US Stamp Honors Fermi

A US stamp to be issued this fall will honor Enrico Fermi on the centennial of his birth.

The stamp shows Fermi in 1948 and a stylized carbon atom—symbolizing graphite, the form of carbon used to slow neutrons in the first nuclear reactor. In December 1942, a team led by Fermi used that pile of uranium and graphite bricks, which was built in a squash court under the University of Chicago's football stadium, to set off the first ever self-sustaining nuclear chain reaction.

Born in Italy on 29 September 1901, Fermi was a towering physicist in both experimental and theoretical nuclear and particle physics, and was awarded the Nobel Prize in 1938. He and his family used the trip to Sweden for the Nobel ceremony to leave Mussolini's fascist Italy and emigrate to the US, where Fermi joined the faculty at Columbia University and then moved to the University of Chicago to continue his work for the Manhattan Project. He died in 1954.

In other philatelic news, stamps commemorating 100 years of the Nobel Prizes, depicting prize founder Alfred Nobel and medals, were issued in the US and Sweden on 22 March.

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The IRCEP was selected because of the department's excellent research, its "major opportunities and ideas for expansion of research, and the most impressive range of collaborative research with institutions in many other countries," says UK Engineering and Physical Sciences Research Council Chair Anthony Ledwith, who served on the SPUR judging panel. SPUR also funded projects involving sonic arts, virtual engineering, and policy at Queen's University, and molecular biosciences and Irish cultural heritage at the University of Ulster.

The IRCEP will build on Queen's University's existing strengths in condensed matter physics and materials science, plasma and laser interaction physics, and atomic and molecular physics. "It's an absolutely fantastic opportunity for us," says physics chair Kenneth Bell. "The three research divisions are physically separated. This will let them come together and allow them to do collaborative research."

Most of the money will go for a new building abutting the current physics department. There won't be new faculty jobs. But, with the IRCEP meant to strengthen international collaborations as well as interdepartmental ones, there will be some funding for bringing in graduate students and visiting professors from abroad. "One of the difficulties we have is that we are very parochial. We are conscious all the time that we need to look outwards," says Bell.

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Elachi Named JPL Director

Capping a 30-year career at NASA's Jet Propulsion Laboratory, Charles Elachi will step into the top job on 1 May. He will succeed Edward Stone, who, after a decade at the helm of the planetary exploration lab, will return to research and teaching at Caltech, which runs JPL.

"I have in mind to keep JPL at the forefront, exercising boldness and ingenuity," says Elachi, listing projects "that are almost impossible": putting a permanent robotic presence on Mars, piercing the ice of Jupiter's moon Europa, exploring under extreme radiation environments, bringing home stardust from the tails of comets.

Elachi joined JPL in 1971, after earning his PhD in electrical sciences at Caltech. His bachelor's degree is in physics from the University of Grenoble, and he holds three master's degrees, including one in business administration from the University of Southern California.

Elachi specializes in radar and remote sensing. He heads the team that is imaging Saturn's moon Titan from the Cassini spacecraft. He is also involved in mapping Earth's surface with interferometric radar. That work, he says, "will definitely shed light on the physics of earthquakes. It could have dramatic scientific and humanitarian consequences."

"One of Elachi's biggest challenges will be to get JPL's estimates in line with real costs—bidding low enough to win projects, but high enough to pay for them," says Mike Drake, who heads the University of Arizona's Lunar and Planetary Laboratory.

Elachi will have to continue with the "faster, better, cheaper" mode, says Edward Weiler, NASA's associate administrator for space sciences. "The revolution is not complete. There's is always pressure to go back to the old way of business"—sending up fewer, larger, costlier missions—"but putting all of one's eggs in one basket is a dangerous way to do business."


JPL

ELACHI

The double debacle in 1999, when NASA lost two Mars missions, Weiler adds, means Elachi "has an advantage that most people don't have—he's known failure. It builds character and leadership."

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Shotter to Lead Canada's TRIUMF

Alan Shotter, an experimental nuclear physicist at Scotland's University of Edinburgh, will begin a five-year term this September as the director of TRIUMF, Canada's laboratory for particle and nuclear physics in Vancouver. He succeeds Alan Astbury, who is returning to particle physics research as a professor emeritus at the University of Victoria.

Last year the lab, which is federally funded and run by a consortium of five universities, won a budget increase of 20% to Can$200 million (US$129 million) over the next five years. Indeed, the lab's outlook is much better today than when Astbury took the reins in 1994. At that time, the Canadian economy was shaky and plans for a $700 million particle accelerator at TRIUMF had been abandoned in the wake of the US cancellation of the Superconducting Super Collider. "TRIUMF came very close to being

SHOTTER

decommissioned," says Astbury.

TRIUMF survived by diversifying: In addition to core programs using its cyclotron and smaller facilities, the lab now provides components for CERN's Large Hadron Collider, facilitates Canadian research at foreign laboratories, and has built the Isotope Separator Accelerator (ISAC), a linear accelerator that produces intense beams of short-lived exotic nuclei.

