April 2002

# ON TARGET

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY • A DEPARTMENT OF ENERGY FACILITY



# Lab recognizes 14 for innovative work leading to nine patents

## *Va. Secretary of Technology applauds inventors during first official visit to Hampton Roads*

Fourteen current and former Jefferson Lab employees were recognized on April 4, for their work on nine recently approved patents. On hand to applaud the individuals for their innovative efforts were the Commonwealth's new Secretary of Technology, several of Virginia's high technology leaders, Southeastern Universities Research Association (SURA) President Jerry Draayer, Department of Energy Site Office staff and Jefferson Lab leadership.

Virginia Secretary of Technology George C. Newstrom and SURA President Draayer presented commemorative plaques to the recipients while JLab Technology Transfer Manager Fred Dylla briefly explained each patent innovation or its potential for technology transfer.

During opening comments, Draayer described the pursuit of patents as an extremely important part of the Lab's ongoing technology transfer program. "I know how busy you are," he said to the scientists, engineers and technicians being recognized, "and I want to assure you that the time you invest in pursuing a patent is very worthwhile. It is great to bring an idea or dream to reality."

"The Department of Energy has consistently rated the Lab 'outstanding' for its efforts in technology transfer, and patents are a vital part of this," he added.

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Jefferson Lab Technology Transfer Manager Fred Dylla (left to right) explains the accelerator to Va. Secretary of Technology George Newstrom, Deputy Secretary of Technology Eugene Huang and Anne Armstrong, president of the Center for Innovative Technology.

# Lab recognizes innovators …

## *Congratulations intellectual property award winners!*

The intellectual property awards presented on April 4 covered a variety of innovations and developments in accelerator technologies, particle detector technologies, and instrumentation.

**Detector technology recognition went to:**

---Stanislaw Majewski and his son Lukasz Majewski for *Radiology Using a Gas Multiwire Detector with Resolution Enhancement*.

---Stanislaw Majewski, Andrew Weisenberger and Randolph Wojcik for *Mini Gamma Camera, Camera System and Method of Use*. (The men were also recently recognized for this work by the Hampton Roads Technology Council, with a **Tech Nite '02 Excellence in Innovation** award.)

---Andrew Weisenberger for the *Gamma-Ray Blind Beta Particle Probe*.

**Instrumentation technology recognition went to:**

---William Brooks for *Heat Detection System and Methodology*.

---Rick Gonzales for an *Electrical Apparatus Lockout Device*.

---Ganapati Rao Myneni for a *Sensitive Hydrogen Leak Detector*.

**And, Accelerator technology recognition went to:**

---Paul Brindza, Robin Wines and James Takacs for *Flexible Cryogenic Conduit*.

---Lawrence Phillips and John Brawley for *Superconducting Accelerator Cavity with a Heat Affected Zone Having a Higher RRR*.

---Dunxiong Wang and Geoffrey Krafft for *Application Accelerator System Having Bunch Control*.

Fred Dylla, FEL program manager, explains FEL nanotube production to (from left) Secretary Newstrom; Lee Beach, Hampton Roads Research Partnership; Deputy Secretary Huang; Bobby Harrell,CIT vice president for regional operations; Terry Riley, HRTC executive director; and Anne Armstrong, CIT president, while the group tours one of the FEL user labs.

*Continued from page 1*

On behalf of Governor Mark Warner and his administration, Secretary Newstrom commended the Lab's research and the inventors' work. Newstrom strives to understand Virginia's high-tech capabilities and determine how Virginia can best compete nationally and globally. "And with what I saw this morning [during the Lab tour] I'm very optimistic about our future."

Acknowledging the individuals being recognized for their patent work, Newstrom continued, "You are the future of our industries — Virginia's and the nation's. You are the heroes that will make sure Virginia is part of the global marketplace."

In addition to Secretary Newstrom, Virginia's Deputy Secretary of Technology Eugene Huang; Anne Armstrong, president of the Center for Innovative Technology (CIT); and Terry Riley, head of the Hampton Roads Technology Council (HTRC), attended the ceremony. Jefferson Lab was the Secretary's first stop of the day. After visiting a handful of additional locations, he ended the evening at the Hampton Roads Technology Center Tech Nite '02 dinner in Newport News.

Including these nine patents, SURA/JLab now holds a total of 31 patents, with 66 people named on them. (A number of these individuals are named on more than one patent.)

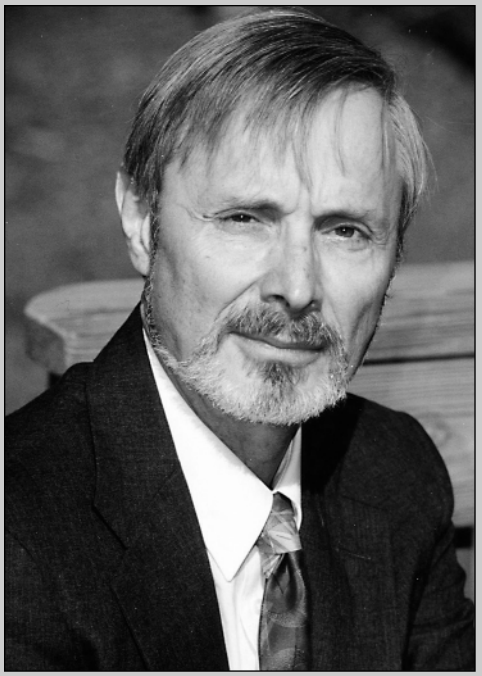
In addition to a $500 award given for each patent issued, there is a 50/50 royalty split for any royalties earned on any patent, between the inventor and SURA/JLab.

