



**American Nuclear Society
Fusion Energy Division
June 2009 Newsletter**

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Chair's Message, Farrokh Najmabadi, Center for Energy Research, University of California-San Diego, La Jolla, CA.

Firstly, I would like to welcome the new officers of the Fusion Energy Division (FED): Lance Snead as Chair, Lee Cadwallader as Vice Chair/Chair Elect, and Mark Anderson (UW) as secretary/treasurer, and the new members of the Executive Committee: Lucile S. Dauffy (LLNL), Richard J. Kurtz (PNNL), and Shahram Sharafat (UCLA).

In this last report as the Chair of FED, I would like to summarize the status of some of the initiatives that we had taken during the past six months:

- **ANS Fellows:** The ANS Honors and Awards (H&A) Committee has implemented their promise to streamline the selection process, including new nomination forms, posting of the details of the criteria they use, developing separate criteria for academic versus industry members, etc. These new steps are in place since February and can be found at the ANS H&A committee website. Again, I would like to encourage our FED members to nominate deserving members to become a Fellow of ANS. It is essential that the files be prepared according to ANS guidelines and make a strong case for the nomination. To help our members, Dr. Nermin Uckan has agreed to review the fellow nomination packages before submission to the ANS H&A Committee. Dr. Uckan can be reached at uckanna@ornl.gov. I am happy and pleased to announce that we now have two new Fellows: Dr. Franco Federici became an ANS Fellow in November 2008 and Dr. Roger Stoller became an ANS Fellow in June 2009. Please see the next article for citations.
- **Work-Force Development – Supporting Students and Young Members:** The FED executive committee is considering various ideas (such as providing scholarships to attend meetings) to support and encourage students as well as young members. Unfortunately, the financial resources of FED are very limited. In a meeting with the ANS President, I expressed my concerns that numerous ideas exist for “Supporting Students and Young Members and Work-Force Development” but cannot be implemented because of the limited FED funding. The ANS President instructed the Chair of Professional Division Committee to look into ways of getting additional funding for ANS Divisions. Dr. Lance Snead will follow up on this issue within the ANS structure.
- **Journal of Fusion Science and Technology:** Under the leadership of Dr. Nermin Uckan, Fusion Science and Technology has become the premier journal in fusion engineering. At the 2008 ANS Winter Meeting, the Professional Divisions unanimously supported the plan for electronic publication of back issues.

At the conclusion of my term as the Chair of FED, I would like to thank all of the Officers and Past Chairs of FED for their support and encouragement. It has been a privilege serving you.

Newly Recognized ANS “Fusion” Fellows, Nermin A. Uckan, FS&T Editor,
Oak Ridge National Laboratory, Oak Ridge, TN.

In the December 2008 ANS-FED Newsletter, the Chair’s Message by Farrokh Najmabadi discussed the declining number of “Fusion” Fellows and encouraged all FED members to actively engage in nominating deserving colleagues to fellowship grade. We are happy to report that we have two new ANS “Fusion” Fellows added to the honors roll: Dr. **Gianfranco Federici** and Dr. **Roger E. Stoller**. Congratulations to both.

Gianfranco Federici, ANS member (Fusion Energy Division) since 1989 and senior technical advisor to the chief engineer in the ITER Department at Fusion for Energy, the Euratom domestic agency for ITER, headquartered in Barcelona, Spain, was recognized as a Fellow of the American Nuclear Society during the ANS Winter Meeting in Reno, Nevada, November 2008. **Federici** earned the highest grade of ANS membership “for his scientific and technical leadership in research on plasma engineering and plasma wall interactions in fusion devices; for pioneering theoretical and computational research in these areas and developing several novel modeling tools that had a major impact in enabling first accurate predictions of important effects in several key areas of design and operation of tokamaks; and for promptly recognizing the need for urgent R&D work and leading experimental work in tokamaks and plasma simulation devices worldwide to investigate critical phenomena such as tritium co-deposition, material erosion, dust production, and material mixing.”

