

BREA NEWS

www.bnl.gov/bera/activities/brea/

Volume 16, Issue 6

November/December 2016

BREA Meetings

BREA meetings are held on the second Tuesday of every month (except for August), at 1 p.m. in one of the conference rooms in Bldg. 400 (except where noted).

All BREA members are invited to attend and participate.

Meeting Schedule

November 8, 2016

December 13, 2016

January 10, 2017

BREA Officers

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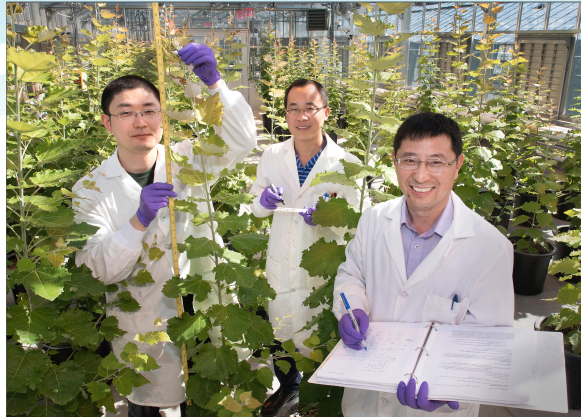
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In the BNL greenhouse, biologists Yuanheng Cai, Xuebin Zhang, and Chang-Jun Liu stand amid aspen trees they designed to improve biofuel production.

For more BNL science, see pages 2 & 3.

From the President

by Liz Seubert, liz.and.ev@gmail.com

Greetings, Everyone,

At his excellent talk on Haiti on October 4, retiree Steve Kramer presented some fascinating history as a setting for the vital work he is doing to support a thriving school for kids who might not otherwise even learn to read. We thank BERA for making this talk possible and suggest that BREA members go to LifeandHopeHaiti.org or contact Steve at SKramer_1953@yahoo.com to learn more. It's worthwhile.

Vital healthcare message: All Medicare-eligible retirees enrolled in the Brookhaven Science Associates (BSA) health reimbursement account (HRA) should have received from the Taben Group a letter dated October 3, 2016, and a form about the HRA. If not, contact Taben at 1-855-826-8692 or flexsupport@taben.com. This is important!

- According to that letter, BSA will provide in 2017 a health reimbursement to each BSA Medicare-eligible retiree enrolled in the HRA, individuals on long-term disability, and covered dependents, in the amount of \$170/month (the same as it was in 2015 and 2016).
- To continue receiving automatic reimbursements for 2017, you must complete the HRA authorization form that came with the letter and submit it to Taben by **December 2, 2016**.
- If you now receive HRA funds through direct deposit, you must still complete and return that form to continue receiving funds in 2017. To change your direct deposit account, contact Taben.
- Remember: In order to receive the HRA funds provided by BSA, you must participate in a Medicare Supplement (Medigap) or Medicare Advantage plan purchased through SelectQuote Senior.

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Let's "Catch Up" With a Year+ of BNL News

BREA members are invariably proud of having contributed to BNL's success as a scientific asset to our nation. We hope this year's "Catch Up" will bolster that pride once again! For the full articles or to read other stories we had no room to cover, go to: www.bnl.gov/newsroom/results.php?y=2016 (or 2015).

