

# HOTLINE

The Princeton Plasma Physics Laboratory is a United States Department of Energy Facility

## President Honors PPPL's Shvets

**Energy Secretary Richardson Also Presents an Award to the Physicist**

**P**resident Clinton recently named 60 young researchers — including Gennady Shvets, a physicist at PPPL — as recipients of the fourth annual Presidential Early Career Awards for Scientists and Engineers. This award is the highest honor bestowed by the United States government on young professionals at the outset of their independent research careers. The researchers received their awards on April 12 in a White House ceremony.



Gennady Shvets

Established by President Clinton in February of 1996, the award embodies the high priority the Administration places on producing outstanding scientists and engineers ready to contribute to all sectors of the economy. Eight Federal departments and agencies join together annually to nominate the most meritorious young scientists and engineers who will broadly advance the science and technology that will be of the greatest benefit to fulfilling the agencies' missions.

"We honor these outstanding young scientists and engineers for their research contributions, for their promise, and for their commitment to broader societal goals," President Clinton said. "They will do much to shape our society and advance our national interests in the twenty-first century."

The young scientists and engineers receive up to a five-year research grant to further their study in support of critical government missions. The Federal agencies involved are: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Veterans Affairs; the National Aeronautics and Space Administration; and the National Science Foundation.

Also on April 12, Secretary of Energy Bill Richardson presented Shvets and four other scientists with the U.S. Department of Energy's (DOE) Office of Science Early Career Awards in Science and Engineering. Shvets was cited "for theoretical and computational investigations of the interaction of ultra-strong laser pulses with plasmas (hot, ionized gases), with applications to inertial confinement fusion, to plasma-based particle accelerators, to new radiation sources based on beams and plasmas." Secretary Richardson presented the DOE awards at a Department reception before the White House ceremony.

Shvets was born in Kiev (Ukraine) and attended the Moscow Institute of Physics and Technology from 1986-1989, majoring in physics and chemistry. In December of 1989, he and his family emigrated to the United States and settled in Baltimore. He received a Ph.D. in plasma physics from the Massachusetts Institute of Technology in 1995, and came to PPPL the same year as a DOE Postdoctoral Fellow. His postdoctoral work was with Princeton University Professor Nathaniel Fisch on the topics of particle collisions in strongly illuminated plasmas, advanced accelerator concepts, and intense laser effects in plasma.

Professor Fisch, who is also PPPL Associate Director for Academic Affairs, said, "Dr. Gennady Shvets is an

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*Pollution Prevention Awareness Day visitors try out PPPL's science "toys."*

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# Personal Connections: PPPL's Reaching Out

## Community

On April 15, PPPL participated in Community, the annual town-gown festival in downtown Princeton. PPPL's Bob Budny, Tony DeMeo, Steve Iverson, Hutch Neilson, Dave Johnson, Carol Phillips, John Schmidt, Patti Wieser, and Stewart Zweben volunteered at the Lab's exhibit. Despite a few rain drops, many visitors stopped by to find out about fusion. Below, Steve Iverson (left, behind table) and Hutch Neilson field questions. At top right, setting up PPPL's exhibit are, from left, Larry Joe Johnson, Craig Salmon, and Tom Ward.

## Pollution Prevention Awareness Day

Nearly 200 area students who had participated in the Lab's Earth Week Poster Contest came to PPPL on April 20 for Pollution Prevention Awareness Day. The events, organized by Margaret Kevin-King and Tom McGeachen, featured speakers, awards for poster contest winners, and hands-on science exhibits. At bottom left is Kevin-King being interviewed by an Action News reporter. At middle right is PPPL's Andy Carpe with his daughter, Andrea. At bottom right, John DeLooper watches some young visitors try out the science "toys."



Community Photos by Carol Phillips



Photo by John Bennevich



Photo by John Bennevich



Photo by Elle Starkman



## Blood Drive



## Talk Radio



Above, PPPL's Chris Ritter (right) and John DeLooper (left) participate in a live radio broadcast from WING 1300 AM featuring a "Report on the Trenton Public Schools" hosted by Gene Wesley (middle). The PPPL participants discussed PPPL and its Trenton Partnership, among other topics, during the April broadcast. At left, PPPL employee Cathy Saville (left) donates blood during the Lab's annual Blood Drive held in March at the Firehouse.