Roger E. Stoller, ANS member (Fusion Energy and Materials Science and Technology Division) since 1978 and distinguished research staff with the Nuclear Materials Science and Technology Group in the ORNL Materials Science and Technology Division, was recently recognized as a Fellow of the American Nuclear Society during the ANS Summer Meeting in Atlanta, Georgia, June 2009. **Stoller** is also a fellow of ASTM since 1998, and fellow of ASM international since 2007. **Stoller** earned the highest grade of ANS membership “for his scientific and technical leadership in radiation effects on materials for light water reactors and advanced nuclear energy systems; for his pioneering research that includes development of models and codes used by international researchers that resulted in significant advances in fundamental understanding of radiation-induced microstructural evolution in structural materials.”

The list of current fellows, nomination steps, guidelines, and nomination forms can be found at <http://www.ans.org/honors/va-fellow>. Please feel free to contact Nermin Uckan at uckanna@ornl.gov to help review nomination forms or for any other questions.

List of Officers and Executive Committee Members, Roger E. Stoller,
Oak Ridge National Laboratory, Oak Ridge, TN

The annual FED election was held in the spring of 2009. The current FED Chair, Prof. Farrokh Najmabadi (UCSD), completes his term of office this month and Lance Snead (ORNL) becomes FED Chair. Lee Cadwallader (INL) was elected to the position of

Vice-Chair/Chair-Elect, and Mark Anderson (UW) was elected to serve as secretary/treasurer.

The people elected to new three-year terms on the FED Executive Committee are: Lucile S. Dauffy (LLNL), Richard J. Kurtz (PNNL), and Shahram Sharafat (UCLA). We thank the outgoing committee members Brad Nelson (ORNL), Brian Wirth (UCB), and Mark Anderson (UW) for their service and look forward to working with the newly elected members. Note that Mark will continue to serve the FED since he was elected to the secretary/treasurer position.

The current FED officers and committee members, and their affiliations are listed below. Note that there is no current FED representative to the ANS Publications Committee. Any FED member who is willing to serve in this position should contact the Chairman, Lance Snead, sneadll@ornl.gov.

FED Officers:

Lance Snead (ORNL) Chair (09-10) sneadll@ornl.gov
Lee Cadwallader (INL) Vice Chair/Chair-elect (09-10) lee.cadwallader@inl.gov
Mark Anderson (UW) Secretary/Treasurer (09-11) manderson@engr.wisc.edu

Executive Committee:

Patrick Calderoni (INL) (07-10) Patrick.Calderoni@inl.gov
Lucile Dauffy (LLNL) (09-12) dauffy1@llnl.gov
Rick Kurtz (PNNL) (09-12) rj.kurtz@pnl.gov
Arthur Nobile, Jr. (LANL) (08-11) anobile@lanl.gov
Wayne Reiersen (ORNL) (08-11) reiersenwt@ornl.gov
Mohamed Sawan (UW) (07-10) sawan@engr.wisc.edu
John Sethian (NRL) (07-10) sethian@this.nrl.navy.mil
Shahram Sharafat (UCLA) (09-12) shahrams@ucla.edu
Alice Ying (UCLA) (08-11) ying@fusion.ucla.edu

Past Chair:

Farrokh Najmabadi (UCSD) (09-10) najmabadi@fusion.ucsd.edu

FED Standing Committee Chairs:

Nominating: Farrokh Najmabadi (UCSD)
Honors and Awards: Neil Morley (UCLA)
Program Committee: Jake Blanchard (UW)

FED Representatives on National Committees:

ANS Public Policy: Roger Stoller (ORNL)
ANS Publications: position open

Editors:

Newsletter: Laila El-Guebaly (UW), Dennis Bruggink (UW)
Fusion Science and Technology Journal: Nermin Uckan (ORNL)

Liaisons to other organizations and ANS divisions:

ANS Board: Rachel Slaybaugh

MS&T: Lance Snead

IEEE: George Miley (UIUC)

RPS: Paul Wilson (UW)

Webmasters:

Mark Tillack (UCSD) – FED website

Dennis Bruggink (UW) – UW website

Treasurer's Report, Lee Cadwallader, Idaho National Laboratory, Idaho Falls, ID.

