

# Program Committee Meeting Minutes

American Nuclear Society – Thermal Hydraulics Division  
Program Committee Meeting  
Disneyland Hotel, Anaheim, CA  
2:30 – 4:30 PM, Sunday, November 9, 2014  
Location: Zambezi

**Attendees:** Si Young Lee (SRNL), Fan Bill Cheung (Penn State U.), Igor Bolotnov (NC State U.), Aaron Perlman (Cal. State U., Long Beach), Donna Guillen (INL), Brian Woods (Oregon State U.), Yassin Hassan (Texas A&M U.), Takashi Hibiki (Purdue U.), Cesare Frepoli (FPoliSolutions), David Aumiller (Bettis), Sofiane Benhamadouche (EDF), Hang Xiao (U. of Missouri), Seth Langford (U. of Tennessee, Knoxville), Eugene O'Donnell (U. of Missouri), Wade Marcum (Oregon State U.), Chul-Hwa Song (KAERI), Jong H. Kim (KAIST), Yong Hoon Jeong (KAIST), Hisashi Ninokata (Polimi), Bao-Wen Yang (Xian Jiao Tong U.), John Luxat (McMaster U.), Elia Merzari (ANL), Seungjin Kim (Penn State U.), Annalisa Manera (U. of Michigan), Paolo Ferroni (Westinghouse), Rui Hu (ANL), Kurshad Muftuoglu (GE Hitachi), Lane Carasik (Texas A&M U.), Dave Pointer (ORNL), Steven Arndt (U.S. NRC), Robert Martin (B&W mPower), Xiaodong Sun (Ohio State U.) - Scanned copy of the actual list of attendees is shown in Appendix A.

## 1. Opening (Sun/Merzari):

Dr. Sun opened the meeting at 2:40 PM.

## 2. Approval of Meeting Agenda (All)

Dr. Sun made a motion to approve the PC meeting agenda, noting that there would be additional agenda items as part of the "Item 11, New Business". These included discussions on ICAPP-2016 and NURETH-18.

Dr. Merzari made a motion to approve the amended agenda. It was seconded by Dr. Guillen. The amended agenda was then approved.

## 3. Approval of Minutes from 2014 Annual Meeting (All)

Dr. Sun made a motion to approve the PC Meeting Minutes for 2014 ANS Annual Meeting (as attached in Appendix B). Dr. Hassan seconded the motion. The motion was approved.

## 4. Session Status of 2014 ANS Winter Meeting in Anaheim, CA

### (a) General meeting (Sun/Merzari)

Dr. Sun gave a quick overview on the status of 2014 ANS Winter Meeting. Details were summarized as shown in Appendix C, which included: (a) summary submission statistics, (b) review statistics, including number of reviews per paper and the list of contributed reviewers, (c) information on summary sessions and panel sessions, (d) session assignments, including time slots, location and session chairs.

Dr. Aumiller expresses his thanks for the efforts made by the PC Chair/Assistant Chair to maintain and/or upgrade the quality of the papers.

Dr. Merzari added brief background on how papers were reviewed, including rejection criteria based on the reviewers' comments (e.g., a paper was rejected when none of the reviewers recommended to accept the paper). He also noted that the rejection rate for the THD papers at this conference was 18%.

## **5. 2015 ANS Annual Meeting Program in San Antonio, TX (Sun/Merzari)**

### **(a) Announced Sessions for Annual Meeting**

Dr. Sun reported that the deadline for summary submission was set as Jan. 9<sup>th</sup>, 2015.

He also reported that there were seven summary sessions and one panel session planned as listed in the THD Newsletter in Appendix D.

Dr. Sun encouraged members to propose additional session topics to be considered. None was made during the meeting.

## **6. 2015 ANS Winter Meeting Program in Washington, DC (Sun/Merzari)**

### **(a) Proposed Sessions and Session Organizers:**

Following session topics and session organizer information were reported by Dr. Sun:

- General T-H (Lee / Ferroni);
- Computational T-H (Guillen / Rui);
- Experimental T-H (Marcum / Frepoli);
- Two-phase Flow (Jeong / Yang);
- CFD Verification & Validation (Hassan / Bolotnov / Merzari);
- Young Professional T-H Research Competition (Aumiller / Manera).

### **(b) Embedded Topical Meeting: Young Professionals Congress 2015 (Merzari).**

It was reported by Dr. Merzari that a panel session on "Topics of interest for the next 10 years" would be organized by Drs. Merzari and Guillen, and the panelists would be solicited. Possible candidates for panelists included: Drs. Corradini, Cheung, J. Kim, Luxat and Yang.

It was also noted that Drs. Aumiller and Manera would try to make summary review status/statistics available for reviewers in order to enhance effectiveness for reviewers when selecting paper(s) to review. Dr. Sun mentioned that he would check with Ellen at the ANS Headquarter if ANS could provide this information to reviewers.

## **7. NUTHOS-10 Update (Ninokata)**

Dr. Ninokata reported that things were well in progress. He also noted that there was a change in plenary speaker. Dr. Mamoru Ishii was replaced by Dr. Nam Dinh because Dr. Ishii wouldn't be able to participate in the conference.

