

# The DPP Chronicle

Savannah, Georgia

A Division of The American Physical Society

November 16-20, 2015



## James Clerk Maxwell Prize for Plasma Physics Recipient

*"For fundamental experimental studies of magnetic reconnection relevant to space, astrophysical and fusion plasmas, and for pioneering contributions to the field of laboratory plasma astrophysics."*

**Masaaki Yamada**  
Princeton Plasma Physics Laboratory



Dr. Masaaki Yamada is a Distinguished Laboratory Research Fellow at Princeton Plasma Physics Laboratory and the Head of the Magnetic Reconnection Experiment (MRX) research program.

He graduated from University of Illinois with Ph. D in Physics in 1973 after receiving B.S. and M.S. from University of Tokyo. He carried out many key plasma physics research relevant to both fusion and space astrophysics. During 1978-1988, he headed the research effort on the spheromak, then a new concept for fusion, utilizing the S-1 device. Since the early 1990's, he has pioneered a new experiment, the MRX at PPPL to explore the fundamental physics of magnetic reconnection. The MRX research has yielded many significant results on magnetic reconnection. Dr. Yamada, who is also a pioneer of laboratory plasma astrophysics, has authored and co-authored over 200 scientific papers in major refereed journals, including the recent review articles in *Rev. Modern Phys.* (2010) and in *Ann. Rev. Astron. Astrophys.* (2009). He has been doctoral thesis advisor for more than dozen graduate students of Princeton University, the University of Tokyo, and Purdue University. Dr. Yamada held invited professor positions at Ecole Polytechnique Federale de Lausanne, Switzerland (1988), Kyoto University, Japan (1989), and the University of Tokyo, Japan (1994, 2010). He has been an APS fellow since 1985 and received APS Excellence of Plasma Physics Award in 2002, Princeton University Kaul Prize in 2003.

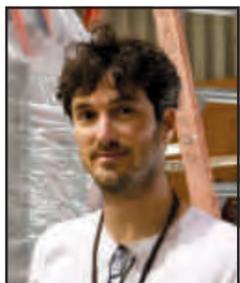
## Savannah Fun Facts

Parts of the movie *Forrest Gump* were filmed in Savannah, most notably the scenes on a bus bench where Forrest tells his story.

## John Dawson Award for Excellence in Plasma Physics Research

*"For creative and novel use of the hard x-ray free electron laser to isochorically create high density plasmas and accurately measure the ionization potential depression, and for new theory that addresses discrepancies with long standing models and provides stimulus for continued developments."*

**Bob Nagler**  
SLAC National Accelerator Lab



Bob Nagler was born in Belgium and received his PhD from the Vrije Universiteit Brussel in 2003, with a dissertation on polarization dynamics in VCSELS and multidimensional quantum key distribution. After graduating, he moved to Lawrence Berkeley National Laboratory (LBNL) for a post-doctoral position with a Francqui Foundation Fellowship of the Belgian-American Educational Foundation and a Fulbright Fellowship. At LBNL, he worked for three years in the LOASIS group working on guided plasma wakefield accelerators. In 2006 he moved to Oxford University as a Marie Curie Fellow, where he started to work with 4th generation light sources to investigate and create matter in extreme conditions. He moved to Linac Coherent Light Source (LCLS) at the SLAC National Accelerator Facility in 2009, first as a visiting scientist of the Rutherford Appleton Laboratories, and since 2011 as staff scientist in the Matter in Extreme Conditions department at LCLS.

## Hyun-Kyung Chung International Atomic Energy Agency



Hyun-Kyung Chung graduated from Seoul National University, Republic of Korea, in 1992 with a bachelor's degree in Nuclear Engineering. She received a Ph.D in 1998 at University of Wisconsin-Madison in the Department of Nuclear Engineering and Engineering Physics under the supervision of Prof. G. Moses and Dr. J. MacFarlane on the topic of atomic processes in plasmas. Following postdoctoral work at Harvard-Smithsonian Center for Astrophysics with Drs J. Babb, K. Kirby and Prof. A. Dalgarno on the topic of line broadening of high pressure sodium vapor she worked at Lawrence Livermore National Laboratory in the field of high energy density physics. Main areas of her research are studies of atomic processes to understand extreme plasma states produced in laboratory and astrophysical objects. Her time-dependent collisional-radiative code FLYCHK, available at the NIST website (<http://nlte.nist.gov/FLY>), is widely used by the plasma community for spectroscopic analysis. Currently at the International Atomic Energy Agency, she coordinates research projects for atomic, molecular and plasma-material interaction data for fusion applications.

**Justin Wark**  
University of Oxford



Justin Wark received his undergraduate degree in Physics from the University of Oxford in 1982, and his Ph.D. in Plasma physics from Imperial College, London in 1985. He then spent two very enjoyable and formative

years as a Postdoctoral Research Assistant at the Laboratory of Laser Energetics at the University of Rochester. After returning to the UK he was awarded a Royal Society University Research Fellowship at the University of Oxford, where he set up a research group working in high power laser-matter interactions. His research interests over the years have included high harmonic generation, XUV lasers, x-ray spectroscopy, and the development and use of novel x-ray sources in studying shock and isentropic compression of solid-state matter via x-ray diffraction - work for which he was made an APS Fellow in 2013. Over the past few years his research group has been highly active in exploiting so-called 4th generation light sources - XUV and X-Ray Free Electron Lasers which have a spectral brightness over a billion times greater than those of any synchrotron. He has used such sources to both create and diagnose matter under extremes of density, temperature, and pressure. He is currently Fellow, Tutor and Professor in Physics at Trinity College, Oxford, and Director of the Oxford Centre for High Energy Density Science (OxCHEDS).

