



DAYA BAY TODAY

BNL and Collaborators Enable Next Step in Neutrino Research

The Daya Bay Neutrino Project, which uses the Guangdong Nuclear Power Group's reactors in southern China as a source of antineutrinos, is primed to measure the last piece of the neutrino puzzle. It began taking data from the first of three planned experimental halls earlier this year, and the second hall should be up and running within the next few weeks. The international collaboration of researchers includes strong teams from China and the United States as well as teams from other countries and regions, including Taiwan, Hong Kong, Russia, and the Czech Republic. BNL has made significant contributions to this experiment, the latest step in the saga of neutrino research.

"Brookhaven's chemistry and physics departments have major leadership roles in the experiment, from designing the detectors all the way through to analysis of the data gathered," said Steve Kettell of the Physics Department, chief scientist for the U.S. Daya Bay Project and leader of Brookhaven's Electronic Detector Group.

Ghostly Neutrinos

Neutrinos are the ghosts of the particle physics world. Most of them pass through anything and everything, even entire planets, without interacting. At a given moment, tens of billions of neutrinos are passing through every square centimeter of the Earth's surface — including you and me, without our noticing it. This makes detecting them especially problematic. What's more, they come in three flavors: electron, muon, and tau — and each has its own quirks that necessitate specific detection techniques. Neutrinos are also able to change among these three forms, a process characterized by numbers known as "mixing angles."

Previous experiments have measured the way neutrinos oscillate between the tau and muon forms and the muon and electron forms. However, the mixing angle that characterizes oscillations between the electron and tau forms, known as θ_{13} ("theta-one-three"), is the one parameter describing neutrinos that remains a mystery.

Antineutrinos

The reactors being used for the Daya Bay experiment produce many more antineutrinos than

Above, innards of an antineutrino detector at the Daya Bay experiment

Below, members of the BNL team on the Daya Bay Neutrino Project include: (seated, from left) Penka Novakova, Laurie Littenberg, Steve Kettell, Ralph Brown, and Bob Hackenburg; (standing, from left) Zhe Wang, Chao Zhang, Jiajie Ling, David Jaffe, Brett Viren, Wanda Beriguete, Ron Gill, Mary Bishai, Richard Rosero, Sunej Hans, and Milind Diwan. Missing from the picture are: Donna Barci, Wai-Ting Chan, Chellis Chasman, Debbie Kerr, Hide Tanaka, Minfang Yeh, and Elizabeth Worcester.



A Ghost-Particle Retrospective

As Daya Bay gets under way, let's take a moment to look back on the history of neutrino research and the contributions from BNL.

Neutrinos were first proposed by Wolfgang Pauli as early as the 1930s, but were only detected in the 1950s at nuclear reactors in Washington and South Carolina by Frederick Reines and Clyde Cowan. This earned them a Nobel Prize in 1955. Neutrinos' name, give by Enrico Fermi, means "little neutral one."

BNL's first major contribution to neutrino research occurred in 1957, when Maurice Goldhaber performed an experiment that revealed neutrinos to be left-handed.

In 1962, a new type of neutrino, the muon neutrino, was discovered by scientists using the Alternating Gradient Synchrotron at BNL. Leon Lederman, Mel Schwartz, and Jack Steinberger took home the 1988 Nobel Prize for this work, which established that there was more than one flavor of neutrino.

neutrinos, said Kettell. "In theory, measuring the way antineutrinos oscillate between electron and tau forms should tell us the currently unobserved mixing angle θ_{13} ," he said. "Because neutrinos and antineutrinos are antipartners of one another, the way their forms oscillate should be equivalent." So, all other things being equal, it made sense to use antineutrinos to investigate this unknown parameter: more particles mean more data and a better measurement.

At the moment, Daya Bay's first twin detectors are recording the interactions of antineutrinos as they travel away from the reactors. This is only the first set of planned detector pairs — there

In the late 1960s, BNL chemist Ray Davis discovered the solar neutrino problem. At the Homestake Mine in South Dakota, deep underground in order to shield the detector from cosmic rays, Davis was the first person able to directly detect the electron neutrinos being produced by the sun. But he only observed about one-third of the expected amount — this deficit would eventually become known as the solar neutrino problem (and the "missing" neutrinos would later turn out to be those that had changed to forms undetectable by Davis' experiment while en route to Earth).

From the 1990s through the mid-2000s, BNL Chemistry's neutrino group played important roles in the GALLEX (Gallium Experiment) and SNO (Sudbury Neutrino Observatory) experiments in Italy and Canada, respectively. BNL chemist Richard Hahn and his group were integral to the SNO...

See *Retrospective* on p. 2

will eventually be four nearly identical detector pairs set up in three different experimental halls. These will be built deep under adjacent mountains to shield them from any interfering particles from space.

BNL's Team at Daya Bay

As the project prepares for the next step, Brookhaven maintains a major presence. For any collaboration of this scale, the number of people needed is dizzying.

Kettell, as chief scientist for the U.S. effort, is a member of the collaboration executive board and oversees many aspects of the project, including detector design and commissioning.

See *Daya Bay Today* on p. 2



RHIC/ATLAS Computing Facility Team Hailed by DOE

Secretary of Energy Steven Chu presented members of BNL's RHIC/ATLAS Computing Facility (RACF) Team with the Secretary's Achievement Honor Award in a ceremony at DOE Headquarters on October 27. The RACF, one of only nine groups to receive this highest level of internal non-monetary recognition, was cited for "outstanding performance in serving the RHIC and ATLAS experimental physics programs." For more information, see www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1340.

