*Fall 2000*

# ON TARGET

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY • A DEPARTMENT OF ENERGY FACILITY



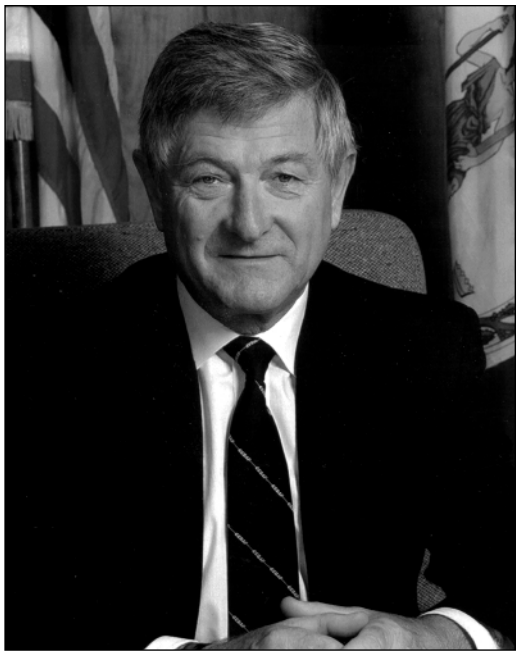
# Grunder accepts offer

## JLab director to head Argonne, Leemann named Interim Director, Sinclair is Interim AD of Accelerator Div.

On Sept. 11, Jefferson Lab Director Hermann Grunder told a standing-room-only crowd in the CEBAF Center auditorium that he had accepted the Directorship of Argonne National Lab. Grunder's appointment as Director of Argonne National Lab, located near Chicago, Ill., becomes effective Nov. 1.

After the announcement, President of the Southeastern Universities Research Association, Jerry Draayer, said, "SURA has enjoyed the dynamic leadership of Hermann Grunder as the Jefferson Lab Director for 15 years. While Hermann's leaving the Lab represents a loss, it also represents an opportunity for the outstanding and educated team that Hermann has built here to move aggressively forward on a clearly defined program — bolstered by the support of an engaged scientific community and under the watchful care of community, state, regional and national stakeholders."

"Argonne National Laboratory — one of the Department of Energy's major multi-program facilities — is gaining a truly visionary leader," Draayer continued. "Hermann Grunder is the right choice; he has proven himself time and again to be a smart and discerning manager for the overall benefit of science. We thank Hermann for his leadership and are assured that he will continue to bring credit to the Department of Energy and bolster our nation's scientific agenda."



"I have made it my career to serve where I am most needed in the national lab system," Grunder said of the appointment. "I am honored that the University of Chicago and the Department of Energy found my knowledge, experience and management style equal to the complex needs of a multi-program lab such as Argonne National Laboratory. While it is difficult to leave Jefferson Lab and the community that is so supportive, I look forward to the challenges ahead."

Argonne was the nation's first national laboratory, chartered in 1946. With sites in Argonne, Ill., and in Idaho, Argonne is one of the U.S. Department of Energy's largest research centers. Approximately 4,200 employees perform research and

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# JLab director asked to head Argonne National Lab. . .

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engineering work in fields ranging from energy technology to high-speed computing. Argonne's annual operating budget is approximately $465 million.

Don Randel, President of the University of Chicago, which manages Argonne said, "Argonne National Laboratory and the University of Chicago are delighted to have Hermann Grunder take its helm. He is a forceful, smart and dynamic scientific manager and his successes at Jefferson Lab and experience at Lawrence Berkeley National Laboratory will serve him well at Argonne."

Grunder, who has served as Director of Jefferson Lab since 1985, spearheaded the technology change of the CEBAF accelerator to superconducting, a move that decreased costs and increased the machine's capabilities. Under his leadership the Lab was completed on cost and on schedule and began operations in 1994. He has been instrumental in leveraging Jefferson Lab's resources to benefit the local community, in the form of educational outreach programs and economic development initiatives such as the City of Newport News-owned Applied Research Center in which local universities, industry and Lab personnel work together to apply technological advances to industry.

In an announcement made Sept. 12, SURA President Draayer named Jefferson Lab's Deputy Director Christoph Leemann as the Lab's Interim Director while SURA assembles a search committee and conducts the search for a new director. Leemann has been at Jefferson Lab since 1985 where he has served as Associate Director for the Accelerator Division and most recently as Deputy Director.

Charles Sinclair has been named Interim Associate Director of the Accelerator Division. A search committee has identified several candidates for the Accelerator Division position. Formal interviews begin Oct 12. After the interviews, the search committee will present its feedback and conclusions to the Director's Council.

"Hermann is leaving Jefferson Lab in excellent shape with an effective management team in place. SURA is confident that under the interim leadership of Christoph Leemann, and with strong backing from the Department of Energy and SURA-member institutions, JLab will not just continue to operate as a world-class laboratory, but will grow into an example of how through partnerships with academia, as well as industry, we will maintain our competitive edge in an increasingly technological world," Draayer said.

Hermann thanks JLab staff after they gave him a standing ovation for his years of work and leadership at the Lab after the Sept. 11 All Hands Meeting.

Larry Cardman, Physics Division AD (left to right); Roy Whitney, Admin. Division AD; Christoph Leemann, Interim Director; Deborah Dowd, executive coordinator; Sally Fisk, chief of staff, and hundreds of Lab staff turned out for Grunder's announcement that he'd accepted the directorship at Argonne.