In the fall of 2008, the Fusion Energy Division made three funding disbursements:

- \$500 contribution to the ANS Nuclear Engineering Education for the Disadvantaged (NEED) fund,
- \$500 contribution to the ANS annual student conference (which was held at the University of Florida-Gainesville in April 2009),
- \$300 contribution to ANS HQ for nuclear student travel to ANS national meetings.

Other FED expenses in the latter part of 2008 were covered by parallel fundraising activities of the conference committee for the 18th Topical Meeting on the Technology of Fusion Energy (TOFE). As of December 31, 2008, the Fusion Energy Division had a balance of \$18,021.

The FED received a member allocation of \$1,654 at the beginning of 2009. That allocation has increased from the typical \$1 to \$2 per division member. As of March 31, 2009, the Fusion Energy Division had a balance of \$19,675.00. There have been no expenses thus far in 2009. Planned expenses for the remainder of this year include:

- \$500 contribution to support the upcoming 2010 ANS annual student conference,
- \$300 contribution to ANS HQ for student travel to ANS national meetings,
- Annual \$500 contribution to the ANS NEED fund,
- \$600 in telephone costs for the scheduled FED executive committee meetings.

There is also a \$500 'other expenses' item in the annual budget to accommodate any unforeseen issues. These expenses sum to a total of \$2,400 for the 2009 year. Other income expected in 2009 includes an estimated revenue of \$10,000 from the 18th TOFE that was held in San Francisco at the end of September 2008. The conference revenue is expected to arrive after the TOFE related activity is closed out in mid-2009.

Fusion Award Recipients, Laila El-Guebaly, Fusion Technology Institute, University of Wisconsin-Madison, Madison, WI.

Fusion awards have been established to formally recognize outstanding contributions to fusion development made by members of the fusion community. The following awards (listed in alphabetical order) were available to the newsletter editor at the time of publishing this newsletter. We encourage all members of the fusion community to submit information on future honorees to the editor (elguebaly@engr.wisc.edu) to be included in future issues. The ANS-FED officers and executive committee members congratulate the honored recipients of the 2008/2009 fusion awards on this well-deserved recognition and our kudos to all of them.

ANS Award

Kathreen Thome, undergraduate at Massachusetts Institute of Technology, received the 1st place for her presentation in Fusion & Applied Plasma Physics at the 2009 ANS Student Conference, held at University of Florida, Gainesville, FL, during April 1-5, 2009. The title of presentation is: Avoiding H-Mode and Advantages therein for the Large Scale Economic Production of Hydrogen Fuel from a Steady-State Tokamak Fusion Reactor: HYPERION.

FPA Awards

At its annual meeting held December 2008 in Livermore, CA, Fusion Power Associates (FPA) presented Special Awards to Drs. **Richard F. Post** and **John H. Nuckolls** for “pioneering contributions to fusion energy development.” **Post** and **Nuckolls** have been active fusion researchers since the 1950s and made seminal contributions to the fields of magnetic and inertial fusion, respectively.

IPP Award

Professor **Friedrich Wagner** from Max Planck Institute of Plasma Physics (IPP), Greifswald Branch, has been awarded the Stern-Gerlach Medal 2009 by the German Physical Society (DPG) for his work in high-temperature physics and fusion research. This prestigious award of the DPG for achievements in experimental physics honors, in particular, his discovery of self-organized transport barriers as a milestone on the way to producing fusion plasmas.

SOFE Award

Award winners for the 2009 Symposium on Fusion Engineering (SOFE) are:

- **Dr. A. René Raffray** (UCSD) who won the 2009 Fusion Technology Award for his internationally recognized expertise in fusion engineering and his outstanding contributions to fusion technology, especially in the area of thermal hydraulics, high heat flux components and power plant design for both magnetic and inertial fusion energy.
- **Mai Ichinose** (Kyoto University) who won the best student paper award for her presentation: Preliminary Design of High Temperature Lithium-Lead Blanket with SiC Cooling Panel.