## **8. NURETH-16 Update (Merzari/Sun)**

Dr. Merzari noted that abstract submission deadline was extended to Dec. 15, 2014. He also noted that additional sessions and new ideas on sessions could still be considered.

Dr. Merzari reported that, as of November 8, 2014, 40 abstracts were submitted. He also encouraged people with ideas on special session to inform Drs. Sun or Merzari.

## **9. NUTHOS-11 Update (J. Kim / Song)**

Dr. Song reported that NUTHOS-11 would be held during the third week of October 2016 in the city of Gyeongju, Korea, the old capital of Shilla Dynasty, as shown in the THD Newsletter in Appendix D. Dr. Song noted that he was preparing a draft agenda, and things were well in progress. He also noted that the President of KINS would serve as the conference General Chair.

## **10. Old Business**

### **(a) Embedded Topical Meeting HTR-2016 (Pointer):**

Dr. Pointer noted that EC voted electronically in favor for ANS THD to seek ANS NPC's approval to serve as the primary sponsoring division of the HTR2016 meeting as an embedded topical meeting at the 2016 ANS Winter Meeting. He noted that HTR meeting had been an international meeting, rotating among Europe, Asia and America. He also noted that the organizers approached ANS, and ANS approached THD for the feasibility. He was expecting to get additional information on logistics from international organizers. He noted that it would be a Class-III meeting.

Dr. Aumiller asked Dr. Pointer if there would be any potential risk that THD might be responsible for when sponsoring the meeting. Dr. Pointer replied that the risk would be low because HTR had already been developed with well-established body of active participants and reviewers.

### **(b) NURETH-17 Call for Proposals (J. Kim/Lee)**

Dr. J. Kim noted that the CFP was yet to be out, but would be announced within the next two months. He then noted that there would be additional discussions during the EC meeting on the timing of required actions (including CFP), and on the roles of EC and the Conference Screening Committee.

## **11. New Business (All)**

### **(a) Discussion on "Best Reviewer Award" (Merzari / Sun):**

Dr. Sun discussed the background of creating a Best Reviewer Award (tentative award title). He mentioned that the award would be to promote, to motivate, and to recognize reviewers for the hard work. As such, this effort would create a form of recognition for the reviewers who provided quality reviews.

Many members agreed that this was a good idea, because reviewers are backbone of good conference. It was noted that creating a clear criteria would be important.

Dr. Sun noted that he would bring this subject to the EC meeting for additional discussion. Dr. Merzari stated that he would propose a motion during the EC meeting to discuss some details, such as award frequency, criteria, and award title.

**(b) PC Membership Nomination (Sun / Merzari)**

Dr. Sun reported that PC received several nominations. He made a motion that EC considers to increase the PC membership cap from 50 to a higher number.

Dr. Aumiller made a suggestion for PC to consider creating similar criteria in approving membership as that used in EC, which are based on the frequency of meeting participation and/or history of participation in reviewing papers.

Dr. Cheung noted that such criteria already exist for PC membership. However, it has not been strictly enforced, because of lower activities in previous years compared to more current years' activities. He suggested that PC let the number grow until it saturates before taking action with criteria to determine the cap.

Dr. Sun reported names of the members nominated for PC membership, which included:

Dr. Y. H. Jeong (KAIST), nominated by Dr. J. Kim  
Dr. M. Avramova (Penn State U.), nominated by Dr. S. Kim

Dr. Merzari made a motion for the nominations be voted in EC. Dr. Luxat seconded, and the motion was passed.

**(c) Other Discussions:**

Dr. Muftuoglu informed PC that ICAPP was seeking official supports from THD for 2016 meeting and for future ICAPP meetings.

Dr. Muftuoglu also noted that he would present some discussions on NURETH-18 (to be held in America in 2019) during the EC meeting.

Meeting adjourned at 4:40PM.

Appendix A: Scanned Copy of the List of Attendees in PC Meeting

**American Nuclear Society – Thermal Hydraulics Division  
Program Committee Meeting**

Disneyland Hotel, Anaheim, CA  
2:30 – 4:30 PM, Sunday, November 9  
Location: Zambezi

**Sign In Sheet**

Name	Affiliation	Email	Phone
Si Young Lee	SRNL	si.lee@srnl.doe.gov	(803) 725-8462
Rice Chang	PSU	fxcf@psu.edu	814-863-4261
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Aaron Perlman	CSULB	aaron.f.perlman@gmail.com	(310) 488-5683
Donna Guillen	INL	Donna.Guillena@inl.gov	208-526-1744
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<del>Rui Hu</del>	<del>ANL</del>	<del>rhu@anl.gov</del>	<del>630-252-1461</del>
Xiaodong Sun	Ohio State Univ.	Sun.2px@osu.edu	614-247-7616
<del>Si Young Lee</del>	<del>SRNL</del>	<del>si.lee@srnl.doe.gov</del>	<del>803-225-8462</del>

## Appendix B

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### Program Committee Minutes

American Nuclear Society – Thermal Hydraulics Division  
Program Committee Meeting  
Grand Sierra Resort, Reno, NV  
2:30 – 4:30 PM, Sunday, June 15, 2014  
Location: Crystal 2