Pictured in the photo above with Secretary Chu (center) are members of the RACF team (from left) Kevin Casella, John Fetzko, Michael Ernst, Richard Hogue, Tomasz Wlodek, Costin Caramarcu, Ofer Rind, and David Yu. Not present were: Maureen Anderson, Maurice Askinazi, Frank Burstein, Jose Caballero, John DeStefano, Dave Free, Carlos Gamboa, Enrique Garcia, Christopher Hollowell, John Hover, Hironori Ito, Saroj Kandasamy, Mizuki Karasawa, Zhenping Liu, John McCarthy, Shigeki Misawa, Ognian Novakov, Daniel Orsatti, James Pryor, Tejas Rao, Yuri Smirnov, Jason Smith, William Strecker-Kellogg, Tony Wong, Yingzi Wu, Xin Zhao.

472nd Brookhaven Lecture, 11/17

'Ancient Materials and Artworks Illuminated By Synchrotron Light'

Think of eye makeup in ancient Egypt — or pigments and concealed details under the surface of renowned masters' oil paintings — or the Mayan Blue pigment that survives to this day on the walls of ancient temples of Mesoamerica. These fascinating items from the world's cultural heritage have one thing in common: all are subjects of scientific investigation using synchrotron light techniques at facilities such as the National Synchrotron Light Source (NSLS).

To find out more about how scientists use synchrotron techniques to study rare or intriguing artifacts and how these findings benefit the modern world, join Eric Dooryhee of the Photon Sciences Directorate as he gives the 472nd Brookhaven Lecture, titled "Ancient Materials and Artworks Illuminated by Synchrotron Light." The talk will be given on Thursday, November 17 (note unusual day), at 4 p.m.



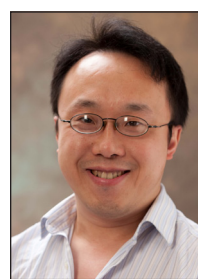
in Berkner Hall. The event is free and open to the public, with refreshments before and after the talk. Visitors to the Lab 16 and older must carry a photo ID.

As Dooryhee will explain, a synchrotron is an exceptionally powerful source of "light"...

See *Dooryhee's Talk* on p. 3

Ya Ha of Yale University to Talk, 11/10: Understanding Alzheimer's Disease

Ya Ha, an associate professor of pharmacology at the Yale University School of Medicine, will give a talk titled "A Step Closer to Understanding Alzheimer's Disease" at Berkner Hall on Thursday, November 10, at 4



Ya Ha

p.m. Sponsored by Brookhaven Women in Science, the public talk is free, and no registration is required. All visitors to the Lab age 16 and over must bring a photo ID.

Ha will explain that genetic mutations in presenilin

are known to cause Alzheimer's disease. Presenilin is a protein that uses water to break membrane proteins inside the water-excluding environment of a cell's lipid bilayer — a barrier that keeps ions, protein, and

other molecules where they are needed in a cell and prevents them from migrating to areas where they are not needed. How presenilin catalyzes this highly unusual reaction is yet unclear. Many researchers...

See *Ha's Talk* 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.
- Additional information for Hospitality may be found at www.bnl.gov/hospitality/calendar.asp.
- The Recreation Building #317 (Rec. Hall) is located in the apartment area.
- Events flagged with an asterisk (*) have an accompanying story in this week's Bulletin.

— 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.

Mondays: Yogalates

Noon–1 p.m. at the Rec Hall (Bldg. 317). Registration required, Ext. 2873.

Mondays: Pilates

5:30–6:30 p.m. at the Rec Hall (Bldg. 317). Registration required, Ext. 2873.

Mon. & Thurs.: Kardio Kickboxing

\$5 per class. 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. Adam Rusek, Ext. 5830, rusek@bnl.gov.

Tuesdays: Hospitality Welcome Coffee

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

Tuesdays: Knitting Class

2–4 p.m. at the Rec Hall (Bldg. 317). Learn to knit/crochet — all skill levels. Free. 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). Registration required, Ext. 2873.

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/toastmasters/.

Tuesdays & Thursdays: Aerobic Fitness

5:15–6:30 p.m. in the Rec. Hall (Bldg. 317). \$5 per class, or 10 classes for \$40. Kathy Schoenig, Ext. 2818.

Tues., Wed., & Thurs.: Rec Hall Activities

5:30–9:30 p.m. in Bldg. 317. General activities, TV, ping pong, chess, games, socializing. Christine Carter, Ext. 5090.

Tuesday & Thursday: Aqua Aerobics

5:30–6:30 p.m., Pool (Bldg. 478). Registration required, Ext. 2873.

Wednesdays: Ballroom Dance

5:30, 6:30, 7:30 p.m., Brookhaven Center (Bldg. 30). Vinita Ghosh, Ext. 6226.

Wednesdays: Play Group

10 a.m.–noon at Rec Hall (Bldg. 317). Parents meet while infants/toddlers 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 Bernholz, 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.

Ha's Talk from p. 1

...think that a product of the reaction, amyloid beta peptide, is toxic to neuronal cells and thus directly responsible for causing Alzheimer's disease. Knowing the atomic structure of presenilin would help to solve this puzzle and to explain the mutations that cause the disease. So far, this has been difficult to achieve experimentally.

Ha and his team took an alternative approach. They used x-ray crystallography to determine the atomic structure of FlaK, a protein that is a close relative of presenilin. Knowing FlaK's atomic structure will help to shed light on presenilin's shape and function, which in turn could reveal new opportunities to treat or prevent early-onset Alzheimer's disease.

Ha earned a B.S. in biochemistry from Nanjing University, China, in 1992 and a Ph.D. in biophysics from the University of Minnesota in 1998. He was a postdoctoral fellow at Harvard University from 1998 to 2001, and in 2001 he joined the faculty of Yale University. In addition to his position as associate professor, he is the Director of the Macromolecular X-ray Crystallographic Facility, Yale University School of Medicine.

— Diane Greenberg

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, 2011.

In addition, Stony Brook University will provide matching \$2,500 scholarships for all winners of 2012 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 16, 2011 (available online at www.bnl.gov/bnlweb/pubaf/bulletin/default.asp), or contact Leesa Allen, Ext. 2700, leesa@bnl.gov.