UW Hilldale Award

Four UW faculty received the prestigious 2009 Hilldale Awards, which honor excellence in teaching, research, and service in four divisions: biological sciences, physical sciences, social studies, and arts and humanities. Prof. **Gerald Kulcinski** is one of the four 2009 UW-Madison Hilldale Award recipients. He helped initiate and still leads the UW-Madison Fusion Technology Institute effort on the conceptual design of fusion power plants. His studies include energy applications, basic materials research, and economic and environmental issues of fusion power, including the impact of fusion on the energy marketplace.

News from Fusion Science and Technology (FS&T) Journal, Nermin A. Uckan, FS&T Editor, Oak Ridge National Laboratory, Oak Ridge, TN.

During the past twelve months (May 1, 2008-April 30, 2009), FS&T received 411 manuscripts for regular issues, plus 43 camera-ready papers from the 2008 Open Systems Conference (OS2008) for FS&T Transactions. [Transactions are FS&T supplements and not fully refereed in the same sense as the journal issues.] Of the 411 manuscripts, 194 are from North America, 104 are from Asia, 112 are from Europe and Russia, and one is from other country.

Following special (dedicated) issues have been published during 5/1/08 to 4/30/09:

- JET Tokamak (Culham, England) – FS&T May 2008
- 8th Tritium07 Proceedings (Parts 1 & 2) – FS&T Jul/Aug 2008
- ARIES Compact Stellarator Study – FS&T Oct 2008
- Selected full papers from EC-15 – FS&T Jan 2009
- Selected papers from 18th IFE Target Fabrication – FS&T Apr/May 2009.

Following special (dedicated) issues are scheduled for the remainder of 2009:

- TOFE08 Proceedings (parts 1 & 2) – FS&T Jul/Aug 2009
- Tore Supra Tokamak (Cadarache, France) – FS&T Oct 2009.

Following special issues are confirmed for 2010:

- LHD Stellarator (JA) 10th Anniversary - FS&T regular issue
- 9th Carolus Magnus Summer School – FS&T Transactions.

Following issues are being planned (or under discussion) for 2010 and beyond:

- JT-60U (update of JT-60 Special 2002) – FS&T (2010-2011)
- 19th TOFE 2010 Proceedings - FS&T (2010-2011)
- 9th Tritium 2010 Proceedings - FS&T (2011)
- JT-60SA (part of JA-EU ITER Broader Approach) (in planning)
- DEMO Studies (EU, JA) – FS&T regular issue (in planning)
- IFMIF (EU, JA) – FS&T regular issue (in planning)
- KSTAR (Korea) – FS&T regular issue (in planning)
- W7-X (Germany) – FS&T regular issue (under discussion)
- Test Blankets (ITER Partners) – FS&T regular issue (under discussion).

Please check renewal of your individual and library subscriptions. Electronic access to FS&T is available from 1997-to-current. Tables of contents and abstract of papers can be accessed at <http://www.ans.org/pubs/journals/fst/>. Individual and library subscribers can access the full text articles at <http://epubs.ans.org/>.

Please send your comments on FS&T contents and coverage as well as suggestions for potential future topical areas that are timely and of interest to fst@ans.org.

ONGOING FUSION RESEARCH:

ReNeW: Building a Framework for Fusion Research, Richard D. Hazeltine, University of Texas at Austin, Austin, TX.

What is Renew?

ReNeW (Research Needs Workshop) is a community planning effort initiated by the Office of Fusion Energy Sciences (OFES) within the US Department of Energy. It involves approximately 200 fusion scientists and engineers, mostly, but not entirely, from the US. Beginning its work in October 2008, ReNeW will submit its final report to OFES in July 2009. The time span addressed by ReNeW planning is the so-called “ITER era”: roughly the 20-year period beginning in 2010.

The product of Renew

The ReNeW report will be based on a discrete set of research thrusts, rather than on a planning timeline with milestones and decision points. This structure is intended to make the ReNeW plan as flexible as possible, while drawing attention to the rich scientific content of fusion research: the set of exciting scientific and technical challenges that the fusion program will encounter as it moves toward power production.