# S&T Review

## Panel evaluates Jefferson Lab performance, gives high marks

Jefferson Lab leadership and staff earned many compliments and high praise during the annual Science & Technology Review closeout meeting on Sept. 27.

Review panel members described the Lab as a well managed institution and a first-class operation with a vigorous science program, fulfilling its promise in science. Many positive comments were made about the dedicated staff, satisfied users, accelerator operation, polarized beam, and the high caliber science and unprecedented data coming from experiments. In addition, the panel had high praise for the Free Electron Laser's performance and its match with the Lab's core technologies; and they encouraged the development of the FEL's science program.

They provided Lab leadership with ideas on how to most effectively promote the Lab's proposed 12-GeV upgrade project. The committee also commended Lab personnel for managing its multiple projects (FEL, SNS, the likely 12 GeV upgrade and Rare Isotope Accelerator) effectively.

The S&T Review panel arrived at JLab Sept. 25 and included Massimo Cornacchia, SLAC; Roy Holt, Argonne National Lab; Stanley Kowalski, Massachusetts Institute of Technology; Sam Krinsky, Brookhaven National Lab; John Marriner, Fermilab; John Negele, MIT; and Steve Vigdor, Indiana University. Chairing the review was Brad Tippens, DOE Program Manager for Hadron Nuclear Physics, Nuclear Physics Division. Also attending the Review were Dennis Kovar, Director of the DOE Division of Nuclear Physics, and Sherman Fivozinsky, DOE's Program Manager for Medium Energy Physics, who retired at the end of September.

The purpose of the review is to evaluate the quality, performance and significance of JLab's major activities, in the context of the Nuclear Science Advisory Committee's Long Range Plan and the national nuclear physics program, and is an important part of the Lab's performance based contract.

# Get ready to fete Grunder!

## Annual Fall Festival, special roast, costume contest set for Oct. 27

Mark Friday, Oct. 27 on your calendars. The Halloween Fall Festival takes on a special twist this year, as it is also the Lab's Farewell to Director Hermann Grunder. All Lab staff, family members and users are invited to the event.

It is slated for 3–7 p.m. in the field behind the Residence Facility. Never one to shun the opportunity for a party, Grunder is looking forward to all of the favorite activities held during this annual event.

The Jefferson Lab Activities Group (JAG) is planning a costume contest, Tug-of-War, pumpkin hurling event, bonfire and other activities for the evening. Food and beverages will be served.

In a special tribute to Hermann, this year's event will feature a Grunder look-a-like contest, and include a 30-minute open mike to roast our long-time director. (Rumor has it that Hermann will judge the look-a-like contest!) Start preparing your roast and your costume now, in honor of Hermann!

Other upcoming JAG events include a Potomac Mills pre-holiday shopping spree on Saturday, Nov. 4. The cost is $22 per person, and includes a bus escort who serves breakfast sandwiches, juices, and a variety of snacks. All items are priced at $1 or less.The deadline to sign up is Friday, Oct. 13. A total of 40 people are needed for the trip; bring a friend or two and have a great day! For more information, or to sign up, contact Betty Beeler at ext. 7491 (e-mail beeler@jlab.org), or Carrie Nichols at ext. 5101.

The adult Holiday Party is set for Saturday, Dec. 9 at the Chamberlin Hotel on Ft. Monroe (Hampton).

The JLab Activities Group has several vacancies and is looking for five new members to represent all working areas at the Lab. For more information on becoming a JAG member, contact Chair Susan Esp, ext. 7520, or any other JAG member.

## Lab plans formal farewell dinner party

A formal farewell dinner and reception for Lab Director Hermann Grunder is being planned for Monday, Dec. 4. The event is scheduled at the Omni Hotel in Newport News. Dinner cost will be about $30 per person.

Federal, state and local community leaders will be invited. Invitations will be sent out Nov. 1. More information about the event will be available in the coming month.

# CEBAF exceeds 6 GeV

## Accelerator surpasses original design specification by 50%

Thanks to high-tech development work and some creative tuning and tweaking, Jefferson Lab can now accelerate beams of electrons to 6 GeV (billion electron volts).

The Continuous Electron Beam Accelerator, originally designed to provide 4 GeV CW (continuous wave) electron beams, reached 6.07 GeV at 109 microamperes in early August, before the machine was shut down for a maintenance and upgrade period.

Energies in the range of 5.65 GeV have become routine at the Lab, thanks to incremental improvements since CEBAF began operation in the mid-1990s.

With even higher-energy electron beams, researchers using the Lab can probe deeper than ever into the atom's nucleus to learn how matter is put together.

"No one can foretell the practical results that could come from this research," says Lab Director Hermann Grunder. "But history shows a clear pattern. Fundamental knowledge of matter itself has led to useful technologies, from medical X-rays and MRIs to transistors and integrated circuits."

Every atom has a nucleus at its core. These nuclei contain protons and neutrons. Three decades ago, experiments at another electron-accelerator laboratory — the Stanford Linear Accelerator Center — proved that protons and neutrons contain still smaller bits of matter called quarks. Jefferson Lab was designed to establish exactly how these quarks make up nuclear matter.