The Lab and its contract manager, SURA, encourage Lab staff to apply for patents on novel, commercially applicable ideas through the Lab's Technology Transfer Office.

Depending on the backlog at the U.S. Patent and Trademark Office, obtaining a patent can take from 1-2 years after filing the application, according to JLab Legal Counsel Rhonda Scales. After an invention disclosure is forwarded to the Patent Attorney, an application is drafted by the attorney and reviewed by the inventor(s). Once everyone is satisfied with the contents of the application, it is filed with the USPTO. The Patent Attorney coordinates with JLab Counsel and responds to any official actions by the USPTO. On average, it costs approximately $5,000 to prosecute a patent.

Any company or small business may submit a proposal to obtain a license of rights from SURA to use, manufacture or sell a SURA invention or patent.

# From the Director



**Christoph Leemann**
**Jefferson Lab Director**

*Leadership works to ensure healthy funding for Lab*

This is the first of a new monthly column where I will highlight for Lab staff a particular topic of importance. I hope you will find that these lines inform you and I welcome your input to the column.

This month, I want to update you on our recent efforts in the area of funding. Doing all we can to ensure healthy funding for the Lab is an ongoing priority in the Director's Office and while this is a year-round effort, a number of key events peak in the early part of the year. The President's Budget Request for Fiscal Year 2003 became public with the State of the Union in late January and is now with Congress where it will be debated and discussed leading to a final Energy and Water Appropriation. As many of you probably heard, the President's FY03 budget brought the encouraging news that the Department of Energy plans to increase the Lab budget by $5.3M starting October 1, 2002. Of course, it is only after approval by Senate and House and the final presidential signature that this budget will be law. We have been actively supporting, along with other Nuclear Physics labs and the NP community, the President's budget and bipartisan efforts to increase funding for the Office of Science. We were also notified that the Lab has approval to begin planning an addition to CEBAF Center with a targeted construction start within the next two years. This addition would replace much of Trailer City, the computer center and would have adequate room for upgrades.

Government agencies, including the DOE, are already busy preparing their FY04 budget proposals that later in the year will go to OMB, the Office of Management and Budget. To help the DOE formulate their FY04 plans, and prepare contingency plans should the final FY03 budget differ from the request, the Lab prepares at this time of the year its budget proposal and a number of impact analyses for increased or decreased funding scenarios. The Lab Division Offices have prepared the necessary documentation to submit to DOE for our FY04 funding. That paperwork is submitted annually in what's called Field Work Proposals by Sharon Parkinson, our Lab Budget Officer.

A follow up is the annual budget review with the DOE Program Office. On March 26, members of Director's Council and several senior Lab staff visited Dr. Dennis Kovar, Director of Nuclear Physics for DOE's Office of Science, to present the Jefferson Lab FY03/04 budget and to discuss the impacts of various budget scenarios. We presented our case for upgrading the CEBAF accelerator to 12 GeV, constructing a new experimental hall, Hall D, and upgrading existing halls. Dr. Kovar was briefed on the 12 GeV project team that has been formed with Claus Rode as the team leader. We are pressing forward with all deliberateness. We expect to obtain CD0, Critical Decision 0 soon, the DOE's official statement of the mission need for the upgrade.

In the big [DOE] picture, just as at the Lab, budgeting is more than accounting, it is a statement of what's important and a priority. It serves to some extent as a reward for performance as well as a statement of performance expectations. In that context it helps JLab to have "good grades". We have two such validating circumstances going for us, first the support of the scientific community through NSAC, and second our Operations Review of last January.

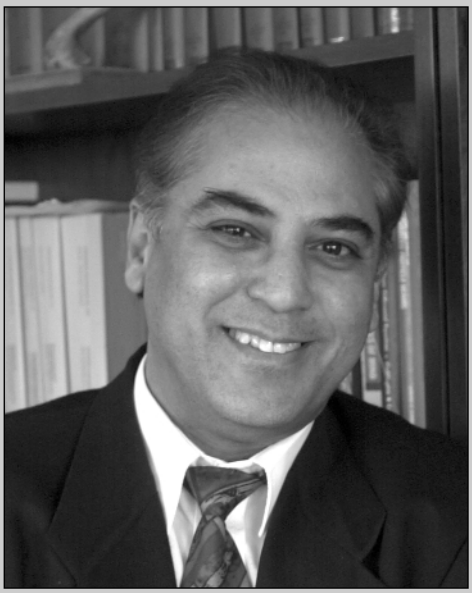
As many of you know, the DOE Nuclear Science Advisory Committee's Long Range Plan recommends funding for enhanced operations and the timely start of the CEBAF 12 GeV upgrade. This recommendation was the result of much preparation on the part of many here at the Lab, and when it comes to having made the scientific case to the community Larry Cardman, his staff and our users deserve much praise. That endorsement serves as the backbone in establishing the mission need for the 12 GeV upgrade and is critical to moving the upgrade forward.

