January 2003

ON TARGET

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY • A DEPARTMENT OF ENERGY FACILITY

DOE Under Secretary Card visits Lab; meets management, receives briefings

Jefferson Lab began the new year on a busy note. Lab Director Christoph Leemann presented the State of the Lab Address to a standing-room-only crowd in the CEBAF Center auditorium on Jan. 6. The Lab's Program Advisory Committee (PAC-23) met Jan. 14-16 for its biennial session, and from the 17th through the 22nd for a special 12 GeV science workshop.

Between these two events, Lab Director Leemann and his senior staff welcomed Under Secretary of Energy Robert G. Card and several senior Department of Energy staffers to the Lab on Jan. 10. It was the first visit to Jefferson Lab for Under Secretary Card who was sworn into the position on June 5, 2001.

As Under Secretary, he has responsibility for Departmental operations in Energy, Science and Environment. Under Secretary Card visited Northrop Grumman Newport News Shipbuilding earlier in the day and arrived at Jefferson Lab around noon to meet with Southeastern Universities Research Association (SURA) and Lab management, and DOE Site Office personnel for briefings and a tour of the Lab.

Accompanying Card on his day-long visit to the Peninsula were Card's Chief of Staff, Eric Knox; Paul Longsworth, Senior Policy Advisor to the Secretary of Energy; Dennis Kovar, Director, Division of Nuclear Physics (Office of Science); Jeffrey Salmon, Chief of Staff to the Director, Office of Science; and James

Continued on page 2

Under Secretary of Energy Robert G. Card (left) talks with Lab Director Christoph Leemann during a tour of the accelerator. Andrew Hutton (right), the Accelerator Division's Director of Operations, leads the group. SURA President Jerry Draayer; Eric Knox, the Under Secretary's Chief of Staff; and Swapan Chattopadhyay, Accelerator Division Associate Director (visible in background, l. to r.) accompanied them on the tour.

Continued from page 1

Under Secretary Card visits Lab...

Turi, Associate Director of Laboratory Operations and Environment, Health & Safety.

SURA President Jerry Draayer welcomed the visitors and presented an overview of SURA as DOE's contract manager for Jefferson Lab. Leemann followed with a JLab briefing. He and Under Secretary Card discussed the development of JLab, its current capabilities, the Lab's planned upgrade to 12 GeV (billion electron volts) and its user community, and the Free-Electron Laser. Larry Cardman, Associate Director of the Physics Division, followed with a discussion of the scientific results coming from experiments run at the Lab. Under Secretary Card expressed interest in the Laboratory's current and planned research programs and discussed with Lab management the importance of more clearly articulating the Lab's unique scientific contributions to the nation. He stated that the DOE is reviewing its scientific portfolio and will fund on a priority basis the most compelling science given budget constraints.

A Lab tour followed, with stops in the accelerator to view where upgrade components would be placed, Halls A and C and the research projects underway in each, the Free-Electron Laser Facility and its current upgrade, and the Test Lab where production is taking place for the superconducting linear accelerator section of DOE's newest research facility — the Spallation Neutron Source.

After the tour, Under Secretary Card met briefly for a closeout session with senior SURA and JLab management, and separately with the DOE Site Office.

Prior to this appointment, Under Secretary Card was President and CEO of Kaiser-Hill Company LLC, where he was responsible for the cleanup and closure of DOE's Rocky Flats site near Denver, Colorado. After assuming responsibility for the Rocky Flats project in 1995, Card restructured site operations and the closure strategy to advance the planned closure schedule of 2065, at a cost of $37 billion to a closure goal of 2006, and at a total cost of approximately $7 billion. The project also achieved significant improvements in safety, safeguards, and environmental compliance during Card's tenure. He also served as a Director and Senior Vice President at CH2M HILL Companies Ltd., one of the world's larger science, engineering, construction and operations firms.

Card completed the Program for Management Development at Harvard Business School; received a Master's of Science in Environmental Engineering from Stanford University; and has a Bachelor's of Science in Civil Engineering from the University of Washington.

Under Secretary of Energy Robert G. Card (2nd from right) learns about the G0 experiment in Hall C from G0 Project Manager and Assistant Director Allison Lung (far left). Accompanying Under Secretary Card on the tour are (left to right) SURA President, Jerry Draayer; JLab Director, Christoph Leemann; Matt Thomas, SURA Director of Business Development; Paul Longsworth, Senior Policy Advisor for the Secretary of Energy; Under Secretary Card; and Eric Knox, the Under Secretary's Chief of Staff.

From the Director

Christoph Leemann
Jefferson Lab Director

Keep security awareness on your mind

Dear Colleagues:

In these difficult and dangerous times we must pay more attention to security than we did in the past. While we deal with security on a regular and routine basis, we need to on occasion remind ourselves of the fundamentals of our Lab security program and spot-check ourselves to make sure we are all working to maintain a safe and secure work environment.