To build and commission the accelerator in the late 1980s and early 1990s, Jefferson Lab pioneered the large-scale use of superconducting electron-accelerating technology. It's a delicate, demanding technology that greatly facilitates accelerating nucleus-probing electron beams. It slashes operating costs and boosts research productivity. And as a young technology still being developed, it yields performance advances to those who work hard to improve it.

By the mid-1990s, Jefferson Lab experiments were under way at 4 GeV, just as had been planned. By August 2000, scientists, engineers and technicians had become better and better at operating the accelerator, allowing them to briefly reach 6 GeV – 150% of the accelerator's original specification.

This achievement highlights the potential of the superconducting accelerating technology that Jefferson Lab pioneered and is now advancing.

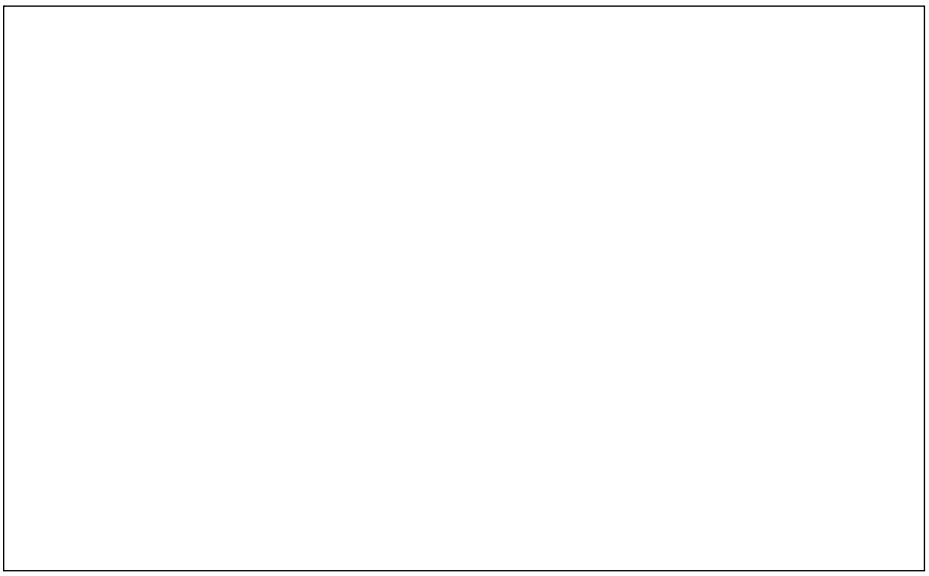
Four examples show how awareness of this potential has begun to spread in the high-tech world:

-- This fall, the nation's Nuclear Science Advisory Committee will consider a proposal to double Jefferson Lab's energy from 6 to 12 GeV. This energy upgrade would require adding and replacing some accelerator hardware. The laboratory's users — researchers from universities across the country — want the upgrade because it will give them even sharper views into nuclei.

-- Under a $70 million contract, Jefferson Lab is providing superconducting accelerating technology for a new research facility being built at Tennessee's Oak Ridge National Laboratory. The Spallation Neutron Source will advance the science, engineering and overall development of space-age materials.

-- A national committee of experts last year recommended superconducting technology for a national accelerator project under consideration, the envisioned Rare-Isotope Accelerator (RIA) facility. RIA would advance the study of matter through investigations of exotic nuclei like those in stars.

-- Jefferson Lab is leveraging its superconducting electron-accelerating technology to develop powerful, versatile free-electron lasers, or FELs. Unlike most conventional lasers, an FEL lets operators dial up a specific color of laser light. Selectable color represents an enormous advantage for basic research and an enormous potential for laser-based materials processing, product manufacturing and national defense. Already, Jefferson Lab's initial FEL delivers laser light at over 150 times the power of previous FELs.



A look down JLab's North Linear Accelerator, or linac, located in the race-track-shaped tunnel about 25-feet below ground.

# Lab staff honored

## Neil, Benson receive international FEL award at conference

George Neil and Steve Benson of the Accelerator Division won the 2000 Free Electron Laser Award for "Outstanding Contributions to Free Electron Laser Science and Technology."

The award was announced at the 22nd International FEL Conference held Aug. 13-18 at Duke University in North Carolina. Neil and Benson share this year's award with Eisuke Minehara (JAERI) for their development of high average power FELs. The JLab FEL team demonstrated over 1.7 kW of CW (continuous wave) FEL power beating the previous record by more than a factor of 150.

The award is given annually by the FEL community at the International Free Electron Laser Conference and provides the international FEL community with a way to recognize its members for their outstanding achievements and service in this field. It has been presented every year since 1988. The award committee consists of previous winners of the prize; and the prize includes a modest cash award and (traditionally) an inscribed clock. Neil's clock is on display in the FEL Control Room. Neil and Benson will be giving the initial talks at next year's FEL Conference in Darmstadt, Germany.

The FEL Group posed for this group photo after achieving 1.72 kW last year. The team is now working to upgrade the machine to 10 kW and eventually produce both infrared and ultraviolet laser light. Recent FEL award winners George Neil (front row, far right) and Steve Benson (seated) are long time members of the FEL team.

"Steve and I would both like to express our thanks to the rest of the FEL Team and the Accelerator Division for all the effort everyone put in to make the FEL a success. It was truly a team effort and everyone here has won a piece of this prize," says George Neil.