In January, the DOE Operations Review Committee, after a thorough three day review, described the Lab as well managed, producing first rate science, and as an efficient and lean operation. Based on these findings we will continue to work with the Department of Energy regularly to communicate the benefits of our programs and our funding needs as they strive to balance national priorities and fund projects.

In conclusion, we are planning an all-staff meeting in May when you can ask specific questions on the budget or the budget process. I solicit your input on topics for that meeting. I want to address subjects that interest staff the most. Please e-mail to me the topics you would like addressed so I can start thinking about them as I plan for this meeting.

# In Pursuit of Excellence

## *Accelerator Division strives for knowledge, experience, cutting edge science*



**Swapan Chattopadhyay**
**Accelerator Division Associate Director**

Months after the September 11, 2001, terrorist attacks on the nation, American life is returning to some semblance of normal. But life for basic science programs like nuclear physics research is likely to remain as challenging as ever. As federal budget deficits balloon and defense-related expenditures increase, in the short run it doesn't seem likely that the physics community should expect substantial funding increases. The JLab CEBAF facility, however, was reviewed in a favorable light in our last operations review and is expected to receive a very modest funding increase, signifying our vital place in the national science agenda.

All the more reason, then, according to Associate Director Swapan Chattopadhyay, responsible for the Accelerator Division, for JLab to push itself in new directions, building on past accomplishments while capitalizing on expertise developed over the past decade and a half. Chattopadhyay says one crucial way for JLab to leverage that experience is to concentrate institutional resources in unique centers of excellence, thereby preserving and enhancing our core competencies, establishing a vital resource for current and future institutional projects and programs, and placing Jefferson Lab in a visible leadership position worldwide. Yet another goal is to make superconducting radio-frequency microwave and accelerator technology proficiencies widely available to other laboratories in the United States and abroad, as well as to the private sector.

"Scientifically speaking, Jefferson Lab was built to bridge the knowledge gap between nuclear and particle physics," Chattopadhyay said. "It's a very difficult boundary between two subatomic domains and hard to 'see' by ordinary conventional facilities available at that time. JLab was set up with the specific mission to probe and elucidate that transition region. As chartered, Jefferson Lab is one of a kind in its scientific reach, rivaled by none in the world and requiring a unique and very special scientific facility based on a novel technology."

Concerning that technology, Chattopadhyay continued, "Originally, there was the need for a very special skills set in order to conceive, design, build and commission the world's very first continuous-electron-beam accelerator at the multiple-GeV level — that is, at energies measured in multiple billions of electron volts. Now that the CEBAF machine is up and running, the people we originally engaged to build it can apply their expertise in pushing the limits of the scientific and technological frontiers of beam physics and superconducting radio-frequency technology even further. We can spawn new ideas and designs, and become the architects of future generations of novel scientific facilities."

JLab's two new centers of excellence, reflecting our unique core expertise, are the Center for Advanced Studies of Accelerators (CASA) and the Institute for Superconducting Radio-Frequency Science and Technology (ISRFST). Both centers have been created to bring experts together from throughout JLab in administratively distinct groups. In house or out, CASA and ISRFST teams will be called upon to solve problems, propose new approaches, and create next-generation ideas and facilities to advance science.

"Resources based upon unique and specialized expertise shouldn't be held hostage to one particular project or program. They should instead be recognized as such and made available across the institution and to the world community at large," declared Chattopadhyay. "We see the creation of these resource groups as providing assistance not just to the Lab at large but also the physics community in general. Our people are our seed corn. In order to grow our own, we must make full use of their talents and years of experience — neither of which is easy to come by."

CASA and ISRFST claimed their respective places on the JLab organizational chart in June 2001. At present, the 70 staff affiliated with ISRFST are housed predominantly in the Test Lab. Fifteen permanent members are on the CASA rolls, with offices on the sixth floor in the Applied Research Center, and there are many affiliate members from across the various departments. CASA and ISRFST are financially supported by the Lab's

nuclear physics and Free-Electron Laser (FEL) programs, with additional assistance from funds available from work being conducted on the Spallation Neutron Source (SNS). Additional Department of Energy funding is being sought for both centers.

"In this country there is no other place with the expertise and experience to build a large-scale superconducting linear accelerator," Chattopadhyay pointed out. "We must secure, retain and enhance this competency — and adequately support it financially — within the next five years. Otherwise it's lost to the nation."