**Attendees:** Chul-Hwa Song (KAERI), John Luxat (McMaster U), Kushad Muftuoglu (GE/Hitachi), Yang Liu (Virginia Tech U), Rui Hu (Argonne), Jong Kim (KAIS/EPRI), Tommy Moore (Zachry Nuclear Engineering), Elia Merzari (Argonne) – Vice Chair, Seungjin Kim (Penn State U), Xiaodong Sun (Ohio State U) – Chair, Hasashi Ninokata (Politecnico di Milano), Donna Guillen (INL), Sama Bilbao y Leon (Virginia Commonwealth U), Steven Arndt (NRC), Robert Martin (B&W), DuWayne Schubring (U Florida) – Secretary, David Aumiller (Bettis), Si Young Lee (SRNL), Piyush Sabherwall (INL), Wade Marcum (Oregon State U), Fatih Aydogan (U Idaho), Sabahattah Acras (U Idaho), Jon Jensen (SAES Pure Gas), Michio Murse (INSS), Paolo Ferroni (Westinghouse), Dave Pointer (ORNL), Igor Bolotnov (North Carolina State U), Huajian Chang (SNPTRD), Yassin Hassan (Texas A&M U), Fan-Bill Cheung (Penn State U), Jose Reyes (NuScale Power) [same order as Attachment A]

#### 1. Opening (Sun)

Prof. Sun opened at the meeting at 2:31.

#### 2. Approval of Meeting Agenda (All)

The draft agenda (Attachment B) was distributed. Prof. Schubring recommended the addition of item 11-a (NURETH 17). Dr. Aumiller moved to accept the revised agenda, second by Dr. S.Y. Lee, and the agenda (Attachment C) was approved unanimously.

#### 3. Approval of Minutes from 2013 Winter Meeting (All)

Minutes from the 2013 Winter Meeting were distributed electronically before the meeting, with additional copies distributed immediately before the meeting. Prof. Sun and Prof. Hassan requested the addition of Prof. Hassan to the attendees list. Dr. Merzari moved to accept the minutes as revised, second by Dr. Mufuoglu, approved without objection.

#### 4. Session Status of 2014 ANS Annual Meeting in Reno, NV

##### 4.1 General meeting (Sun/Merzari)

- a) Submittal Statistics
- b) Reviews
- c) Session Assignments

Prof. Sun distributed a summary of the submittals, reviews, and session assignments for the general meeting [Attachment D]. 22 papers were submitted, with 17 reviewers contributing 80 reviews. A total of 19 summaries will appear in the program, with 3 sessions

(Experimental Thermal Hydraulics, Computational Thermal Hydraulics, Thermal Hydraulics: General). For the final session, Dr. Aumiller was replaced by Dr. Meholic as co-chair.

Dr. Merzari notes that the procedure for the paper auction changed for this meeting, with calls made alphabetically to professional divisions. THD was therefore the last division called, with few options for rooms. Originally, 2 sessions were scheduled for Thursday, though negotiation with other divisions allowed for moving 1 session.

Dr. Muftuoglu reminded attendees of the need to complete reviews in a timely fashion to ensure timely session assignments.

#### **4.2 ATH'14 (Guillen)**

##### **a. Submittal Statistics**

##### **b. Reviews**

##### **c. Session Assignments**

Dr. Guillen read a summary of the submittals, reviews, and session assignments for the ATH meeting. Following the meeting, the document was provided for inclusion in the minutes [Attachment E]. The 65 submittals led to 58 accepted papers across 9 sessions. As a full paper session, detailed review was required, complicated by a number of papers longer than the 8-12 page limit. Guillen read the names and total number of reviews for each reviewer in the process.

Dr. Aumiller reiterated the importance of maintaining and improving paper quality for ATH '14 to increase the prestige of the meeting.

Prof. Cheung suggested best papers should be submitted to archival journals to advertise meeting quality.

Dr. Muftuoglu noted a 50% increase in papers relative to ATH '12.

Aumiller noted ANS-HQ financial incentives for efficient placement of the meeting on the calendar. A brief discussion of financial issues for imbedded topicals followed, with no motions made.

Prof. Sun thanked the organizers of ATH '14.

Prof. Ninokata discussed the potential for the THD best paper award to come from ATH '14.

Cheung recommended that non-NURETH papers only be considered for best paper award if the "pool" of papers (numbered submitted to THD meetings) was sufficiently high.

#### **5. 2014 ANS Winter Meeting Program in Anaheim, CA (Sun/Merzari)**

##### **a. Announced Sessions for Annual Meeting**

Attendees were directed to the recent THD newsletter for the full list of sessions in Anaheim. 6 paper sessions, 2 panel sessions, plus the YPTHRC will be included. The organizers of the YPTHRC (Prof. Marcum, Dr. Hui, Prof. Bardet) were thanked for their efforts.

##### **b. Submittal Status**



No THD-specific information was available. A total of 140-150 summaries have been submitted to the November meeting.