For more information about the annual International FEL Conference, visit Duke's Web page at www.fel.duke.edu/fel2000/.

# DOE launches new electronic newsletter 'EnergyConnections'

The Department of Energy Consumer Information office launched a new e-mail newsletter called "EnergyConnections" earlier this year.

This newsletter spotlights several different DOE web sites each month, highlighting what DOE is doing to serve consumers, energy efficient tips, policy news and unique scientific breakthroughs. Each "short" is hot-linked directly to the featured web site, offering subscribers a quick and easy way to dive into the vast reservoir of Web pages offered to the public by DOE program offices and labs.

People subscribing to "EnergyConnections", receive an e-mail alert once a month, giving them the ability to stay in touch with the latest news and interesting consumer developments within DOE. This free subscription is also interactive: subscribers may send in their energy-saving tips and the newsletter will feature the best submissions in the next issue.

To subscribe to the electronic newsletter, anyone can log onto www.ma.doe.gov/connect/. At this page you can read past newsletters, check out current offerings, and fill out a voluntary questionnaire to help the "EnergyConnections" staff identify new areas of reader interest.

# DOE Ombudsman visits JLab; talks with management, staff, tours campus

Dr. Jeremy S. Wu, the National Ombudsman and the director of the Office of the Ombudsman for the Department of Energy visited Jefferson Lab on Sept. 11.

The Ombudsman is a confidential and independent source of assistance to employees, supervisors and managers regarding workforce issues such as diversity, equal employment opportunity, racial profiling, work environment and similar issues.

Wu started his day at the Lab meeting with DOE Site Office staff, then with Lab Director Hermann Grunder, Interim Director Christoph Leemann and JLab's senior staff. After a whirlwind tour of the Lab, he met with a large number of Lab employees for a Town Hall-style meeting. The meeting was open to all Lab employees below the core manager level.

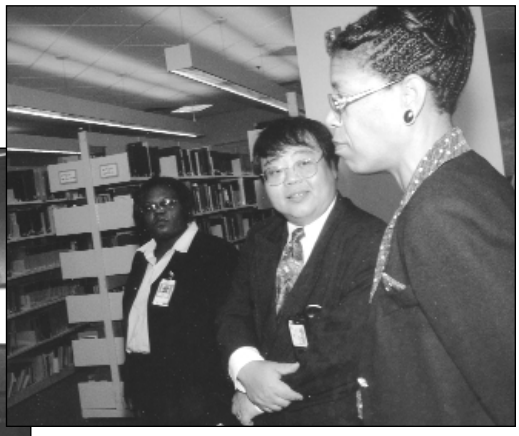
During the informal meeting with Lab employees, Wu explained how he came into the recently created position of National Ombudsman, the purpose and goals of his office, and his accomplishments to date.

The purpose of his office is to integrate, coordinate and promote activities that produce the best possible work environment for DOE and contractor employees. The goals of his office are to promote understanding, identify systemic workforce issues and produce positive results for the workforce. The first major step in implementing his program was the DOE-wide Diversity Standdown in April.

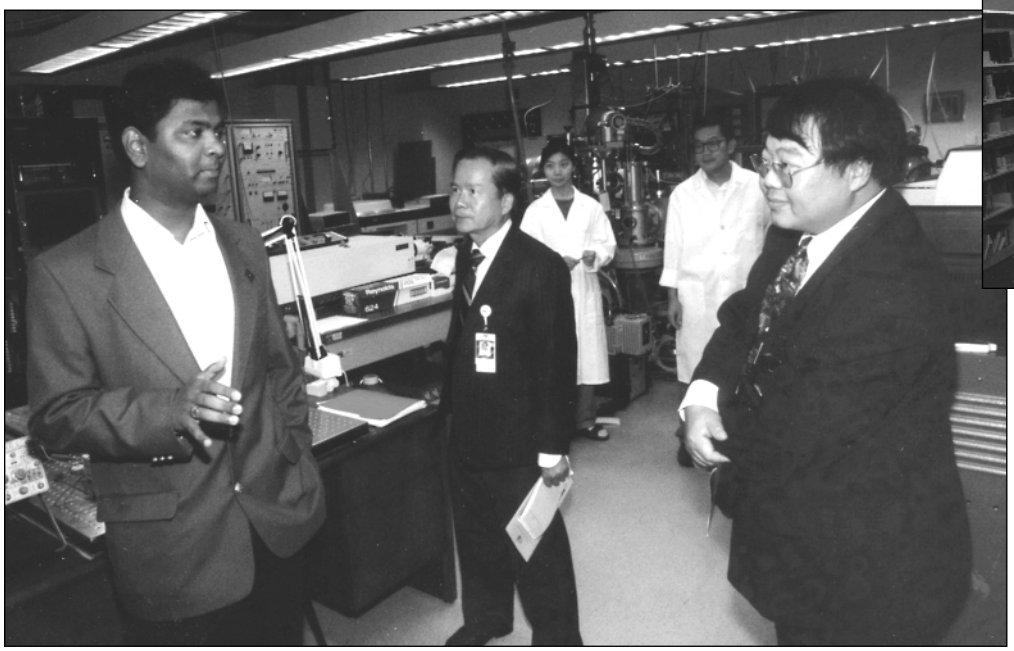
"People are our most important resource. And only when we provide our people with the best possible work environment, can they be their best. In that environment we can achieve our best science," he said. "My job is to ensure that the DOE and contractor workforce environment is diverse, inclusive, hospitable and productive." In the eight months he's served in this new position, he's made it a high priority to meet as many people as possible at DOE's many offices and laboratories.