ISAC, along with the growing number of radioactive beam facilities worldwide (see PHYSICS TODAY, May 1997, page 17), is opening up the study of unstable nuclei in nuclear astrophysics. "What's important in this area is to understand the energy involved in cataclysmic events like supernovae," says Shotter. "We have to know how unstable nuclei react with things like hydrogen and helium."

Applications for radioactive beams may also be found in nuclear physics, condensed matter physics, engineering, and biological research, says Shotter. "There is a lot of exciting potential here, but until we actually have intense beams of radioactive nuclei, this potential will remain speculative."

LYNLEY HARGREAVES

NEWS NOTES

Surveying physics. What will be the hottest areas of physics in the next decade? Quantum technologies, complex systems, biophysics, new materials, cosmology, and high-energy physics are the six areas identified as priorities in *Physics in a New Era: An Overview.*

The report, out this month, is the culmination of a survey by the National Research Council, which over the past five or so years has published a series of field-specific reports. *Physics in a New Era: An Overview* looks not just at physics research in the US, but also at the conditions under which it is carried out and at its impact on society.

The overview makes nine key policy recommendations. They include increasing funding for basic physics research, developing mechanisms for the US to participate in international research collaborations, revamping undergraduate physics education, reestablishing basic research as a high priority in the Department of Energy's defense labs, and fostering collaborations among government, academia, and industry.

Physics in a New Era: An Overview may be ordered from National Academies Press by e-mail at bpa@nap.edu or from their Web site at http://www.nap.edu.

Survival of the curriculum. The Kansas State Board of Education has restored Darwinian evolution, the Big Bang, and the age of Earth to the K–12 science curriculum, ending a controversy that began in 1999 when creationists on the board stripped such "controversial" science from the state's education standards. (See PHYSICS TODAY, November 1999, page 59, and October 2000, page 75.)

A contentious election last November that centered on the evolution issue resulted in the defeat of three conservative board members. On 14 February, the new board, by a 7–3 vote, approved new science standards that had been developed by a 27-member committee of science teachers and other experts. The new standards will be used in developing tests that will be administered statewide this spring.

Referring to the elections that put creationists in the majority on the board of education, then removed them, John Staver, director of Kansas State University's Center for Science Education, noted, "I said when this began a year and a half ago that democracy got us into this, and democracy would get us out, and it did." Staver was the cochair of the committee that wrote the new education standards.

Nano journal. Physical, chemical, and biological structures, and processes and applications at the nanoscale are the topics spanned by *Nano Letters*, a new peer-reviewed journal published by the American Chemical Society. Articles are posted online regularly and collected in print monthly. The online multimedia version is free through June at http://www.pubs.acs.org/journals/nalefd/. Paul Alivisatos, a professor of chemistry and materials science at the University of California, Berkeley, is the journal's founding editor.

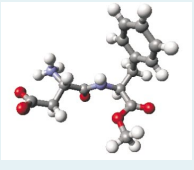
Scanning for alien lasers. A team led by Harvard physicist Paul Horowitz hopes to spot laser pulses from extraterrestrials with a new optical telescope. The 1.8-meter telescope will scour the northern sky, seeking flashes from fixed objects or aliens on the move.

It's easy to make beamed laser pulses brighter than stars, says Horowitz. The telescope will view any one spot for only about a minute, he adds, "but if they are sending flashes frequently, we'll see it."

This latest tool joining the search for extraterrestrial intelligence (SETI) is scheduled to go online early next year 65 kilometers west of Boston, in Harvard, Massachusetts. The Planetary Society is paying for the telescope, with half the $350 000 tab donated by entrepreneur David Brown of Santa Barbara, California. ■

Web Watch

http://www.bris.ac.uk/Depts/Chemistry/MOTM/motm.htm



Paul May, a chemist at the University of Bristol in England, edits **The Molecule of the Month**, an online compendium of essays and short pieces about what he deems to be "particularly interesting molecules." Recently featured molecules include the potent artificial sweetener aspartame and the notorious defoliant Agent Orange.

http://mems.isi.edu

The aim of the **MEMS Clearinghouse** is to foment the sharing of information and ideas about microelectromechanical systems (MEMS). Run by the University of Southern California's Information Sciences Institute, the site offers news about industrial developments and upcoming conferences, as well as job postings and an online bookshop.

http://hstexhibit.stsci.edu

Currently touring the US, the exhibit **Hubble Space Telescope: New Views of the Universe** highlights the scientific achievements of the Hubble Space Telescope. The exhibit's lavishly produced online incarnation offers several movies, one of which previews Hubble's successor, the Next Generation Space Telescope.

To suggest topics or sites for Web Watch, please e-mail us at ptwww@aip.org.

Compiled by **CHARLES DAY**