ba, l/r, w/fp, formal d/r, new big eik, nr everything 8 min to BNL, no smkg/pets, 1 mo sec. $1,900/mo neg. 210-369-8254.

MASTIC – Cozy 2-bdrm single family house, 1 bath, lr/dr combo, fenced yard. Small pet considered. 2-mo. sec. Utilities not included. Avail. Nov. 1. $1,525/mo. 775-8703.

PATCHOGUE – 1 bdrm, kitch, l/r, b/r, kitch has m/wave, d/w, incls all util, cable/int, cac, Off st prkg, avail Dec 1. $1,200/mo. 872-1874.

RIDGE – spacious 4rm apt on quiet, wooded prop, 4 mi to BNL, sep outside ent/off st prkg, ALL utils incl, Prof single, no smkg/pets; mon-to-mon w/2 mon termination. $1,100/mo. 516-885-9113.

SHIRLEY – 1 bdrm apt, full ba, kitch/lr, priv ent, all incld, non/smkr, no pets, $1000 plus sec. $1,000/mo. 516-810-9890.

WADING RIVER – 1 bdrm apt.eik. large lr, full ba, pri. ent.,10 min BNL,1 mo sec., util. incl, single non smkr only. $1,000/mo. 929-3419.

For Sale

BAYPORT – Frank Lloyd Wright-style, 2,300 sq ft house, 1 woooded acre nr Grt S. Bay, 4 bdrm, 2 & half bath, open flr plan, lg windows, radiant heat, screened porch, excel schools. $499,000. 617-332-6264.

MASTIC – 8 yrs young Victorian, 6 bdrm, 4 full ba, l/r w/fp, fam rm, f/dr, office, 4/zone heat, full fend prop, sprinkler, lots more, 20'w new drway, $280,000 neg. 210-369-8254.

PATCHOGUE VILLAGE – 3 B/R, 1 ba ranch, hdwd floors, full basemt, cent a/c, oil basebrd heat. Move in immed. $221,000 neg. 793-9111, wjleonhardt@bnl.gov.

PT JEFF STATION – 3/bdrm, 2/ba Coop, 2nd flr, new bathrms, w/w rugs, applis, gated comm. w/swimpool, BBQ, laundry on prem. Nr SBU & BNL. $142,000. 431-4551.

SAYVILLE – expnd'd ranch, 10 rms + sunrm, 3bdrm, den w/fp, 1.5 baths up, 3 rms + .5/bath dwn, igp, cac, 1/car gar, new kitch, heating sys, gutters, $340,000. 431-4551.

In Appreciation

To all my friends at BNL, thank you for your thoughts, gifts, prayers and support. My wife Kandy is looking and sending down her love. Love you guys, Johnny (CUZ).

— John Pagano

Thank you all in the Biology Department for your kind words and support with the passing of my sister Kandy Pagano.

— Linda De Masi

For services by BNL employees contact *lseubert@bnl.gov* or Ext. 2346.

Safety makes science possible at Brookhaven National Laboratory

Traffic Safety Improvements Coming Soon On Site

By Bruce Penn, Traffic Safety Committee Chair

In the coming weeks, you should notice changes to several traffic patterns on site. These changes are being made to improve traffic safety here in response to suggestions submitted by a number of BNLers.

The Lab's Traffic Safety Committee has been made up of eight staff members, including me, and other staff from the Business Operations Directorate; Environmental, Safety & Health Directorate; Laboratory Protection Division; Modernization Project Office; Photon Sciences Directorate; and Site Resources Division. Before the Traffic Safety Committee provided its recommendations, we explored a number of possible solutions to reduce hazards while keeping project costs down. The changes that I describe below were approved by Lab management and are in compliance with the traffic safety management system in SBMS and New York State law.