### c. Panel Sessions

Panelists must be confirmed by July 14. Dr. Aumiller noted that up to 5 invitations (from the Division Chair) made be made per panel; these invitations allow for free one-day registration for panelists, even those who are ANS members.

## 6. 2015 ANS Annual Meeting Program in San Antonio, TX (Sun/Merzari)

A lengthy discussion on potential sessions led to the following 8 sessions in the roster for the next Annual Meeting.

1. General Thermal-Hydraulics (J. Luxat and K. Muftuoglu, and E. Merzari)
2. Computational Fluid Dynamics Verification and Validation (Y. Hassan, H. Ninokata, and D. Pointer)
3. Advanced System Code Development and Analysis (F. Aydogan and D. Aumiller)
4. Experimental Thermal-Hydraulics (W. Marcum and P. Sabharwall)
5. Computational Thermal-Hydraulics (I. Bolotnov and D. Guillen)
6. Thermal Hydraulics in Non-traditional Nuclear Applications (S. Y. Lee)
7. Thermal Hydraulics Education [Panel] (S. Bilbao y Leon and D. Schubring)
8. Two-phase Flow (Y. Liu, S. Kim, and F.B. Cheung)

Organizers of new sessions were reminded to provide 100 word summaries. Reviewers are asked to note, during the review process, any summaries submitted to an inappropriate session for reassignment.

## 7. NUTHOS-10 Update (Ninokata)

Prof. Ninokata reminded the attendees of the location and date of the meeting. 300 abstracts were submitted, with full paper review now underway (submission deadline in late June). Given 3 reviews per paper, the number of reviews is on the order of 1000. Invitations to keynote speakers have been distributed.

Planning for NUTHOS-11 is in the early stages. It is expected that the meeting will occur in South Korea.

The liberalization of rules regarding foreign Class I meetings were noted and the implications of this change on NUTHOS were briefly discussed.

**ACTION ITEM:** The ad hoc committee of Prof. J Kim, Prof. Ninokata, and Prof. Chao are to contact the Korean Nuclear Society for the purposes of having a recommendation for the NUTHOS-11 host to be considered by the THD Conference Selection Committee and THD Executive Committee.

Prof. Cheung requested clarification on the THD role in NUTHOS and the status of NUTHOS vs. ATH as the THD #2 meeting (behind NURETH).

Dr. Aumiller noted potential risks with stand-alone meetings such as ATH, as low attendance at ICAPP led to a financial loss.

#### **8. NURETH-16 Update (Merzari/Sun)**

The call for papers has been distributed, including through the recent THD newsletter. Prof. Sun will finalize TPC membership in the next few weeks. There have been frequent organization meetings, including a 7 am Tuesday meeting planned at this meeting. All THD-PC members were invited to attend. The Art Institute of Chicago is expected to host the banquet; final negotiations are in progress. Sponsorships are available for purchase by contacting Dr. Keith Bradley (ksbradley@anl.gov). Abstract submissions will open August 1. A 14 page limit will be enforced, with page charges for papers exceeding this. Abstract review will be a cursory review for planning purposes and will close in mid-November, with notification of acceptance in late 2014. A full paper draft will be due in February, with reviews complete by April, and final camera-ready manuscripts required by May 31. The organizers are open to suggestions for new sessions or workshops. Best papers will be referred to ANS journals. Due to the retirement of Dr. Tom Waite, Dr. Merzari has been added to the roster of Assistant Technical Progress Chairs.

Prof. Sun paused the meeting momentarily to note that Winter 2014 reviews will be opened not later than June 23.

#### **9. ICAPP'14 Update (Muftuoglu/Sun)**

No further discussion occurred on THD co-sponsorship of this meeting. Dr. Hu noted approximately 100 papers on THD topics appeared in ICAPP, with TH topics frequently appearing in meetings in which THD is not directly involved.

#### **10. Old Business (All)**

##### **a. EC action on PC motions from 2013 ANS Winter Meeting (new PC members, NPC representative)**

The new PC members and NPC representative were approved by the EC.

Two new members of the PC were nominated: Prof. Aydogan (U Idaho), nominated by Dr. Muftuoglu, and Prof. Manera (U Michigan), nominated by Prof. S. Kim. A motion was made by Muftuoglu, second by Prof. Luxat, and approved without objection to recommend their inclusion on the PC to the EC.

Prof. Sun also requested PC (and EC) approval to bless an issue of Nuclear Engineering and Design, dedicated to the work of Dr. Zuber. This was referred to the EC meeting without a formal vote.

Sun noted that the potential for removing members as the 50 member cap is approached.

#### **11. New Business (All)**

##### **a. NURETH 17 (Schubring)**

Prof. Schubring recommended beginning the discussion on NURETH 17 citing. The normal NURETH rotation would set the meeting in the Asia/Pacific region. Schubring recommended that the traditional rotation – decided decades ago – be reconsidered and

either modified or reaffirmed, based on significant changes in THD membership since the founding of the NURETH series.

Prof. Cheung recommended that Asia/Pacific locations not be excluded from NURETH 17, based on maintaining NURETH as the THD (and TH) flagship conference.