The thrusts gathered in the ReNeW report include large, multi-year multi-institutional efforts, requiring major new facilities and addressing a collection of related scientific challenges. Yet we also expect smaller projects, focused on narrow but critical issues, to appear. The report will discuss logical connections among various thrusts, and, where necessary, it will take note of the temporal order in which they should be addressed.

A conventional approach to community planning in fusion research first enunciates the program goals and then displays the well-ordered steps necessary to achieve them. The several previous fusion planning documents that use this format show clear advantages in terms of mission-clarity and transparent logic. But there are also disadvantages. First, any credible sequence of steps toward fusion power must make assumptions about the federal support that will be applied over several decades. Sometimes these assumptions have turned out to be too optimistic, with a resulting loss of credibility of the plan. Second, the linear, single-goal-directed structure focuses the attention of a reader (at least one from outside the research program) on the “bottom line”: the total investment in terms of years and dollars. This bottom line emphasis misses the richness of fusion science and may not show the program in its best light.

The ReNeW target of a *portfolio of research thrusts* addresses both of these circumstances:

1. The flexibility inherent in a portfolio should keep the plan relevant over a wide range of funding scenarios: OFES officials can use real-time funding

information to choose among thrusts each year, as well as adjusting the rate at which each thrust is attacked.

2. The focus of each thrust will be a coherent set of scientific and technical questions, most of which we plan to make intelligible to a reader from outside the research community.

Thus, we hope the report will display what has been, sadly, a well-kept secret: that the science and technology of fusion research is rich with issues of deep scientific interest and intellectual excitement.

One other feature of the ReNeW Report deserves emphasis. It will begin with a relatively detailed discussion of the research elements—including theory and numerical simulation, experimental diagnostics, parameter regimes and so forth—that are needed to address the key issues and knowledge gaps of fusion research. (The issues and gaps themselves are mostly gleaned from previous fusion planning documents, such as the “Report of Priorities, Gaps and Opportunities” report, submitted to OFES in October 2007.) Only after developing this survey of requirements will the research thrusts emerge. This report structure is intended to display each thrust as convincingly grounded in a compelling need of the fusion research program.

ReNeW structure and process

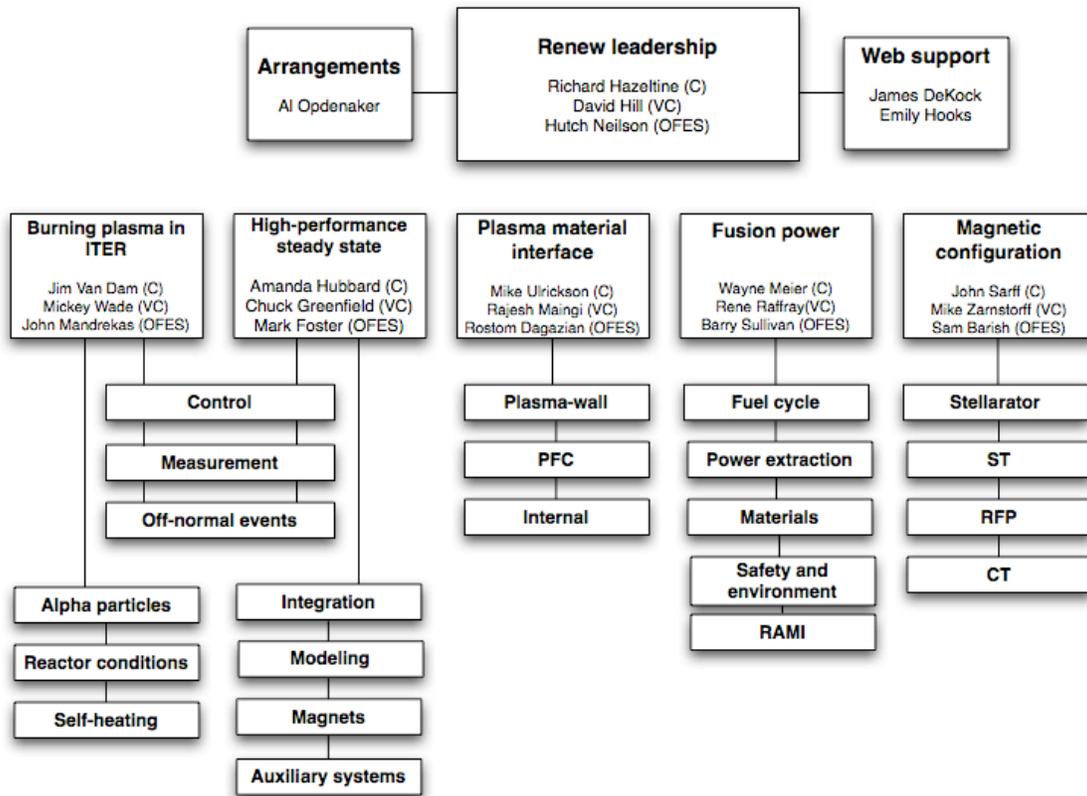
ReNeW participants are organized into five Themes, each directed at a key area of magnetic fusion research, as shown in the figure. Each Theme is in turn composed of several panels, devoted to more specific scientific and technical issues (a few panels are shared between Themes).