Collaborators on a hill above the Daya Bay facility, with reactors in the background

Daya Bay Today from p. 1

BNL's Ralph Brown of Physics is the chief engineer for the U.S. effort at Daya Bay, and he manages the technical direction of the project — from assembly and installation through the interfaces between the various mechanical systems that make up the equipment, a vital job on such a technologically intensive project.

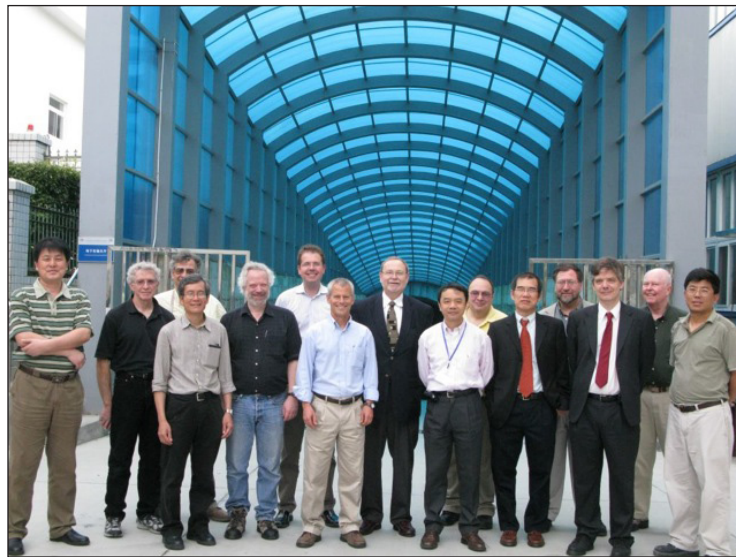
Brown offers the following anecdote describing one of the hurdles of his job: "I had to find a heavy haul vehicle capable of transporting an assembled, 25-ton antineutrino detector underground to the liquid scintillator filling hall. Then, once it was filled — now weighing 110 tons — taking it to the experimental halls for installation."

Meanwhile, Hide Tanaka of Physics is the commissioning co-coordinator, responsible for the setup and debugging of the detectors. He has spent significant time in China making sure all of the detectors work as designed.

Within those detectors, of course, are various vital subsystems. Richard Hahn and Minfang Yeh of BNL's Chemistry Department devised the "recipe" for the clear liquid scintillator that fills the massive cylindrical detectors. This liquid reveals antineutrino interactions by very faint flashes of light. They have also approved materials that come into contact with the liquid scintillator to ensure it won't interfere with the scintillator's ability to detect antineutrinos.

Similarly, Laurie Littenberg and Bob Hackenburg of Physics handle management of the muon-veto system, which protects the antineutrino detectors from ambient radioactivity present in the rock. The system also identifies false signals caused by interactions of cosmic rays that manage to penetrate the caverns containing the detectors.

On a project of this scale — deep underground and with heavy equipment — safety is a major concern. The project's safety officer is Ron Gill of Physics (who has taken over from Dana Beavis, also of Physics). Gill is responsible for the safety of all equipment,



DOE's Dennis Kovar (center), then Associate Director of High Energy Physics, with other DOE, Laboratory, and Daya Bay project personnel in front of the entrance to the underground facility.

Retrospective from p. 1

...experiment, which proved that neutrinos do oscillate among three forms — electron, muon, and tau.

Meanwhile, the Super-Kamiokande experiment in Japan, in which BNL was represented by the late physicist and former BNL Director Maurice Goldhaber, had confirmed that neutrinos do indeed oscillate and have mass. Davis's problem was solved: he had observed only the fraction of electron neutrinos from the sun that reached Earth without changing into muon or tau neutrinos. In 2002, he was honored with the Nobel Prize in Physics, shared with Masatoshi Koshiba of Japan and Riccardo Giacconi of the United States.

facilities, and practices.

Finally, once the experiment is up and running, everything's safe, and data are being collected, David Jaffe, Physics, and his analysis coordination committee are in charge of data analysis. They helped to develop techniques for simulation and provided input on the development of software that enables the analysis process.

Naturally, "All of these positions are supported by many others here at BNL," said Kettell.

Past Present in Future

Hahn, a longtime, now retired, neutrino researcher at BNL who was a major proponent of BNL's involvement in Daya Bay, pointed out that the Daya Bay experiment is a natural extension of BNL's history (see sidebar, p.1): "We've been in the neutrino business for years," he said, "and we've participated in

BNL then became involved in the ongoing MINOS (Main Injector Neutrino Oscillation Search) experiment based at Fermi National Accelerator Laboratory in Illinois, which began taking data in 2005 and has since provided measurements of mixing angles that describe how various neutrino types oscillate between one form and another.

In addition, BNL is integral to the Daya Bay Neutrino Project, which just began taking data this year. This experiment aims to measure the final unknown mixing angle that describes how neutrinos oscillate — another chapter in BNL's long history of neutrino research over the last several decades. — K.V.

several important experiments in the field."

Said Steve Vigdor, Associate Lab Director of Nuclear & Particle Physics and a member of Daya Bay's Laboratory Oversight Group, "Although this important collaboration between the U.S. and China has had to overcome challenges arising from cultural differences, it is now poised to provide both forefront science and a template for future scientific collaborations between our two countries."

By making Daya Bay possible, BNL is helping to open the door to the next step in neutrino research. Understanding neutrinos, said Kettell, could be the gateway to answers to some of the most profound questions plaguing physicists today: Why do we live in a universe where matter vastly outweighs anti-matter? Why do we exist at all?

— Kenrick Vezina

Benefits Open Enrollment Continues Until 11/18

Open Enrollment for medical and dental benefits, reimbursement accounts (health care, dependent daycare, and transit commuter), and the vacation buy plan continues through Friday, November 18. During this time, eligible employees may add or drop medical and/or dental coverage, change from one medical or dental plan to another, add/drop family members covered, and/or sign up for the reimbursement account(s) and the vacation buy plan. All changes made during the Open Enrollment period are effective January 1, 2012.