Prof. Sun indicated that Dr. Lee and Prof. J. Kim will lead drafting of the NURETH 17 call for proposals.

J. Kim argued that the traditional rotation be continued, based on a history of past success.

All involved agreed to refer further discussion to the EC meeting.

Sun suggested targeting a September or October 2014 release for the CFP, which would require a decision on geographical preference at the June meeting.

With NURETH 17 discussion tabled until the EC, several topics were brought up from the floor.

Dr. Merzari thanks reviewers again and reminded them to be aware of potential conflicts of interest.

Dr. Aumiller discussed highlights from the division chairs' meeting with ANS President Hoffman. The liberalization of Class I international meetings was noted. Hoffman indicated that the registration fees, long a concern at THD meetings, were compared to other societies and found to be reasonable. However, Aumiller noted that other societies do not have page charges and that the raw data were not provided, though this was established as PDC action item for Hoffman. Prof. Sun noted that the same issues were discussed in the National Program Committee meeting, with topical meetings (smaller attendance) typically more expensive.

Dr. Merzari moved to adjourn.

The meeting was adjourned at 4:28 pm.

## Appendix C

### ANS 2014 Winter Meeting, Anaheim, CA

X. Sun and E. Merzari

We have received a total of 74 summaries submitted to the seven proposed summary sessions. Our THD reviewers again did a great job to review these summaries despite a relatively narrow time window in which we had to complete the review.

Reconciled review recommendations for the summaries are as follows: One of these summaries was accepted (A) without further comments; 47 were accepted with revisions (A/R); 16 were rejected unless revised (R/R); and 10 summaries were rejected.

1	Accepted (A)
47	Accept with Revisions (A/R)
16	Reject Unless Revised (R/R)
10	Rejected (R)

After another round of rigorous review process for those R/R summaries, a total of 58 summaries made to final program of the conference.

Overall, the review participation was sufficient. All of the papers received adequate review on a timely basis. Many thanks to our dedicated reviewers! The distribution is as follows:

Summaries	# of reviews
29	2 reviews
26	3 reviews
11	4 reviews
2	5 reviews

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Total 68\* 190 reviews

(\*: The rest summaries have been pulled out of the ANS paper review system when this report was prepared.)

There were 212 review recommendations that needed to be coordinated from 33 reviewers. Reviewer participation was great for this meeting. We had the highest number of reviewers who helped with the peer review process! The reviewers' support is much appreciated. Most recent reviewer participations were as follows:

Anaheim	212 reviews from	33 reviewers
Reno	80 reviews from	17 reviewers (General meeting)
D.C.	284 reviews from	29 reviewers
Atlanta	137 reviews from	23 reviewers
San Diego	129 reviews from	22 reviewers
Chicago	116 reviews from	17 reviewers
D.C.	179 reviews from	22 reviewers
Hollywood	148 reviews from	14 reviewers
Las Vegas	181 reviews from	20 reviewers
San Diego	102 reviews from	21 reviewers
D.C.	135 reviews from	22 reviewers
Atlanta	191 reviews from	25 reviewers
Reno	73 reviews from	11 reviewers

Following individuals contributed to the reviews of the summaries:

Merzari, Elia (29)	Kim, Seungjin (6)	Riznic, Jovica (3)
Aumiller, David (19)	Manera, Annalisa (6)	Sun, Xiaodong (3)
Ferroni, Paolo (13)	Yang, Bao-Wen (6)	Todd, Donald (3)
Arndt, Steven (12)	Zou, Ling (6)	Buschman, Francis (2)
Revankar, Shripad (12)	Aydogan, Fatih (5)	Kim, In Hun (2)
Hu, Rui (10)	Cheung, Fan-Bill (5)	Schubring, DuWayne (2)
Muftuoglu, Kurshad (10)	Marcum, Wade (5)	Talamo, Alberto (2)
Yu, Yiqi (9)	Thomas, Justin (5)	Gerardi, Craig (1)
Bolotnov, Igor (8)	Martin, Robert (4)	Hassan, Yassin (1)
Lee, Si (7)	Vaghetto, Rodolfo (4)	Lomperski, Stephen (1)
Liu, Yang (7)	Guillen, Donna (3)	Meholic, Michael (1)

THD has a total of nine summary sessions and two panel sessions at this winter meeting. They are:

### **Monday**

General Thermal Hydraulics – I [Mon. p.m.]

Experimental Support for System Code Development and Validation: IETs and SETs – Panel [Mon. p.m.]

### **Tuesday**

General Thermal Hydraulics – II [Tues. a.m.]

Computational Thermal Hydraulics – I [Tues. p.m.]

Experimental Thermal Hydraulics – I [Tues. p.m.]

Thermal Hydraulics Analyst 2.1 – Panel [Tues. p.m.]

Experimental Thermal Hydraulics – II [Tues. p.m.]

### **Wednesday**

Computational Thermal Hydraulics – II [Wed. a.m.]

Experimental Thermal Hydraulics – III [Wed. a.m.]

Computational Thermal Hydraulics – III [Wed. p.m.]

Young Professional Thermal Hydraulics Research Competition [Wed. p.m.]