**Orlando Ciricosta**  
University of Oxford



Orlando Ciricosta received a degree in Physics in 2006 and a Master's degree in Condensed Matter Physics in 2010 from University of Pisa, Italy. He then moved to the UK, where he received his D.Phil. in Atomic and Laser Physics from University of Oxford in 2014. His doctoral work includes experiments and modelling on the novel isochoric heating platform that uses an X-ray free electron laser to generate hot-dense plasmas, and relating the X-ray emission from these plasmas to a direct measurement of ionization potential depression. He is currently a postdoctoral fellow at the University of Oxford, and a visiting scientist at the Lawrence Livermore National Laboratory, his main research effort being devoted to a collaboration between the University

of Oxford, the University of York, the Laboratory for Laser Energetics, and the Lawrence Livermore National Laboratory on the spectroscopic investigation of hot-spot mix in fusion-capsule implosions at the National Ignition Facility.

**Philip Heimann**  
SLAC



Philip Heimann conducts research on warm and hot dense matter, in which experiments are conducted at the Linac Coherent Light Source (LCLS) and previously at the

Advanced Light Source. In particular, he has pursued investigations of the electronic structure of warm and hot dense matter through x-ray absorption and emission spectroscopies. Philip Heimann is involved in the development of the LCLS-II X-ray Instruments. He performed the x-ray optical design for the LCLS SXR Instrument.

**Richard W. Lee**  
SLAC National Accelerator Laboratory



Richard W. Lee, educated at the Johns Hopkins University and receiving his Ph.D. in Physics in 1970 from University of Florida, he then did postdoctoral

research at Imperial College, London. He joined the faculty at Imperial College in 1972, leaving in 1984 for Lawrence Livermore National Laboratory. During this period, he developed techniques, now widely used, to analyze the radiative properties of hot dense matter laboratory plasmas. In 1980's he became the leader for applied physics experiments on high-energy lasers at LLNL and continued to develop theoretical techniques for plasma spectroscopy. During this period he became an Associate Editor for the *Journal of Quantitative Spectroscopy and Radiative Transfer* specializing in the area of High Energy density research. He is currently leading the development of High Energy Density research on the 4th generation x-ray light sources in Europe and the United States. He is now the Associate Director of the University of California Institute for Material Dynamics in Extreme Conditions and the Editor-in-Chief of the journal "High Energy Density Physics" launched in December 2005.

**Roger Falcone**  
University of California, Berkeley



Dr. Roger Falcone has been a faculty member in the Physics Department at the University of California, Berkeley since 1983, and served as department chair from 1995-

2000. Since 2006, he has served as the Director of the Advanced Light Source x-ray synchrotron facility at Lawrence Berkeley National Laboratory. His personal research activities involve the interaction of intense light with matter and he has published over 150 papers in this and related fields. Most recently, his work has involved the use of the ultrashort pulse optical lasers to create warm and dense matter, the use of ultrashort pulse, extreme ultraviolet light to study chemical dynamics, the use of high-energy lasers to compress matter and create plasma x-rays that scatter from the matter, and the use of an x-ray laser to study plasmas. His newest work involves the use of the high-energy NIF laser at Lawrence Livermore National

Laboratory to study the equation of state of matter at billion-atmosphere pressures. He serves on a variety of advisory and review committees for US and European research laboratories, as well as the Lawrence Hall of Science in Berkeley, a science center focusing on K-12 education. Dr. Falcone obtained his Ph.D. in Electrical Engineering from Stanford University in 1979, after completing his undergraduate degree in Physics at Princeton University in 1974. His list of honors include being a Fellow of the APS, OSA and AAAS; APS Leo Szilard Award (2005); Halbach Prize for Instrumentation at the ALS at Berkeley Lab (2000); APS Distinguished Lecturer (1992-93); and Presidential Young Investigator Award of the NSF (1984).

**Sam M. Vinko**  
University of Oxford



Sam Vinko received his Master's degree from the University of Rome Tor Vergata in Italy in 2007, and his doctorate from the University of Oxford in

2011, investigating the interaction of intense XUV light with matter on the FLASH free-electron laser (FEL). As part of an international team he worked on producing record intensities in the XUV, and showed how these could be used to saturate atomic processes in metals on femtosecond timescales. For this work he was awarded the 2012 Culham Thesis prize from the Institute of Physics. As a postdoctoral researcher in Oxford he then worked on some of the first plasma experiments on the LCLS FEL, studying how intense X-rays could be used to create homogeneous hot-dense plasmas via X-ray isochoric heating. This work has most recently led to the first measurement of both continuum lowering and electron collisional ionization rates in dense plasmas. He has also been actively developing DFT-based models to efficiently simulate hot-dense plasmas from first principles. Sam Vinko was awarded a Royal Society University Research Fellowship in 2014 and now leads a small research group at the University of Oxford.

**Thomas H. Stix Award  
for Outstanding Early  
Career Contributions to  
Plasma Physics Research**

*"For pioneering analytical and numerical studies of magnetic reconnection and especially for his contribution to the identification and understanding of the plasmoid-dominated reconnection in high Lundquist-number plasmas."*

**Nuno F. G. Loureiro**  
Instituto Superior Tecnico



Nuno F. G. Loureiro was born in Viseu, Portugal, in December 1977. He graduated from Instituto Superior Técnico, Lisbon, in 2000, with a degree in Physics Engineering, and subsequently

moved to London, UK, to study for a PhD degree in Plasma Physics at Imperial College. He was awarded a PhD in 2005, for analytical and numerical work on the tearing instability.

Nuno subsequently held a post-doctoral position at the Princeton Plasma Physics Laboratory, US, followed by a Fusion Research Fellowship at CCFE, UK.

In 2009 Nuno was awarded an advanced fellowship from the Portuguese Science and Technology Foundation to work at the Institute for Plasmas and Nuclear Fusion (IPFN), at IST Lisbon. In Dec. 2012 he was appointed Head of the Theory and

Modelling Group at IPFN. In 2013 Nuno was awarded a Development Grant under the Investigador FCT programme of the Portuguese Science and Technology Foundation. Nuno is also an Invited Associate Professor at the Physics Department of IST and a faculty member of the plasma physics doctoral programme APPLAuSE at IST.

Nuno's current research interests cover a broad range of astro, space and laboratory plasma physics problems, including magnetic reconnection, the generation and amplification of magnetic fields, turbulent transport in magnetized plasmas, fast-particle-driven instabilities in fusion plasmas, etc.