To answer questions one-on-one, the BNL Benefits Office will host representatives from CIGNA, Vytra, Delta Dental, PayFlex, TIAA-CREF, and Fidelity from 11 a.m. to 2 p.m. on Thursday, November 10, in the Bldg. 400 lobby. Literature will be available.

For more information, visit <http://intranet.bnl.gov/memo/mm.asp?IssueId=204&StoryId=4> or contact the Benefits Office at Ext. 2877, 5126, or 2881.

Open Enrollment: Benefits Presentation, 11/7

The BNL Benefits Office will hold a benefits presentation from noon to 1 p.m. on Monday, November 7, in Berkner Hall Auditorium for all

interested employees. The session will be webcast live and recorded for later viewing on the BNL intranet.



Stream live video of the event online:

<http://www.bnl.gov/video/>



How Chris Harris Made BNL Safer

Chris Harris of the Facility Operations Office realized that if a fire broke out in one of the Bunsen burners in Bldg. 490, it might be difficult to put out. This was because the propane isolation valves were positioned behind the hood and difficult to shut off. He thought of some improvements and proposed his idea to BNL's Safety Solutions (S2) Program, which approved his recommendation. First, they replaced the old valves, then repositioned the valves in an more accessible area, and lastly, they labeled the piping clearly.

By getting these changes made to the cut-off valves for gas flow to the Bunsen burners, Harris has helped prevent hood fires.

The BNL S2 Program is designed to seek out health and safety improvements and corrective actions derived from employee suggestions. The S2 Program is open to all BNL employees, users, and visitors. Selection of projects is made by the S2 Council, which has representation from BNL science, operations, and support organizations. Members of the S2 Council are a good resource and sounding board in the development of proposals. The Council reviews S2 proposals and awards funding to those projects that best meet the approved criteria.

More ideas have become successful projects, which you can see in the series of videos available at <http://intranet.bnl.gov/safety/videos/>. For more information, see www.bnl.gov/esh/shsd/OHSAS/S2_homepage.asp.

Safety

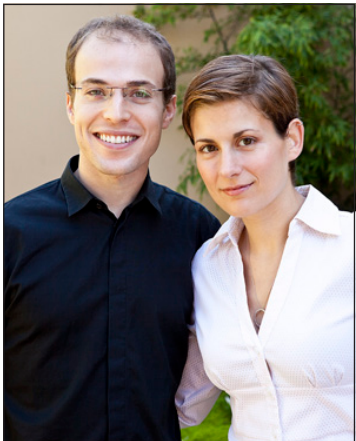
makes science possible
at Brookhaven National Laboratory
<http://intranet.bnl.gov/safety>

BSA Noon Recital, 11/9 Orion Weiss and Anna Polonsky to Perform

Pianists Orion Weiss and Anna Polonsky will perform duets by Schubert, Schumann, and Ravel in a concert on Wednesday, November 9, at noon in Berkner Hall. Sponsored by Brookhaven Science Associates, the concert is free and open to the public. All visitors to the Laboratory 16 and older must bring a photo I.D.

Orion Weiss was named the 2010 Classical Recording Foundation's Young Artist of the Year. He is one of the most sought-after soloists in his generation of young American musicians. His impressive list of awards includes the Gilmore Young Artist Award, an Avery Fisher Career Grant, the Gina Bachauer Scholarship at the Juilliard School, and the Mieczyslaw Munz Scholarship.

Anna Polonsky is widely in demand as a soloist and chamber musician and has performed at venues such as the Amsterdam Concertgebouw, the Vienna



Konzerthaus, Alice Tully Hall, and Carnegie Hall's Stern, Weill, and Zankel Halls. A frequent guest at the Chamber Music Society of Lincoln Center, she was a member of Chamber Music Society Two during the 2002-2004 seasons. In 2007 she gave a solo recital at Carnegie Hall to inaugurate the Emerson Quartet's Perspective Series.

Party News

The BERA Holiday Party will be on Dec. 16, at the Crowne Plaza in Holtsville, 7 p.m. to midnight, with open bar 7-11 p.m. \$60 each includes hors d'oeuvres, buffet dinner, dessert, DJ, and raffle prizes. Special rate to stay the night: \$79/couple, + tax, including breakfast.

Reserve Party Space

Reserve Division Holiday Party space at the Rec Hall, which has couches, a piano, and a fireplace in a room for about 25. The Big Room can be set up with round tables and seats for 80. Reserve for day or evening: Fri., Dec. 2, 9, 16, and for day or evening: Dec. 19, 20, 21, 22. Contact 344-5090 or ccarter@bnl.gov.

Thanksgiving
is in the
air

Please share – give
food or \$\$ to the
BNL FOOD DRIVE

This year, gifts of food are needed more
than ever. Please don't forget.

Dooryhee's Talk from p. 1

...(from x-rays to infrared), which permits fast, sensitive experiments to be done without damage on minute samples of objects, using a range of analytical techniques and allowing measurements to be made below the surface. Lately, researchers examining historic artifacts have developed advanced methods and instrumentation that can also help in diagnosing deterioration processes with a view to inventing protective treatments.

Dooryhee will show how these techniques, including several that he has worked with himself, have shed light on whether ancient eye makeup could have been a medicine, and on the cause of darkening pigments in paintings such as Van Gogh's "Sunflowers" or Matisse's "Le Bonheur de Vivre," as well as on how to uncover artwork concealed beneath paintings, and how to mimic Mayan Blue to produce durable, non-toxic modern pigments.

If there is time, he can also talk about preserving historic timbers of shipwrecks or the secret composition of varnishes on Stradivari violins.