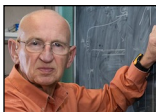
Scientific Accomplishments

2015 Peering at debris from particle collisions that recreate the conditions of the very early universe, **scientists at BNL's Relativistic Heavy Ion Collider (RHIC) have – for the first time – measured the force of interaction between pairs of antiprotons.** The findings could offer insight into larger chunks of antimatter, including antimatter nuclei previously detected at RHIC, and may also help scientists explore one of science's biggest mysteries: Why does the universe today consist mainly of ordinary matter with virtually no antimatter to be found, though the Big Bang – the beginning of the universe – produced matter and antimatter in equal amounts? ... **BNL scientists have made two advances in understanding superconductivity** – the ability of some materials to carry current with *no* energy loss.: One team discovered a new way to generate very low-resistance electric current in a new class of materials. The key finding – the "chiral magnetic effect" – had long been predicted theoretically, but never before observed definitively in a materials science laboratory. Its discovery points to a range of potential applications in energy, quantum computing, medical imaging, and possibly even a new mechanism for inducing superconductivity. And BNL physicists have solved a long-term mystery – how "high-temperature" superconducting materials can conduct electricity without resistance at temperatures hundreds of degrees above the ultra-chilled temperatures required by conventional superconductors – having determined that this "critical" temperature is controlled by the *density* of electron pairs in the superconductor, challenging the standard theory that the critical temperature depends on the *strength* of the electron pairing. ...

(continued on page 3)

Awards & Honors

2015: Veljko Radeka was one of two recipients of the inaugural American Physical Society (APS) Division of Particles and Fields Instrumentation Award for "widespread contributions and leadership in the development of new detector technologies and low-noise electronics instrumentation in particle physics as well as other fields..." ... Four BNL scientists – **Charles Black, Ahsan Ashraf, Atikur Rahman** and **Matthew Eisaman** received



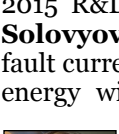
an Innovate LI Innovator of the Year award in the Science and Technology category for their work on nanotech antireflection surface coatings. ... **Dennis Perepelitsa**, Goldhaber Distinguished Fellow at BNL, was named a 2015 Blavatnik Regional Award Finalist in Physical Sciences & Engineering, for his work exploring fundamental nuclear physics at RHIC and at the European Large Hadron Collider (LHC). ...



Prachi Chitnis, a Stony Brook University student mentored by BNL Physicist Kevin Brown, received the 2015 Experimental Physics Control Systems Prize by the European Physical Society for "significant contributions to the reliability of the RHIC beam permit system." ...



Stefan Meinel, a research fellow at the RIKEN BNL Research Center, received the 2015 Kenneth G. Wilson Award for Excellence in Lattice Field Theory, a method for mapping particle interactions that helps solve otherwise intractable problems involving strongly interacting quantum systems. ... Two technologies developed at BNL received



2015 R&D 100 awards: the aSFCL, developed by **Vyacheslav Solovyov** and **Qiang Li** (not shown), is a novel superconducting fault current limiter that can transmit a large amount of electrical energy without added conduction losses; the Binary Pseudo-



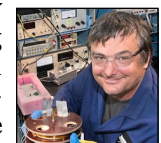
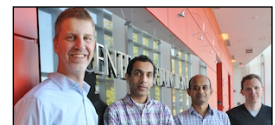
Random Calibration Tool, developed by **Nathalie Bouet** and **Peter Takacs**, solves one of the most difficult problems in surface profile and imaging metrology. ... **Robert Tribble**, BNL Deputy Director for Science & Technology, received the 2015 APS Division of Nuclear Physics Distinguished Service Award for his leadership skills and outstanding contributions to the field



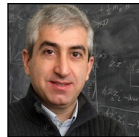
of nuclear physics for more than 30 years. **2016:** Deputy Secretary of Energy Elizabeth Sherwood-Randall presented the highest annual honor for a project in the DOE complex – the Secretary's Award of Excellence – to the **National Synchrotron Light Source II (NSLS-II)** in recognition of its being completed ahead of schedule, under budget, and with an expanded scope. At the same ceremony, DOE-Brookhaven Site Office Manager **Frank Crescenzo** was named Federal Project Director of the Year for his leadership of and dedication to the NSLS-II project. ... The APS named four BNL researchers as 2015 APS



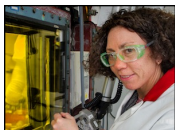
Fellows: **Sergey Belomestny**, "For outstanding contributions to the science and technology of radio frequency [systems for storage rings, linear accelerators (linacs) and energy recovery linacs,], a superconducting RF in beam physics"; **Hooman**



Davoudiasl, “For elucidating our understanding of the experimental consequences of warped extra-dimensional models of space-time”; **Cedomir Petrovich**, who has paved the way for new discoveries related to our understanding of superconductivity; and **Ferdinand Willeke**, “For pioneering contributions advancing the physics of beams and scientific research, by leading the design and construction of frontier accelerator facilities and providing valuable advice to many accelerator facilities worldwide,” most recently, NSLS-II. ...



