



THERMAL HYDRAULICS DIVISION NEWSLETTER

Fall 2012

Message from the Chair

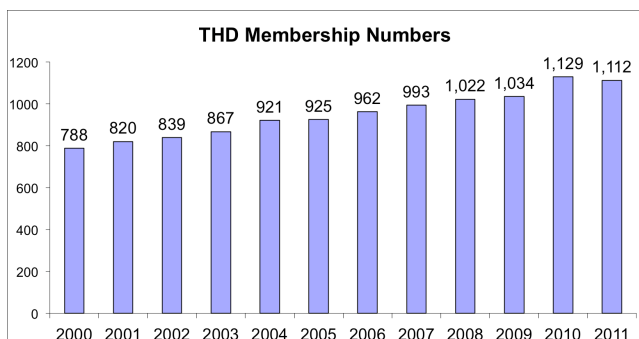


Dear Colleagues,

I am writing my first message with sincere gratitude to our numerous division volunteers, including paper reviewers, session organizers and chairs, members of Program and Executive Committees, and many more who contributed to the success and growth of our Thermal Hydraulics Division.

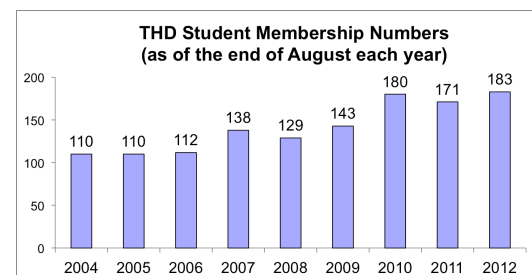
It is because of your selflessness and great support that our Division remains one of the strongest divisions within the ANS. It is indeed my greatest honor and privilege to be associated with and represent such a dedicated group of professionals.

The past several chairs of the Thermal Hydraulics Division have reported on our Division's healthy state and I am pleased to be able to keep that tradition. First, our Division membership has remained strong, as indicated in the THD Membership Numbers plot below. As of the end of 2011, the Thermal Hydraulics Division had a total of 1,112 paid members, representing 9.8% of the total ANS membership. This is down by 17 members when compared to the Division's 2010 membership number. However, during the same period, the total ANS membership has dropped by approximately 1.7%. It is encouraging to note that as of the end of August 2012, our Division's paid membership number stands at 1,080, which compares very well with the numbers of August 2010 and 2011, 1,068 and 1,060 respectively. Our membership is



distributed among a variety of sectors: consulting companies, national labs, manufacturers, government agencies, architect/construction companies, utilities, and educational institutions, with the last two being the largest contributors (utilities: 12% and educational institutions: 31%).

I would also like to make a note on the trend of our Division's student membership. As shown in the plot below, our student membership had a large jump in 2010 and has been fairly steady in the recent few years. The Division considers recruiting and retaining younger members, including student members, critical to the Division's growth and future success. On that end, the Division continued its efforts to recruit younger members and provide support for their professional development. In addition to the donations to ANS National for student travel support to national meetings and donations to the student conferences, the Division has offered financial travel support for student members of the Division who present papers in the Division sponsored sessions at the ANS national meetings and embedded topicals. We are continuing this support for the upcoming 2012 ANS Winter Meeting in San Diego and its embedded topical meeting: Advances in Thermal Hydraulics-2012 (ATH'12). In addition to providing student travel support, the Division has continued its effort to organize the "Young Professional Thermal-Hydraulics Research Competition" for many years. This competition has been valuable in helping young professionals develop their professional career. At this San Diego Winter Meeting, a total of eight papers are scheduled for presentation in this session (See "Program Committee Report" in this Newsletter). I am grateful to Dr. Elia Merzari of Argonne National Laboratory and Prof. Wade Marcum of Oregon State University for organizing this year's competition as well as to Dr. Brian Collins of Pacific Northwest National Laboratory, our liaison to the ANS Young Member Group.



Second, our membership participation in technical meetings and society activities continues to be active and strong. The Division commits fully to bringing about high-quality technical meetings and sessions. NUTHOS-9, co-sponsored by the Atomic Energy Council and the ANS Thermal Hydraulics Division, among many others, was successfully held in September 2012 in Kaohsiung, Taiwan. At this upcoming ANS Winter Meeting and the embedded topical ATH'12, we will have six summary sessions and six full-length papers sessions, respectively. In addition to the paper presentations, nine THD student members will be presenting posters from 4:00 to 6:00 pm on Monday at this Winter Meeting. This represents one third of the posters to be presented at the Student Poster Session. If you plan to attend this Winter Meeting, I would encourage you to stop by this Poster Session and meet with our student members. For the 2013 ANS Annual Meeting in Atlanta, GA, a total of eight sessions are being planned by the Division. Furthermore, our Division's flagship topical meeting, the NURETH series, will hold the 15th conference of its series (NURETH-15) in Pisa, Italy in May 2013. A solicitation for proposals to host NURETH-16 is being prepared and will be distributed to local sections shortly. Please read the Program Committee Report in this Newsletter for more detail.