Eric Dooryhee joined BNL in June 2009 to help build the x-ray powder diffraction beam-

line at the National Synchrotron Light Source-II (NSLS-II). He has a master's degree in hard condensed matter physics and crystallography, and a Ph.D. in radiation physics, both from the University of Paris. He has specialized in powder diffraction at most of the research facilities where he has worked, including the Synchrotron Radiation Source at Daresbury, U.K.; the Interdisciplinary Research Center with Ions and Lasers in Caen, CNRS, France; the European Synchrotron Radiation Facility in Grenoble, France; and the Neel Institute, CNRS, also in Grenoble.

Since 2005, Dooryhee has run a series of international conferences called SR2A, for Synchrotron Radiation in Art & Archaeology. The last conference was at the Van Gogh Museum of Amsterdam, in November 2010. The next conference, SR2A 2012, which is co-organized by BNL, will be right in New York City at the Metropolitan Museum, June 6-8. Learn more at <https://www.bnl.gov/sr2a/>.

To join Dooryhee for dinner at an off-site restaurant on Friday, November 18 (the day after the lecture), please contact Lydia Rogers, lrogers@bnl.gov or Ext. 4746. — Liz Seubert

BNL History, Still Present: BWIS

Page one in today's Bulletin announces that Yale University School of Medicine's Ya Ha will give a November 10 talk on understanding Alzheimer's disease. Like many talks of interest to the Lab community, it is sponsored by Brookhaven Women in Science (BWIS). A Lab institution strongly supported by the Lab Director and management, as well as by Brookhaven Science Associates, the managers of the Lab for DOE, BWIS seems to have been around forever. Forever, though, in BWIS's case, started in 1979.

To refer again to the Bulletin, on November 2, 1979, a notice announced "Women's Group Meets." From the beginning, Lab management evidently supported the "Women In Science Association," as it was then called, because at that meeting Deputy Director Warren Winsche giving a talk on "Laboratory programs and plans." A contribution of \$1 was collected for coffee, with another \$2 to join the group. Contacts listed were Vicki McLane or Rosemary Cohen. BWIS was set to go, and its history flowed on.

Behind the scenes of that early meeting, however, lay much planning. The BWIS cofounders, the late McLane, a senior physics associate, and Harriet Martin, a Lab librarian now retired, were breaking new ground if not glass ceilings.

The story of their efforts, together with those of founding and other early members, several of whom are still here at the Lab, will be told in a series of articles to come. — Liz Seubert

Increased 401(k) Limit for 2012

The IRS limits annual contributions an employee can make to the 401(k) Plan. This limit is increasing effective January 1, 2012, from \$16,500 to \$17,000. In addition, those who are turning age 50 or older in 2012 may elect additional annual catch-up contributions up to an additional \$5,500, which brings the annual maximum contribution to \$22,500. The IRS also limits compensation that can be used for the purpose of contributions to both the Retirement Plan and the 401(k) Plan. The compensation limit has been increased from \$245,000 to \$250,000 effective January 1, 2012.

If you want to change the current percentage allocation that you are contributing to the 401(k) Plan and/or elect the catch-up provision for January 1, 2012, go into PeopleSoft under Employee Self-Service/Benefits/Change My 401(k) and insert the new percentage you are electing. For your online change to take effect January 1, 2012, if you are a monthly employee, you must make your change online in PeopleSoft between December 1, 2011, and December 15, 2011. If you are a weekly employee, you must make your change online between December 27, 2011, and December 28, 2011.

If you do not have access to a computer or are unable to make the change online, you can request a form from the Benefits Office (Bldg. 400) or call Ext. 7516 to obtain an election form. Please note that you can increase, decrease, start, stop, or restart your 401(k) contributions at any time during the calendar year.

As a reminder, TIAA-CREF and Fidelity representatives are available on site to provide one-on-one financial counseling on various days of the month. To schedule an appointment with a representative, please call the following toll-free number:

- TIAA-CREF: (800) 732-8353
- Fidelity: (800) 642-7131

CALENDAR

— WEEK OF 11/7 —

Monday, 11/7

*Talk: Long Term Care for Vets
Noon. Berkner, Room B. See p.4.

Tuesday, 11/8

Joint Photon Sciences Inst. Talk
2 p.m. SBU Physics Seminar Room S240. Ian Robinson, London Centre for Nanotechnology, UCL & Research Complex at Harwell, "Materials Analysis at Large Scale Facilities."

Wednesday, 11/9

*BSA Noon Recital
Noon. Berkner Hall. Pianists Orion Weiss and Anna Polonsky in concert, free, open to the public. Visitors to the Lab of 16 and older must carry a photo ID. See left.

Thursday, 11/10

*Ceremony for Veterans Day
Noon. Brookhaven Center (Bldg. 30) parking lot. Ceremony honoring veterans. All are welcome. See p.4.

*Talk on Alzheimer's Disease
4 p.m. Berkner Hall. Ya Ha, Yale University, will talk on "A Step Closer to Understanding Alzheimer's Disease." Sponsored by BWIS. Free, open to the public. Visitors to the Lab of 16 and older must carry a photo ID. See p.1.

Friday, 11/11

Lab Closed Honoring Veterans Day
No Bulletin this week.

— WEEK OF 11/14 —

Thursday, 11/17

*472nd Brookhaven Lecture
4 p.m. Berkner Hall. Note unusual day. Eric Dooryhee, Photon Sciences, will talk on "Ancient Materials & Artworks Illuminated by Synchrotron Light." Free, open to the public. Visitors to the Lab of 16 and older must carry a photo ID. See p.1.

Thanksgiving Dinner Next Friday, 11/18

On Friday, November 18, at 5:30 p.m in the Recreation Bldg., the Quality of Life Office and the English for Speakers of Other Languages Program will sponsor a complimentary traditional American Thanksgiving dinner. Turkey and simple side dishes will be provided. Guests are asked to bring a dessert or a beverage. Also, please bring a donation of a new toy or two canned food items. Only those who register may participate. To register, email jpieniazek@bnl.gov or call Ext. 4894. Provide your name and number of guests. See you there!