He encourages raising and resolving personnel and work environment issues at the local level. He admits his office isn't the answer to every issue, concern or problem brought forward, but the Ombudsman can bring a higher level of attention and scrutiny to systemic workplace issues. "My office serves with complete independence, neutrality and 100 percent confidentiality. I want to hear the good and the bad. We want to share successes and areas of improvement from across DOE."

Anyone wanting to talk with Dr. Wu may contact him through his office manager, Regina Neal, at (202)586-2234, fax (202)586-6673 or e-mail regina.neal@hq.doe.gov. Individuals may email jeremy.wu@hq.doe.gov or write Dr. Jeremy Wu, National Ombudsman, U.S. Dept. of Energy, at 1000 Independence Ave., SW; Room 5B-140; Washington, DC 20585, or contact the Jefferson Lab Site Office for more information.



DOE National Ombudsman Jeremy Wu (center) and his office manager, Regina Neal (left), visit Elois Morgan, JLab Librarian.



DOE National Ombudsman Wu and his staff member Jheng Chang (from right) visit Old Dominion University's laboratory in the Applied Research Center. Here they speak with ODU research scientist, Dr. Anna Selvan. In the background are Hailing Wang (left) and Changkun Dong, ODU graduate students.

# Collaboration produces better FEL electron gun

## Efforts of Berkeley, JLab scientists, technicians reduce flashover in component

*by Paul Preuss*
*Berkeley National Lab*

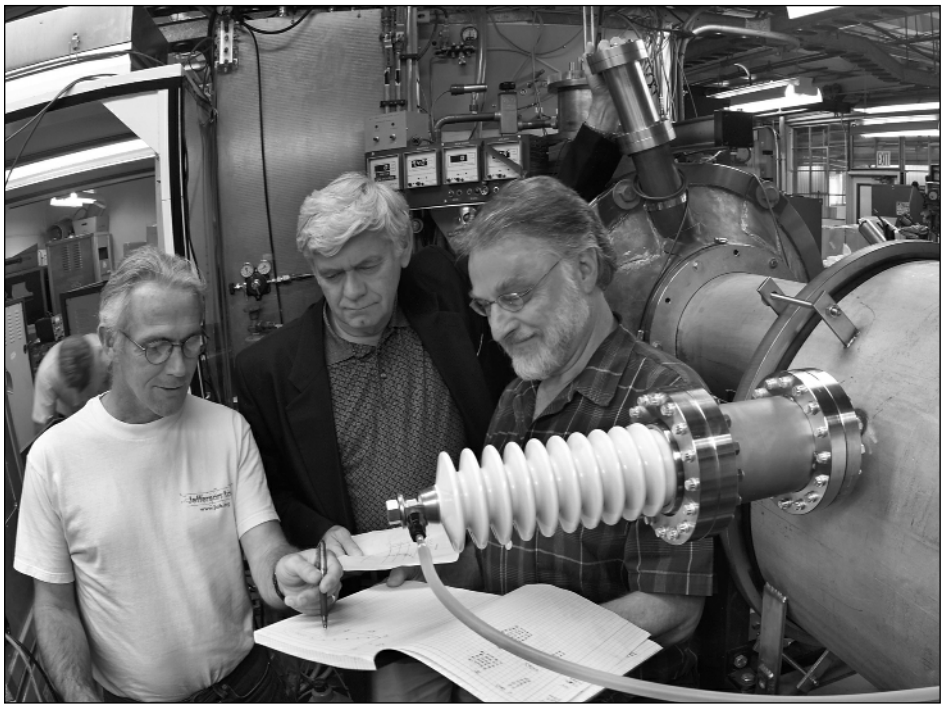


Photo by Roy Kaltschmidt, Berkeley

Jefferson Lab's Tim Siggins, ultra-high vacuum technical associate (from left), and Larry Phillips, senior SRF physicist, review ion-implantation processing results with Ian Brown, the head of Berkeley's Accelerator and Fusion Research Division. Behind them sits Berkeley's ion implanter unit and the gray cylinder over Brown's shoulder is JLab's 'rotisserie.'

To inject energetic electrons into Jefferson Lab's Free Electron Laser, scientists here built a Photo-Emission Electron Gun designed to operate in vacuum at half a million volts. The gun's "barrel" is a pair of cylindrical ceramic insulators, known as accelerator columns, made of pure alumina and capable of withstanding the high voltage.

No matter how good an insulator may be in bulk, however, its surface is vulnerable to failure. In a strong electric field, free electrons can be accelerated onto its inner surface. A single electron impact may scatter one or two or more electrons, which impact the surface in turn.

As surface atoms lose more and more electrons, positive charge quickly develops and still more electrons are launched. In an instant, an avalanche of electrons is rolling over the surface in a catastrophic flashover.

"Flashovers not only bring operations to a halt, they can do expensive damage," says Larry Phillips, a JLab senior superconducting radiofrequency physicist. "When we built the electron gun we knew that a big challenge would be to operate it at high electric field strength without breakdown."