Session	# of papers	Time Slot	Location	Chairs
General Thermal Hydraulics – I	8	Mon. 1:00 pm	Monorail A/B	J. Luxat, X. Sun
Experimental Support for System Code Development and Validation: IETs and SETs	Panel	Mon. 1:00 pm	Castle A/B	W. Marcum D. Aumiller
General Thermal Hydraulics – II	5	Tues. 8:30 am	Monorail A/B	P. Ferroni F. Aydogan
Computational Thermal Hydraulics – I	8	Tues. 1:00 pm	Monorail A/B	D. Aumiller
Experimental Thermal Hydraulics – I	7	Tues. 1:00 pm	Castle A/B	K. Muftuoglu C. Brooks

Thermal Hydraulics Analyst 2.1	Panel	Tues. 4:00 pm	Monorail A/B	E. Merzari
Experimental Thermal Hydraulics – II	5	Tues. 4:00 pm	Castle A/B	S.Y. Lee P. Chen
Computational Thermal Hydraulics – II	8	Wed. 8:30 am	Monorail A/B	H. Ninokata B.-W. Yang
Experimental Thermal Hydraulics – III	4	Wed. 8:30 am	Castle A/B	S. Arndt M. Avramova
Computational Thermal Hydraulics – III	6	Wed. 1:00 pm	Monorail A/B	I. Bolotnov
Young Professional Thermal Hydraulics Research Competition	7	Wed. 1:00 pm	Castle A/B	R. Hu, P. Bardet
<b>Total</b>	<b>58</b>			

**Additional Notes:**

- All paper presentations are 25 minutes each.
- Session chairs are to obtain the session sheets from the Speaker/Session Chair Desk and return the filled sheets after the sessions.
- **TAA Lecture and Best Paper Awards:** Tuesday morning immediately follow the “General Thermal Hydraulics – II” session in Room Monorail A/B.



## THERMAL HYDRAULICS DIVISION NEWSLETTER

**Fall 2014**

### Message from the Chair



Dear Colleagues,

At the conclusion of the recent ANS Annual Meeting in Reno, I had the privilege of becoming Chair of the Thermal Hydraulics Division (THD). At the June meeting in Reno, I was given the opportunity to make a brief presentation on the success of

our Division to the ANS Board of Directors. In the presentation, it was highlighted that the membership of THD steadily grew over the past several years considering seasonal fluctuation, and we now have approximately 1100 members, with nearly 210 student members, thanks to the collective efforts of many of our division members. In addition to our membership growth, I was pleased to report the increased participation of young and student members in all division areas and the continued support for student scholarship and student travel to the national meetings. I also thank the previous leaders in THD for their hard work and endeavors to keep THD technically strong and financially healthy.

The 2014 ANS Annual Meeting and the Advances in Thermal Hydraulics (ATH-14) Embedded Topical Meeting at Reno were one of the most successful showings for the THD sponsoring twelve very well attended sessions with a total of 77 papers including 58 full ATH papers. The quality and breadth of work presented at these meetings was remarkable. I would like to thank the organizers and paper reviewers for the successful 2014 THD annual gathering in terms of number of quality papers and session participants. For the upcoming 2014 ANS Winter Meeting in

Anaheim, I ask you to look at the Winter Program for the Meeting and join us in Anaheim, California, for our 11 technical sessions and 59 scheduled presentations. There will be two panel discussion sessions held on Monday and Tuesday, thanks to Drs. Wade Marcum, David Aumiller, and Elia Merzari for their organizing efforts and time. I encourage all of you to participate in these sessions and to take some time to have interaction with the invited panel members. There are a number of upcoming meetings of interest to our THD community, especially NUTHOS-10 to be held in Okinawa, Japan, in December 2014, the 2015 ANS Annual Meeting, and NURETH-16 to be held in Chicago, from August 30 to September 4, 2015. Note that this NURETH-16 meeting is the THD stand-alone conference and we look forward to your participation in and your support of that meeting in Chicago 2015.

In addition, note that the division is sponsoring one session “Young Professional Thermal Hydraulics Research Competition” during the ANS Winter Meeting in Anaheim. The session will be held on Wednesday November 12 with 7 papers to be presented, thanks to Drs. Rui Hu and Phillippe Bardet for their organizing effort. I strongly encourage you to attend the session in support of the young members.

Some special thanks and congratulations are in order: First, I got the help and support from my immediate predecessors, Dr. David Aumiller and Prof. Xiaodong Sun, and I thank them for sharing their experience and thoughts with me so that I can serve the division better. Second, many thanks to Honors and Awards Committee (HAC) members and HAC chair Prof. Hisashi Ninokata for their extra effort and time to enable the success of these award nominations. Third, congratulations to Prof. Jose

Reyes for receiving the 2014 THD Technical Achievement Award. He certainly earned the award for his excellent technical contributions and support to the THD community. Lastly, congratulations to the 2014 Best Paper Award recipients for the outstanding quality of the research papers.

I believe that this Newsletter is only one of the ways we facilitate communications among our division membership. The 2014-15 officers, Prof. DuWayne Schubring (vice chair/chair elect), Prof. Seungjin Kim (Secretary), Dr. Kurshad Muftuoglu (Treasurer) and I welcome your feedback on any matter in which the Division can help you in your professional development, or you can help the Division and your fellow members.