It is Jefferson Lab policy to pursue our scientific mission safely and in a secure manner. Security is managed in the same integrated way as safety, and your personal knowledge and commitment is essential. At its most fundamental level, this means we should know who is in our respective work areas. Each of us carries the responsibility to:

- Protect our JLab identification badge and not let anybody else use it.
- Not allow people you don't know into JLab facilities.
- Ask to see the JLab ID badge of people we don't know.
- Call Security if people do not have proper JLab identification and are not escorted. (Gate Guard, ext. 5822)

While Jefferson Lab sponsors no security clearances and no classified work is conducted at the Lab, it is still wise not to volunteer or provide information about our work at the Lab to people you do not know, or to individuals who have an unknown or questionable purpose in seeking information from you. All tours should be coordinated through JLab Public Affairs, ext. 7689.

The realm of Cyber Security has grown rapidly in the last decade, and our computer professionals work diligently to keep our systems working. But primary cyber security begins with each one of us. Be responsible in creating, using, and protecting your computer password. Do not give your password to others, or let others see it or use it. Carelessness with passwords can make our systems here vulnerable to hacker attack or other disruption.

Another vital security area is Export Controls. These controls are designed to protect items and information important to the United States. As a national laboratory with important international collaborations, it is imperative that JLab be a responsible exporter. Your primary responsibility is to understand export-control requirements related to your work and ensure no exports are made contrary to federal law. Noncompliance could result in administrative or criminal penalties for the Lab and/or you. Coordinate all shipments through the Property Office, ext. 7348.

Jefferson Lab property and equipment are to be used only for official JLab business. It is unlawful to use, appropriate or remove any Jefferson Lab property for personal use. Report unauthorized use of JLab property to the JLab Security Office, ext. 7169.

This column will hopefully help to serve as a reminder of the duty each of us has in maintaining a secure environment and encourage each of us to take a few moments to assure that we are knowledgeable concerning those responsibilities. And please, if you are uncertain of how to handle any security-related matter, call on the JLab Security Office (ext. 7169), Property Office (ext. 7348), or Computer Center (ext. 7155). Any after-hours concerns should be reported directly to the Gate Guard, ext. 5822.

For more information, visit www.jlab.org/intralab/security/.

Stay safe and secure!

Congratulations!

Physics Division's Rocco Schiavilla recognized as 2002 APS Fellow

One member of Jefferson Lab's Physics Division and two JLab users were elected Fellows of the American Physical Society in 2002.

Rocco Schiavilla, JLab's Interim Theory Group Leader and a professor of physics at Old Dominion University joins the ranks of APS Fellows for his work "advancing the theory of nuclei as systems of nucleons bound together by two- and three-body forces, and particularly for studies of their electroweak interactions."

Schiavilla has been a member of JLab's staff since September 1993. However, he first came to the Lab in 1988 and spent approximately two years here as the Theory Group's first post-doctoral fellow. He focused on the study of the electromagnetic form factors of few body nuclei. Before returning to JLab as an employee in '93 he was the Enrico Fermi Scholar at Argonne National Lab, and was a staff scientist at INFN (Istituto Nazionale di Fisica Nucleare) in Lecce, Italy.

As the Interim Theory Group Leader he interfaces with colleagues, Physics Division leadership and individual researchers. He coordinates activities and acts as the group's spokesperson. Beyond that, he explains, "The group operates in an academic environment, and most significant decisions are made by the group as a whole in a collegial manner."

Concerning the announcement of his APS Fellowship, Schiavilla comments, "It is a great pleasure to receive this honor and to be recognized by the APS for my work."

Then honing in on the science, he continues, "in the last few years a picture of nuclei has emerged, in which they are viewed as systems of protons and neutrons interacting amongst themselves via many-body potentials, and with external electro-weak probes via one- and many-body currents. This deceptively simple picture has been, so far, very successful in explaining quantitatively nuclear properties over a wide range of energies, from the few-thousand electron volt (keV) regime of astrophysical relevance to the million-electron volt (MeV) regime of nuclear spectra to the hundreds of MeV measured in nuclear response experiments (relevant to the research being done at JLab). My work in this area has dealt and continues to deal with the development and application of this picture and methods for its practical implementation, and with the exploration of its limits."

"In fact," he adds, "one of the fascinating, unresolved questions is: how does this description of nuclei arise from the underlying quark and gluon degrees of freedom, the basic building blocks of nuclear matter? This is one of the fundamental questions JLab is attempting to answer."