CASA's competencies are to be utilized in the Lab's CEBAF operation and its proposed and expected upgrade to 12 GeV from the current 6 GeV. In addition, CASA is contributing to advance planning for a potential high-luminosity electron-ion collider facility for nuclear physics at Jefferson Lab. The center is also contributing to a technical demonstration (in collaboration with Cornell University) of proposed energy-recovered linacs, or ERLs, for inclusion in the Relativistic Heavy Ion Collider, or RHIC, at Brookhaven National Laboratory and for stand-alone synchrotron radiation facilities at Jefferson Lab, Cornell, or Berkeley Lab.

Another primary focus will be the creation of a robust research and development program that capitalizes on the Lab's existing infrastructure. ISRFST specialists are expected to push the technological envelope in developing a sound scientific understanding of microwave superconductivity, surface processes that allow superconducting accelerator structures to approach theoretical limits, and a more thorough understanding of the ultimate limitations in the operation of superconducting accelerators.

"Accelerator-derived expertise is at the core of everything we do," Chattopadhyay said. "It's vital to our 12 GeV upgrade, to additional development and refinement of our Free-Electron Laser and to development of future light sources. Caring for and feeding this expertise are vital to our future."

# *CASA, ISRFST leverage Lab's core competencies, extend Lab's scientific reach*

## The Center for Advanced Studies of Accelerators (CASA)

CASA has been organized to pursue a broad program of theoretical and experimental research in accelerator, electron and photon-beam physics. The center's primary mission is to generate, to investigate deeply, and to distribute forefront knowledge, especially that developed as a result of research conducted at Jefferson Lab's Continuous Electron Beam Accelerator, its Free-Electron Laser, and other advanced scientific facilities. A secondary goal is to provide an organized archive for retaining information generated by Jefferson Lab's Accelerator Division activities, so that such information is available to guide future projects.

Scientific research by CASA team members is oriented to a variety of topics:

- Materials studies supporting performance enhancements to superconducting radio-frequency cavities; Design and operation of superconducting accelerators;
- Design and operation of recirculated and energy-recovered electron accelerators (called energy-recovered linacs, or ERLs);
- Design and operation of high-average-power photon sources, particularly those that generate ultrashort pulses over a wide variety of wavelengths;
- Development of advanced electron-beam diagnostic devices;
- Advanced methods of controlling accelerators by computerized feedback systems;
- Development of advanced theoretical calculations for predicting beam behavior for a wide variety of physical arrangements; and
- Development of advanced accelerator designs for a wide variety of applications based on RF superconductivity and beam recirculation.

## The Institute for Superconducting Radio-Frequency Science and Technology (ISRFST)

The ISRFST research and development program aims to substantially extend the performance characteristics of superconducting radio-frequency (SRF) accelerators. The knowledge and processes developed under the ISRFST program should result in the construction of future SRF accelerators with greatly increased accelerating gradients and significantly reduced cryogenic loads. Such improvements are expected to allow the accelerators to be constructed at dramatically lower costs than with present SRF technology.

ISRFST researchers will examine means of making technical improvements to SRF accelerating cavities, focusing first on cavity fabrication and processing, and later on critical ancillary technologies. The program will determine fundamental technology limitations on superconducting accelerator structures. Existing technology will be systematically developed to increase both the accelerating gradient and cavity quality factor Q while decreasing existing cavity inefficiencies. Supporting these efforts will be accelerator-physics modeling experiments, conducted to deepen the understanding of higher-order modes and beam dynamics in superconducting accelerators with and without energy-recovery systems.

ISRFST specialists will also assess the potential of, and develop accelerator structures from, superconducting materials with fundamental properties superior to niobium; measure the limitations on accelerator performance imposed by beam breakup (BBU) and higher-order-mode (HOM) losses; and develop SRF accelerating structures that minimize these limitations.

*Editor's note: Catch an interview with Warren Funk, the Lab Spallation Neutron Source project services manager who was named in March to head ISRFST.*

# Giving the 'gift of life'

**Twelve-year-old fights for his life**

Reynolds was recently informed that his bone marrow recipient has Graph Versus Host Disease, which is normal in these types of cases. The young man is doing better than expected. He's on a mild restriction concerning play.

When Reynolds received the update, the recipient was a couple days away from leaving the hospital, but will stay in guarded care for the next 100 days after which he will be re-evaluated.

"Jefferson Lab held its bone marrow registry drive at the time JLab Senior Scientist and Theory Group Leader Nathan Isgur was battling multiple myeloma, a rare cancer of the bone marrow. One of the possible treatments for his cancer was a bone marrow transplant," recalls Linda Ware, Lab Public Affairs manager. "This generated interest in what the Lab could do to show support for Nathan, and a marrow registry drive seemed to be a good choice."

The American Red Cross subsidized the registry fees and the NMDP charged no fee for registering minorities. Thirty-one Lab people registered at that time — five individuals with minority heritage. The Lab, using SURA funds, sponsored the remaining $546 tab to cover tissue-typing expenses for registrants.

Leon Reynolds, Accelerator operator, takes a moment out of his day to pose for the camera and to reflect on the struggles of his bone marrow recipient.