Arrivals & Departures

— Arrivals —

Mary Campbell Env./Life Scis
Feifei Li.....Biology

— Departures —

Arokiasamy Francis...Env./Life Scis
Raanan Tobey CMP/MS

The Clocks change
This Sunday—

you can sleep an hour
longngngngnger!

Also, remember to change the batteries
of your smoke and carbon monoxide
detectors — your life could depend on it.

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 & Supplies

09 NISSAN SENTRA – 24K mi. blk 2.0L motor, 4dr, clean, peppy "excel gas mi" pics. \$12,500 neg. Ext. 8325, bbenish@bnl.gov.
06 CHEVY IMPALA LTZ – 92.879K mi. Sport Red Metallic 3.9 ltr 242 hp, lthr ht seats, new tires, m/roof, \$9,795. 662-8155.
04 HYUNDAI SANTA FE – 93K mi. 4dr, 4cyl, 5spd, fwd, 6spkr a/c, c/c, p/l, p/w, new batt/tmg belt/more. \$5,500 neg. Ext. 4698.
02 BUICK LESABRE – 93.9K mi. cust Sdn, V6, a/t, a/c, c/c, p/l, p/w, ABS, fwd, blue, excel, lthr, alarm, \$4,500 neg. 816-0723.
01 FORD WINDSTAR – 99.5K mi. gold 7/ pass minivan, recent tranny and brakes, runs well. \$3,000 neg. Steve, Ext. 4719.
01 SAAB 9-3 SE CONVERTIBLE 2D – 127K mi. KBB:\$5700, a/t, htd lthr seats, fr/side a/bags, alarm. \$4,200 neg. 344-2420.
99 VOLVO V70R – 156K mi. v/well maint, awd, turbo 2.3L 5cyl all pwr \$5,500 neg. Mark, Ext. 3970 or mwahlert@bnl.gov.
99 NISSAN ALTIMA – 89K mi. all pwr, lthr, excel running cond, great mpg and car. \$4,900 neg. Frank, Ext. 3681, 375-6991.
98 HONDA CIVIC DX COUPE – 126K mi. 30+mpg, a/t, airbags, runs well, new brake/tire/th'stat. \$1,999 neg. 371-3128.
97 TOYOTA CAMRY – 111K mi. all working, runs well, gd cond, perfect student car. \$3,000. Michael, 878-9384.
95 BUICK LE SABRE LTD – 91K mi. runs well, new batt, mounts, brk lines, w/pump, struts, a/c, test dr at BNL. \$3,750. Ext. 3932.
95 MAZDA 626 – 150K mi. 4dr, 4/cyl, 2.0 Liter, a/t, v/gd cond, v/gd starter car. \$1,200 neg. 605-5413.
88 CHEVY K5 BLAZER – 146K mi. full size K5 350TBI; new tranny, fr/r brakes & top end, 33" m. thompsons. \$1,700 neg. 484-9888.
83 MAZDA RX7 – 53K mi. 12A rotary classic, many new parts. \$6,700 neg. 327-4687.
CHROME RIMS – 20" w/gd tires, gd cond/\$600. 445-4027.
PAGID BRAKE PADS – new in sealed box part# T1228 for Mercedes Bens ML \$50. Stephen, Ext. 2575.

Boats

9' AVON INFLATABLE – gd shape, 4 hp Mercury eng in gd running cond, ft pump, oars, seat. \$400 neg. 734-2567.

Furnishings & Appliances

COMPUTER DESK/HUTCH COMBO – cherry finish, 54"xw24"d, orig/\$250, ask/\$75/ea, 8-10pcs avail, excel cond. 804-6262.
FREEZER – Imperial, heavy duty commercial, excel cond/\$1000. 678-3299.
GAS STOVE – used, still works, \$100. Carol, Ext. 2587 or cbell@bnl.gov.
KITCHEN APPLIS – lg white & silver Emerson m/wave, grt cond/\$60, dble toaster & can opener/\$25, wht. canisters/\$10. 445-4027.
MEDICAL EXAM TABLES – Midmark Ritter 204 high-end, new cond, pics, \$1075/ea, or 3/\$3150 C:240-350-0174, vbri1@aol.com.
MICHAEL ANGELO TOUCH PICTURE – v/lg, gold frame, \$80 firm. 445-4027.
QUEEN MATTRESS W/FRAME – Sealy, South Court, Posturepedic, Plush, pd/\$859, ask/\$675/neg. 603-731-8687.
SECTIONAL – mid-century 3 pc, wd frame, trquoise, well maintd \$500/obo, custom coffee tble, \$40. 744-4077.
WAVEBOX MICROWAVE – Ltwght, portable, w/removable cooler. Plugs into AC, DC to car batt, Like new. \$75. 395-6784.

Tools, House & Garden

GENERATOR – Generac GP 5500, under 120 working hrs 5500w, 45.8 amps, like new/\$750, incld 2/5 gal, gas cans. Bob, Ext. 4666.
LEAF BLOWER – w/shredder vacuum/BagStihl SH 85C, gd cond, \$175. Todd, Ext. 8464, 764-0359 or corwint@bnl.gov.
WOOD FLOORING – part box Bruce flrg, 2 1/4" w/Gunstock finish, part box 2" flrg nails for pneumatic nailer, \$20. Ext. 3884.

