

2006 James Clerk Maxwell Prize to Chandrashekhar J. Joshi UCLA



Citation: "For his insight and leadership in applying plasma concepts to high energy electron and positron acceleration, and for his creative exploration of related aspects of plasma physics."

Background: Chandrashekhar Joshi is a Distinguished Professor of Electrical Engineering at UCLA. He is also the Director of Center for High Frequency Electronics and heads the Neptune Laboratory for Advanced Accelerator Research at UCLA. He received his B.Sc. (1974) from London University and Ph.D. (1978) from Hull University, both in the U.K. Following a two year stint as a research associate at the National Research Council of Canada, where he worked on laser-plasma interactions, he joined UCLA first as a researcher and since 1988 as a faculty member. At UCLA, Professor Joshi has built a strong research group that has done pioneering work in the areas of laser-plasma instabilities, plasma-based light sources, laser-fusion and basic plasma experiments. His group is best known, however, for developing the field of plasma based particle accelerators over the past two decades. Professor Joshi is a Fellow of the APS, IEEE and Institute of Physics (U.K). He is also the recipient of DPP's Excellence in Plasma Physics Award (1996) and USPAS prize for Achievement in Accelerator Physics and Technology (1997).

2006 Award for Excellence in Plasma Physics Research to Ryosuke Kodama Osaka University



Citation: "For developing the Fast Ignition inertial fusion concept and for demonstrating key aspects of it in a series of experiments that have catalyzed the world-wide effort on the concept."

Background: Ryosuke Kodama is a Professor of Graduate School of Engineering, Osaka University. He also is a Professor of Institute of Laser Engineering, Osaka University. He studied electrical engineering and science at Osaka University, earning his B.S. degree in 1985, his M.S. degree in 1987, and his Ph.D. degree in 1990. He was a visiting researcher at Clarendon Laboratory, Oxford University and Central Laser Facility, Rutherford Appleton in UK from 1990 to 1992, an assistant professor from 1993 to 1999 and an associate professor from 2000 to 2004 at Institute of Laser Engineering, Osaka University in Japan. He is now exploring high energy density science in methods of introducing a Plasma Photonics concept to control intense light and high energy density charged particles, including studies on the fast ignition concept in laser fusion and high energy density matter such as high pressure matter and warm dense matter. Professor Kodama received a Research Fellowships for Young Scientists of the Japan Society for the Promotion of Science (JSPS) in 1988, JSPS Special Postdoctoral Fellowships for Research Abroad in 1990. He also received the Daiwa Award from the Daiwa Anglo-Japanese Foundation in 1993, the Incentive Awards from the Japan Laser Society in 2002, the Excellence of Fusion Engineering Awards from the USA Fusion



"An investment in knowledge always pays the best interest."

Benjamin Franklin

US author, diplomat, inventor, physicist, politician, and printer (1706 - 1790)

Power Associates in 2002, the Minister Prize on Science and Technology from the MEXT Japan in 2005, and The JSPS Prize from the JSPS in 2006.

2006 Award for Excellence in Plasma Physics Research to Peter Norreys Rutherford Appleton Laboratory



Citation: "For developing the Fast Ignition inertial fusion concept and for demonstrating key aspects of it in a series of experiments that have catalyzed the world-wide effort on the concept."

Background: Peter Norreys graduated from Queen Mary College, University of London in 1983 with a bachelor's degree in Physics and Astronomy. He started his study of laser-plasma interaction physics at Royal Hollow College, University of London under the supervision of Dr Eric Wooding and Dr Mike Key in 1984. His topic of study was an experimental investigation into the uniformity of ablation in 12-beam spherical symmetry using the Vulcan laser facility. After obtaining his PhD in 1988, he was awarded a JSPS post-doctoral fellowship to continue his studies at the Institute of Laser Engineering at Osaka University, Japan. He took up a position at the Rutherford Appleton Laboratory upon his return to the UK in 1990. He has held a number of UK research council grants (in collaboration with colleagues from Imperial College London and other UK and international universities) that have investigated high intensity laser-plasma interaction physics relevant to fast ignition of fusion targets. He has led the Physics Group at the Central Laser Facility since 2001, and is currently a visiting Professor of physics at the Blackett Laboratory, Imperial College London.

2006 Award for Excellence in Plasma Physics Research to Max Tabak Lawrence Livermore

National Laboratory



Citation: "For developing the Fast Ignition inertial fusion concept and for demonstrating key aspects of it in a series of experiments that have catalyzed the world-wide effort on the concept."

Background: Dr. Tabak received his S.B. in 1970 from the Massachusetts Institute of Technology in Physics and his Ph.D. from the University of California, Berkeley in 1975 in experimental high energy physics. He followed this work with post-doctoral training in elementary particles at the Weizmann Institute of Science and at Carnegie Mellon University. Since 1980, Dr. Tabak has been associated with Lawrence Livermore National Laboratory and is now a group leader in the Defense and Nuclear Technology Department as well as Associate Program Leader for Inertial Fusion Target Design in the Fusion Energy Program. He is a Fellow of the American Physical Society. He received the Teller Medal of the American Nuclear Society in 2005. He is currently a Teller Fellow at Lawrence Livermore National Laboratory.

Dr. Tabak has broad experience in inertial fusion and has made contributions in a number of areas including implosion hydrodynamics, radiation transport and ICF target design. He was a member of the HALITE team that put to rest fundamental questions about the basic feasibility of achieving high gain in laboratory experiments. He led teams that produced early designs for the distributed radiator target for heavy ion fusion and the Z-pinch driven hohlraum target. He was the lead inventor of the Fast Ignition concept and continues to contribute to its theoretical development. His current research involves designing optimized implosion systems and reducing ignition laser requirements for Fast Ignition.

2006 Award for Excellence in Plasma Physics Research to

Kazuo Tanaka Osaka University



Citation: "For developing the Fast Ignition inertial fusion concept and for demonstrating key aspects of it in a series of experiments that have catalyzed the world-wide effort on the concept."