JLab users joining Schiavilla in earning the distinction of being elected APS Fellows, through the APS Nuclear Physics Division, include Charles Perdrisat from the College of William & Mary; and Douglas H. Beck from the University of Illinois at Urbana-Champaign. Perdrisat was elected for his "leadership of studies of the electromagnetic structure of the proton through polarization transfer, which have shown large differences between the distributions of charge and magnetization; and Beck "for pioneering work in the use of parity-violating electron scattering to elucidate the quark structure of the nucleon."

Rocco Schiavilla, one of JLab's newest American Physical Society Fellows, stops for a quick photo in his office, and gets a lick — or is that a kiss of approval from his golden retriever, Disney!

Deadlines are nearing for submissions for the 2002 SURA Thesis Prize and for applications to participate in HUGS 2003.

SURA Thesis Prize

The deadline for submitting a thesis for the 2002 SURA Thesis Prize is Feb. 21. To recognize the vital role played by graduate students in the scientific mission of Jefferson Lab, the Southeastern Universities Research Association established a yearly prize for the best graduate student thesis. The award includes a stipend of $1,000 and a plaque commemorating the achievement. The prize will be presented at the Annual Users Group Meeting in June 2003, where the winner will be invited to speak about his or her results.

All graduate students whose dissertation results are from CEBAF research are eligible for the thesis prize. This includes students enrolled at non-SURA institutions, including universities outside the U.S. Experimental theses must be primarily devoted to experiments carried out at Jefferson Lab. Theoretical theses must be relevant to experiments at JLab. Theses in the area of accelerator physics or instrumentation are welcome. The 2002 prize will be awarded for theses that have been successfully defended and accepted in final form by the university during the 12 calendar months of 2002.

A committee chosen by the Jefferson Lab Users Group Board of Directors will select the recipient of the thesis prize. Selection will be based on the quality of the written dissertation, the contribution of the student to the research, the impact of the research, and service to the scientific mission of the Lab.

For additional information on the submission package and process, visit the JLab Users Group web page at www.jlab.org/user_resources/usergroup/, or contact the Jefferson Lab User/International Liaison Office:

Attn: Clara Perdue,
User/International Liaison Mgr.
Building 12/L111, Mail Stop 12B
12,000 Jefferson Ave.
Newport News, VA 23606
Ph. (757) 269-7767
e-mail clara@jlab.org

HUGS 2003

The 18th Annual Hampton University Graduate Studies (HUGS) program at Jefferson Lab is scheduled for June 2-20.

Applications are being accepted through April 1 for 2003 fellowship consideration. HUGS is a summer school designed for second and third year experimental and theoretical Nuclear/Particle physics graduate students who have finished [or nearly finished] their coursework. Students who are well into a research project are encouraged to apply as well.

Acceptance into the program is competitive. Students will receive one transferable credit hour from Hampton University. The 2003 school will focus primarily on experimental and theoretical topics of high interest in strong interaction physics.

While attending HUGS at Jefferson Lab, students will attend lectures and seminars. The program is simultaneously intensive, friendly, and casual. Lecturers are internationally renowned leaders in their fields. There will be many opportunities to interact with Jefferson Lab staff, as well as the lecturers, other graduate students and visitors. This program provides students excellent insight into the type of physics to be performed at Jefferson Lab in upcoming years.

For more information about application requirements, visit www.jlab.org/community/hugs/. To apply for HUGS 2003 at Jefferson Lab, submit complete application packages to the address below. Students will be notified by April 30 of acceptance.

Forward all queries and applications to:

HUGS 2003
Jefferson Lab
Attn: Mary Fox
MS 12H2
12000 Jefferson Avenue
Newport News, VA 23606

Deadlines near for SURA Thesis Prize submissions, HUGS 2003 applications

Forty down; 280 to go

New ceramic windows going into cryomodules will improve accelerator operation

John Heckman (left), Vacuum Group supervisor, holds one of the new, more rugged, ceramic windows being used to replace the Teflon and polyethylene versions currently used in the outer-most layer of the accelerator cryomodules. Greg Marble (right), senior high-vacuum technologist, holds one of the older-version windows that had deformed due to the high energies funneled through it and into the cryomodule during accelerator operation.

by James Schultz

Telephone solicitors often badger telemarketer-weary homeowners with offers to replace existing windows with newer, improved versions. Their promise is that since these late-generation brands are better insulated and thus more energy efficient, heating and cooling costs are bound to drop.

Were telemarketers somehow to get through to decision-makers at Jefferson Lab, they would learn the sale had already been made. Only these windows aren't the plate-glass variety. Because they have to keep the electrons recirculating, cryomodule windows keep the cold in and everything else out. Otherwise, physics at JLab would be impossible to conduct.

The Lab is in the process of replacing all 320 cryomodule windows, which act as the point of entry for the radio-frequency energy that makes possible the accelerator's continuous electron beam. The existing Teflon and polyethylene versions can become deformed over time, with some actually melting due to the high energies they funnel. Their ceramic replacements are not only more rugged, but will be able to accommodate a planned doubling of accelerator energy within the next several years, from current levels of 6 billion electron volts, or 6 GeV, to 12 GeV.