Brookhaven Science Associates (BSA) was selected by the U.S. Small Business Administration as the national winner of the Dwight D. Eisenhower Award for Excellence in the Research and Development category, as a large organization that has excelled in its use of small businesses as suppliers and subcontractors. ...



Lisa Muench received The Center for Molecular Imaging Innovation and Translation Laboratory Professionals Award, for her work with molecular imaging for the Lab’s Medical Isotope Research & Production program to prepare radioisotopes for use in nuclear medicine and industry. ... **Terrence Buck**, a leader in BNL’s recruiting



and diversity programs, received the Long Island Business News’ Diversity in Business Award, which highlights outstanding achievements of business leaders of diverse ethnic backgrounds. ... **Piyush Joshi**, a versatile electrical engineer, was honored as a “High Accomplished Asian American Professional” during Asian Pacific American Heritage Month. ...



Séamus Davis was one of two recipients of Science Foundation Ireland’s prestigious St. Patrick’s Day Science Medal, recognizing extraordinary contributions made by U.S.-based scientists, engineers or technology leaders with Irish connections. ... **Satoshi Ozaki**, BNL Senior Scientist



Emeritus received a BSA Distinguished Service Award for his longtime contributions to the Lab and DOE, including serving as project director for RHIC throughout its design and construction. ...



Retired physicist **Derek Lowenstein** was recognized

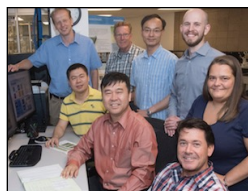


for outstanding work in the field of accelerator physics with the first ever Xie Jialin Prize during the seventh annual International Particle Accelerator Conference in Busan, Korea. ... The Utility Energy Service Contract (UESC) Team at BNL – (front) **Aundrea Clifton, Lloyd Nelson, Evelyn Landini, Susan McKeon,** (back) **Mike McCann, Dari Scuola, Peggy Caradonna, Mark**

Toscano, Chris Seniuk, Brigitte Kimble, Chris Channing and David Mitchell – received the 2016 Department of Energy Sustainability Award in the team category. ...



BNL Physicist **Oleg Gang** was honored as an “Inventor of the Year” at a “Celebration of Solvers” held by Battelle, the global science and technology organization that partners with Stony Brook University as BSA, to manage BNL. ... Scientists at the Hard X-ray Nanoprobe beam line at NSLS-II – **Yong Chu, Evgeny Nazaretski, Hanfei Yan, Nathalie Bouzet, Xiaojing Huang, Brian Mullany, Dennis Kuhne and Kenneth Lauer** – received a 2016 Microscopy Today Innovation Award. ... The **NSLS-II** project received the Project Management Institute’s prestigious Project of the Year Award.



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– Anita Cohen, afcohen@optonline.net

Scientific Accomplishments

(continued from page 2)

Graphene, the two-dimensional powerhouse, packs extreme durability, electrical conductivity, and transparency into a one-atom-thick sheet of carbon.

Despite being heralded as a breakthrough “wonder material,” graphene has been slow to leap into commercial and industrial products and processes. Now, **BNL scientists and their collaborators have developed a simple and powerful method for creating resilient, customized, and high-performing graphene:** layering it on top of common glass. This scalable and inexpensive process helps pave the way for a new class of microelectronic and optoelectronic devices – everything from efficient solar cells to touch screens. ...