Background:

Kazuo A. Tanaka finished his PhD at the Laboratory for Laser Energetics, University of Rochester in 1982 after graduating Osaka University in Japan. He stayed as a Post Doc. and scientist at the University of Rochester for three years and then he became an assistant professor and has been a professor since 2001 at Osaka University. His major interests are on fast ignition, laser plasma interactions, equation of state of matters. He has been a leader in many these experiments. He published more than 150 scientific papers. He reported the first deuterium fuel implosion using foam spherical shells and fast ignition integral experiments as invited talks at the APS. He is an APS fellow and board members of Japanese Society of Plasma Science and Nuclear Fusion Research (JSPF), Journal of Plasma Physics and Fusion Research in Europe and several international conferences. He is a chief editor of the Journal of JSPF. He received the Minister of Education and Culture award (Japan) in 2005 for the achievement of fast ignition research. He is a member of APS, JSPF, and JPS (Japanese Society of Physics).

2006 Award for Excellence in Plasma Physics Research to Scott Wilks Lawrence Livermore National Laboratory



Citation: "For developing the Fast Ignition inertial fusion concept and for demonstrating key aspects of it in a series of experiments that have catalyzed the world-wide effort on the concept."

Background: Dr. Wilks received his B.A. degree in physics from U.C. Berkeley and his PhD. in plasma physics from U.C.L.A. in 1989 under the supervision of John Dawson. Since then, he has been a research scientist at Lawrence Livermore National Laboratory. His area of expertise is the application of computer simulation to the design and analysis of high intensity laser matter experiments. His work on applying Particle-In-Cell simulations to ultra-intense laser solid density plasma interactions led to several theoretical predictions about the interactions which were subsequently verified in experiment: namely, the ponderomotive scaling of hot electron temperatures, the presence of hundreds of megaGauss magnetic fields and hole boring of the laser pulse. This work played a key role in the early development of the fast ignitor concept. Recent work includes the development of a physical picture of ion acceleration, dubbed Target Normal Sheath Acceleration (TNSA). In 2002, he was awarded the Defense Programs Award of Excellence for his role in developing a novel hydrodynamics experimental campaign. Currently, he is investigating novel methods of creating high density, high temperature plasmas for laboratory astrophysics experiments. He is a lifetime member of the American Physical Society.

2006 Outstanding Doctoral Thesis in Plasma Physics to Cameron Geddes Lawrence Berkeley National Laboratory Advisors: Wim Leemans and Jonathan Wurtele



Cameron Geddes is a physicist in the LOASIS program of the Ernest Orlando Lawrence Berkeley National Laboratory, where he works on laser driven particle acceleration and intense laser-matter interaction.

He received his Ph.D. in physics in 2005 (M.A. 2003) from the University of California, Berkeley, where he was supported by the Hertz fellowship. His dissertation research, done at LBNL with research advisor Wim Leemans and faculty advisor Jonathan Wurtele, demonstrated the first laser driven accelerator in which the laser pulse propagation was controlled by a pre formed plasma channel, resulting in production of monoenergetic beams for the first time in a laser wakefield accelerator. Dr. Geddes received the Hertz Foundation Thesis Prize and LBNL Outstanding Performance Award for his Ph.D work in 2005. He worked at Livermore National Laboratory from 1997-99 on laser plasma interactions in inertial fusion. He received the B.A. in physics with high honors in 1997 from Swarthmore College, and won the American Physical Society Apker Award for the outstanding undergraduate thesis, and the Swarthmore College Elmore Prize for outstanding work in physics for his thesis on spheromak plasma equilibria. He has received the Hertz (2000-2004), DOE NDSEG(1999-2000), and DOE undergraduate plasma physics (1995) fellowships. He is a member of the American Physical Society.

Banquet... after dinner music Josh Lawrence



Josh Lawrence grew up in New Jersey where he began his studies in music with Dr. Anthony Biancosino. Under his mentor's tutelage, Josh developed a deep love of jazz, which led him to Philadelphia to attend the University of the Arts.

At the school, he studied with Dennis Wasko, George Rabbai and Jon Swana. Josh has played on Broadway with the revue Red Hot Broadway and accompanies the cast on its US tour dates. Josh has also appeared with the Funk Brothers (of Standing in the Shadows of Motown fame) and opened for Dru Hill as a member of the Tiffany Jones band. As a studio musician, Josh has recorded with Jasmine Sullivan for Jive Records, gospel rap artist Emmanuel, Claudette Ortiz of City High for Interscope Records, Tangible Truth, the Blue Method and R&B group Boyz II Men. As a jazz

T S T O K A M A K B Q U L R P F
 U C N Q N O I T C E N N O C E R
 R I L C R Y O G E N I C G T F O
 B S N A Y M Y S N J R N N U P U
 U Y O F T U U E P A K E S C N M
 L H I E P N E F Y M V I B D I S
 E P S B H T E T K I O C E C L Y
 N O L O Y A I M R N Q R R L A M
 C R U R S C C D I F G O Y Q D M
 E T P P I N R Y T R W S L X I E
 N S O T C E T W A A E T Y T O T
 O A R W S S K D V N M P I D R R
 N O P A U O U E W K R S X H O Y
 V E L D H A S V C L F B A E T X
 W I N S T A B I L I T Y J L O C
 Y R O E H T R Z U N I T E R P G

Word Puzzle:

Find the following words:

- | | | | |
|--------------|------------------|--------------|------------|
| ASTROPHYSICS | BENJAMINFRANKLIN | CRYOGENIC | DUSTY |
| EXPERIMENTAL | FUSION | INSTABILITY | ITER |
| LASERDRIVEN | MICROWAVES | PHYSICS | PLASMA |
| PROBE | PROPULSION | RECONNECTION | SYMMETRY |
| THEORY | TOKAMAK | TOROIDAL | TURBULENCE |
| | UNDERGRADUATE | VORTICITY | |

player, Josh has appeared at the JVC Jazz Festival in New York (as mentioned in Down Beat magazine), Chris' Jazz Café, Ortlieb's Jazz Haus and the Kimmel Center in Philadelphia.