Third, our Division members are also very active in supporting the ANS National, including participating in the society's governance. Several Division members have recently served or are serving on the Board of Directors. Our young members actively participate in YMG's activities. Other members are volunteering to serve on various ANS committees, such as National Program Committee, Standards Committee, Publications Steering Committee, and Alpha Nu Sigma National Honor Society to name a few. I consider our Division's members' active involvement in the ANS National as one of the Division's strength.

I am also happy to report that the Thermal Hydraulics Division has been selected to receive the 2012 Young Members Advancement Award. I will have the honor, on behalf of the Division, of accepting this award at the Opening Plenary on Monday, November 12 at the upcoming Winter Meeting. I would like to take this opportunity to thank Dr. David Pointer of Argonne National Laboratory and Dr. Merzari for preparing the award nomination package, and other members who helped during the package preparation process. I consider this award a great recognition of the efforts that the Division has made in the past years in helping young professionals advance in their career. I would therefore like to thank the volunteers who helped organize the "Young Professional Thermal-Hydraulics Research Competition" sessions as well as our younger members on the Program and Executive Committees over the years.

To help further reach out to our student members as well as to respond to a suggestion made by the ANS Board of Directors during the Division's presentation to the Board last fall, the Division is proposing to elect a student member to its Executive Committee. Once approved by the EC at the upcoming meeting in San Diego, the proposed student EC member nominee will appear on the Division's election ballot in the spring of 2013.

I encourage you to review the Program for the 2012 ANS Winter Meeting and join us in San Diego this November. I would also like to invite you to attend THD Executive Committee meeting to be held at 4:30 to 6:00 pm on Sunday, November 11 in "Pacific Salon 4" conference room.

The new officers, Dr. Dave Aumiller (Vice chair/Chair-elect), Dr. Si Young Lee (Secretary), Prof. DuWayne Schubring (Treasurer), and I are trying our best to lead the Division for another productive year. We cannot do this without your support. I would like to thank all of you for your support and help to make the Division stronger. We welcome communication from members who would like to volunteer their time and efforts. Please feel free to contact us with comments on how we can improve Division services.

Thank you for your continued loyalty and support to the ANS Thermal Hydraulic Division. I look forward to seeing many of you at the ANS Winter Meeting in San Diego.

Xiaodong

Xiaodong Sun, The Ohio State University
2012-2013 Division Chair
ANS Thermal Hydraulics Division
sun.200@osu.edu

Treasurer's Report

2012 Division Financial Report

2012 Income

The THD member allocation for 2012 is \$2,224. THD also receives a \$480 from national meetings due to the number of THD papers that the Division sponsored. Including 2011 carry forward of \$20,847, the total THD income for 2012 is **\$23,551**.

2012 Division Budget (\$4,800)

The THD Executive Committee approved the following budget at the 2011 Winter Meeting:

- \$1,800 for awards and plaques
- \$2,500 for student support

- \$500 for ANS-national directed support of student travel to Annual/Winter meetings
- \$500 for travel support at the 2012 ANS Student Conference
- \$1,500 of THD-directed student travel support for 2012 Annual and Winter meetings, to include the embedded topical in at the Winter 2012 meeting
- \$500 donation to Scholarship/NEED

2012 Expenses (\$2,050 as of September 1, 2012)

THD expenses so far in 2012 have included the following:

- \$500 for ANS-national directed support of student travel to Annual/Winter meetings
- \$500 for travel support at the 2012 ANS Student Conference
- \$500 of THD-directed student travel support for 2012 Annual Meeting (\$100 to each of 5 students)
- \$500 donation to Scholarship/NEED
- \$50 for plaque

The balance of the THD general funding account as of September 1, 2012 was **\$21,501**.

DuWayne L. Schubring
2012-2013 Treasurer
ANS Thermal Hydraulics Division
dlschubring@ufl.edu

Honors and Awards Committee Report

TAA Award

The recipients of the 2011 and 2012 Technical Achievement Award (TAA) are as follows:

2011: Professor John Luxat
2012: Professor Hisashi Ninokata

Unfortunately, last year there was some delay in preparing the paperwork for the 2011 THD TAA and it is the intention of the Division to award the 2011 TAA this year (retroactive to 2011). The selection method was based on the TAA selection criteria ranking table used by THD for many years.