**Marshall N. Rosenbluth  
Outstanding Doctoral  
Thesis Award**

*"For development of a novel means to generate a differentially rotating unmagnetized plasma using magnetic and electric fields applied at the plasma edge, providing access to previously inaccessible laboratory plasma regimes, and for unique measurements of the plasma viscosity."*

**Cami Collins**  
University of California, Irvine



Dr. Collins received her B.S. in Physics and Applied Mathematics from Montana State University Bozeman in 2007. As an undergraduate, she participated in the National

Undergraduate Fellowship Program in Plasma Physics and Fusion Energy Sciences at General Atomics. In 2013, she completed her Ph.D. in plasma physics at the University of Wisconsin, Madison, advised by Professor Cary Forest. At Wisconsin, Dr. Collins created a large, fast-flowing, magnetic field-free plasma using multicusp confinement and edge-applied torque which can be used to study several outstanding problems in astrophysics, including the magnetorotational instability and the dynamo. As a graduate student, Dr. Collins was awarded the U.S. DOE Fusion Energy Sciences Graduate Fellowship and was selected to attend the 60th Annual Meeting of Nobel Laureates in Lindau, Germany. She is currently a postdoctoral researcher at the DIII-D tokamak at General Atomics, where her work focuses on Alfvén eigenmode induced transport of fast-ions. Dr. Collins has been an APS DPP member since 2006.

**Résumé Help Desk**

**Monday – Wednesday**

**November 16-18,**

**10:00 a.m. – 6:00 p.m.**

**Thursday, November 19**

**10:00 a.m. – 4:00 p.m.**

**Exhibit Hall A**

During the DPP annual meeting we are once again hosting a résumé writing help desk as a complimentary service to meeting attendees. The help desk is located in the Savannah International Trade and Convention Center near the Job Fair. Interested attendees should stop by to sign up for a 30-minute time slot with a DPP scientist for help constructing an effective résumé. Time slots will be filled on a first come, first served basis. Stop by today!

**Speaker Ready Room Hours**

**Room 205**

Monday, Nov. 16, 7:00 a.m. - 5:00 p.m.

Tuesday, Nov. 17, 7:00 a.m. - 5:00 p.m.

Wednesday, Nov. 18, 7:00 a.m. - 5:00 p.m.

Thursday, Nov. 19, 7:00 a.m. - 5:00 p.m.

Friday, Nov. 20, 7:00 a.m. - 11:00 a.m.

**Review Talks**

**Review talks begin at 8:00 a.m.**

**Monday – Friday**

**Chatham Ballroom AB**

**Morning Coffee Breaks**

**Georgia International Gallery  
& Rotunda**

Monday-Friday, 9:00 a.m. - 9:30 a.m.

**Afternoon Coffee Breaks**

**River Concourse  
& Rotunda**

Monday-Thursday, 3:00 p.m. - 3:30 p.m.

Note: Beverages will not be replenished.

**DPP Registration Desk**

**River Concourse**

Sunday, Nov. 15, 2:00 p.m. - 7:00 p.m.

Monday, Nov. 16, 7:00 a.m. - 5:00 p.m.

Tuesday, Nov. 17, 7:00 a.m. - 4:00 p.m.

Wednesday, Nov. 18, 7:00 a.m. - 3:00 p.m.

Thursday, Nov. 19, 7:00 a.m. - 3:00 p.m.

Friday, Nov. 20, 7:00 a.m. - 12:00 p.m.



**Job Fair**

**Sponsored by APS DPP**

**Monday – Wednesday, November 16-18, 10:00 a.m. – 6:00 p.m.**

**Thursday, November 19, 10:00 a.m. – 4:00 p.m.**

**Exhibit Hall A**

*(Interviews will be held in private space near the Job Fair.)*

Are you an employer looking to hire a physicist for your science and technology jobs? Are you a physicist looking to connect with potential employers to learn about opportunities, or interview for a job? Then you will not want to miss the APS DPP Job Fair during the DPP annual meeting.

**Participating employers can:**

- Advertise unlimited job openings on the APS Job Board
- Search Job Fair resumes through the APS Job Board
- Arrange interviews through the APS Career Center website (Oct.19-Nov. 19)
- Interview candidates privately at the DPP annual meeting

**Job seekers will be able to:**

- Let employers know you'll attend the DPP annual meeting
- Search for positions advertised at the meeting
- Schedule private interview directly with employers

To register for the APS DPP Job Fair stop by the information desk or visit <http://www.aps.org/careers/employment/jobfairs/dpp/index.cfm>

## HEDSA Symposium on High Energy Density Laboratory Plasmas

Sunday, November 15  
7:00 p.m. – 10:00 p.m.

Room 203

The High Energy-Density Science Association (HEDSA) will hold its annual Symposium on High Energy Density Laboratory Plasmas in Room 203 of the Savannah Convention Center. The program includes presentations from prominent researchers in basic and applied High Energy-Density sciences. The HEDSA symposium is free to all conference attendees.

## Companions' Breakfast

Monday, November 16  
8:30 a.m. – 11:00 a.m.

Harbor A - The Westin

*Note: Breakfast is only for companions and their children.*

Join other companions who are attending the annual meeting for a DPP-sponsored complimentary breakfast at the Westin. You will have an opportunity to join other companions and reacquaint with friends from past DPP meetings. A representative from Visit Savannah will attend the breakfast to show a video about tours and sites to see while visiting the city.

## APS DPP Membership Booth and Store

Monday – Wednesday  
November 16-18  
8:00 a.m. – 5:00 p.m.

River Concourse

The APS Membership Department staff will be on hand to answer questions about APS and DPP membership. Stop by for information on how to become a member and purchase fun and practical items. Joining APS and DPP is a perfect way to stay connected with the most recent developments in the physics world. Browse the selection of t-shirts, caps, and more.

## Contact Congress

*(Sponsored by APS Washington DC Office)*

Monday – Thursday  
November 16-19  
9:00 a.m. – 5:00 p.m.