Contact Information:
 Email: josh12k@gmail.com
 Phone: 267-235-6112

Coffee Break Locations and Times

Franklin Hall, fourth level and Grand Ballroom Pre-Function, fifth level
 Monday — Friday at 9:00 a.m.
 Monday — Thursday at 3:00 p.m.
 Note: Coffee will not be replenished.
 Concessions are available for purchase inside Franklin Hall.

Marriott Philadelphia Downtown Hotel

Review talks begin at 8:00 a.m.
 Monday — Friday
 Grand Ballroom ABC, fifth level

Women in Plasma Physics Luncheon Ballroom Salon IJ Monday, October 30, 12:45-2:45 pm

To attend please check the appropriate space on the meeting registration form to register for the luncheon. The cost for lunch is \$30; women graduate and undergraduate students will pay \$10 (partially supported by the DPP). Informal discussions on issues of interest to women in plasma physics will be encouraged at each table.

Dr. Mary Ann Sweeney (Sandia National Laboratories) will speak on her experiences working at the Department of Energy headquarters.

Women in Plasma Physics Reception Ballroom Salon IJ Monday, October 30, 515-645 p.m.

Plan to attend a complimentary reception for Women in Plasma Physics. There will be a talk and discussion on the perspectives of junior scientists in plasma physics.

Dr. Melissa Douglas, DPP06 chair, welcomes all meeting attendees to this talk and reception, which will be hosted by vice chair of the division, Professor Ian Hutchinson, MIT.

Business Meeting of the Division of Plasma Physics Wednesday, November 1, 5:15 p.m.-6:15 p.m. Grand Ballroom, Salon H

The business meeting of the Division of Plasma Physics will include reports of actions undertaken by DPP on issues important to our membership. New items of business will be considered in the following order: (1) Written motions, together with any supporting arguments, received by the Secretary-Treasurer, Steve Allen, at the DPP Registration Desk, Philadelphia Marriott Downtown Hotel, before noon on Monday, October 29, or which were mailed by noon on Friday, October 13, 2006. Copies of such material will be displayed on a bulletin board near the DPP registration area in order to give members reasonable notice in case they wish to participate in the discussion and vote on such motions.

(2) Written motions submitted to the Secretary-Treasurer prior to the start of the business meeting. (3) Other new business not included in (1) or (2).

Concerns for Junior Scientists Town Meeting Governor's Square 11 Tuesday, October 25 1:00 - 2:00pm

The Committee for the Concerns of Young Scientists is pleased to announce this special Town Meeting with Dr. Anne Davies. Dr. Davies is the Associate SC Director of the Department of Energy's Office of Fusion Energy Sciences (OFES). The OFES administers the fusion program for the Department of Energy. The meeting offers an opportunity for young scientists to interact with the OFES associate director to learn more about the current mission and goals of the OFES, as well as current information about the accomplishments and opportunities in the U.S. Fusion Energy Sciences research programs.

Student Appreciation Reception Plaza Court Exhibit Area Tuesday, October 25 6:00 - 7:00 pm

Please plan to attend a complimentary reception in honor of the student attendees of the 2005 DPP annual meeting. Students and student advisors are particularly encouraged to come. Lemonade, punch, and an assortment of cookies and other munchies will be served. Jill Dahlburg, 2005 DPP Chair, cordially welcomes all DPP meeting attendees to this reception, and encourages their participation in open discussion on topics of interest to students of plasma physics.

The American Competitiveness Initiative and the 'Gathering Storm' Report: Progress and Prospects

Approximately one year ago, the National Academy of Science released its report "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future". This landmark report concludes that the U.S. is falling dangerously behind in the increasingly globalized and interconnected economy. In brief, it recommends that better education, a deeper commitment to basic research, implementing policies to attract and retain the best and brightest in the U.S. and increasing incentives for U.S. business to be more innovative are the keys to heading off a devastating loss of U.S. global economic leadership.

In his State of the Union address in January 2006, President Bush announced his American Competitiveness Initiative (ACI) aimed at making the U.S. more competitive in the global economy. Cornerstones of the ACI are to:

- Double federal budgets for the "most critical" physical science programs over the next 10 years;
- Encourage expansion of private sector investment in innovation;
- Improve math and science education;
- Support universities that provide world class education and research opportunities;
- Provide job training for workers and manufacturers that make them more competitive;
- Attract and retain the best and brightest from around the world to enhance competitiveness; and
- Fostering a business environment that encourages entrepreneurship and protects intellectual property.

Did the President's 2007 Budget Request to Congress begin to meet the challenge he laid out in his State of the Union Address? How is Congress responding? Will the Gathering Storm report and the ACI have a lasting effect? How is physics research in the U.S. likely to be impacted?

Win a 30GB iPod or a Garmin i5 Street Pilot GPS!

Dear DPP Member,

DPP 2006 is sponsoring a drawing to reward attendance for the full week of the 48th Annual Meeting of the Division of Plasma Physics. This will be held on Friday, November 3 with two drawings, one for a Garmin i5 Street Pilot GPS and a second drawing for an Apple iPod 30 GB.

Each attendee who checks in at the DPP Meeting Registration desk between the hours of 4-8 p.m. on Sunday, October 29 or 7-5 p.m. on Monday, October 30 will receive a ticket stub with a number. The matching ticket number along with your name, will be held at the DPP Registration desk. A few minutes after the conclusion of the Friday morning Invited Session Z12 (at 12:35 p.m. on Friday, November 3 in Ballroom Salon CDE of the Philadelphia Marriott Downtown Hotel), the DPP chair, Melissa Douglas, will draw two of these matching ticket numbers at random. To encourage attendance through to Friday, the winners of the drawing must, of course, be present to win.