## *Leon Reynolds donates his bone marrow to save life of young cancer patient*

Leon Reynolds: son, husband, father, former Marine and teacher, accelerator operator and most recently, bone marrow donor.

Last month, Reynolds became the Lab's first person in corporate memory to become a marrow donor. He entered the National Marrow Donor Program (NMDP) registry on Oct. 11, 2000, when the Lab sponsored a bone marrow registry drive in conjunction with a regularly scheduled Red Cross blood drive.

"It was one of those things I'd always wanted to do, but had just never found the time to get it done," Reynolds recalls of the quick, simple registry process. "The Lab made it easy and convenient for me. I wish more employers would hold a registry drive."

"There's a real shortage of minorities registered as potential donors. So it was important to me to do this," he explains.

"Two marrow donor statistics still stick out in my mind: One in 20,000 Caucasian people [needing a bone marrow transplant] receive marrow from a registry match, while only one in 1,000,000 minority recipients receive marrow from the registry," he continues. "Because of the shortage of registered minority donors, look at how many people die from blood-related cancers without ever having the chance to receive a marrow transplant that could extend or save their life."

He didn't think much more about it until nearly a year later when he received a call from the NMDP registry. "Was he still interested in being a donor? How was his health right now?" he was asked. "There's a 12-year-old boy with acute leukemia. He needs a bone marrow transplant to live. It looks like you are a match. If you are still willing to be a donor, can we do another round of testing to see if you'd be a suitable donor for the child?"

Reynolds says, he couldn't say no. "What if it were one of my kids in this situation," he kept thinking. "I would hope that someone would be willing to make this small sacrifice to help save my child."

Reynolds made a few trips to the Medical College of Virginia in Richmond for a complete battery of

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# In their own words

## *with Hall C Leader Rolf Ent*

Rolf Ent, Hall C leader, takes a break between meetings.

*as told to Judi Tull*

I come from an extremely small town in the Netherlands, about 15 miles north of Amsterdam. It's very historic, with some houses as old as 400 to 500 years, but you probably know it best for the cheese that's produced there — Edam. I'm the youngest of seven children, and only one brother is relatively close to me in age. It was sort of like growing with four mothers and three fathers.

I was pretty young when I made the decision to pursue physics, probably 14 or 15 years old. I was facing a choice — did I want to be an athletics teacher or a physicist? I went to my gym teacher and asked him. He said that if I became a gym teacher, I'd be teaching sports, but not playing them. My real interest in soccer was in playing it, so I chose physics.

I still play soccer, in fact. I'm proud to say that I'm still playing mid-field even though I'm 40.

When I went to the Free University of Amsterdam, I chose to pursue nuclear physics, and ended up studying at the National Institute for Nuclear and High Energy Physics (NIKHEF), where they had an electron accelerator. I loved the work, but wasn't sure I wanted to go on to a Ph.D. In the Netherlands, it's not necessarily a big benefit to have one. But my supervisor at the University landed a special project working on cluster knock-out reactions and got the money for it, so I worked on that. After I got my Ph.D. in 1989, I once again wasn't sure I wanted to be a post-doc but I heard about another experiment that sounded interesting, one based on spin-dependent measurements at the Center for European Research (CERN).

During that time I had the good fortune to be hired, based solely on e-mail, by the University of Virginia, even though I'd never even been to America. So I worked at CERN for UVa. During

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## *Black History Month team seeks projects for students*

The six essay contest winners will arrive at JLab on June 24 to begin their six-week externships. Each externship will be broken into three 2-week segments, allowing the students to experience different areas of the Laboratory, according to Rhonda Scales, JLab Legal Counsel and Black History Committee member.

"We're in the process of identifying areas where the students could be placed," Scales explains. "We're looking for a variety of areas and jobs for the students. They are interested in administrative, technical and non-technical areas."

Anyone at the Lab with short-term projects that could be accomplished by high school seniors is asked to e-mail Scales with a short description of the project and what the student or students would be expected to do. "We're looking for work the students can do on small projects, larger projects that can be broken into segments, research, or even administrative support tasks, or any work-related tasks you've put on the back burner that might be appropriate for a student to tackle," Scales adds.

"The externships give us [at the Lab] a real opportunity to interact in a positive way," Scales points out, "with youth who are in the process of deciding what they want to do with their lives. We can encourage and nurture them and provide them with more exposure to the things they are interested in, as well as to opportunities of which they may not have even been aware."

Money to support the externships has already been identified, so there is no direct cost to any office, group or section that hosts a student during his or her externship.

Anyone with a project or project idea is asked to contact Scales by June 4, ext. 7384, e-mail scales@jlab.org.

The 12 finalists posed for a group photo. Front row, left to right are: Derrik Melvin, Alicia Rodrigues, Latasha Davis, Shavonne Cameron, Keyona Grant, and Rachael Jaenichen. Back row, l. to r. are: Steven Thompson, Sean Diggs, LaShawn Powell, Tommie Canty, Lenita Williams, and Shena Morrow.