The award citation reads "In recognition of his exceptional contributions to the understanding of thermal hydraulics phenomena of significance to advanced nuclear reactors and for his impact on the thermal hydraulics community as a researcher, educator, and leader."

TAA is an ANS National award and therefore, the recipients will be recognized in the plenary session of the 2012 ANS Winter Meeting in San Diego, CA.

2012 Best Paper Award

The 2012 best paper was selected from NURETH-14 papers and the winner is:

M. Bucci, W. Ambrosini, N. Forgone, F. Oriolo, and S. Paci. The title of the paper is "Experimental and Computational Analysis of Steam Condensation in the Presence of Air and Helium." This paper was selected from thirteen NURETH-14 papers recommended by NURETH-14 organizers.

Membership Service Term for Three General Members

Upon request by the EC, the chair determined the membership service year of three general members in order to keep the continuity of the smooth H&A business, function, and transition. The method used in this decision was agreed upon by general members and their term is listed below:

Professor Bill Cheung: 1 year (July 1, 2012 to June 30, 2013)
Professor Yassin Hassan: 2 year (July 1, 2012 to June 30, 2014)
Professor Jong Kim: 3 year (July 1, 2012 to June 30, 2015)

Chang Oh, Idaho National Laboratory
2012 Honors and Award Committee Chair
Chang.Oh@inl.gov

Program Committee Report

The 2012-2013 period is busy with many program activities. Foremost, THD has a strong presence at the upcoming Winter Meeting with six sessions from Monday to Thursday. Secondly, THD is sponsoring an embedded topical meeting in San Diego: Advances in Thermal Hydraulics—2012 (ATH'12) is a peer-reviewed full-length technical paper conference covering recent advances in thermal hydraulics. It takes place concurrently with our regular summary sessions. Then, Pisa, Italy will be the host of NURETH-15 in spring 2013. See the additional update on the conference in this Newsletter. Finally, very strong program is proposed for the annual meeting in Atlanta, as detailed below.

Continuing with the successful tradition of the Young Professional Thermal-Hydraulics Research Competition, this year too, the winter meeting has a dedicated session. With the support of the session organizers, reviewers, and contributing authors, the program committee has put together the following summary sessions for the 2012 Winter Meeting at San Diego. These are:

- Computational Thermal Hydraulics—I, Mon. p.m.
- Computational Thermal Hydraulics—II, Wed. a.m.
- Young Professional Thermal-Hydraulics Research Competition, Tues. a.m.
- Thermal Hydraulics: General—I, Tues. p.m.

- Thermal Hydraulics: General—II, Wed. p.m.
- Thermal Hydraulics: General—III, Thurs. a.m.

All of these sessions are all contributed sessions. We have received total of 42 summaries for these sessions and only one paper was rejected by the reviewer recommendations.

In the embedded topical, ATH'12, we have 6 sessions, including the plenary session. The plenary session, scheduled for Tuesday afternoon, includes the following key features:

- Honorary Chair's address: Emeritus Prof. Bal Raj Sehgal will deliver a talk titled "Role of Thermal Hydraulics in Delineation and Resolution of LWR Safety Issues"
- Invited speakers on advances in thermal hydraulics research including the THINS and CASL programs and BEPU techniques
- Lecture by the 2011 Technical Achievement Award winner Prof. John Luxat
- Panel discussion on SMR Programs

The contributed full-paper ATH'12 sessions, including two split sessions, are:

- Fundamental Research in Two-Phase Flow and Heat Transfer, Wed. a.m.
- Numerical Applications and Reactor Operation/Safety, Wed. p.m.
- Thermal-Hydraulics of Waste Management and Non-Power Systems, Wed. p.m.
- Code Developments and Simulation Applications, Thurs. a.m.
- Experimental Thermal Hydraulics, Thurs. p.m.

The 2013 Annual Meeting will be held in Atlanta, Georgia. The planned sessions for this meeting are:

1. Thermal Hydraulics in Severe Accidents
2. Thermal Hydraulics: General
3. General Two-Phase Flow
4. Computational Thermal Hydraulics
5. Visualizations in Thermal Hydraulics
6. Spacer Grid Thermal Hydraulics
7. Thermal Hydraulics in Fluoride-salt-cooled High-temperature Reactors
8. State-of-the-art in modeling fuel rod ballooning, fuel relocation and high burnup issues in LOCA Evaluation Models

The website (<http://epsr.ans.org/meeting/?m=80>) is open for submission of summaries. The published deadline for the submissions is January 11, 2013.

In San Diego, the THD Program Committee meeting will be held on Sunday November 11, 2012, starting at 2:30 p.m. in

"Pacific Salon 4" conference room. Anyone interested in the program committee activities are invited to participate.