"With the 12 GeV upgrade planned, we were already looking into ceramic windows," says Greg Marble, senior high-vacuum technologist and deputy supervisor of the Lab's Vacuum Group. "RF frequencies will go right through the ceramic. It maintains a good vacuum without too much outgassing. You're able to get a good RF transition and it can withstand the higher power."

Ceramics are known performers; one kind of ceramic has long been installed on the cavities themselves, as part of the fundamental power-coupler array. Cavities comprise the innermost components of the cryomodules' three-part system, which also include a cooling tank to hold liquid helium and a Thermos-bottle-like structure known as a cryostat that provides insulation, allowing the cavities to remain cooled to two Kelvin, or nearly absolute zero. At such a temperature, the surface currents associated with the introduced radio waves lose all electrical resistance, and provide beam acceleration with a power dissipation of less than a

Continued on next page

Continued from previous page

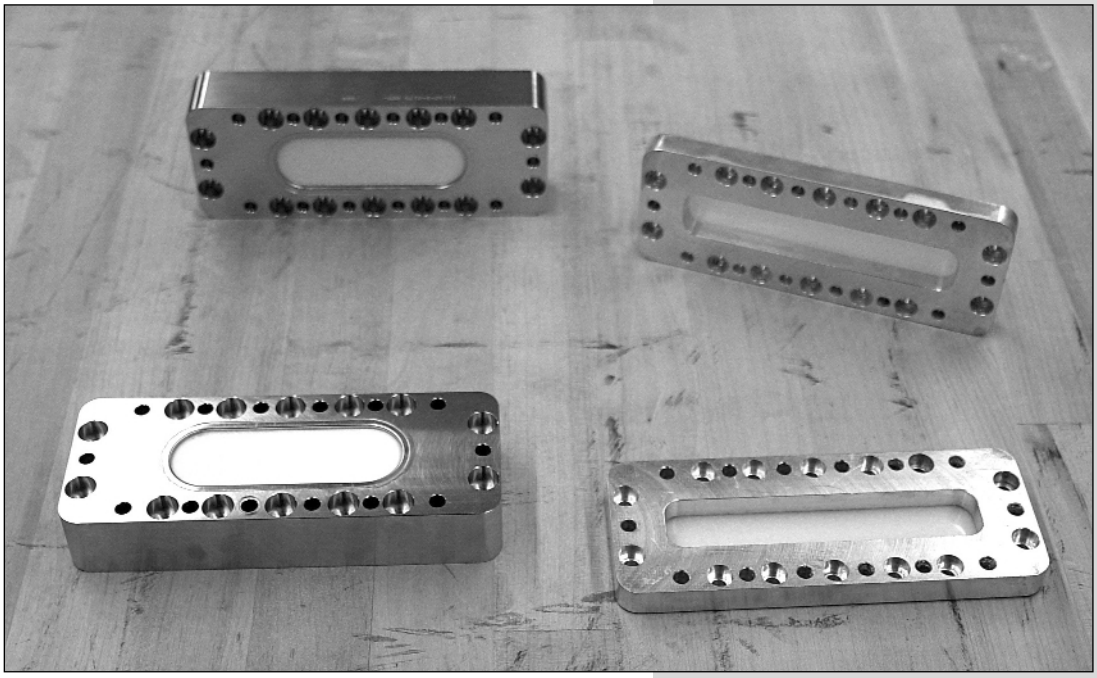
millionth of that used in energizing accelerators made of normally-conducting materials, such as copper.

The ceramic replacements are being made to the cryomodules' outermost layer, to a "port extension," an elbow-like device containing the window that channels the RF power. Technicians must prepare carefully for the transition, in order not to allow temperatures within the cryomodule to rise to more than 40 Kelvin, or minus 388 degrees Fahrenheit.