# Finalists of African-Americans in Science Essay Contest compete for externships

Jefferson Lab recently held its second annual African-Americans in Science and Technology Essay Contest as part of its Black History Month activities. A dozen finalists visited JLab on Feb. 21 for a day of special activities, culminating with the oral presentation segment of the essay contest.

For their outstanding efforts, six Newport News 11th graders won six-week, summer externships at the Lab, reports Rhonda Scales, JLab Legal Counsel and Black History Committee member.

Externship winners are Alicia Rodrigues, Denbigh High School; Keyona Grant, Warwick High School; and Latasha Davis, Steven Thompson, Tommie Canty and Sean Diggs of Woodside High School. Their essays covered the lives, challenges and accomplishments of a variety of 20th century African-American scientists and inventors. The essays included such innovators as Garrett Augustus Morgan, who created the first traffic signal and first gas mask, to Dr. Charles Richard Drew and his lifesaving work in blood preservation and banking, and the groundbreaking work of Dr. Mae Jemison, the nation's first African-American female astronaut.

"Last year's essay contest was a great start and we wanted to continue that success this year," Scales said. "We believe the essay contest, coupled with the students' visit to the Lab and the externships, are a worthwhile way to encourage interest in science and technology, and an excellent way to increase our knowledge and appreciation of black history." Contest participants met and spoke with a number of Lab employees, learned about the Lab and toured the site during their visit. The winners will be back on June 24 to begin their paid, six-week-long externships.

The Lab's Black History Month Committee hosted the essay contest and a lecture by William Pinkney, captain of the Freedom Schooner Amistad. The nationally known speaker shared his knowledge of the history of the Amistad incident of 1839 to a nearly full auditorium. Pinkney travels to ports around the U.S. promoting human rights

Fred Dylla, JLab FEL program manager (from left), Congresswoman Jo Ann Davis (Virginia) and Kevin Jordan, FEL team member, listen to Brian Holloway, William and Mary physics professor, describe his nanotube research during the FEL tour. Congressmen Randy Forbes and Duncan Hunter, Congresswoman Davis, and several congressional staff members visited the Lab March 15 as part of an initiative of the House Armed Services Committee, Military Research and Development subcommittee. The group learned about the role of superconductivity in free-electron lasers, heard from Admiral Jay Cohen, Chief of Naval Research, toured the FEL facility and got a taste of the research conducted with the FEL by Brian Holloway and Michelle Shinn, Jefferson Lab staff scientist.


# Congressional Visit

Congressmen Randy Forbes, Virginia (right), and Duncan L. Hunter, California, take in a JLab briefing on superconductivity.

# Leon Reynolds...

*continued from page 6*

tests and to provide the NMDP with his complete medical history. "I've had a physical every year of my life," Reynolds admits, "but never this extensive. It was nice to know, as I enter my 40s, that my body is in good working order."

"They really check everything out. Everything in my bone marrow becomes his," Reynolds points out. "You've gotta remember, they're going to wipe out this kid's bone marrow — his entire immune system. The doctors have to make sure they're not exposing the patient to anything. Even the common cold could kill him."

The results came back. He was a very good match — 5 out of 6 blood characteristics — and his health was excellent. On Feb. 18, Leon worked in the Machine Control Center (MCC) control room then drove up to the Marriott in Richmond. Early the next morning Leon was picked up by his Red Cross representative for the short drive to MCV where he was admitted for the overnight procedure. He received a general anesthesia; then the doctors extracted two liters of bone marrow from his body. The life-saving marrow was packaged and immediately taken to Richmond International Airport, where the recipient's NMDP representative received it and flew to the child's destination.

Reynolds returned to work Feb. 25, a little slow but in great spirits. "The response from co-workers and friends around the Lab has been incredible. Recovery went much faster than I expected. Yea," he admits, "I was a little sore when I first came back to work but I was 90 percent mobile. For a few days it felt like a brick had slammed across my lower back and it was still hanging there and I was carrying it around. But this was nothing compared to what the recipient is going through."

While Leon doesn't know the young man who received his bone marrow, or even where he lives, Leon received a 30-day update and will receive future updates on his condition. After one year, if the child elects to meet his donor, Leon could meet the young cancer patient. Leon hopes that happens.

"I'm fine," Leon reassures his co-workers. "It's that little 12-year-old boy out there, somewhere, fighting for his life that we need to keep in our thoughts and in our prayers."

"I hope that through my exposure to donating bone marrow that others will consider being placed on the registry and possibly becoming a marrow donor," he says. "It's such a small personal sacrifice and it can save someone's life. Life should be about helping others."