As many of you already know, we have successfully reestablished the NURETH tradition. Every meeting attracts many participants from all around the world. As we are looking forward to another successful meeting in Pisa, we are also preparing for the next meeting. Traditionally, this meeting rotates between U.S. and abroad. Planning for NURETH-16 in the U.S. in 2015 has just started. The solicitation for bids will be sent to the local sections. Interested groups are welcome to join the PC meeting for more information. However, the details will be announced soon.

Finally, I would like to express my gratitude to all of my colleagues who devote their time to our activities. Thanks to their dedicated efforts, we are able to put together strong programs at many meetings. These meetings remain as the prominent venue for scientific information exchange in the thermal-hydraulics community. As always, I would like to encourage our members to actively participate by attending our meetings, submitting papers/summaries, volunteering to organize sessions, and supporting the peer-review of the papers. I am looking forward to many more successful years.

Kurshad Muftoglu
Program Committee Chair*
PCchair@thd-ans.org

(*: Appointment extended until the transition of new chair in June 2013)

Status of 15th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, NURETH-15 May 12-16, 2013, Pisa, Italy

About 700 abstracts were received and the abstracts review process is completed. The organization of Pre-NURETH and Post-NURETH Seminars and Workshops is in progress. Detailed information is available on the website (www.NURETH15.org).

Francesco D'Auria
NURETH-15 Conference Co-Chair

Web Page Report

The official website of the ANS Thermal Hydraulics Division is located at <http://thd.ans.org>. The THD committee membership and minutes, conference announcements, newsletters, and awards are all updated as they change throughout each year.

Effective with the 2012 Winter Meeting in San Diego, I will be stepping down as THD Webmaster. I thank the Thermal Hydraulics Division leadership for the opportunity to serve the community in this capacity over the past 3 years and look forward to working with many of you in other roles in the future.

Dr. Elia Merzari, from Argonne National Laboratory, has been selected to take over as THD Webmaster following the Winter Meeting. Dr. Merzari has been an active member of ANS and the THD for several years, serving as Secretary of the Young Members Group and organizing the Young Professionals Thermal Hydraulics Research Competition. His email address is shown below.

Finally, the division continues to maintain an online directory of members who are or have been active in division activities at <http://thd.ans.org/people.html>. To update your information or to be included in this directory, please contact the THD Webmaster.

DuWayne Schubring, University of Florida
Outgoing THD Webmaster
E-mail: dlschubring@ufl.edu

Incoming THD Webmaster (November 2012)
Elia Merzari, Argonne National Laboratory
E-mail: emerzari@anl.gov

Nominating Committee Report

Based on the election earlier this year, the current Division Officers and Executive Committee members are listed below.

Current Year THD Officers (June 2012 – June 2013):

Division Chair: Xiaodong Sun, sun.200@osu.edu
Vice Chair/Chair-Elect: David Aumiller,
david.aumiller.contractor@unnpp.gov
Secretary: Si Young Lee, si.lee@srnl.doe.gov
Treasurer: DuWayne L. Schubring, dlschubring@ufl.edu

Executive Committee Members:

Steven A. Arndt steven.arndt@nrc.gov
David Aumiller david.aumiller.contractor@unnpp.gov
Xu Cheng xu.cheng@kit.edu
Fan-Bill Cheung fxc4@psu.edu
Francesco D'Auria dauria@ing.unipi.it
Yassin A. Hassan y-hassan@tamu.edu
Takashi Hibiki hibiki@purdue.edu
Jong H. Kim JKIM@epri.com
Seungjin Kim skim@psu.edu
Si Young Lee si.lee@srnl.doe.gov

Kurshad Muftuoglu kurshad.muftuoglu@ge.com
W. David Pointer dpointer@anl.gov
DuWayne L. Schubring dlschubring@ufl.edu
Chul-Hwa Song chsong@kaeri.re.kr
Xiaodong Sun sun.200@osu.edu
Brian Woods (ex-officio) woods@ne.orst.edu
Hans D. Gougar* Hans.Gougar@inl.gov

* Chair of the ANS Professional Divisions Committee, ex-officio member without vote

Committee Chairs:

Program Committee – Kurshad Muftuoglu
Honors and Awards Committee – Chang Oh
Nominating Committee – Brian Woods
Membership Committee – Brian Woods

The Nominating Committee is responsible for the nomination of THD members to leadership positions on both the Program and Executive Committees. The THD would like to encourage members interested in becoming more involved to contact one of the officers listed above. In particular, the division is usually in need of volunteers for technical meeting session organizers and paper reviewers.

Brian Woods, Oregon State University
2011-2012 Chair - ANS Thermal Hydraulics Division
brian.woods@oregonstate.edu