One way to prevent flashover is to add some conductivity to the surface of the insulator, so charge can bleed away before it builds up. "In our first columns we fired on a thick coat of rare metal oxides," says Phillips, "but the coating behaved erratically and the columns still broke down a lot."

Then, at an accelerator conference held in Washington, D.C., in 1993, Phillips heard a talk by Berkeley Lab's Simone Anders on controlling the surface resistivity of ceramics using metal ion implantation. "It sounded like it might be the answer to my problem," Phillips says, "which shows you the importance of going to conferences!"

Anders, a scientist with the Plasma Applications Group in Berkeley's Accelerator and Fusion Research Division (AFRD) headed by Ian Brown, described a vacuum-arc ion source of the group's invention which, says Brown, "had shown nice characteristics for certain kinds of implants. It is very good at putting metal into alumina, for example."

In the vacuum-arc implanter, a broad beam of ions formed from a cathode of the metal or alloy to be implanted propagates through a vacuum chamber toward the target. The device was originally built to produce beams of uranium ions for Berkeley's Bevalac. After the Bevalac was decommissioned "our research evolved toward ion implantation," Brown adds." This kind of ion source and ion implantation works so well it has been copied at many laboratories around the world."

Brown, Phillips, and their colleagues at Berkeley and Jefferson Lab, joined forces to investigate the possibilities of using metal ion implantation to lick the flashover problem. They began by implanting small ceramic coupons with titanium, gold, and platinum.

"Ideally you want a good insulator with a surface that's just slightly resistive, so charge can drain off," Brown explains, "and you want the resistivity even over the length of the ceramic."

Tests established that indeed surface resistivity could be controlled by implanting metal ions; with energies at 135 keV (thousand electron volts), ions were implanted into the surface of the material to about 300 angstroms deep (30 billionths of a meter). The collaborators decided to use platinum, which does not oxidize and makes a good cathode material.

The remaining challenge was to scale up the process from samples the size of postage stamps to cylinders as big as cooking pots. The Jefferson Lab team built a special cradle to fit on the target end of the implanter, tilted to hold the cylinder at a 55-degree angle to the ion beam and fitted to slowly rotate it as the broad beam played over the entire inner surface. The device was immediately nicknamed the "rotisserie."

Implantation is periodically halted to check the surface, until resistance is lowered to the desired value. "We are used to dealing with targets a hundred times smaller and implantation times of a few minutes to a few hours," Brown says. "It takes several days to process a single accelerator column, running the ion source at maximum beam."

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# BEAMS underway for new school year

## Volunteers key to program's continued success

The 2000/01 school year is underway and the Lab's Becoming Enthusiastic About Math and Science (BEAMS) program is welcoming middle school students for the 10th consecutive year.

Forty-two sixth-grade classes from across Hampton Roads will visit the Lab this year — each class spending five consecutive days immersed in Lab-related science and math events and activities — conducted with the help of volunteer scientists, technicians and support staff. Education staff and Lab volunteers will also work with 12 returning seventh-grade classes and 16 returning eighth-grade classes (for two to three days each). BEAMS is designed to open new landscapes of the mind and imagination for these students, according to Jan Tyler, JLab's Education program manager.

It has been recognized by the National Research Council for taking math and science learning out of the textbook and turning it into an active, exciting learning process for students.

"The key to BEAMS's success," Tyler points out, "is the willingness of Lab staff to donate their time as program teachers, presenters and guides. The Education staff is very small. Without our volunteers we wouldn't have a program; they make BEAMS happen." The Education staff is looking for volunteers to guide students through the BEAMS activities planned for this year's classes. They include:

-- The Human Accelerator: demonstrating the complexity of moving an electron (in this case, tennis balls) through an accelerator.

-- Shape of Things: understanding how JLab's electron beam probes an unseen target.

-- Hot and Cold (liquid nitrogen): changing the phases of matter (solids to liquids, liquids to gases, gases to plasmas); and demonstrating how the properties of materials change as they are exposed to severe temperature changes.

-- Looking for the Top Quark: graphing game similar to "Battleship."

-- Microscopes: discovering the world we can't see with the naked eye.

-- Cold Stuff: figuring out how insulation works and what makes a good insulator.

-- Oobleck: identifying the properties of matter at different phases and what happens when observations just don't fit.

-- Magnets and Electromagnets: learning how magnets work, then making and using an electric magnet.

-- Design and Engineering: using teamwork to design, build and test aluminum foil boats.

Role Model Visits: opening your office/work space up to about a dozen students for a 30-minute visit.

There's nothing like mixing up a batch of Oobleck. It's not a solid, but not a liquid, either. BEAMS students learn about colloidal suspensions.

Taking part in "The Shape of Things" gives students a basic understanding of how JLab's electron beam probes subatomic particles like quarks.