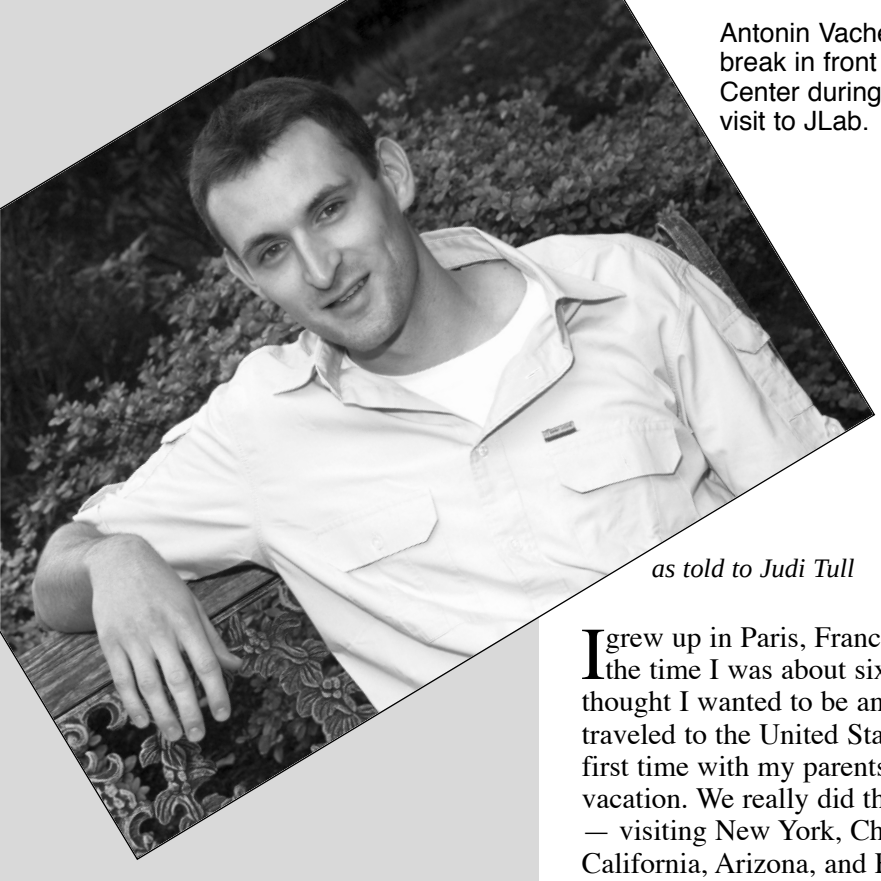
The preparation is tedious, and usually involves three people. Beginning to end, setup to completion, takes an average of two days for one cryomodule. Workers must change the windows, rehook the waveguides and test for leaks. That does not include subsequent cryomodule cooldown, which can take up to a week.

"Setup is the most time consuming," says John Heckman, Vacuum Group supervisor. "Changing the window itself doesn't take all that much time. But space is very cramped. You have to be careful. One air leak and you destroy a cavity."

Thus far, 40 windows have been replaced, with another 280 to go. The work began in September 2001 and is scheduled for completion in 2004 — a reasonable time frame, given that the accelerator must be up and running for physics to continue and other related tasks to be completed. "You have to prioritize what has to be done," says Greg Marble. "We never lack for work."



On the left: The new window includes the ceramic window, brazed to a stainless steel frame. On the right: The older windows that are being replaced were Teflon and polyethylene with an aluminum frame.



Antonin Vacheret takes a break in front of CEBAF Center during a fall 2002 visit to JLab.

In their own words with...

...Hall A experimentalist and Ph.D. candidate Antonin Vacheret

as told to Judi Tull

I grew up in Paris, France, and from the time I was about six years old, I thought I wanted to be an astronaut. I traveled to the United States for the first time with my parents that year on vacation. We really did the grand tour — visiting New York, Chicago, California, Arizona, and Florida, where we went to Cape Canaveral. After that, I was hooked on going into space. For a little while I also thought about being a fighter pilot, but realized that I didn't fit with the military discipline.

I came to physics relatively late. As I grew up and through high school, I liked physics but it was not my main interest. I was always curious about a lot of things — languages, sports, and drawing. I studied Russian for five years in school, as well as English. I was open to a lot of things, but not necessarily physics at that time.

Then, when I first went to University at Orleans, I started to like math a lot, especially abstract algebra. I saw the link between math and physics, and that, I think, was my turning point. I saw how math helps with visualizing the things you do in physics.

By my third year at the University, I discovered quantum mechanics. It was interesting to me to see the properties of matter and I began to pursue that. By my fifth year, though, I decided to concentrate on nuclear physics. That change held me up for a year, but it was worth it.

I trained at Saclay (France) for three months, and at the end of that time I was faced with the possibility of having to go into military service. In France you have to do one year in the military or the alternative of what we call cooperation work as a civilian for a French firm or a foreign university. I chose to do the academic work, so I asked my advisor if it would be possible for me to come to the United States to do that.

I was accepted at the University of Massachusetts for scholar research, and I went there in September 2000. Krishna Kumar, Jefferson Lab user and associate professor of physics at UMass, sponsored me and I started work with him and JLab staff scientist Robert Michaels on the (Hall A) HAPPEX collaboration.

By the time I started work on my Ph.D., I had a lot of practical experience. In addition to my work at JLab, I'd also gone to Syracuse, N.Y., to work on building a detector for SLAC (Stanford Linear Accelerator Center). The University of Massachusetts sends you where you can do the work, and for nuclear physics that means coming to an accelerator.