Some of the alterations — in particular, the new traffic pattern at the intersection of Upton Road and Cornell Avenue — were approved as far back as August, but will only take effect soon, because the supplies we needed were on back order. An accident occurred at that intersection several weeks ago, when a staff member driving south on Upton Road did not yield the right of way before making a left turn onto Cornell Avenue as another car traveled through the intersection. We were fortunate that no one was badly injured. These new traffic patterns are intended to reduce hazards for drivers and pedestrians, but it is ultimately everyone's responsibility to remain aware and engaged in staying safe on the road.

Crews from the Site Resources Division will begin installing signage and indicators during the next several weeks. Please obey all safety personnel and any barricades, warnings, and signs — both while crews make the changes and thereafter.

Stop Signs at the Intersection of Upton Road and Cornell Avenue

New stop signs will be installed at the intersection of Upton Road and Cornell Avenue for traffic traveling north or south along Upton Road. With existing stop signs already in place for vehicles traveling west on Cornell Avenue, this will become an "all-way-stop" intersection. In addition, markers will be posted to direct traffic around the corner along the northbound side of Upton road at the intersection.

Speed Bumps Along Johns Hopkins Street

Speed bumps will be installed along Johns Hopkins Street on each side of the crosswalk that connects the parking lot outside the Office of Educational Programs (Bldg. 438) to the sidewalk leading to the Research Support Building (Bldg. 400).

New Crosswalk at Intersection of Brookhaven Avenue and Johns Hopkins Street

Signage will mark a new pedestrian crosswalk at the intersection of Brookhaven Avenue and Johns Hopkins Street. This crosswalk will continue the path of the walkway along the east side of Johns Hopkins Street.

Parking Lot Along Bldg. 179

Signs will be installed to indicate that traffic can no longer exit the parking lot behind the Post Office and Global and Regional Solutions Directorate (Bldg. 179) onto Center Street. Instead, vehicles will be required to exit this parking lot via the existing driveway onto Bell Avenue.

As always, I appreciate the many thoughtful suggestions the Lab community shared with the Traffic Safety Committee to help keep our roads as safe as possible. Please feel free to reach out to me at any time.

Augie Hoffman

Roger Stoutenburgh D3681012

Come to BNLers' Visions on Show At Art & Crafts Exhibit, 11/19–21

Opening reception with refreshments will be held on Monday, November 19, 5-6:30 p.m. in Berkner Hall, Room B

BNL artists, photographers, sculptors, and crafters have been preparing creative entries for the upcoming Art and Crafts Show sponsored by the BNL Art Society, the BNL Camera Club, and the BNL Crafts Club, to be held at Berkner Hall, Monday to Wednesday, November 19–21, 11:45 a.m.–1:30 p.m.

One of the exhibits will be this unusual sculpture made of brass and aluminum by Augie Hoffman of the Physics Department.

Says Hoffman, "I usually make wind chimes, but I suddenly got inspired to make something bigger!"

All are welcome to attend the show. See you there!

Upcoming Events for the United Way

November 15–16: Bake sale, Bldg. 400 lobby, 11 a.m.-3 p.m.

December 7: Asian food tasting in seminar room 157 of Bldg. 463 from noon until 1 p.m.

December 12-13: Holiday auction, yard sale, and holiday boutique in the lobby of Berkner Hall, from 11 a.m. to 2 p.m.

December 17: "Pie In The Face Contest" in Berkner Hall between 11:30 a.m. and 12:30 p.m.

January 18: Tommy Sullivan Concert, Berkner Hall, 5-7:30 p.m. Prizes for best dancing and costumes from the 1950s and 60s.

For more information go to *http://1.usa.gov/P097gJ*.

The BNLers who joined in for the bike ride through the scenic roads of East Mattituck and Cutchogue on October 27 helped raise $785 for the United Way. Way to go!

the Bulletin

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Liz Seubert, editor
Joe Gettler, assistant editor
Roger Stoutenburgh, photographer

On the Web, the Bulletin is located at *www.bnl.gov/bnlweb/pubaf/bulletin.asp*. A calendar listing scientific and technical seminars and lectures is found at *www.bnl.gov/bnlweb/pubaf/calendar.asp*.

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