River Concourse

Stop by the Contact Congress desk to sign your name to letters addressed to your Congressional delegation on the importance of federal funding for basic research. It takes only a couple of minutes. By doing so, you are making your voice heard in Washington and helping to influence the funding levels for physics research and education. To amplify the impact, the APS Washington DC Office will follow-up each letter with a call or visit to congressional staff. The strongest and most persuasive advocates on Capitol Hill come from a Senator or Representative's constituents. That means you! If you live in the United States, you are qualified to write to your members of Congress.

If you have any questions about what is happening in Washington, just stop by the Contact Congress desk to ask the experts.

## Mini-Conferences

Three mini-conferences are scheduled Monday afternoon through Wednesday afternoon to be held at the Convention Center. Check the Epitome for the presenter start times.

All mini-conferences are organized with oral presentations plus time for questions and discussion, and may include poster presentations. They employ a question-oriented format to stimulate discussion and interaction amongst attendees. LCD projectors will be used in all oral sessions at the expense of DPP.

### Plasma Energization – Interactions between Fluid and Kinetic Scales

Room 100/101

Monday, Nov. 16 at 2:00 p.m.

Tuesday, Nov. 17 at  
9:30 a.m. & 2:00 p.m.

Wednesday, Nov. 18 at 9:30 a.m.

Organizers: John Sarff, Zhihong Lin, Anatoly Spitkovsky, Gregory Howes, & Hui Li

Description: This mini-conference will examine the plasma energization processes in a wide range of plasma environments including laboratory, space, solar, and astrophysical plasmas. In particular, the role of exchanges between fluid and kinetic scales will be emphasized as the plasmas are energized in the form of flows (such as zonal flows in fusion plasmas and outflows in space and astrophysics), heating (such as fusion plasma and laboratory plasmas), non-thermal particles (such as energetic particles in fusion and cosmic rays in astrophysics). By bringing together active researchers from a diverse background and from a range of expertise in experiment, observation, theory and simulation, it will not only take stock of the current understanding of the key plasma processes in these systems, but also engender discussions that look forward to the next stage of research in terms of the latest advancements in experimental techniques, theory and numerical tools. This mini-conference is endorsed by the APS Topical Group in Plasma Astrophysics (GPAP).

### Nonlinear Effects in Geospace Plasmas

Room 102

Tuesday, Nov. 17 at  
9:30 a.m. & 2:00 p.m.

Organizers: Evgeny Mishin, Vladimir Sotnikov and William Amatucci

Description: This mini-conference will assess the contribution of nonlinear plasma processes to the dynamics of the Earth's space plasma environment (geospace) subjected to natural and man-made disturbances. Satellite and ground-based observations provided enough evidence to the important role of nonlinear plasma effects in geospace warranting a joint discussion between the geo- and plasma-physical communities. Presenters will summarize recent progress in observations, theory, and numerical and laboratory modeling of nonlinear wave processes in natural and artificial geospace plasmas and discuss future directions.

## Measuring and Modeling Plasma Material Interactions

Room 103/104

Tuesday, Nov. 17 at 2:00 p.m.

Wednesday, Nov. 18 at  
9:30 a.m. & 2:00 p.m.

Organizers: Karl Hammond, Davide Curreli, Brian Wirth, and David Ruzic

Description: This mini-conference is motivated by fast-paced recent advancements in both multi-scale modeling of plasma-surface interactions and novel in-vacuum, in-situ diagnostic techniques that are shedding light on basic unresolved physics. Taming the plasma-material interface is one of the high-priority issues in fusion energy science. A dedicated mini-conference will allow for discussion and synergy across the community on such a topic, which has been of increasingly higher and higher relevance over time. The mini-conference will include many of the people currently involved within the DOE-funded PSI-SciDAC project (Bridging from the Surface to the Micron Frontier through Leadership Computing), as well as other presenters in the area.

### Women in Plasma Physics Luncheon

Monday, November 16  
12:30 p.m. – 2:00 p.m.

Harbor A - The Westin

Our guest speaker is Stephanie Hansen of Sandia National Laboratories, recipient of a U.S. Department of Energy Office of Fusion Energy Science Early Career Award for work on atomic-scale modeling in plasmas. Stephanie will lead discussion on career development for women in plasma physics.

To attend the luncheon, mark the appropriate space on the DPP on-site registration form. The lunch tickets are \$25 for regular attendees and \$10 for graduate and undergraduate students. The lunch cost is partially subsidized by DPP.

### Women in Plasma Physics Reception

Monday, November 16  
5:15 p.m. – 6:30 p.m.

Hosted by: Dr. Arati Dasgupta,  
CWIPP chair

Reception Speaker:  
Dr. Kate Kirby

American Physical Society  
CEO

Harbor A - The Westin



Dr. Kate Kirby is the first Chief Executive Officer (CEO) at The American Physical Society (APS). Dr. Kirby earned her bachelor's degree in chemistry and physics from Harvard/Radcliffe College and her PhD from the University of Chicago. After a postdoctoral fellowship at the Harvard

College Observatory she was appointed as Research Physicist at the Smithsonian Astrophysical Observatory and Lecturer in the Harvard University Department of Astronomy. From 1988 to 2001, she served as an Associate Director at the Harvard-Smithsonian Center for Astrophysics, heading the Atomic and Molecular Physics Division. From 2001-2007, she served as Director of the Institute for Theoretical Atomic, Molecular and Optical Physics (ITAMP) at Harvard and Smithsonian. In July 2009 she was appointed Executive Officer of the American Physical Society. In February 2015 she was appointed the first CEO of APS.

Dr. Kirby's research interests lie in theoretical atomic and molecular physics, particularly the calculation of atomic and molecular processes important in astrophysics and atmospheric physics. She is a Fellow of both APS and AAAS.

## Savannah Fun Facts & Trivia

The American Institute of Parapsychology chose Savannah as "America's Most Haunted City."

## LGBTQ Networking Dinner

Monday, November 16  
6:30 p.m. – 8:30 p.m.

Join fellow LGBTQ plasma physicists and their families for an informal networking dinner on Monday evening, November 16. We'll meet in front of the DPP Meeting Registration Desk at the Savannah Convention Center at 6:30 and go to a local restaurant. Participants are responsible for buying their own food and beverage. RSVP is encouraged, but not required.