2005 Apple iPod Prize Winner, David Ennis University of Wisconsin



Our three panelists are perhaps some of the best positioned in Washington to answer these and other important questions about the state of the federal commitment to scientific research. They are:

Dr. Diane Jones, Deputy Associate Director, Science Division, Office of Science and Technology Policy

Dr. Peter Rooney, Deputy Chief of Staff, House Committee on Science

Dr. Richard E. Bissell, Director, Committee on Science, Engineering and Public Policy, National Academy of Science

Abstract

Leading the World in Innovation

By nearly every relevant metric, the U.S. leads the world in science and technology. With only about five percent of the world's population, the U.S. employs nearly one-third of all scientists and engineers and accounts for approximately one-third of global R&D spending. President Bush's FY07 Budget request brings the total Federal R&D investment to a record \$137 billion, an increase of more than 50 percent over the 2001 level. Total R&D spending in the U.S. is as much as the rest of the G-8 nations combined. While the U.S. is supporting science at unprecedented levels, the rest of the world is not standing still. In order for the U.S. to maintain our leadership position, President Bush is pursuing pro-growth economic policies, including the American Competitiveness Initiative (ACI), which he announced in his 2006 State of the Union address. The ACI is an integrated package of investments and policies that will double over 10 years funding for innovation-enabling research in the physical sciences at key Federal agencies; modernize the Research and Experimentation tax credit by updating and making permanent provisions to encourage private sector investment; strengthen K-12 math and science education; reform the workforce training system; and increase our ability to compete for and retain the best and brightest high-skilled workers from around the world.

Town Meeting on American Competitiveness Initiative

Ballroom Salon CDE

Wednesday, November 1,
12:45-1:45 p.m.

Abstract for Peter Rooney



In January 2006, during his State of the Union Address, President Bush announced a renewed commitment on the part of his Administration to funding math

and science education, and science and engineering research. Two weeks later, in February 2006, the President submitted his budget request to Congress, including The American Competitiveness Initiative (ACI), a budget initiative that proposes to double federal investments in fundamental research in the physical sciences at three civilian science agencies--the Office of Science in the Department of Energy, the National Science Foundation (NSF), and the National Institute of Standards and Technology (NIST)--over ten years. To date, ACI has fared well in Congress. The House of Representatives has already approved the increases for the Office of Science (up 14%), NSF (up 8%), and NIST (core laboratory research and infrastructure up 24%). Key Senate Subcommittees have approved similar increases. Of equal significance to the budget proposal, the President's pronouncements represent an effort to change the public perception of the value of science. This is the capstone of a fifteen-year effort on the part of the scientific community, including the

American Physical Society, to develop a new rationale for funding physical science research in the post-Cold War era. Thirty years of economic research suggests there is a strong correlation between the government investments in education and research, particularly physical science and engineering research, and future economic performance. The President made this connection explicit for the public in his State of the Union Address and in subsequent speeches and town hall meetings. The author will discuss these trends and the outlook for ACI going forward.

Bio

Peter Rooney Deputy Chief of Staff Committee on Science.

Peter Rooney serves as deputy chief of staff of the House Science Committee, having previously served as staff director of the Subcommittee on Research, and before that as staff director of the Subcommittee on Environment, Technology and Standards. Prior to joining the Science Committee, Dr. Rooney served as the founding executive director of the Forum on Technology & Innovation, an organization established by Senators Bill Frist (R-TN) and Jay Rockefeller (D-WV) to brief House and Senate staff on emerging technology policy issues. He also served as a policy advisor to the Council on Competitiveness, an independent private-sector think tank with members from industry, labor and academia, focused on technology-based economic development. Before that, he served as a program officer at the National Academy of Sciences where he directed a number of science policy studies.

Dr. Rooney holds a Ph.D in physics from the University of California at San Diego.

ITER is a joint international fusion project that shall demonstrate controlled ignition and extended burn of deuterium-tritium plasmas. ITER will be constructed in Europe, at Cadarache in the South of France by the joint efforts the European Union, Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation, and the USA.

The latest developments in the ITER project and the contribution of U.S. to the ITER project shall be presented at the evening session of 47th Annual meeting of DPP, on Tuesday, October 31, 2006. The ITER session shall include presentations of ITER Principal Deputy Director-General, Dr. Norbert Holtkamp, Head of U.S. ITER Home Team, Dr. Ned Sauthoff, and Director of the U.S. Burning Plasma Organization, Dr. Raymond Fonck.

ITER Project Norbert Holtkamp



ITER International Team, Cadarache Joint Work Site, Cadarache, France
ITER is an international project that aims to demonstrate the scientific and technical feasibility of fusion power.

Fusion is the energy source of the sun and the stars. On earth, fusion research is aimed at demonstrating that this energy source can be used to produce electricity in a safe and environmentally benign way, with abundant fuel resources, to meet the needs of a growing world population. Experiments done in U.S. and Europe were successful in producing ~10 MW of fusion power for ~ 1 second. ITER will produce ~500 MW of fusion power for a minimum period of 6 minutes (ultimately ~ one hour). To achieve this level of power, a high temperature of 200 million degrees C and a plasma pressure of 6 atmospheres are required. ITER can achieve this goal based on projection from present experiments. Enabling technologies, such as superconducting magnets, high heat flux components, plasma heating systems, and remote handling, have been developed by international collaboration. The demonstration of production of this much fusion power will be important to

move forward to the subsequent step, DEMO, which aims to produce ~ 3,000 MW of fusion power, in producing ~1,000 MW of electricity. In ITER, for the first time on earth, the plasma will sustain its high temperature state mainly using its self-produced fusion power. This kind of high temperature gas, called plasma, is also a very interesting subject of scientific studies, with a view to optimizing its performance for power production. About the time of this talk, the international agreement for ITER construction is expected to be signed. The construction should start in 2008 and the first ITER plasma is expected in 2016. The parties to the project are the People's Republic of China, the European Union (represented by EURATOM), India, Japan, the Republic of Korea, the Russian Federation, and the USA. ITER will be constructed at Cadarache in the South of France.