## Science Fair

Fourteen area students exhibited their science projects at PPPL on April 11 during the Lab's annual Science Fair Day. The fair honored the winners of PPPL's Corporate Awards, who were chosen among student exhibitors in March at the North Jersey Regional Science Fair at Bell Labs in Murray Hill and at the Mercer Science and Engineering Fair at Rider University in Lawrenceville. PPPL's Science Fair winners, as well as several Honorary Mention recipients, were on hand throughout the day to discuss their exhibits, which ranged from "Balloon-powered Cars" to the "Efficiency of Subliminal Messages on Audio Tapes." The featured young scientists were 9 to 17 years old. PPPL's Mary Ann Brown organized the Science Fair activities. Highlights for the honorees included having lunch with PPPL Director Rob Goldston; participating in a roundtable discussion with Nobel Prize winner Russell Hulse; and touring NSTX. Shown is Director Goldston handing out certificates to the youngsters following lunch.

## Shvets

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outstanding young scientist who is fast becoming a leading figure in the area of laser interactions with plasma. This is an important area of research. Lasers are becoming more and more powerful as technology progresses. In interacting with powerful laser light, matter is quickly ionized if not already a plasma. Plasma illuminated by intense light may be made compressed enough to undergo spontaneous nuclear fusion, or it may contain fields

capable of accelerating particles to huge energies for scientific purposes. Hence, the area that Dr. Shvets has specialized in holds some of the most exciting research directions in the field. Dr. Shvets is simply full of ideas. It has been a real pleasure working with him at Princeton. He is an excellent choice for this award."

In 1997, Shvets joined the staff of PPPL's Theory Department. His present research interests are in the fields of ultra-intense laser-plasma interactions, plasma-based accelerators, and nonlinear optics in plasmas. Shvets resides with his wife, Isabella Khavash, in Plainsboro. ●

# Astronaut to Speak at University and at PPPL in May

## Chang-Díaz to Describe Next Generation of Space Rockets

**D**r. Franklin Chang-Díaz, the U.S. astronaut with the most space shuttle missions, will inaugurate the Plasma Science and Technology Distinguished Speaker Lecture Series with a talk entitled, "Plasma Rockets for the Next Generation." The talk, sponsored by PPPL and Princeton University's School of Engineering and Applied Science, is scheduled to be held Monday, May 8, at 7:30 P.M. at the Computer Science Building on main campus, 35 Olden Avenue, in the Large Auditorium (Room 104). Chang-Díaz will give a second, more technical talk, "The Development of the VASIMR Engine," for PPPL staff on Tuesday, May 9, at 2:30 P.M. in B-318.

Chang-Díaz, a native of Costa Rica, graduated from Colegio De La Salle in San Jose, Costa Rica, and received a bachelor of science degree in mechanical engineering from the University of Connecticut in 1973. He studied controlled fusion and applied plasma physics at the Massachusetts Institute of Technology, where he received his Ph.D. in 1977. His interests soon turned to space travel and he began dual careers, as a researcher on propulsion systems and as a space traveler.

Chang-Díaz earned NASA Space Flight medals in 1986, 1989, 1992, 1994, 1996, and 1998, and has logged more than 1,269 hours and 22 million miles in space. He has flown on the shuttles Columbia, Atlantis, and Discov-

ery. On those missions, he deployed communication satellites and the Galileo satellite; conducted experiments on astrophysics, medical science, and materials processing; and participated in the first Joint U.S./Russian shuttle mission with a Russian Cosmonaut on board.

The lecturer is an adjunct professor of physics at Rice University and the University of Houston and has been heavily involved in community service activities, including drug rehabilitation and community residences. Chang-Díaz is married and the father of four children.

His lecture on main campus will include his vision for manned space travel and exploration during the next 50 years. The talk is free and open to the public. ●



Chang-Díaz

## HOTLINE

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