Organizers: Derek Schaeffer (dschaeffer@physics.ucla.edu) and Eli Parke (eparke@ucla.edu)

## University Fusion Association (UFA) General Meeting

Monday, November 16  
7:00 p.m. – 9:00 p.m.

Chatham C

The UFA is an organization of approximately 200 university professors and scientists interested in promoting fusion energy science (<http://universityfusion.org/>). The UFA has been at work for over 25 years (the original UFA constitution was formulated in March 1989). The role of the UFA is to support plasma science and technology in the development of a new, environmentally attractive energy source using controlled thermonuclear fusion energy. The current president of UFA is Professor Uri Shumlak, University of Washington. He will be replaced in 2016 by the vice president Professor David Maurer, Auburn University.

The UFA supports the study of the science of matter under extreme conditions (high temperature and/or density) typical of that required for sustained thermonuclear reactions. In addition, the UFA promotes the development of the knowledge and technology necessary for the production of fusion reactivity for commercial applications and electrical power production. UFA officers and executive committee members meet regularly to evaluate the role of academic research in the U.S. fusion program. The UFA president represents the interests of the academic fusion energy science research community at meetings with U.S. Department of Energy Office of Fusion Energy Sciences and other groups. Information is disseminated to UFA membership via electronic newsletters and an annual general meeting.

The UFA general meeting typically discusses issues of relevance to fusion science research in U.S. universities and the status of the U.S. fusion program. The UFA meeting is open to all conference attendees.

## Savannah Fun Facts & Trivia

The Georgia state motto is, "Wisdom, Justice and Moderation."

## Stay for the Invited Talk Session on Friday... Win a Prize in a Raffle!



Apple iPad mini  
MD531LL/A, 16GB

At the DPP Meeting Registration Desk ask for a numbered ticket stub for the raffle that takes place AFTER the Invited sessions on Friday!

After the conclusion of the Friday morning sessions on November 20 in Chatham Ballroom BC, Riccardo Betti, will draw three raffle tickets at random. The winners of the drawing must be present to win.



Kodak FZ41 Red 16 MP  
Digital Camera



Beats Executive OverEar Noise  
Cancelling Headphones



### DPP Education Events Energize Savannah – Again!

Savannah loves science! That at least is the experience of the members of the APS-DPP Education Outreach Planning Committee, who visited the city in May to meet local educators and discuss the education events annually held in conjunction with the annual meeting. DPP Education Chair Paul Miller (West Virginia University) addressed a large sampling of local teachers and education administrators, all excited to help make the events as successful as they were the last time the DPP visited the city – 2004. Even Dr. Juan-Carlos Aguilar, Program Manager for the Georgia Department of Education, attended via iPad FaceTime.

Local teachers will have their first chance this year to experience APS-DPP education with Science Teachers Day on Tuesday, November 17, when they will spend the morning learning about the fundamentals of fusion energy and plasma science. They will spend the remainder of the day in workshops of their choosing, focusing on such subjects as the nature of matter, cosmology, principles of mechanics, lasers, the electromagnetic spectrum, and Newton's Laws.

The Plasma Sciences Expo, at the Savannah International Trade and Convention Center, will be open for school groups on Nov. 19 and 20 from 8 a.m. to 2 p.m., and for the general public on November 19 from 6 to 8 p.m. The Expo features hands-on experiments from national and international institutions, as well as local education and industrial venues. The committee anticipates the participation of Georgia

Southern University, Armstrong State University, Georgia Institute of Technology and Savannah State University.

Paul Rivenberg (MIT Plasma Science and Fusion Center) is the 2015 Education Outreach Planning Committee Chair, and one of two current committee members who helped plan the 2004 Savannah events. He noted, "Savannah has always been remarkably enthusiastic in promoting the APS-DPP programs. They have been great about spreading the word, and in helping encourage local schools to participate as Expo exhibitors. They really get the importance of this kind of educational outreach, and appreciate the opportunity it presents." The word has spread far enough that the Friday Expo is already booked solid from 9 AM to 12:30 PM.

Teachers Day is also filling up. Kania Greer, Project Development Specialist at Georgia Southern University, mentioned, "We are promoting the heck out of Plasma Day (Science Teachers Day)! I was in a meeting with a district yesterday and before I left two teachers had already registered and I just heard from a third. It is very exciting." Greer has already enlisted education committee member Sam Lightner (Contemporary Physics Education Project) to man a booth at a local STEM Festival in September, to further excite the local community about plasma sciences and the DPP education events. With this kind of local cooperation the APS-DPP expects that, come November, the Savannah area general public, teachers and students will have a much better understanding of plasmas and importance of plasma research.



PPPL's Andrew Zwicker introduces a student to the thrill of a Van de Graaff generator.



Mike Randall, who heads the University of Wisconsin-Madison's "Wonder of Physics" outreach program, brings a truckload of demonstrations to the Expo.



Education Outreach Planning Committee member Tom Richmond, of Oak Ridge Institute for Science and Education (ORISE), has overseen bus logistics for the Plasma Sciences Expo for more than a decade. He and his team assure the safe and orderly entrance and exit of every school group.

### Savannah Fun Facts & Trivia

Savannah was the first capital of the 13th colony and later of Georgia.

#### Housing Information

##### The Westin Savannah Harbor

1 Resort Drive, Savannah, Georgia  
(\$199 single/double; \$108 gov't rate)  
(Daily resort fee is \$21 plus tax)

##### Hyatt Regency Savannah

2 West Bay Street, Savannah, Georgia  
(\$199 single/double; \$224 triple;  
\$249 quad; \$108 gov't rate)

##### Marriott Savannah Riverfront

100 General McIntosh Blvd,  
Savannah, Georgia  
(\$183 single/double; \$203/triple;  
\$223/quad; \$108 gov't rate)

##### Hampton Inn Savannah Historic District

201 East Bay Street, Savannah, Georgia  
(\$175 single/double/triple/quad;  
no gov't rate offered)

##### Holiday Inn Express Savannah Historic District

199 East Bay Street, Savannah, Georgia  
(\$175 single/double/triple/quad;  
no gov't rate offered)

All guest room rates are subject to 13% applicable state and local tax plus \$1.00 occupancy tax per room per night.