Lignin is a natural component of plant cell walls, the scaffolding that surrounds each cell and plays a pivotal role in plants’ ability to grow against gravity and reach heights ranging from grasses to redwoods. But lignin is a problem for scientists interested in converting plant biomass to biofuels and other sustainable bio-based products., making it hard to break down plant matter so its carbon-rich building blocks can be converted into forms suitable for generating energy or running automobiles. Now, **BNL scientists and collaborators have overcome that problem,** altering the lignin in aspen trees in a way that increases access to biofuel building blocks without inhibiting plant growth, resulting in an almost 50 percent increase in ethanol yield from healthy aspen trees. (See cover photo.) ...

Imagine in the U.S. electric vehicles as affordable and convenient as gasoline-powered vehicles. BNL scientists are working to make that a reality as part of a multidisciplinary “Battery500 Consortium” led by DOE’s Pacific Northwest National Laboratory. As announced by the White House, **the consortium is striving to create commercially viable, next-generation batteries that can produce 500 watt-hours per kilogram,** compared to the 170-200 watt-hours per kilogram in today’s typical electric vehicle battery, at a cost of less than \$100 per kilowatt-hour for a battery pack.

... Retired physicist **Derek Lowenstein** was recognized for outstanding work in the field of accelerator physics with the first ever Xie Jialin Prize during the seventh annual International Particle Accelerator Conference in Busan, Korea. ... The Utility Energy Service Contract (UESC) Team at BNL – (front) **Aundrea Clifton, Lloyd Nelson, Evelyn Landini, Susan McKeon,** (back) **Mike McCann, Dari Scuola, Peggy Caradonna, Mark**

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Renew BREA Membership

Do you need to renew your BREA membership? Look to the right of your name in the panel below. If 2016 or earlier is on the mailing label, it's time to renew.

Membership expires on December 31 of every year no matter when you paid your dues (which are requested by January 31 of the following year). To stay on BREA's mailing list, complete the form below and mail it to me along with your payment. Be sure to include your email address so BREA can send you timely information.

If you have questions or if your contact information has changed, send me an email at hellobylin@yahoo.com.

PLEASE PRINT

Last name: _____ First name: _____ MI: _____

Street: _____ City: _____ Zip+4: _____

Phone: _____ Email: _____

Membership type:

annual (\$10) 5 years (\$40) Life (\$95)

Make check out to BREA

Date: _____ Check amount: _____

Dues cover year(s) _____

Mail form and check to:

Beth Lin, BREA Membership Chair
81 Westchester Drive
Rocky Point, NY 11778

– Beth Lin, Membership Chair,
hellobylin@yahoo.com

In Memoriam

We deeply regret to inform you of the passing of the following retirees:

Alyce Daly, 85, August 27, 2016

Robert Edward Chrien, 86, October 7, 2016

More information may be found at BREA's website:

www.bnl.gov/bera/activities/brea

To post an obituary for a deceased BNL employee or retiree, send information by email to afcohen@optonline.net or by snail-mail to BREA's address in the panel below.

President's Message (continued from page 1)

• Also, Medicare's annual election period is from October 15 through December 7, 2016. Up until December 7, you may join or change your healthcare plan through SelectQuote Senior (SQS) by calling 1-866-479-8317 (press option 1). [Note that Taben's December 2 deadline for the authorization form is earlier than the December 7 end of the Medicare annual election period.] You may work with SQS to change your prescription drug plan *or do it on your own without jeopardizing your HRA funds*. **If you are satisfied with your current medical insurance and prescription drug plan, your enrollments will be automatically renewed.**

Flash mob: Some retirees want to get together to socialize more often than the BREA annual luncheon. As a start, let's meet up in the BNL cafeteria (at the back on the left) at 11:30 a.m.-12:40 p.m. before the next BREA meeting, November 8. Just bring a bag lunch or buy a meal there.

I wish you all wonderful holidays, and may those with joyful celebrations ahead remember to invite a lonely person to share the happiness. – Liz Seubert, liz.and.ev@gmail.com

Brookhaven Retired Employees Association

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