I finished my work with UMass in December 2001, and officially started my Ph.D. work at Saclay then. I travel back and forth now between Jefferson Lab and France. I expect to finish my dissertation, which is titled "Electric Strange Form Factor Extraction From Parity Violation Asymmetry Measurement in Elastic Electron-Proton Scattering," by the end of 2004. I would like to find a position in research then, but I could also teach. When you teach people, you have to give, to help. I've developed this relationship by teaching as part of my martial arts studies, and I hope I can reach that with physics as well.

Living in America has been challenging sometimes. I'm not a big fan of American food. I was surprised that the quality of fruits and vegetables here is not as good as in Europe, but it seems like many Americans don't eat a lot of them or buy them. I've seen big kitchens here, but not many cooks! When I was with SLAC, I spent quite a bit of time with American friends who had this big kitchen that was always clean because they never had

Continued on page 10

as told to Melanie Cooper
contributing writer

...and accelerator physics graduate student Chris Tennant

I was born in Bainbridge, a very small town in upstate New York. So small in fact, that two towns had to merge to form my high school, Bainbridge-Guilford. And it took three towns to get a football team together! There were only 75 students in my graduating class.

My dad is an art teacher at my old school. I have a stay-at-home mom and three younger siblings, a brother and two sisters. One of my sisters has inclinations towards art and the other is pursuing a career in medicine. My brother is studying restaurant management, perhaps because my mom is such a great cook.

I have always enjoyed science, as well as English, literature and photography. In high school, I wanted to be a medical doctor or to go into sports medicine or athlete training. I did well in all my subjects and had a tremendous physics teacher who turned me on to physics. Many people pull faces when you tell them you're a physicist, and they all seem to say they had terrible teachers. I was fortunate to have such a great teacher.

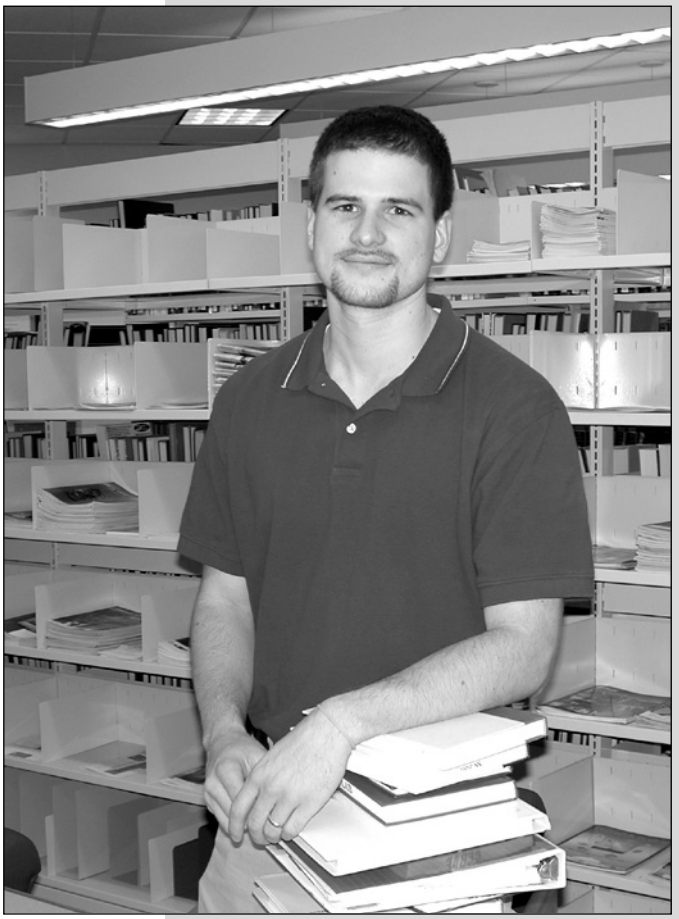
Coming from a small school, I didn't want to go to a large college. I chose Ithaca College in New York for my B.A. in physics. Ithaca College has about 6,000 students and a great 12:1 student-faculty ratio. For my first two summers at Ithaca College, I conducted astronomy research at the then-new Clinton B. Ford Observatory, using their telescope to track asteroids. I would love to continue this as a hobby, but there isn't enough open space for sky-gazing here. Last year my wife and I ended up watching the Leonid meteor shower lying on our backs in the parking lot of a restaurant — that was the largest, darkest open space we could find!

In the summer of 2000, I began a particle physics internship through the National Science Foundation's Research Experiences for Undergraduates (REU) Program at the Wilson Synchrotron Laboratory of Cornell University. I was thrilled to get in but I was pretty disappointed when I found I was one of the three students assigned to accelerator physics. I didn't want to do that, even though I had no idea what accelerator physics was! But by the end of summer I had worked on two separate projects and I loved it.