The prevailing government rate is \$108 ++ per night.

### Savannah Restaurants and Eateries

**The Olde Pink House**  
23 Abercorn Street, (912) 232-4286

**Vic's on the River**  
26 East Bay Street, (912) 721-1000

**Moon River Brewing Company**  
21 West Bay Street, (912) 447-0943

**The Pirate's House**  
20 East Broad Street, (912) 233-5757

**Vinnie Van GoGo's  
City Market, 317 West Bryan Street,  
(912) 233-6394**

### Savannah Trivia

Georgia is bordered by 5 states, can you name them? See Back Page for the Answer.

### Savannah Fun Facts & Trivia

When General Sherman marched through Savannah during the Civil War, he was so impressed by her beauty that he sent a telegraph to President Lincoln, offering Savannah to him as a Christmas present.

#### Mobile App

APS DPP is pleased to announce that the DPP 2015 mobile app for your Android device or iOS device will again be available. This useful app contains the scientific program. You'll also be able to read the abstracts, view the speaker index, view maps of the hotel, create your own personal session schedule, and more!

For instructions on how to download the app, please see the flyers at the DPP Registration Desk or at the APS DPP Meeting Information Booth.

#### Child Care Room

##### Pulaski

A child care room is available located in the Savannah Convention Center for parents/caregivers to use at no cost to attendees. The room is intended for parents/caregivers who have brought infants or young children to the annual meeting. The room will be furnished with comfortable furniture and with a limited amount of toys, natural organic snacks, and beverages for young children. Note that neither APS nor DPP will assume responsibility for providing supervised child care.

#### Child Care Room hours:

Monday, Nov. 16, 8:00 a.m. - 5:00 p.m.  
Tuesday, Nov. 17, 8:00 a.m. - 5:00 p.m.  
Wednesday, Nov. 18, 8:00 a.m. - 5:00 p.m.  
Thursday, Nov. 19, 8:00 a.m. - 5:00 p.m.  
Friday, Nov. 20, 8:00 a.m. - 12:00 p.m..

#### Wireless Access

WiFi will be available in the Savannah Convention Center public space and in The Westin.

### Savannah Fun Facts & Trivia

The Georgia state Nickname is "The Peach State."

### DPP Banquet

**Wednesday, November 18  
Reception: 6:30 p.m.**

**The Westin Grand  
Ballroom Foyer**

**Banquet: 7:30 p.m.**

**The Westin Grand Ballroom**

**Review, Tutorial and Invited  
Speaker Poster Sessions**

**Exhibit Hall A**

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 Exhibit Hall A. 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, November 20

**Topical Group on Plasma  
Astrophysics (GPAP)  
Business Meeting**

**Tuesday, November 17  
12:45 p.m. – 1:45 p.m.**

**Room 203**

GPAP will hold its annual business meeting during the DPP annual meeting in Savannah. The GPAP meeting is open to all conference attendees.

**Town Meeting on Concerns of  
Junior Scientists**

*Chair: Richard Magee, Tri-Alpha Energy*

**Tuesday, November 17  
1:00 p.m. – 2:00 p.m.**

**Chatham Ballroom C**

The DPP Committee on the Concerns of Junior Scientists (COJS) is pleased to announce their annual Town Hall Meeting.

This annual meeting offers junior scientists the opportunity to interface with scientists established in their fields on topics ranging from career advice to present and future funding climates to maintaining a healthy work-life balance.

Following a brief introduction, attendees will have the opportunity to discuss topics of their choice with each of the panelists in small groups.

This year we have representatives from national laboratories, research universities, and private companies working in the areas of inertial confinement, magnetic confinement, and basic plasma physics. We are pleased to announce this year's panel:

Richard Buttery  
General Atomics

Arati Dasgupta  
Naval Research Laboratory

Bruce Remington  
Lawrence Livermore National Laboratory

Earl Scime  
West Virginia University

Matthew Thompson  
Tri Alpha Energy

Please plan to arrive a few minutes early, as we will start promptly at 1:00 pm.

Hope to see you there!

**Meet the Editors of the  
APS Journals**

**Tuesday, November 17  
5:00 p.m. – 6:30 p.m.**

**Georgia International Gallery**

The Editors of APS journals cordially invite you to join them for conversation and refreshments. Your questions, suggestions, compliments and complaints about the journals are welcome. All meeting attendees are invited.

**Student Appreciation Reception**

**Tuesday, November 17  
6:00 p.m. – 7:00 p.m.**

**The Westin  
Grand Ballroom B**

Please plan to attend a complimentary reception in honor of high school and undergraduate students. Professor Riccardo Betti, DPP Chair, cordially welcomes all DPP meeting participants, and encourages their open discussion. Refreshments will be served.

**Savannah Fun Facts & Trivia**

Lawyers were not allowed to practice in early Savannah!

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**Division of Plasma Physics  
(DPP) Business Meeting****Wednesday, November 18  
5:15 p.m. – 6:15 p.m.****Room 203**

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, professor Daniel Dubin, at the DPP Registration Desk, Savannah Convention Center before noon on Wednesday, November 16, or which were emailed to Professor Dubin (ddubin@physics.ucsd.edu) by noon on Sunday, November 13. 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).

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**Plasma Science  
Christian Fellowship****Wednesday, November 18  
6:45 a.m. – 7:45 a.m.****Room 105/106**

The Plasma Science Christian Fellowship (PSCF) is honored to have a guest speaker, Mickey Wade, who will share his recent career change from head of a fusion program to Executive Pastor, as God has called him to "Faithfully Step into Your Destiny". PSCF is an informal affiliation of students and scientists working in plasma and fusion energy research. Formed in 2006, the PSCF seeks to provide a forum to discuss how faith connects to the workplace experience and life as scientists. Please join us for an hour on Wednesday morning before the opening session review talk. Bring your own coffee and breakfast, if desired. Contact Darren Craig (darren.craig@wheaton.edu) if you have questions or need additional information. We hope to see you there!