These five Themes have worked well in terms of helping 200 volunteers get control of a complicated task, but at the same time we have taken pains to insure strong communication and linkage among the Themes.

All the Theme Chairs and Vice Chairs, together with the leadership group consisting of David Hill, Hutch Neilson and me, constitute an Executive Committee. This group has weekly teleconferences and occasional face-to-face meetings.

In March, each Theme conducted its own Workshop. The Theme Workshops provided an arena for advice from the entire fusion community (including international participants); they allowed systematic study of research requirements; and they began the process of constructing research thrusts.

In several respects, the ReNeW organization copies similar community planning efforts that have been used for some years by the Office of Basic Energy Sciences (BES). Like the BES model, ReNeW is focused on its final Workshop. This workshop was held in Bethesda, Maryland, from June 8 until June 12, 2009. The near-final report was complete, up to details of prose, by the end of the Workshop. The final report will be submitted to OFES in mid-July.



INTERNATIONAL ACTIVITIES:

US ITER Report, Ned Sauthoff, US ITER Project Office, Oak Ridge National Laboratory, Oak Ridge, TN.

Following a \$10.6M budget for FY08 activities, the US ITER project in April received a \$124M budget for FY09. This increase enables the US to regain momentum and to fulfill commitments.

The US ITER Project is focusing on the completion of R&D and the completion of the design for components that are part of the US in-kind contributions. The increased budget will permit much greater participation by industry in the design activity, including incorporation of industrial experience, optimization of the design, and designing for manufacturability. The US Domestic Agency (USDA) has long recognized the necessity of engaging industry in the design, as most of the cost of US contributions will be incurred in industry for the manufacturing design and fabrication; experience in other large projects has shown that industry has much to offer. The USDA continued to work with the international ITER Organization to assure that industrial input will be part of the so-called Procurement Arrangement between the ITER Organization and the USDA; in many cases, the arrangement will start with the US completing the design with industrial

participation. The USDA is working to structure the industrial involvement to enable the designers to also participate in the fabrication.

The ITER team, consisting of the ITER Organization and the seven Domestic Agencies, continues to work toward the establishment of a baseline of scope, cost and schedule. This international baseline is essential for the US project, as the DOE Project Management procedures demand that the US project be baselined early and the international baseline provides the boundary conditions for the US project's scope and delivery schedule. Prominent in this baselining process is the resolution of remaining issues relating to recent changes such as the incorporation of in-vessel coils to improve vertical plasma position control and mitigation of Edge Localized Modes (ELMs); the US is leading the development of associated requirements and the exploration of design alternatives. The upcoming ITER Council meeting in June in Japan will review the design improvements as well as the progress in cost estimation and schedule development.

FUSION CONFERENCES:

Highlights of the IEEE NPSS 23rd Symposium on Fusion Engineering, Mark Tillack, University of California, San Diego, Center for Energy Research, La Jolla, CA.