Audio, Video & Computers

ACER DESKTOP – Windows 7, 64-bit, all up-dates, 4gb RAM, 120gb HD, full Office 2007 Suite, Anti-Virus, \$200. Jesse, Ext. 2122.
APPLE KEYBOARD – Slim profile w/numeric keybd, like new, no box, http://tinyurl.com/5tbbdz4, \$30. jmontalto@bnl.gov.
CD PLAYER – JVC XL-R86, 5 Disc. \$20. 821-1271 or difilip@bnl.gov.
CELLPHONES – 2/HTC EVO touch screen, ask/\$250/ea, still in box. Shayn, 353-1820 or billionairekid_20@yahoo.com.
DJ HERO 2 – Wii Game, 1 yr old, never used, in orig box, \$10. 821-1271.
HP LASERJET 1100 – works v/gd, \$20. 821-1271 or difilip@bnl.gov.
IPHONE 4 – 32 gig phone for AT&T, in orig box w/charger/cables, \$350. Ext. 8278.
LAPTOP & DOCUMENT BAG – Targus model CUN1, blk leather, in great shape, \$15. Paul, Ext. 2899 or porfin@bnl.gov.
NIKON D300 – incl 2 batts, \$1000 Tokina 11-16mm f/2.8 w/ Hoya filter, \$600, both like new cond w/box & manuals. Ext. 3970.



Roger Stoutenburgh D6131011

NY Wildfire and Incident Management Academy Prescribed Burn Practice

This photo was taken on October 25 while students and instructors from the New York Wildfire and Incident Management Academy (NYWIMA) conducted a prescribed

burn in the northeast corner of the Laboratory site. For the past 14 years, the NYWIMA has held classroom and field training on the BNL site. In addition to the impor-

tant benefits of hands-on training, the prescribed burn also helps to improve conditions for forest regeneration and reduce fuels that support catastrophic wildfires.

Before conducting the burn, many requirements must be met, including specific weather conditions and safety preparations.

— Jane Koropsak

PHONE/TABLE – P'sonic cordless phne, 2 hand sets, spkr phne, digitl answrng sys, caller id, \$25, small computer table \$15. 344-4290.

Miscellaneous

BRITAX CAR SEAT – Frontier Harness Model, fwd facing, harness/seat belt, side impact protect, \$125/neg. Ext. 4385.
CAMERA – Antique 100 yr old, No2 Folding Pocket Brownie Model A, v/gd/\$25. Robert, Ext. 4637.
EUROS – have 110€ left from trip, yours for \$150. Betty, Ext. 3562.
OPERA TICKETS – 2, "La Fille du Regiment," at MET, Dec 15. Balc. \$71.50 plus bus from N. Shore Public Lib. Shoreham. Ext. 7761.
STOUFFER'S COUPONS – for FREE Bistro Subs \$3.49 value, sell for 2/\$3, 50 avail, expire 8/2012. Heather, Ext. 4138.

Community Involvement

'HELLO DOLLY' MUSICAL – Annual show at Riverhead High to benefit scholarships for graduating seniors, Nov.11,12,18 &19 @8pm, Sun. 13 @2:30pm. Glenn Abramowitz's 19th show. Call for adv. sale tickets. 344-7477.
FUNDRAISER FOR IPOP – My daughter has been selected to represent L.I. at IPOP in LA in Jan. Fundraiser dinner at Polish American Club, Pt Jeff Sta, 11/4, 6-10p. Ticket info: Mark, Ext. 2574 or sardzinski@bnl.gov.
LONGWOOD HS BAND FUNDRAISER – Help High School band raise funds for out of town performances. Cookie Dough (2/lb tubs) of Snickerdoodles, Chocolate Chunk, and more, \$10 before 11/1. Deborah, Ext. 7582 or lange@bnl.gov.
SPONSOR A FAMILY – Thee Island INN soup kitchen serves meals to those in Middle Island & surrounding communities. Need grocery store gift cards for Thanksgiving bags for our guests; send to Bldg. 460. Barbara, royce@bnl.gov.

Happenings

HOLIDAY RECESSION PARTY, DEC 9 – Join us @ The Flaming Hearth, 756 Horseblock Rd, Farmingville, 6 p.m. DJ, Appetizers, Cash bar, 50/50 raffle, door prizes. \$10 or \$15 at door. Kevin Hester, 796-9168 and Charles Gardner, 219-2884.

Lost & Found

GLASSES – found at Bldg 197C prkg lot, black half-frame, email me, thank you. So Jeong, sjlee@bnl.gov.
LOST CAT – yellow/white, missing from apt in housing area (near daycare), indoor only cat, very shy, pls contact me if you spot her so I can search. Elizabeth, Ext. 5325, 773-220-6862 or etw@bnl.gov.

Free

AIR CONDITIONER – Amana, works v/well, call for details, must pick up. 949-4046.
CONSOLE – 43"w 47"h 14-3/4"d TV shelf, 4 shelves for pictures, video, DVD etc, 1 shelf w/ dr, gd cond. Marilyn, 744-4077.
TABLE – beautiful polished old wood

table, some carving, about 58" sq., two 15"leaves, very heavy, u-pic-up.Ext. 2346.

Sports, Hobbies & Pets

CRICUT – and cartriges, used once for about an hr, pd/\$560, ask/\$350/neg. Adrienne, Ext. 7525 or ajerry@bnl.gov.
TELESCOPE – Celestron Powerseeker 114, 3 yrs old, have orig box/\$50. 821-1271.
TREK 650 – classic rd bike, 53cm, v/gd/ cond, rack, computer, \$325. Paul, Ext. 7577.
WEIGHT SET – wgths about 300lb. 2 benches, 2 bars, assorted bumb bell, ask/\$300. 924-8143 or callegari@bnl.gov.

Yard & Garage Sales

CORAM, 27 AMBER LANE – Huge Sale 11/5&6, 9a-4p, furn/ baby/electron/ toys/ books/ movies/ TVs, etc. Luke, Ext. 2238.
MOVING SALE – contents of home, l/r, q/ bdrm, dinette set, china cabinet, wood desk, rain or shine, 137 Dogwood Rd, E/ Mastic Beach, 11/5/6, 9a-4p. 281-8685.