U.S. Contributions to ITER Ned Sauthoff



The U.S. ITER Project Team has sustained a focus on positioning the U.S. to maximize the likelihood of success of ITER overall and to enable effective

research on the science and technology of burning plasmas. The U.S. Contributions to ITER project is structured to provide a major item of equipment, consisting of hardware components, staff and cash to the ITER Organization; this project will terminate with the delivery of the contributions, while U.S. exploitation of ITER will be performed under operations budgets that include facility operations and research. In 2003 and again in 2005, technical representatives of the parties developed the assignments of responsibility for the ITER hardware, balancing domestic preferences with the best interest of the project; the success of this key step shows that technically-based decision making is possible in the ITER environment. The hardware to be provided by the U.S. spans a spectrum from high-tech systems like magnets, plasma-facing structures, ICH and ECH components, pumping and fueling, tritium-processing and plasma diagnostics to lower-tech but massive systems such as cooling water and steady-state electric power. The U.S. activity is performed within the contexts of the DOE project management order and of the ITER project management policies and procedures, which is a challenging mix. The status of the U.S. organization and technical progress in the areas of U.S. hardware contribution will be described as well as plans for future activities.

Preparing for Burning Plasma Research in the ITER Experiment Raymond J. Fonck University of Wisconsin-Madison



The ITER project confronts the grand challenge of creating and understanding a burning plasma for the first time. Its distinguishing characteristic is the tight coupling between the fusion heating, the resulting

energetic particles, and the confinement and stability properties of the plasma. Research on ITER will help address four fundamental areas relevant to understanding fusion plasmas and their surrounding environment: the creation, control and sustainment of a self-heated fusion plasma; the relation of the large size of the plasma required for fusion to its confinement, stability, and energy dissipation properties; the extension of the tokamak towards continuous, self-sustaining operation; and the materials and components for the plasma containment vessel and structures. Pursuing these issues, and thereby developing a predictive understanding of the fusion plasma state,

requires research both in the decade before and during actual operation of the ITER experiment, and for continuing research on other devices, to support ITER research objectives. These efforts can include: develop and optimize ITER operating scenarios; develop critically needed integrated models of plasma behavior in the tokamak; develop diagnostics and control techniques for later ITER deployment; and advance fusion engineering science to develop plasma control tools and prepare to participate in the ITER blanket test program. This research will comprise much of the burning plasma research activity of the U.S. fusion research program. This list is only representative, and is not exhaustive. The burning plasma research program in the U.S. is structured to maximize the scientific benefits of U.S. participation in the ITER experiment. A U.S. Burning Plasma Organization was established to focus U.S. fusion research activities supporting burning plasma research. In addition, U.S. scientists participate in the International Tokamak Physics Activity to coordinate these activities with international partners. Progress on the critical scientific and technology issues needed to design future fusion energy power plants will be evaluated with metrics based on increased scientific understanding and performance in the burning plasma regime.

Job Fair Sponsored by AIP and APS-DPP Franklin Hall, Level Four (Interviews to be held in Room 404-405, Level Four)

Whether you are looking for a job or recruiting, the DPP Job Fair will provide job seekers and hiring managers with unsurpassed recruitment and networking opportunities.

Job Seekers utilize the services to: Network with technical staff and human resource recruiters, post resume and search open positions, interview for positions.

Employers utilize the services to: Showcase your company with a Recruitment Booth, advertise open positions, interview qualified job seekers, search resumes specific to the meeting.

The Job Fair is free of charge to all job seekers. There is a nominal fee for employers.

Hours of Operation: Monday - Wednesday, October 30 to November 1, 9:00 am to 5:00 pm

Invited Paper Poster Sessions

Poster versions of review, invited, and tutorial papers are optional and are scheduled Monday through Friday, in the following half-day session, in a designated area of Grand Ballroom I & II, Tower Building. For example, the Monday morning review and invited talks may also be presented as posters in the Monday afternoon poster session. This option will be available on Monday morning for invited papers scheduled on Friday morning.

Diane Jones, White House Office of Science and Technology Policy



The American Competitiveness Initiative: Leading the World in Innovation

By nearly every relevant metric, the U.S. leads the world in science and technology.

With only about five percent of the world's population, the U.S. employs nearly one-third of all scientists and engineers and accounts for approximately one-third of global R&D spending. President Bush's FY07 Budget request brings the total Federal R&D investment to a record \$137 billion, an increase of more than 50 percent over the 2001 level. Total R&D spending in the U.S. is as much as the rest of the G-8 nations combined. While the U.S. is supporting science at unprecedented levels, the rest of the world is not standing

still. In order for the U.S. to maintain our leadership position, President Bush is pursuing pro-growth economic policies, including the American Competitiveness Initiative (ACI) which he announced in his 2006 State of the Union Address. The ACI is an integrated package of investments and policies that will double over 10 years funding for innovation-enabling research in the physical sciences at key Federal agencies; modernize the Research and Experimentation tax credit by updating and making permanent provisions to encourage private sector investment; strengthen K-12 math and science education; reform the workforce training system; and increase our ability to compete for and retain the best and brightest high-skilled workers from around the world.

Bio

Diane Auer Jones is the Deputy to the Associate Director for Science at the White House Office of Science and Technology Policy (OSTP). Trained as a molecular biologist, Diane began her career as the director of an environmental assessment center, professor of biology, and founding director of an NSF-funded Biotechnology Institute. She then served as a program director in the Division of Undergraduate Education at the National Science Foundation before transitioning to a career in science policy. Diane was a professional staff member and acting majority staff director for the Research Subcommittee of the U.S. House of Representatives Committee on Science during the 107th Congress, and then worked for three years as Princeton University's Director of Government Affairs before taking her current position at OSTP. In addition to her work in academia and government, Diane also has significant experience in the private sector where she founded and owned for seven years a gourmet and natural foods store, a multi-practitioner health and wellness center, and was a founding co-owner of an environmental biotechnology company, AthenaES.