The 23rd Symposium on Fusion Engineering (SOFE) was held in the San Diego Omni hotel in downtown San Diego May 31 through June 5, 2009. This event is organized biannually under the auspices of the Fusion Technology Committee of the IEEE Nuclear and Plasma Sciences Society. The general chair and technical program chair were Mark Tillack and A. René Raffray, both from the Center for Energy Research at the University of California San Diego.

This SOFE was the first ever to be completely combined with the International Conference on Plasma Science (ICOPS). In 2007 the two conferences were co-located only. In our case, we shared a single budget and a single local organizing committee, chaired by Dan Goodin of General Atomics. The oral and poster sessions shared common space, and were open to all attendees of both conferences. Fourteen companies participated in the combined industry exhibition.

308 abstracts were submitted to SOFE from 20 countries, including 18 from students. Concern over the A(H1N1) flu virus led to a significant number of withdrawals from the SOFE program, especially from Japan and Europe. Nevertheless, the registered attendance of SOFE reached 251, with a total combined ICOPS/SOFE attendance of 692.

SOFE was divided into 12 oral sessions, 12 poster sessions and 4 plenary sessions with 8 plenary speakers. In addition, 3 "joint plenary" presentations were given to the combined ICOPS and SOFE communities by speakers Guenter Janeschitz (ITER IO), John Sethian (NRL) and Ed Moses (LLNL).

A full social program was provided, including a welcome reception, a special reception for IEEE members and women in engineering and science, a night at the ballpark, and the conference awards banquet. The Omni hotel is located adjacent to Petco Park, home of the San Diego Padres, and attendees were able to enter the park through a private skybridge and enjoy a reserved block of seats. Unfortunately, the Padres lost to the 2008 world series champion Phillies.

Award winners this year included Mai Ichinose from Kyoto University, who won the best student paper award for her presentation “Preliminary Design of High Temperature Lithium-Lead Blanket with SiC Cooling Panel”, and A. René Raffray who won the 2009 Fusion Technology Award winner “for his internationally recognized expertise in fusion engineering and his outstanding contributions to fusion technology, especially in the area of thermal hydraulics, high heat flux components and power plant design for both magnetic and inertial fusion energy.”

This year a one-day mini-course was offered in conjunction with SOFE on “The Basics of Fusion Engineering and Design”. Lectures were provided from experts in the fusion engineering field, including Don Steiner (RPI), Lee Cadwallader (INL), Neil Morley (UCLA), Farrokh Najmabadi (UCSD) and Dave Rasmussen (USIPO/ORNL). The mini-course was organized by Don Steiner and René Raffray.

The proceedings of the 23rd SOFE are now in preparation, for posting at the IEEE Xplore website and distribution on a CD to all registered attendees of SOFE. In addition, for the first time ever, all SOFE authors were invited to submit extended versions of their conference manuscript for peer review and publication in the IEEE journal Transactions on Plasma Science. Prof. David Ruzic from the University of Illinois will serve as guest editor.

For more information on the symposium and associated events, please visit the joint ICOPS/SOFE website at <http://cer.ucsd.edu/icopssofe09/>. The next SOFE will be held in Chicago, Illinois on June 25-30, 2011.

Calendar of Upcoming Conferences on Fusion Technology

2009:

23rd Symposium on Fusion Engineering – SOFE-2009
May 31 - June 5, 2009, San Diego, CA, USA
<http://cer.ucsd.edu/icopssofe09/>