**Between June 19 and Aug. 11, 13 high school students took part in Accelerator and Physics Division projects as part of the High School Summer Honors Internship Program (SHIP). This year's participants included (left to right) Billy Law, Stephanie Martin, Melissa Logan, Valla Olliver, Kevin Haluska, Michelle Williams, Jason Green, Michelle Johnfinn, Susan Su, Catherine Fortes and Juan Liceaga. Not pictured are Adam Sassi and Jessica Bowers. Each student had a JLab mentor and a project to work on while here. Now is a good time to start thinking about projects for next year's SHIP students. Call Lisa Surles-Law, ext. 5002 for more information about the program.**

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-- And new this year, an Electrostatics Demonstration. The Education staff recently acquired a Van de Graaff generator and is looking for ideas and activities that middle-school-age students could conduct or participate in with this component. "We hope Lab staff and users will send us their ideas for developing an electrostatic demonstration or activity with the generator," Tyler said. "Most people think of this type of generator in terms of putting their hand on the large spherical electrode and having their hair stand on end." The activity will be held in the auditorium and last 30 minutes.

BEAMS activities encompass the basic science and many of the technologies used at the Lab, and have been tailored to meet Virginia Standards of Learning guidelines.

For more information about BEAMS, or to volunteer for an activity, contact Education Technician Lisa Surles-Law at ext. 5002 or e-mail surles@jlab.org. "We're happy to teach the activities to new volunteers," Surles-Law said, "and are happy to have prospective volunteers visit a class during any of the activities."

BEAMS also uses volunteer mentors to conduct pre- and post-visits with the students at their schools. The pre-BEAMS visit takes about 1 hour and includes giving the students a survey, conducting a short, simple activity, and giving them a basic explanation about the Lab. The post-BEAMS visit only takes about half-an-hour and includes administering the follow-up survey and discussing their BEAMS week with them. Volunteers are paid for their mileage to the school and back to the Lab. The pre-BEAMS visits take place one week before a class visits the Lab and the post-BEAMS visits take place a week after a class visits. For more information about the mentor visits contact Stacy Ring, ext. 7560 or e-mail ring@jlab.org.

Using wire, a nail and a battery pack, BEAMS students create their own electric magnets. They test the results of increasing the magnetic field around the nail as well as the current by lifting paper clips with their new found toy (tool)!

# Briefs

## Fall Science Series events start in October

Jefferson Lab's Fall Science Series kicks off on Tuesday, Oct. 17 with the Lab's own Michael Kelley at the podium. Kelley, chair of the Lab's Laser Processing Consortium and of the College of William and Mary's Applied Science Department, will discuss "What's New in Environmental Science." His presentation will incorporate expertise from the Virginia Institute of Marine Science (VIMS).

Then on Tuesday, Nov. 14, Alan Rowe, a chemistry professor from Norfolk State University, will present "Molecules are Everywhere!" He will explain and demonstrate a variety of chemical reactions.

Each event starts at 7 p.m. in the CEBAF Center auditorium on its respective date. The programs each last about one-hour and include a question and answer period at the end. These events are free and open to Lab staff and the public.

## Be a part of next Lab blood drive

The next American Red Cross Blood Drive at JLab is set for Oct. 11, from 10 a.m.- 4 p.m. in the VARC, room 55. The Lab's goal is 80 units so new and repeat donors are encouraged to attend, according to Vicki Barnett, blood drive coordinator and Medical Services secretary. First-time donors will receive a free T-shirt.

Adequate blood supplies are critical during emergencies and many types of surgeries. JLab's own Bill Kozma required six units recently leading up to his heart transplant surgery.

Also, for anyone interested in being added to the National Marrow Donor registry, the Red Cross will be gathering small blood samples to place volunteers into the National Marrow Donor Program.

A consultant will be available to answer questions about apheresis and bone marrow donation.

Walk-ins for each activity are permitted; however, making an appointment allows the Red Cross to schedule adequate staff for their visit. Call Barnett at ext. 6269 to schedule an appointment.

## Newsletter returns to monthly publication schedule

The *OnTarget* newsletter will resume a monthly publication schedule in November.

## Collaboration produces better FEL electron gun. . .

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Brown credits physicist Efim Oks of the High-Current Electronics Institute in Tomsk, Russia, currently working with AFRD's Plasma Applications Group in a collaboration funded by the Department of Energy, for "getting the ion source operating at twice its former efficiency."

Three accelerator columns are presently being implanted with platinum ions, in addition to three implanted in an earlier joint effort. Two columns have already been assembled in the FEL electron gun at Jefferson Lab.

"We've had no problems whatsoever," says Larry Phillips; indeed the gun quickly began operating at far higher efficiency than before. So encouraging are the results that a second electron gun is planned.

Jefferson Lab's FEL, has already achieved energies of 1.7 kilowatts, and is being upgraded to far higher 10-kilowatt energies. Phillips says a long line of potential users from universities and industries are already in line for the versatile machine.

Essential to the upgraded FEL is a dependable high-voltage electron gun. By tailoring the surface resistivity of its accelerator columns through metal ion implantation, the collaborators have met a major challenge to operating the gun at high field strengths without breakdown.