Beyond the Beltway: Implementing "The Gathering Storm" Report in the States and Regions



At the end of 2005, the National

CPS Develops New Wayst to Promote Plasma

Earlier this year the Coalition for Plasma Science (CPS) met to review their educational outreach efforts, and to brainstorm new ways of exciting students and the general public about plasma science.

CPS had already established a successful series of educational luncheons for members of Congress and their staffs, this year featuring the University of Florida's Prof. Vladimir Rakov, with his talk "What You Don't Know About Lightning." And CPS was continuing to sponsor, for the second year, an award at the Intel Science and Engineering Fair - "The CPS Excellence in Plasma Science Award," given to the best project in the broad area of plasmas. This year's winner, 14-year-old Sarah Lynn McCuskee from Saskatchewan, Canada, examined the proposition that the solar wind and the ionosphere affect the accuracy of a Global Positioning System.

Now CPS wanted to find a way to expand their involvement with the APS-DPP Science Teachers Day, being held this year at the Philadelphia Marriott Downtown on October 31.

On Science Teachers Day, teachers from around the APS-DPP meeting host city are invited to learn about plasma by attending a series of talks and hands-on workshops. Teachers are sent home loaded with brochures, curriculum, charts and portable experiments for their classrooms. CPS already contributes to this wealth of materials by supplying a large poster illustrating that "Plasmas are Everywhere."

The group felt they could contribute

Academies issued a report titled *Rising Above The Gathering Storm: Energizing and Employing America for a Brighter Economic Future*. The distinguished authoring committee was asked to identify the top ten actions, in priority order, that federal policy-makers could take to enhance the science and technology enterprise so the United States can successfully compete, prosper, and be secure in the global community of the 21st century. The findings and recommendations of the report covered K-12 education, investing in science and engineering research, higher education, and incentives for innovation. The growing debate in the wake of that report, including the Administration's American Competitiveness Initiative and myriad bills introduced in the House and Senate, testifies to the bipartisan thirst for new, 21st century solutions for the U.S. to global challenges. The Initiative received the highest attention, with an emphasis in the President's State of the Union address. While the initial debate focused on national actions to be taken, increasing attention is now given to potential policies and programs at the regional, state and local level. It is increasingly recognized that sub-national entities can and do play an important role in each of the four sectors addressed by the original report. At the same time, the limited capacity and resources of states and localities require even more attention given to priority-setting in the face of the many possible policy options. This presentation will spell out the dimensions of that emerging debate, along with illustrations of "model programs" undertaken in various jurisdictions throughout the US.

Bio

Dr. Richard Bissell is Executive Director for Policy and Global Affairs of the National Research Council as well as Director of the Committee on Science, Engineering, and Public Policy of the National Academy of Sciences (NAS), National Academy of Engineering (NAE), and the Institute of Medicine (IOM). He has held prior positions as a Member and Chair of the Inspection Panel at the World Bank. He held senior appointments at the U.S. Agency for International Development and the US Information Agency, and has taught at American University, Georgetown University, and the University of Pennsylvania. He was educated at Stanford University (BA), Tufts University (PhD), and Princeton University (Postdoctoral Fellowship).

further by providing each teacher with a hands-on means of teaching about plasmas - a half-coated fluorescent tube. These tubes always cause a stir when they are lit, showing a thin line of softly glowing plasma brightening the coated side of the tube. Workshop instructors will show the teachers how to use the tube to talk about plasma and related science.

The Coalition for Plasma Science was formed in 1996 by a group of individuals and organizations with an interest in plasma science research. Perceiving that this rapidly progressing field of science was not well understood or appreciated by the general public (including the media, the education community and policy-makers) CPS set out to increase public awareness and understanding of plasma science and its many applications. The group has over 60 members, and is strongly supported by a number of organizations, including APS-DPP.

Volunteers Needed Now!

Providing plasma tubes at DPP's Science Teachers Day was not the only new idea to emerge from the CPS brainstorming session. As part of its goal to promote plasma education at the K-12 level, CPS has long been interested in addressing plasma's omission from many K-12 state science education standards. The Coalition, along with the APS-DPP, played a major role in getting the topic of plasma included in the Georgia state science standards prior to the 2004 APS-DPP meeting in Savannah.

The Coalition has decided to continue this effort across the country, but they need volunteers. The first step simply entails reviewing the science standards for a given state (all available on-line), and reporting on

Call for Nominations for 2007 Prize and Awards

A prize or award presented by APS is one of the highest honors a physicist can receive. The DPP annually solicits nominations for one prize, two awards and one medal. The deadline for receipt of these nominations is Monday, April 2, 2007. Please take time to nominate exceptional DPP colleagues.

Anyone other than a member of the committee making the selection may submit one nomination or seconding letter for each prize, or award, or medal in any given year.

Go to this web address: <http://www.aps.org/praw/nomguide.cfm> for nomination guidelines.

The nomination package must be mailed to the chair of the appropriate DPP selection committee by Monday, April 2, 2007. Acknowledgement of receipt can be emailed to the selection committee chair upon your request. The dissertation award has other requirements in addition to those listed on the APS website, so check for descriptions of the prize and awards for which you are making a nomination.

James Clerk Maxwell Prize for Plasma Physics

Michael Mauel, Chair
Columbia University
Department of Applied Physics
500 West 120th Street
New York, NY 10027
Phone: 212-854-4455
Fax: 212-854-8257
Email: mauel@columbia.edu

Award for Excellence in Plasma Physics Research

Nermin Uckan, Chair
Oak Ridge National Laboratory
Fusion Energy Division MS-6169
PO Box 2008
Oak Ridge, TN 37831
Phone: 865-574-1354
Fax: 865-241-8231
Email: uckanna@ornl.gov

Marshall N. Rosenbluth Outstanding Doctoral Thesis Award in Plasma Physics

John Goree, Chair
University of Iowa
Department of Physics and Astronomy
Iowa City, IA 52242
Phone: 319-335-1843
Fax: 319-335-1753

Email: john-goree@uiowa.edu

Franklin's List

Benjamin Franklin would likely have valuable insight into solutions for many of today's societal concerns. Here are some steps he might recommend taking:

- * Encourage scientists to run for Congress and other public office, and establish a bipartisan science caucus

- * Organize a series of science seminars for policy makers

- * Work to increase the nation's overall science literacy

- * Assemble a science literacy handbook that includes dos and don'ts for scientists

- * Educate students about science and civic responsibility. Scientists could volunteer to help in settings from preschool child development centers through the entire educational system.