After that I wrote a letter to the director of the internship program at the lab, and half-jokingly asked, "Would the lab consider hiring me?" I was amazed when he said they would try to find me something. In the fall of 2000, I began working at Wilson Synchrotron Lab part-time. During my stay at Cornell I had tremendous mentors who really helped to shape my interests in physics.

When it came time to look at grad school, I knew I wanted to pursue research in accelerator physics. I kind of worked in reverse — I considered the labs I wanted to work at and then looked at the schools near them. Jefferson Lab was where I really wanted to be, so in spring 2001 I came down to inspect the College of William & Mary. I liked what I saw and I liked Williamsburg, where my wife and I now live.

I finished my graduate program at the end of May 2001 and I was here within two weeks. My JLab supervisors are David Douglas and Lia Merminga; I have worked with Dave for the past two summers. I also attended the U.S. Particle Accelerator School at Yale University this summer, which was an intense two-week course covering the fundamentals of accelerator physics.



Chris Tennant takes a moment to peruse a stack of books in JLab's Library.

I finish my coursework this semester and am looking forward to the point where I can just do research. My

Continued on page 11

Briefs

Send unused distribution envelopes to Shipping & Receiving

The Lab is currently experiencing a (seeming) shortage of inter-office distribution envelopes. "Many times these (generally) dark-gold colored, perforated envelopes are thrown away or put into a drawer and forgotten," comments Joan Campbell, JLab property manager. "However, they are made to be reused many, many times."

The average "distribution" envelope may be used 40 to 60 times. At the beginning of each year many of us do office housekeeping: cleaning out desk drawers, filing cabinets and bookshelves, Campbell comments. She suggests sending extra or unused distribution envelopes to Shipping and Receiving so they may be put back into circulation.

Put extra envelopes into a large inter-office envelope and send them to Shipping and Receiving through the regular on-site distribution system. For larger stacks of the envelopes, contact Shipping and Receiving at ext. 5010 to arrange a pick-up.

JLab receives CHROME outstanding member award

During December 2002, JLab received an outstanding member award from CHROME — the Cooperating Hampton Roads Organization for Minorities in Engineering.

Founded in 1983 as a non-profit consortium of now nearly 70 public school systems, colleges and universities, business and industry, government agencies and professional associations from across Hampton Roads, CHROME's mission is to increase the number of underrepresented minorities and females participating in mathematics, science, engineering, or related fields. According to Jan Tyler, JLab's Science Education manager and the Lab's CHROME coordinator, the program is an outstanding example of what can be done to help pre-college students realize and achieve their dreams. It is a highly effective regional initiative that has been promoting minority and female participation for 17 years.

Anyone interested in participating in this program may contact Tyler at ext. 7164, or e-mail tyler@jlab.org. For more information about the program, visit www.chrome.org.

Navy legend Carl Brashear speaks at JLab's Black History Month event

U.S. Naval legend Carl Brashear will be at JLab on Wednesday, Feb. 19, as the Lab's guest speaker for Black History Month.

During his pioneering naval career, Brashear earned the distinction of becoming the first black deep-sea diver, the first black Master Diver, and the first person in naval history to be restored to full active duty as an amputee. Twentieth Century Fox produced a motion picture based on Brashear's life, starring Cuba Gooding, Jr., that was released in the fall of 2000.

Brashear will speak about his life and career in the CEBAF Center auditorium from 2-3 p.m. Everyone at Jefferson Lab, as well as the public, are invited to this free event. A reception with refreshments honoring Brashear will be held in the CEBAF Center atrium immediately after the public presentation.

While on board the USS Hoist in 1966 for the recovery of a nuclear weapon off Spain, Brashear was badly injured in an accident; as a result, surgeons amputated his left leg below the knee. He refused to submit to medical survey boards attempting to retire him as unfit for duty. After demonstrating that he could still dive and perform his other duties, he continued serving and in 1970 he qualified as the first black master diver in the history of the U.S. Navy.

During his naval career, Brashear served on President Eisenhower's staff as Aquatic Escort, served on an aircraft carrier during the Korean War, and held assignments in submarine rescue and on salvage ships. For his singular achievements, Brashear earned the Navy/Marine Corps Medal, and was named a "Naval Tradition Maker" before retiring from the Navy as a Master Chief Petty Officer and Master Diver in 1979.

He began a civil service career in 1982 as an engineering specialist and he retired in 1993 as an environmental protection specialist. During his civil service tenure, Brashear earned the second highest Civil Service award — the Navy Meritorious Civilian Service Award.

The man is a motivational and inspirational speaker with an indomitable spirit. He has been featured on numerous television programs and interviewed for a variety of publications.