**Representatives of the Office of Management & Budget visited the Lab on Aug. 4. JLab Deputy Director Christoph Leemann (far left) acted as the group's escort. Here, John Mammosser (right, foreground), Accelerator Division, talks to the group about the Lab's superconducting niobium cavities.**

**Other tours held here recently include: Aug. 16 for nearly 70 scientists and chemists who were attending an international symposium on the industrial applications of the Mossbauer Effect, hosted by Old Dominion University; DOE's Office of Science Director for Planning and Analysis, Bill Valdez on Aug. 18; and for nearly 80 scientists visiting the Lab Sept. 23 during the Superconductivity Conference in Virginia Beach.**

# Milestones
## for July 2000

### Hello

Earl L. Adcock, Mechanical Designer, Accelerator Division

Hans J. Arends, Visiting Staff Scientist, Physics Division

Corey R. Butler, Mechanical Designer, Accelerator Division

Teresa E. Haagsma, Financial Analyst, Administration Division

Peter N. Knudsen, Mechanical Engineer (Cryo), Accelerator Division

Scott H. Myers, Accelerator Operator, Accelerator Division

Mina Nozar, Hall B Postdoctoral Fellow, Physics Division

James B. Pitts, Mechanical Designer, Accelerator Division

Leon Reynolds, Jr., Accelerator Operator, Accelerator Division

Deauna Robertson, Employment Assistant, Administration Division

Diane M. Sarrazin, Staff Secretary, Accelerator Division

John R. (Rusty) Sprouse, Jr., Plant Engineering Director, Administration Division

Mircea Stirbet, Accelerator Engineer (RF), Accelerator Divison

### Goodbye

Thomas H. Briggs, Structural Maintenance & Services Section Manager, Administration Division

Richard A. Hill, FEL Instrumentation Technologist, Accelerator Division

Karen C. Hokansson, User Liaison Manager, Physics Division

# Milestones
## for August 2000

### Hello

Samantha K. Albright, Employment Administrator, Administration Division

Trent L. Allison, Electronics Engineer, Accelerator Division

Thomas Goodman, Accelerator Technologist/SRF Research, Accelerator Division

Michael C. Necaise, Magnet Measurement Technician, Accelerator Division

Stephanie Slachtouski, Mechanical Designer, Accelerator Division

Rebecca K. Yasky, Structural Maintenance & Services Section Manager, Administration Division

### Goodbye

Mark T. Crofford, Electronics Technician Associate, Accelerator Division

Peter Hartmann, Injector Physicist, Accelerator Division

David P. Heddle, Hall B Physicist, Physics Division

Franz J. Klein, Hall B Postdoctoral Fellow, Physics Division

Michael W. Kuss, Hall A Postdoctoral Fellow, Physics Division

Richard F. Lebed, Theory Postdoctoral Fellow, Physics Division

# Milestones
## for September 2000

### Hello

Betsy J. Ballard, Employment Dept. Receptionist/Secretary, Administration Division

Jon M. Barbour, Electrician, Accelerator Division

Christiana Grenoble, Accelerator Technician/Electrician & Programmer, Accelerator Division

Kyungseon Joo, Hall B Post Doctoral Associate, Physics Division

Sherlon Kauffman, Electronics Engineer, Accelerator Division

Christina Krasche, Documentation Assistant, Director's Office

Tara E. Nelson, Documentation Coordinator, Accelerator Division

Cindy J. O'Hare, Procurement Administrator, Administration Division

### Goodbye

Brenda L. Burt, Accountant, Administration Division

Keith S. Jonak, Network Manager, Physics Division

Maurice F. Piller, Jr., RF/Microwave Staff Engineer, Accelerator Division

*"Milestones" highlights the achievements of JLab staff and users, full-time and term new hires, separations and retirements. To submit staff or users' promotions, special honors and awards send information to magaldi@jlab.org or call ext. 5102.*

# Check out the latest, greatest

## Admin Fair brings useful information to Lab employees, users

On Thursday, Nov. 16, Jefferson Lab's A-team invites all Lab employees and users to a fair. The Admin Fair, hosted by the Administration Division, is free and will run from 9 a.m.- 5 p.m. in CEBAF Center and the Residence Facility. The event will feature booths, displays, interactive training and short talks covering the latest customer service information from the many departments within the Admin Division — including Business Services, Human Resources & Services, Plant Engineering and Medical Services.

Ever wonder how to find the most current information in the JLab Library, electronically submit a Plant Engineering work order, complete a government credit card transaction with an electronic business, how to do web-based financial reports, handle government travel requests or check the Lab's shipping & receiving logs, Lloyd asks. "The answers to these questions and many more will be waiting for you at the Admin Fair," he adds. "The event will be educational and informative; however, we also plan on making it fun. We'll have refreshments, drawings and prizes all day."

"We've had many new employees join the Lab over the summer, and we have a new group of users starting a new round of experiments," points out Danny Lloyd, event chair and Lab purchasing manager. "This is a great opportunity to meet some of the new faces, and find out about the latest customer services offered by the Administration Division."

More than a dozen tables and displays will be set up in the CEBAF Center atrium and rooms L102/L104. Hands-on computers will be set up for one-on-one training. The auditorium will be used for a series of 20-minute rotating presentations, demonstrations and training sessions on using government credit cards, submitting requisitions, Library services, and much more.

The event will also provide the latest information on the federal government's Green Purchasing Program (buying materials with recycled content).

Medical Services will be signing up people for cholesterol screening and blood pressure readings in the Residence Facility. Additional computers will also be set up in the Residence Facility for hands-on activities.

ON TARGET

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*Editors*
**Linda Ware**
**Debbie Magaldi**

*Contributing Writer*
**James Schultz**

*Photographer*
**Greg Adams**

Check Us out on the Internet
www.jlab.org

Jefferson Lab/MS 12C
12000 Jefferson Avenue
Newport News, VA 23606