I am looking forward to seeing you at Anaheim.

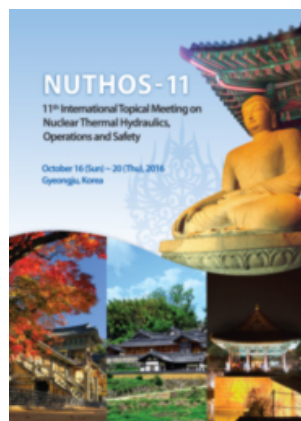
Si Young Lee  
Savannah River National Laboratory  
si.lee@srl.doe.gov  
2014-2015 THD Chair  
ANS Thermal Hydraulics Division

## Upcoming THD Conferences

- 2014 ANS Winter Meeting (Anaheim, CA): Nov. 9-13 2014
- NUTHOS-10 (Okinawa, Japan): Dec. 14-18, 2014
- NURETH-16 (Chicago, IL): Aug. 30-Sept. 4, 2015
- 2015 ANS Annual Meeting (San Antonio, TX): June 7-11, 2015

In addition to these conferences, NUTHOS-11 is being organized as follows:

- Conference Venue: Gyeongju, Korea
- Conference Date: Oct. 16-20, 2016
- Honorary Chair: Prof. Jong H. Kim (KAIST)
- General Chair: Prof.



- Moo Hwan Kim (POSTECH, and KINS)
- TPC Chair: Dr. Chul-Hwa Song (KAERI).

## Treasurer's Report

### 2014 Division Financial Report

- Balance forward from 2013: \$17,706

### 2014 Income:

- Revenue from 2014 member allocation (through 6/30/2014): \$1,171
- Additional member allocation estimate (based on Dec2013 count): \$1,169
- Estimated revenue from ATH'14 (based on 58 papers): \$2,900

- Total Estimated Income: \$5,240

### 2014 Division Budget:

(approved: \$4,800, amended \$5,300)

The THD Executive Committee approved the following budget at the 2013 Winter Meeting and approved additional \$500 for a second best paper on 10/9 (electronic voting):

- Awards and plaques \$2,300
- Donation to Scholarship/NEED: \$500
- Student support: \$2,500  
(including \$500 for HQ-directed support for ANS national meetings, \$500 for Student Conference, and \$1,500 for THD-directed student travel support for 2014 Annual and Winter meetings, including ATH.)

### 2014 Expenses:

THD expenses occurred in 2014 as of October 23<sup>rd</sup> are as follows:



- Awards and plaques \$0
- Donation to Scholarship/NEED: \$500
- Student support: \$1,300  
(includes \$500 for HQ-directed and two \$150 THD-directed allocations. However, my notes indicate that there should be three students to be funded. Additionally, 7 students requested travel support for the Winter meeting.)
- Other expenses (USPS postage): \$8

(e) THD-directed student support: \$1,500 (same as 2014)

Kurshad Muftuoglu,  
kurshad.muftuoglu@ge.com  
2014-2015 Treasurer  
ANS Thermal Hydraulics Division

## Honors and Awards Committee Report

### 2015 Division Budget Proposal

Updated based on actual spending through June 30, 2014 provided by ANS Headquarters

#### 2015 Estimated Income:

Only income estimated for 2015 is the fund from member dues allocation. Based on December 2013 count, \$2,340 is expected. Revenue from NURETH meeting is not credited with the possibility of financials might not be final by the end of the year.

#### Expected Balance Forward from 2014: \$18,276

Forwarded balance estimate includes income in 2014 of \$2,900 from ATH based on 58 papers. It also assumes, spending on awards/plaques as budgeted and student support as projected.

#### 2015 Estimated Budget

The estimated budget for 2015 is \$4,800, \$500 less than the amended 2014 budget. It is based on the following estimates:

- Awards and plaques: \$1,800 (TAA and only one best paper awarded)
- Donation to ANS Scholarship/NEED: \$500 (same as 2014)
- ANS-national directed travel support: \$500 (same as 2014)
- ANS Student Conference: \$500 (same as 2014)

### 2014 Thermal Hydraulics Division (THD) Technical Achievement Award

The Technical Achievement Award is the highest award given by the THD. It is presented annually to a member of the THD in recognition of outstanding past or current technical achievement. It is based on a major contribution to the state of the art, an important publication, a major technical achievement, or a sustained record of accomplishment and technical excellence in the art or science of thermal hydraulics.



This year, we are pleased to recognize Dr. Jose N. Reyes, Chief Technology Officer and Co-Founder of NuScale Power and the Schuette Endowed Chair Professor from Oregon State University as the 2014 Achievement Award winner for his outstanding contributions to the areas of experimental scaling, two phase flow, advanced passively safe designs, small modular reactors, and thermal stratification and, as indicated by the citation that will appear on his award plaque, "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" promoting technical excellence and international scientific exchanges.

As TAA is an ANS National Award, Prof. Reyes will be formally recognized at the Opening Plenary &

President's Special Session, on Monday November 10, 2014 in the ANS 2014 Winter Meeting.