Brashear was the sixth of nine children born to rural Kentucky sharecroppers. He attended a small, segregated one-room schoolhouse where he completed seven grades. He later earned a GED and continued his education.

Antonin Vacheret...

Continued from page 8

dinner at home. I like Japanese food, and eat a lot of that.

America is such a massive country, and that has been sometimes difficult to get used to; you need a car in order to do anything. Not at all like living in a large city in Europe where there is plenty of public transportation. I live in Paris, so I'm used to having access to public transportation.

I study the martial art of Kendo. Some students at William and Mary started a Kendo club, and I help teach Kendo classes there. It has helped me develop my teaching skills.

Everyone at the Lab has been good to me, and I'm very happy to be here. I like the way Americans push the work.

Safety Spotlight

JLab Director Christoph Leemann joined Physics Division safety staff for a safety inspection during December. Here Leemann, flanked by Charles Hightower (far left), associate coordinator for Physics safety, and Bert Manzlak (center), Physics Division deputy safety officer, discuss work going on in Hall A with Ed Folts, Hall A's technical coordinator and safety warden.

Let creativity flow!

JAG announces 2003 JLab T-shirt design contest

"Let the creativity flow," urged Jefferson Lab Activity Group (JAG) chair, Dave Williams, when he recently announced the Lab's 2003 T-shirt Design Contest.

T-shirt designs may be submitted through Friday, Feb. 21, to Dave Williams, (ARC) bldg. 1, rm 527, ext. 7183; or to Jessica Ledbetter (CEBAF Center) bldg. 12, rm L107, ext. 7250.

Each submission must include both front (pocket) and back designs, and include the words "Jefferson Lab", "DOE", "SURA" and "2003". The designs must be submitted in color and on 8.5X11 inch paper. Each entry must include name, division and phone number of the person/people submitting it.

All designs will be posted on the JAG web page (www.jlab.org/jag/) March 3-28, and on-line voting (one vote per person) will determine the winning design. The winning design will be unveiled at the May 2003 Run-A-Round. The winning designer will receive a free T-shirt, $25 worth of JAG Bucks, and recognition. If the winning design is submitted by a team, each member will receive a T-shirt and the team will receive $35 in JAG Bucks.

Anyone needing assistance with voting or additional information about the submission process may contact Williams or Ledbetter.

Chris Tennant...

Continued from page 9

project has two components. The first is the CEBAF Energy Recovery (ER) experiment, due to run next spring. The cavities give energy to the beam and the idea is to recycle and decelerate the beam to give energy back to the cavities. The Free-Electron Laser (FEL) already does this on a much smaller scale. Nobody else has demonstrated ER on the scale of a machine like CEBAF. And the second part of my project will examine high-current effects in an ER system by studying the FEL beam.

Outside of work, my wife and I enjoy playing basketball and tennis, and hiking in the Shenandoah Valley. I enjoy photography; and I'm a bibliophile — I especially love hunting through used bookstores.

As for future plans, I have no inclination to teach, so I don't want to be a professor. I'd like to continue doing research at a place like Jefferson Lab. And maybe someday I'll take a summer off.

Science is Cool 2003!

JLab schedules Open House for Saturday, April 26

Mark your calendar, tell your family, friends and neighbors: Jefferson Lab has set Saturday, April 26 for its next Open House.

"The Lab's last Open House was about two years ago. This is a great event that gives everyone here the opportunity to share their work and the Lab's accomplishments with the public," comments Linda Ware, JLab Public Affairs manager. The event will be free of charge, open to the public, and will run from 9 a.m. to 3 p.m. rain or shine.

Parts of every major area of the facility will be open. In addition to a section of the accelerator, visitors will also be able to enter two of the Lab's experimental halls, the Free Electron Laser Facility, the Computer Center and the Test Lab where components for JLab's accelerator and the Department of Energy's Spallation Neutron Source — being built in Oak Ridge, Tennessee — are assembled and tested. The Lab's tech transfer endeavors, including medical imaging will also be on display.

In addition to highlighting the latest physics research and technology developments underway at Jefferson Lab, the event will include a variety of hands-on, science-education oriented activities for the young and young-at-heart, provided by JLab and regional museums and government agencies. And Lab staff will give the ever-popular Liquid Nitrogen Demonstration throughout the day.

Many workers will be needed to support this event. More information about staffing sign up will be available next month. For the most current information on the event visit www.jlab.org/openhouse/.

Lab employees, contractors and users may contact Debbie Magaldi, ext. 5102 or Mary Beth Stewart, ext. 7618, for Open House flyers that may be distributed to family, friends, neighbors, or groups.

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's Office of Science. 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.

Editors
Linda Ware
Debbie Magaldi

Contributing Writers
James Schultz
Judi Tull

Photographer
Greg Adams

Check Us out on the Internet
www.jlab.org

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

Please Recycle