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**HEDSA Annual Business Meeting****Wednesday, November 18  
12:30 p.m. – 2:00 p.m.****Room 200**

The High Energy-Density Science Association (HEDSA) invites members and interested parties to attend its Business Meeting in Room 200 of the Savannah Convention Center. Representatives from funding agencies will be on hand to share their perspectives on High Energy-Density research.

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**Savannah Fun Facts & Trivia**

On April 24, 1979, "Georgia on My Mind" (music by Hoagy Carmichael and lyrics by Stuart Gorrell) was designated Georgia's official state song. It was performed on March 7, 1979, before the state legislature by Georgia native, Ray Charles. Prior to the adoption of this song, "Georgia," words by poet Robert Loveman and music by Mrs. Lollie Belle Wylie, served as the state song.

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**Town Meeting on Plasma  
Physics at the National  
Science Foundation**

*Chair: Vyacheslav Lukin,  
National Science Foundation*

**Wednesday, November 18  
1:00 p.m. – 2:00 p.m.****Chatham C**

We invite you to the Town Meeting on the role of the National Science Foundation (NSF) in supporting basic and applied research in Plasma Physics in the U.S. The

overarching goal of NSF is to promote the progress of science and to enable training of the next generation of scientists and engineers at US colleges and universities. In this context, the role of the NSF Physics Division in leading the nearly 20-year-old NSF/DOE Partnership in Basic Plasma Science and Engineering serves as an example of the long history of NSF support for basic plasma physics research. Yet, the NSF interest in maintaining a healthy university research base in plasma sciences extends across the Foundation. A total of five NSF Divisions are participating in the most recent Partnership solicitation, and a host of other multi-disciplinary and core programs provide opportunities for scientists to perform research on applications of plasma physics to Space & Solar Physics, Astrophysics, Accelerator Science, Material Science, Plasma Medicine, and many sub-disciplines within Engineering. This Town Meeting will provide a chance to discuss the full range of relevant NSF funding opportunities, and to begin a conversation on the present and future role of NSF in stewarding basic plasma science and engineering research at US colleges and universities. We would like to particularly encourage early career scientists and graduate students to participate in this Town Meeting, though everyone is invited to join what we hope to be a lively discussion.

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**Savannah Fun Facts & Trivia**

Savannah is one of a handful of cities that allow to-go cup cocktails.

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**DPP Banquet****Wednesday, November 18  
Reception: 6:30 p.m.****The Westin  
Grand Ballroom Foyer****Banquet: 7:30 p.m.****The Westin  
Grand Ballroom**

Banquet After-Dinner Speaker is

**Richard Rhodes,  
American historian, journalist  
and author.**

The official banquet of the DPP will be held on Wednesday evening. A cash-bar reception preceding the evening banquet at 6:30 p.m. will be held in The Westin Grand Ballroom Foyer. A subsidized banquet ticket can be purchased for \$40 at the registration desk Tuesday, November 17 up

to 5:00 p.m. Tickets will be sold on a space-available basis and are non-refundable. Tickets must be presented for admission at the door to the banquet hall. Tickets will not be sold at the door. The banquet program will include presentation of the James Clerk Maxwell Prize, the John Dawson Award for Excellence in Plasma Physics Research, the Thomas H. Stix Award for Outstanding Early Career Contributions to Plasma Physics Research, the Marshall N. Rosenbluth Outstanding Doctoral Thesis Award in Plasma Physics, and recognition of newly elected APS Fellows. The after-dinner speaker will be Richard Rhodes, an American historian, journalist and author of both fiction and non-fiction.



Richard Rhodes is the author or editor of twenty-five books including *The Making of the Atomic Bomb*, which won a Pulitzer Prize in Nonfiction, a National Book Award and a National Book Critics Circle Award; *Dark Sun: The Making of the Hydrogen Bomb*, which was shortlisted for a Pulitzer Prize in History; an investigation of the roots of private violence, *Why They Kill*; a personal memoir, *A Hole in the World*; a biography, *John James Audubon*; and four novels. He has received numerous fellowships for research and writing, including grants from the Ford Foundation, the Guggenheim Foundation, the MacArthur Foundation Program in International Peace and Security and the Alfred P. Sloan Foundation. He has been a visiting scholar at Harvard and MIT and a host and correspondent for documentaries on public television's *Frontline* and *American Experience* series. His most recent book, *Hell and Good Company*, is currently in bookstores. Rhodes lectures frequently to audiences in the United States and abroad. With his wife Ginger Rhodes, a clinical psychologist in private practice in San Francisco, he lives above Half Moon Bay, California.

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**Savannah Fun Facts & Trivia**

Savannah is called "America's First Planned City" because its founder, General James Oglethorpe carefully organized the town into grids, with wide streets and 24 public squares. 21 of these squares were carefully preserved throughout the years and still exist today.

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**A new SPPASE Program:  
Smart Phone Plasma  
Applications for Science  
and Education****Thursday, November 19  
12:30p.m. - 2:00p.m.****Room 203**

A competition to develop new smart phone applications for the plasma physics community will be introduced at the 2015 APS DPP annual meeting in Savannah, GA. This competition, called the SPPASE (Smart Phone Plasma Applications for Science and Education) Program will give participants a year to develop products, with judging to commence at the 2016 APS DPP meeting in San Jose, CA. Cash prizes will be awarded to the highest ranked entries. This competition is envisioned as a multi-year event spanning four years, with different themes for each year.

The concept for the SPPASE Program was motivated by both a desire to promote the development of expertise in smart phone application programming within our community and to spur the development of new tools. In particular, we are interested in developing tools that will enable greater connectivity between members of the plasma physics community and elementary and high school science education programs. The SPPASE competition is a joint collaboration of the plasma science education outreach programs at MIT and PPPL.

Event details as well as a quick primer on smart phone application development will be presented at the DPP meeting.