# Briefs

## Milestones

### for February 2002

**Hello**

Vladimir Sapunenko, Computer Scientist,Physics Division

**Goodbye**

James B. Pitts, Mechanical Designer, Accelerator Division

### for March 2002

**Hello**

LaChelle K. Dozier, Science Education Assistant, Director's Office

Stephen B. Dutton, Electronics Technician, Accelerator Division

Jacek Sekutowicz, Senior Staff Scientist/Engineer, Accelerator Division

**Goodbye**

Michael D. Wimbish, Electronics Technician, Physics Division

**Congratulations**

The following individuals went from casual to regular employee status during February or March:

Teresa A. Davis, Procurement Administrator, Administration Division

Barbara Donovan-Swanick, Procurement Administrator, Administration Division

Lori Powell, Creative Multimedia Specialist, Physics Division

Petra H. Radulovic, Training Assistant, Administration Division

Celia M. Whitlatch, Mechanical Engineer, Administration Division

## Education seeks mentors, projects for summer interns

Each summer, Jefferson Lab hosts an in-residence education program aimed at high school honors students interested in pursuing a college education in math, computer science, or physics.

The Science Education staff is currently preparing for the program and needs your help, says Jan Tyler, Science Education program manager.

"We need Lab employees to help us by providing educational, hands-on projects for these enthusiastic students to work on or participate in," Tyler explains. More than a dozen high school students from across the region will be on site from June 17 to August 9, and they will need both mentors and projects for their stay at the Lab. "Please contact me if you have a project or project idea that you feel would be appropriate for a high-achieving high school student or students," Tyler asks. Anyone interested in being a mentor for a student over the summer may also contact her.

Send Tyler a short description of the project and an explanation of what the student(s) would be doing. "We're hoping to attract a range of projects for the group," she says. "In addition to a variety of scientific interests, this year's group has students who are very interested in engineering and electronics. Many of the students have well-developed computer programming skills in C and C++.

Money to support the High School Summer Honors Internship Program (SHIP) students is handled through Education. There is no direct cost to any JLab group's budget for participating students.

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# Rolf Ent...

*Continued from page 7*

that period, I went to the Massachusetts Institute of Technology to defend a proposal, and ended up being hired by them in 1990. In 1991, I was stationed at the Stanford Linear Accelerator Facility for one year. I worked with extremely good people there. A good team makes the work look easy.

I came to Jefferson Lab for the first time in 1993, for a Hall C meeting. A friend I knew from NIKHEF asked if I was interested in coming to work here, and it appealed to me. The one thing I wanted was to work on the commissioning. That was the fun part — finding the problems and solving them on the fly. When we started the first experiment in 1995, it was tremendously exciting.

I was also interested in coming here because it would give me the chance to work at Hampton University, where I am an adjunct [professor] now. I find that it's always convenient to be near a university, and HU especially appealed to me because it's a minority school. In 1996, I became a group leader there, managing their experimental group. I also supervise students, including Ph.D. candidates, and I really enjoy that part of it.

In 2000, I was asked by the User Group to start work on the 12 GeV upgrade, and then last November I was asked to become the Hall C leader. In much the same way that I'd been hesitant at other steps along the way in my career, I wasn't really sure I wanted to do this. I loved doing physics and I loved working with students. Frankly, I was happy as a clam!

On the other hand, I really like a challenge and this was certainly a challenge. The timing was such that I had to give myself a crash course in the operational review process, and of course it's more managerial and administrative than what I did before. The thing I like least are the 8 a.m. meetings. My preferred time to work is more like from 2 p.m. to midnight. In fact, I used to joke about meeting with someone "bright and early" at 10 a.m.

In my off time, I play volleyball and soccer, and I take my winter vacation to go skiing in Europe. I'm also a regular at the World Cup soccer matches — if the Dutch are playing, I'm there. I'm an avid fan of classic movies from the 1940's and 1950's, and love to read, mostly fantasy novels. I can spend a whole day just reading.

But in the end, I think of myself as a real hard-core physicist. This is a great job — I get to do something fun, and it has some usefulness for humanity. It's a fascinating application of mathematics — to figure out what's going on.

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Anyone with a project or project idea is asked to contact Tyler by May 24. This is the 10th year Jefferson Lab has sponsored this program. Seventy-eight students applied for this year's 13 internships.

Call Tyler at ext. 7164 or e-mail tyler@jlab.org.

## Author visits May 8 to discuss 'Einstein's Unfinished Symphony'

Author Marcia Bartusiak brings a discussion of her latest book "Einstein's Unfinished Symphony" to Jefferson Lab on May 8.

"A new generation of observations, now being completed worldwide, will give astronomers not just a new window on the cosmos but a whole new sense with which to explore and experience the heavens above us," she writes. "Instead of collecting light waves or radio waves, these novel instruments will allow astronomers to at last place their hands on the fabric of space-time and feel the very rhythms of the universe. These vibrations in space-time — or gravity waves — are the last prediction of Einstein's general theory of relativity yet to be observed directly. They are his unfinished symphony, waiting nearly a century to be heard. When they finally reveal themselves to astronomers, we will for the first time be able to hear the cymbal crashes from exploding stars, tune in to the periodic drumbeats from swiftly rotating pulsars, listen to the extended chirps from the merger of two black holes, and eavesdrop on the remnant echoes from the mighty jolt of the Big Bang itself."