- * Gather the best scientists and science writers to reform and rewrite science textbooks and curricula

- * Make better educational use of television, computers, and computer games

when the standards were last updated, and where the topic of plasma appears within those standards - if anywhere. This task is neither labor intensive, nor time-consuming. Volunteers are free to choose any states they would like to review, on a first come basis.

After receiving this information from the volunteers, CPS will contact the appropriate Boards of Education. The Coalition for Plasma Science's educational brochure states "Plasmas Are Everywhere," from interplanetary space to the fluorescent lighting in most classrooms. With help from volunteers, plasmas will also be found

in the science standards of every state in the U.S.

To volunteer for this effort, please contact: Lee Berry at berryla@ornl.gov or 865 574 0998.

Join CPS NOW!

CPS is a volunteer organization whose members meet by conference call once a month. They are always looking for a few good individuals who will help the cause of promoting plasmas to the public. You can join by contacting CPS at CPS@plasmacoalition.org



CAPTION: Teachers attending APS-DPP Teachers Day participate in plasma experiments. This year CPS will contribute to the hands-on materials teachers take back to their classrooms.

American Competitiveness Initiative Committee on International Scientific Affairs

Announces Availability of Free On-line Journals for Institutions in Sub-Saharan Africa

The Committee on International Scientific Affairs (CISA) is pleased to announce that the American Physical Society is now offering free, on-line access to its journals to institutions in sub-Saharan Africa. Beginning in 2006 through 2008, not-for-profit institutions located in eligible countries can gain online access to APS journals (a complete list of eligible countries is provided at the end of this article). CISA asks the Division of Plasma Physics to help "spread the word" of this new program to interested colleagues in sub-Saharan Africa.

The APS is offering this access via the International Network for the Availability of Scientific Publications' (INASP) Programme for the Enhancement of Research Information (PERI). The goal of PERI is to "support capacity building...in developing and transitional countries by strengthening the production, access and dissemination of information and knowledge." One component of PERI is to provide country-wide access to international research findings. Research communities in developing and transitional countries are able to access scholarly literature in a wide range of disciplines. The APS is just one of a host of publishers that makes its journals available through this program. While the APS has initially begun offering free journal access to countries in sub-Saharan Africa, if this pilot program with PERI proves successful, it is hoped that the APS will be able to expand this offering to other developing regions. For additional

information, please visit <http://www.aps.org/intaff/cisa/peri.cfm>

Background

The mission of the American Physical Society is "to advance and diffuse the knowledge of physics." Toward this end, one of the major endeavors of the APS is the publication of some of the world's leading physics research journals. The Physical Reviews are primary research journals among physicists worldwide. Thus, access to the Society's journals is vital for many physicists.

For many years, the APS has strived to make its journals available in regions of the world where the cost of the journals is prohibitive. However, many institutions in the developing world that could access electronic information did not take advantage (or did not know how to take advantage) of electronic access to APS journals that were available at reduced, or no, cost. Despite this, the APS knew that physicists around the world were in need of and actively seeking out access to the Society's journals. APS staff turned to CISA for guidance: there had to be a better way to promote journal access in the developing world.

In February 2005, CISA, led by its then-Chairman Jerry Draayer, sponsored a meeting with other organizations to discuss options for providing access to scientific literature. How do other organizations provide access to their journals in developing countries? What are the successes and barriers to encouraging countries/institutions to participate? Are there other/better models for offering access in certain regions of the world? Several organizations that had faced the same challenge had increased their journal offerings through INASP, which endeavors, in part, to "promote sustainable and equitable access to information...and

to strengthen local capacities to manage and use information and knowledge." INASP's solid reputation for arranging and facilitating access to information in the developing world ultimately led to the Society's participation in its Programme for the Enhancement of Research Information (PERI). (To learn more about PERI, please visit <http://www.inasp.info/peri/index.shtml>)

Gaining Access

Again, we ask the members of the Division of Plasma Physics to "spread the word" to colleagues in sub-Saharan Africa about the journal offerings and these guidelines regarding access:

1. Access to PERI resources is controlled via Internet Protocol (IP) addresses entered within the institutional administrative system. Thus, interested institutions must be registered with PERI before their users can gain access to APS publications. Registration should be completed by a librarian on behalf of the institution. (It is also possible to make access available for institutions without an IP range through an institute-specific username and password.)

2. Institutions can learn how to register by visiting the PERI registration web site at <http://www.inasp.info/segi-bin/peri/peri.pl> (Choose to browse by country, select appropriate country, select desired resource, and then follow the remaining instructions.) There are "Help Documents" available on this site that explain the registration process in full.

3. Individual researchers should contact their librarian or PERI Country Coordinator (<http://www.inasp.info/peri/countries.shtml>) to determine whether their institution is registered.

Once registered, institutions will have

access to the following APS publications:

- Physical Review A
- Physical Review B
- Physical Review C
- Physical Review D
- Physical Review E
- Physical Review Focus
- Physical Review Letters
- Physical Review Online Archive (PROLA)
- Physical Review Special Topics - Accelerators and Beams
- Physical Review Special Topics - Physics Education Research
- Reviews of Modern Physics

Eligibility

Countries are selected for participation in PERI based on their Gross Domestic Product (GDP) and/or the Human Development Index (HDI). Individual publishers then determine to which countries they will offer their products. Access is made available to not-for-profit institutions in those countries.