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**2015 DPP Election Results**

Vice-Chair: John Cary  
University of Colorado

Executive Committee Members:

Jan Egedal,  
University of Wisconsin

John Kline,  
Los Alamos National Lab

Lorin Matthews,  
Baylor University

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**Savannah Fun Facts & Trivia**

Georgia is the eight most populous state in the United States

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**OMEGA Users Group****Tuesday, November 17, 5:00 p.m. – 6:30 p.m.****Room 102, Savannah Convention Center**

The annual OMEGA Laser Users Group meeting will be held on November 17 at 5:00 p.m. in Room 102. We will meet to discuss the Spring 2016 workshop plans (27-29 April 2016) and especially the OLUK Findings and Recommendations from the last workshop. Come join us on November 17 for this spirited event! We look forward to your participation!



## Evaluation Form for 2015 APS DPP Annual Meeting

Please give us your candid opinion of the 2015 DPP annual meeting to aid in future planning. Base your evaluation on a comparison to previous APS DPP and non-APS scientific meetings. You may use a separate page for additional comments.

\_\_\_ APS member \_\_\_ non-member Did you attend last year in New Orleans? Yes No  
 workplace: \_\_\_ university \_\_\_ gov't. lab \_\_\_ industry \_\_\_ self employed \_\_\_ student \_\_\_ retired  
 plasma physics subfield: \_\_\_ state (or country) of residence: \_\_\_

Check all 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 \_\_\_ job fair  
 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	5	4	3	2	1
• range of topics	5	4	3	2	1
• review 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
• bulletin	5	4	3	2	1
• mobile app	5	4	3	2	1
• chronicle content	5	4	3	2	1
• meeting announcements	5	4	3	2	1
<b>Meeting logistics</b>					
• location (city/state)	5	4	3	2	1
• length of meeting	5	4	3	2	1
• meeting rooms layout	5	4	3	2	1
• abstract submission process	5	4	3	2	1
• registration services	5	4	3	2	1
• AV equipment	5	4	3	2	1
• speaker ready room	5	4	3	2	1
<b>Events / Amenities</b>					
• education/outreach program	5	4	3	2	1
• job fair	5	4	3	2	1
• résumé help desk	5	4	3	2	1
• exhibitors	5	4	3	2	1
• wireless service	5	4	3	2	1
• special events	5	4	3	2	1
• banquet	5	4	3	2	1
• beverage breaks	5	4	3	2	1
• peer interaction	5	4	3	2	1
• hotel accommodations	5	4	3	2	1
• hotel location	5	4	3	2	1

Please return this form to the DPP registration desk or email comments to:  
 Saralyn Stewart, DPP Administrator email: [stewart@physics.utexas.edu](mailto:stewart@physics.utexas.edu)

### Town Meeting on FES Workshops

Chair: Mark Foster,  
 U.S. Department of Energy

Thursday, November 19  
 7:00 – 9:00 p.m.

Room 105/106

In 2015 the DOE Office of Science, Fusion Energy Sciences (FES) sponsored a set of community engagement workshops in the areas of plasma-materials interactions (PMI), transient events in tokamaks, integrated simulations for magnetic fusion energy sciences (jointly sponsored by the office of Advanced Scientific Computing Research), and plasma science frontiers. Modeled after other similar research needs workshops, these community-led activities provided a mechanism for fusion researchers to both identify the key scientific issues in each of these areas and describe specific options and approaches for addressing them. The Plasma-Materials Interaction Workshop was held May 4-7 at the Princeton Plasma Physics Laboratory; the Integrated Simulations Workshop was held June 2-4 in Rockville, Maryland;

the Transients Workshop was held June 8-11 at General Atomics, and a Plasma Science Frontier Town Hall meeting was held June 30-July 1 in Washington, DC, with two workshops following on August 20-21 and in October. Reports from the first three workshops have been finalized and submitted to FES for consideration and use in future program planning. A report from the Plasma Science Frontier workshops is in progress. The workshop leaders will report on the overall process and major findings of each of these activities at this Town Meeting.

#### Speakers:

- Dr. Mark Foster (U.S. DoE)  
Town Meeting Presiding Chair
- Dr. Rajesh Maingi (PPPL)  
Workshop on Plasma-Materials Interactions
- Dr. Paul Bonoli (MIT)  
Workshop on Integrated Simulations for Magnetic Fusion Energy Sciences
- Dr. Charles Greenfield (General Atomics)  
Workshop on Transients
- Professor Fred Skiff (University of Iowa)  
Workshops on Plasma Science Frontiers

### Call for Nominations for 2016 Prize and Awards

Deadline: Friday, April 1, 2016

A prize or an award presented by APS DPP is one of the highest honors a physicist can receive. Membership in the APS or DPP is not required for nomination or selection for a prize or an award. DPP annually solicits nominations for one prize and three awards. The deadline for receipt of all nominations is Friday, April 1, 2016. Please take time to nominate exceptional DPP colleagues in 2016.

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

Go to this web address: <http://www.aps.org/programs/honors/nomination.cfm> for Nomination Guidelines.

The nomination package must be submitted by Friday, April 1, 2016. Acknowledgement of receipt can be requested. The DPP dissertation award has other requirements in addition to those listed on the APS Nomination Guidelines website, so check for descriptions of the awards to which you are making a nomination.

#### James Clerk Maxwell Prize for Plasma Physics

Mordecai Rosen, Chair  
 Lawrence Livermore National Laboratory  
[rosen2@llnl.gov](mailto:rosen2@llnl.gov)

#### John Dawson Award for Excellence in Plasma Physics Research

Eric Blackman, Chair  
 University of Rochester  
[blackman@pas.rochester.edu](mailto:blackman@pas.rochester.edu)

#### Marshall N. Rosenbluth Outstanding Doctoral Thesis Award in Plasma Physics

Andrea Garofalo, Chair  
 Columbia University/General Atomics  
[garofalo@fusion.gat.com](mailto:garofalo@fusion.gat.com)

#### Thomas H. Stix Award for Outstanding Early Career Contribution to Plasma Physics Research

Bill Kruer, Chair  
 Lawrence Livermore National Laboratory  
[williamkruer@gmail.com](mailto:williamkruer@gmail.com)

#### Answer

(Florida, Alabama, Tennessee, North Carolina and South Carolina)

### Notes/Doodles

Designed by:



[jdnava.com](http://jdnava.com)