The Science Series event will begin at 7 p.m. in the CEBAF Center auditorium, and last about 1 hour. The event is free and open to anyone interested in learning more about science. Barnes & Noble will attend and have Bartusiak's new book available for purchase.

## April 22 TOCTWD sign-up deadline nears

Jefferson Lab's Take Our Children to Work Day, in honor of National Take Our Daughters to Work Day, will be held April 25 from 8:30 a.m.-4:45 p.m. The day will include career exploration and hands-on science activities. "The time between 11:45 a.m. and 1:15 p.m. is set aside for you to have lunch with your child(ren)," explains Jan Tyler, Science Education program manager.

Children and grandchildren of Jefferson Lab employees who are in grades 1 through 6 may attend. "All children must be registered by 5 p.m. April 22 in order to participate," Tyler emphasizes. The electronic registration form can be found at: https://www1.jlab.org/ul/apps/education/children/. Call Tyler at ext. 7164 for more information or to volunteer to help with the morning career exploration activities. "We need many volunteers to make this event a success," Tyler says. Volunteers are needed to escort groups in the morning, to provide career exploration (office or work area visits), and to help with afternoon group activities.

The cafeteria is planning to serve special kids' meals on this day.

## Go green: Check out new Intranet page

A new Web page and electronic newsletter have debuted on the Jefferson Lab Intranet. "Take a few minutes to check out "EarthWise," the Lab's new environmental awareness Intranet page," asks Linda Even, Environmental Engineer. "We've also just published our first edition of "*earthwatcher newsletter*," an electronic newsletter designed to bring Lab staff, users and contractors the latest information about the Lab's recycling and green procurement programs."

"We needed a convenient, efficient and timely way to promote environmental awareness and communication across the site," Even says, "and the Intranet page and electronic newsletter should meet those needs nicely and not generate any waste!"

The EarthWise page provides information on the Lab's Recycling Centers and the Green Procurement program; access to the *earthwatcher newsletter*, and easy-to-use links for quickly connecting to the Lab's Environmental, Health & Safety Manual; a variety of Green Web sites; community environmental awareness Web sites; current environmental issues; and information about environmental awareness events. There's also a link for making suggestions: to the Lab's environmental awareness programs; the Web page; or to submit ideas for the newsletter.

"Visit the EarthWise today. Find out what a Bag Bird is, and what you can do to stop them. See how easy it is to get involved," Even comments. "You'll be making Jefferson Lab, our community and our planet a better place to live. We hope you contact us with your suggestions on reusing and recycling materials, and reducing waste."

The EarthWise Intranet page is accessible from the Safety First link on the main page (www.jlab.org). The Intranet address is www.jlab.org/intralab/earthwise/. You may subscribe to the newsletter from the EarthWise page, or by checking "earthwatch" on the JLab Mailing List that is available from the JLab Insider page (www.jlab.org/insider/).

## Blood drive set for May 23; your help is needed

The next blood drive at Jefferson Lab is set for Thursday, May 23, from 10 a.m. until 4 p.m. in L102-104 in CEBAF Center.

Vicki Barnett, Medical Services, encourages new and regular donors to contact her to set a donation appointment. "It's best to make an appointment so adequate Red Cross staff will be available for the donors," Barnett explains. "In addition to donors, we're looking for bloodhounds to help sign up donors; and we'll need volunteers the day of the drive to staff the regis-

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tration table. Please come out and support this worthwhile event, give back to the community, and help save lives."

The last Red Cross blood drive at the Lab, on Jan. 24, produced 69 units of blood. "We missed our goal by only one unit," Barnett says. "We hope everyone will take part in the May blood drive, either by giving a unit of blood, helping with donor sign ups, or at the registration table the day of the event."

Call Barnett at ext. 6269 or e-mail vbarnett@jlab.org.

## *DOE swears in new Office of Science Director*

Raymond L. Orbach was sworn-in on March 14 as the Department of Energy's new director of the department's Office of Science. He was confirmed by the U.S. Senate on March 4.

"Ray's over three decades experience as a practicing scientist and his demonstrated leadership skills as an administrator who led a major university campus will serve the department well," Secretary of Energy Spencer Abraham said.

With an annual budget of $3.3 billion, the Office of Science is the principal funding agency of the nation's research programs in high-energy physics, nuclear physics and fusion energy sciences. The office also manages research programs in basic energy sciences, biological and environmental sciences, and computational science. The office is responsible for the management of 10 of the department's laboratories, including Jefferson Lab, and for constructing and operating large scientific user facilities.

Ray Orbach
Director, DOE,
Office of Science

The director of the Office of Science also serves as the science advisor to the Secretary of Energy and is the vice chair of the Department's Research and Development Council.

ON TARGET

**On Target** is published by the Thomas Jefferson National Accelerator Facility, a national nuclear physics research laboratory in Newport News, VA, operated by the Southeastern Universities Research Association for the U.S. Department of Energy. News items are published on a space-available basis and are subject to editing. Submit news items to the Jefferson Lab Public Affairs Office, MS12C, 12000 Jefferson Avenue, Newport News, VA 23606.

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