The following countries are eligible to receive free on-line access to APS journals:

Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde Central African Republic, Chad, Comoros, Congo (Brazzaville), Republic of the, Congo (Kinshasa), Democratic Rep. of the, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Mini-Conferences

Three mini-conferences are scheduled Tuesday through Thursday to be held at the Philadelphia Marriott Downtown Hotel. Check the Epitome for the speaker start times.

Mini-conference on Shock Acceleration in Space and Astrophysical Plasmas

Tuesday all day, October 31, Grand Salon KL

Session GM1: Tuesday Morning
Speakers: R.A. Mewaldt, Tamas Gombosi, Jonathan Eastwood, Lin Yin, A.C. Cummings, Allan J. Tylka

Session JM1: Tuesday Afternoon
Speakers: Tony Bell, Joe Giacalone, Yu Lin, Mikhail Medvedev, Anatoly Spitkovsky, Edison Liang, Giovanni Lapenta, George Gloeckler, L.A. Fisk

Mini-conference on Nuclear Renaissance: Where is it going and where does fusion fit in?

Tuesday all day, October 31, Room 407-409

Session GM2: Tuesday Morning
Speakers: I.H. Hutchinson, Andrew C. Kadak, M.F. Haynes, David Petti

Session JM2: Tuesday Afternoon
Speakers: Farrokh Najmabadi, Wallace Manheimer, John Sethian, John F. Santarius

JM2 Panel Discussion (5:00 p.m. to 6:00 p.m.)

Mini-conference on Interface Between Fluid and Kinetic Processes in Laboratory, Space and Astrophysics

Thursday all day, November 2, Ballroom Salon KL

Session UM1: Thursday Morning
Speakers: P.H. Diamond, M. Velli, Pablo Mininni, Hui Li, Michael Shay, Zhihong Lin

Session VM1: Thursday Afternoon
Speakers: Paulett Liewer, Tony Bell, Philip Isenberg, Benjamin Chandran, D.S. Montgomery, S. Peter Gary

Town Meeting on American Competitiveness Initiative

Ballroom Salon CDE

Wednesday, November 1, 1245-145 p.m.

Order of speakers

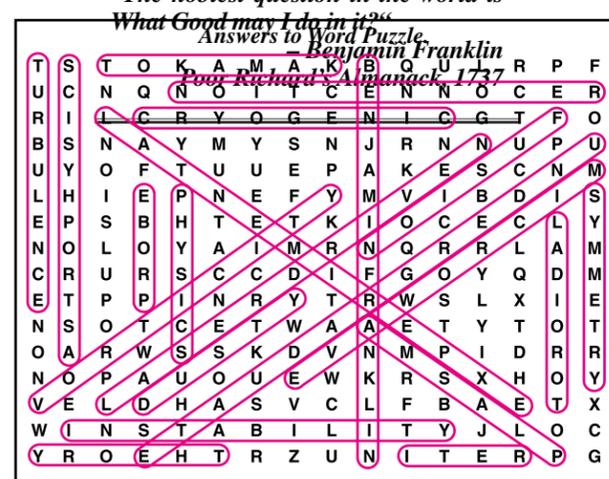
Dr. Diane Jones, Deputy Associate Director, Science Division, Office of Science and Technology Policy

Dr. Peter Rooney, Deputy Chief of Staff, House Committee on Science

Dr. Richard E. Bissell, Director, Committee on Science, Engineering and Public Policy, National Academy of Science

"The noblest question in the world is

What Good may I do in it?"



Evaluation Form for 2006 APS-DPP Annual Meeting

Please give us your candid opinion of DPP06 to aid in future planning. Base your evaluation on a comparison to previous APS-DPP and non-APS scientific meetings. Use a separate page for additional comments.

___ APS member ___ non-member Did you attend DPP05 in Denver? Yes No
 workplace: ___ university ___ govt. lab ___ industry ___ self employed ___ student ___ retired
 plasma physics subfield: _____ state (or country) of residence: _____

Rank the factors that most influenced your decision to attend this meeting:

___ meeting registration cost ___ hotel cost ___ geographical location ___ quality of program
 ___ breadth of program ___ interaction with colleagues ___ attend mini-conference ___ seek a job
 Did you present a paper? ___ Did you co-author one or more papers presented by others? ___

Evaluate on a score of 5=excellent and 1=poor (please circle):

- Scientific content and organization**
- range of topics 5 4 3 2 1
 - plenary talks 5 4 3 2 1
 - invited sessions 5 4 3 2 1
 - tutorial sessions 5 4 3 2 1
 - poster sessions 5 4 3 2 1
 - mini-conferences 5 4 3 2 1
 - scheduling (overlap) 5 4 3 2 1
 - peer interaction 5 4 3 2 1
 - bulletin 5 4 3 2 1
 - mtg. program web pages 5 4 3 2 1

Meeting logistics

- location (city) 5 4 3 2 1
- length of meeting 5 4 3 2 1
- meeting size/layout 5 4 3 2 1
- abstract submission process 5 4 3 2 1
- registration services 5 4 3 2 1
- meeting rooms 5 4 3 2 1
- AV equipment 5 4 3 2 1
- speaker ready room 5 4 3 2 1
- job fair 5 4 3 2 1

Amenities/social events

- hotel accommodations 5 4 3 2 1
- hotel location 5 4 3 2 1
- coffee breaks 5 4 3 2 1
- special events 5 4 3 2 1
- banquet 5 4 3 2 1
- email stations 5 4 3 2 1
- wireless service 5 4 3 2 1
- vendors 5 4 3 2 1
- companion program 5 4 3 2 1
- education/outreach program 5 4 3 2 1

Please return this form to the DPP registration desk or email comments to:

Ian Hutchinson, 2007 Program Chairman email: hutch@psfc.mit.edu and
 Saralyn Stewart, DPP Administrator email: stewart@physics.utexas.edu

Notes/Doodles