ANS Annual Meeting
June 14-18, 2009, Atlanta, GA, USA
<http://www.ans.org/>

- 36th European Physics Society Conference on Plasma Physics
June 29 - July 3, 2009, Sofia, Bulgaria
<http://eps2009.uni-sofia.bg/>
- 14th International Conference on Emerging Nuclear Energy Systems – ICENES-2009
June 29-July 3, 2009, Ericeira, Portugal
<http://www.itn.pt/icenes2009>
- 3rd IAEA Technical Meeting on First Generation of Fusion Power Plants
Design and Technology
July 13-15, 2009, Vienna, Austria
<http://www-naweb.iaea.org/naweb/physics/meetings/TM37251.html>
- 9th IAEA Technical Meeting on Fusion Power Plant Safety
July 15-17, 2009, Vienna, Austria
<http://www-naweb.iaea.org/naweb/physics/meetings/TM37432.html>
- 6th International Conference on Inertial Fusion Sciences and Applications – IFSA-09
September 6-11, 2009, San Francisco, CA, USA
<https://ifsa09.org/>
- 14th International Conference on Fusion Reactor Materials - ICFRM-14
September 7-12, 2009, Sapporo, Japan
<http://www.icfrm-14.com/>
- 9th International Symposium on Fusion Nuclear Technology - ISFNT-9
October 11-16, 2008, Dalian, China
<http://www.isfnt-9.org/>
- 21st International Conference on Magnet Technology
October 18-23, 2009, Hefei, China
<http://mt21.ipp.ac.cn/>
- 51st American Physical Society - Division of Plasma Physics (APS-DPP) meeting
November 2-6, 2009, Atlanta, GA, USA
<http://www.apsdpp.org>
- ANS Winter Meeting
November 15-19, 2009, Washington, DC, USA
<http://www.ans.org/>
- Fusion Power Associates Annual Meeting
December 2-3, 2009, Washington, DC, USA
<http://fusionpower.org/>

2010:

34th International Conference and Exposition on Advanced Ceramics & Composites – ICACC 2010

January 24-29, 2010, Daytona Beach, Florida, USA

<http://www.ceramics.org/daytona2010/>

ANS Annual Meeting

June 13-17, 2010, San Diego, CA, USA

<http://www.ans.org/>

26th Symposium on Fusion Technology – SOFT-2010

September 27- October 2, 2010, Porto, Portugal

<http://soft2010.ipfn.ist.utl.pt/>

23rd IAEA Fusion Energy Conference

October 11-16, 2010, Daejeon, Korea

9th International Conference on Tritium Science and Technology

October 24-29, 2010, Nara, Japan

<http://tritium2010.nifs.ac.jp/index.html>

52nd American Physical Society - Division of Plasma Physics (APS-DPP) meeting

November 8-12, 2010, Chicago, IL, USA

<http://www.apsdpp.org>

ANS Winter Meeting

November 7-11, 2010, Las Vegas, NV, USA

<http://www.ans.org/>

ANS 19th Topical Meeting on the Technology of Fusion Energy – TOFE-2010

November 7-11, 2010, Las Vegas, NV, USA

<http://www.ans.org/>

2011:

ANS Annual Meeting

June 26-30, 2011, Hollywood, Florida, USA

<http://www.ans.org/>

24th Symposium on Fusion Engineering – SOFE-2011

June 25-30, 2011, Chicago, IL, USA

neumeyer@pppl.gov

ANS Winter Meeting

October 30-November 3, 2011, Washington, DC, USA

<http://www.ans.org/>

53rd American Physical Society - Division of Plasma Physics (APS-DPP) meeting

November 14-18, 2011, Salt Lake City, Utah, USA

<http://www.apsdpp.org>

2012:

ANS Annual Meeting

June 24-28, 2012, Chicago, IL, USA

<http://www.ans.org/>

ANS 20th Topical Meeting on the Technology of Fusion Energy – TOFE-2012

54th American Physical Society - Division of Plasma Physics (APS-DPP) meeting

October 29-November 2, 2012, Providence, Rhode Island, USA

<http://www.apsdpp.org>

ANS Winter Meeting

November 11-15, 2012, San Diego, CA, USA

<http://www.ans.org/>

2013:

ANS Annual Meeting

June 16-20, 2013, Atlanta, GA, USA

<http://www.ans.org/>

ANS Winter Meeting

November 10-14, 2013, Washington, DC, USA

<http://www.ans.org/>

The content of this newsletter represents the views of the authors and the ANS-FED Board and does not constitute an official position of any U.S. governmental department or international agency.