Wanted

ADOPT-A-PLATOON – Monetary donations gratefully accepted towards mailing shipments to our platoon stationed overseas and to send goodie packages to BNL family members. Thank you. Joanne, Ext. 8481.
BNL FAMILY MEMBERS IN MILITARY – If you have a family member that has been deployed overseas, please contact Adopt-a-Platoon so we may send them a goodie package. Joanne, Ext. 8481.
DONATIONS – Thee Island INN soup kitchen serves meals to those in M.I. & local areas. Seeking \$25 checks payable to Thee Island INN for Thanksgiving bags for our guests; send to Bldg. 460. Barbara, royce@bnl.gov.
HALLOWEEN CANDY – If you would like to donate any candy from Halloween, we will ship the sweets to our Troops, along with other necessities. Joanne, Ext. 8481.
KAYAK – prefer plastic, but will consider any size or type. 375-2680 or philmar39@optonline.net.
MATTRESS – queen or full w/boxspring, in gd or v/gd cond, appreciate it! Rick, Ext. 3005.
SNOW BLOWER – used, 30", self propelled, cond not so important, but it must run. Ted, Ext. 8363 or tselmer@bnl.gov.
SOUTH BEND 9 – looking for a nice used or NOS bed for South Bend Model "A" metal lathe, also need threading dial assembly. Charles, Ext. 7035 or cfolz@bnl.gov.

For Rent

CORAM – lg 2nd flr 1 bdrm apt w/lg bdrm w/high ceilings, wn ent/drway prkg, incl all except elect/cable, avail Dec 1. \$900/mo. 445-4027.
EAST MORICHES – 3 bdrm, 2.5 bth, 2 car gar, bsmt, nice size yd, cac, on priv rd, rent yr round, sec/deposit. \$2,000/mo. Ext. 8489, 878-4059.

November Is Veterans' Awareness Month

The Brookhaven Veterans Association (BVA) and the Employee Assistance Program (EAP) are co-sponsoring a series of talks and a fundraising event to mark Veterans Awareness. All are warmly invited to participate, especially in generous donations to the homeless vets shelter. Dates to remember are:

Monday, 11/7, Noon — Berkner Hall, Room B. A lecture on "Long Term Care and Estate Planning for Veterans," will be given by Nancy Burner, Esq., Setauket, NY.

Thursday, 11/10, Noon (promptly) — Brookhaven Center (Bldg. 30) parking lot. BVA Ceremony in partnership with BNL Lab Protection Division.

Monday, 11/28, Noon — Berkner Hall, Room B. "Update on Veterans Benefits & Advocacy" from Suffolk County Veterans Services Agency (SCVS).

Monday, 12/5 — Berkner Hall lobby. "1-1-1 Fundraising Event" for the SCVS Homeless Vets Shelter. Please bring 1 used clothing item for men, \$1, and 1 item of non-perishable lunch-time food or toiletries. All donations very gratefully accepted.

Wish List of items to give:

Paper products: paper plates, paper cups, napkins, toilet paper, paper towels; Laundry soap and bleach; wind-up alarm clocks; men's socks, underwear, t-shirts, sweatpants and jackets, shirts, shoes, heavy sweaters, hats, gloves, heavy jackets; containers for storage of food items: personal hygiene products: deodorant, razors, shaving cream, toothbrushes, toothpaste, shampoo, soap; books: self help/motivational books, health/diet books, cookbooks; towels, washcloths, and large storage containers for personal items; coffee, sugar, creamer; gift certificates to chain restaurants (Olive Garden, Ruby Tuesday, Carvel, Friendly's, etc.); home items: shower curtains, twin beds, twin sheets, pillowcases, blankets, mattress covers; lamps, dressers & night stands, used tools, computers & printers, vacuum & cleaning products. Donated items will be transported to the Vets Shelter in Yaphank.

MANORVILLE – 1 bdrm apt, kit/lr combo, incld util/cable, looking for gd tenant, 1 mo rent/sec deposits, refs req, \$1,100/mo. 827-3516.

MASTIC – female rm-mate to share hse, furn, lg bdrm, attach/priv full bath, high spd int, TV, share kit or m/wave, util incl, no smkg/pets, 1/mo sec. \$750/mo. 339-3444.

MNT SINAI – priv, waterfront hse, 2/bdrm, 2 ba, kitch, d/w dr/dr/bsmt/gar & deck, w/d. no smkg/pets, oil/hot water heat, util not incl, avail 12/15. \$2,000/mo. 987-8892.
NEAR LAB – roommate wanted to share an apt or hse. \$600/mo neg. 847-477-1634 or kazekg@comcast.net.

NORTH PATCHOGUE – studio apt incld cable, wireless int, own t'stat, priv drwy/ent, grd flr, full kitch, 1/mo sec, credit check & refs. \$900/mo. Brad, 730-5860.

ROCKY POINT – Co-Op apt/800sq+, 1 bdrm w/ S/N windows, patio, lg ba, lg kitch, lg l/v, new cac/heat, no smkg/pets, incl water/gas/heat, \$1,000/mo neg. 598-9928.

SHOREHAM – share hse w/professional, lg/furn bdrm, cable/int, no smkg/pets, 8 mi to BNL, cell# 578-0108, avail Now. \$625/mo. 744-3543 or gg19582003@gmail.com.

YAPHANK – fully furn spacious stuido apt for one, hi spd int/all utils incl, quiet area, 5 min to BNL, no smkg/pets. \$850/mo. Irene, 516-205-6712.

For Rent or Sale

SPRING HILL, FL – priv ranch on Gulf, 70m Orlando, 45m Tampa, fly Islip direct, near beach/tennis/park, SW architecture, 3/ bdrm, 2/bath, d/r, f/p, 2gar, igp in lanai, fruit trees, see review.oktane.net/HouseTour. \$450/wk. Sale: \$125,000 neg. 344-5537.

For Sale

CALVERTON – move right in, 7 rms, 2-bdrm, 2-bath, kitch, d/r, lg l/r w/vaulted ceilings, charming cape in a quiet area, just mins away from all. \$179,000 neg. 831-0152.