## 2014 Best Paper Award

The Best Paper Award is given annually for the best full paper presented at one of the previous Division sponsored thermal hydraulics sessions or topical meetings. The award is made on the basis of originality, creativity, impact and scientific integrity. Recommendations for the Best Paper Award come from chairs of technical meeting sessions and from members at-large (through the Program Committee Chair). THD procedures for THD Best Paper selection require that at least one of the authors be a member of ANS. See <http://thd.ans.org/Bylaws/Procedures.htm#THP9.4>.

This year, because of the postponement of the selection of the 2013 award to this year, we have selected the following two best papers for the 2014 award, one from the NURETH-15 conference (2013) and the other from the ATH '14 (2014):

“Distributed Fiber Optic Temperature Sensing for CFD Code Validation” by S. Lomperski, C. Gerardi and D. W. Pointer, published in the Proceedings of the 15<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-15), Pisa, Italy, May 12-17, 2013; and “Experiments on the Effects of a Spacer Grid in Air-Water Two-Phase Flow” by J. Wheeler, T. Worosz and S. Kim, published in the Proceedings of the Advances in Thermal Hydraulics – 2014 (ATH '14), Reno, Nevada, USA, June 15-19, 2014.

## THS Award Ceremony and TAA Lecture

Recipients of the THD awards will be honored at the THD Award Ceremony, which will be held immediately following the Tuesday morning technical session “General Thermal Hydraulics – II” on November 11 at the upcoming 2014 ANS Winter Meeting. During this event, Professor Reyes will honor us with the TAA Lecture, "[Development of Design Certification Test Programs](#)". Please join us in congratulating all the THD award recipients and

enjoy the TAA lecture, November 11. Congratulations to all our 2014 honorees!

Hisashi Ninokata  
Politecnico di Milano  
2014-2015 Honors and Award Committee Chair  
ANS Thermal Hydraulics Division  
[hisashi.ninokata@polimi.it](mailto:hisashi.ninokata@polimi.it)

## Program Committee Report

The strong THD presence at the ANS national meetings continues after a very positive 2014 ANS Annual Meeting where the embedded ATH'14 Topical Meeting was successfully held. The interest and participation to the technical sessions organized by our division have maintained at a very high level at the upcoming ANS Winter Meeting 2014. Thanks to the support of the session organizers, contributing authors and panelists, and reviewers, the program committee has put together another strong arrangement of sessions for the meeting.

At the 2014 Winter Meeting in Anaheim, THD is organizing a total of nine contributed summary sessions and two panel sessions. A total of 74 summaries were submitted, out of which, based on the reviewer recommendations, a total of 58 summaries are expected to be presented at this Winter Meeting. Again, let us take this opportunity to thank the session organizers and reviewers for their wonderful efforts: over 200 reviews were completed for this Winter Meeting. These sessions, in chronological order, are:

General Thermal Hydraulics – I [Mon. p.m.]  
Experimental Support for System Code Development and Validation: IETs and SETs – Panel [Mon. p.m.]  
General Thermal Hydraulics – II [Tues. a.m.]  
Computational Thermal Hydraulics – I [Tues. p.m.]  
Experimental Thermal Hydraulics – I [Tues. p.m.]  
Thermal Hydraulics Analyst 2.1 – Panel [Tues. p.m.]  
Experimental Thermal Hydraulics – II [Tues. p.m.]  
Computational Thermal Hydraulics – II [Wed. a.m.]  
Experimental Thermal Hydraulics – III [Wed. a.m.]

Computational Thermal Hydraulics – III [Wed. p.m.]  
Young Professional Thermal Hydraulics Research  
Competition [Wed. p.m.]

The 2015 Annual Meeting will be held in San Antonio, TX. For that meeting our division is planning to sponsor seven summary sessions:

- 19a. Two-Phase Flow
- 19c. Thermal Hydraulics in Non-traditional Nuclear Applications
- 19d. Computational Thermal Hydraulics
- 19e. Experimental Thermal-Hydraulics
- 19f. Advanced System Code Development and Analysis
- 19g. Computational Fluid Dynamics Verification and Validation
- 19h. Thermal-Hydraulics: General

In addition to the summary sessions, one panel session is also planned:

- 19b. Thermal Hydraulics Education [Panel]

A copy of Call for Papers for this Annual Meeting can be found at [http://www.ans.org/meetings/c\\_1](http://www.ans.org/meetings/c_1). The website (<http://epsr.ans.org/meeting/?m=144>) is open for summary submission. The published deadline for the submission is January 9, 2015.

The 10<sup>th</sup> International Topical Meeting on Nuclear Thermal Hydraulics, Operation and Safety (NUTHOS-10) will be held December 14-18, 2014 in Okinawa, Japan. Please see the conference website <http://www.nuthos10.org> as well as a report in this newsletter for details.

The 16<sup>th</sup> Internal Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-16) will be held in Chicago from August 30–September 4, 2015. An updated Call for Papers is attached to this newsletter. More details about the conference are available at <http://nureth16.anl.gov/>.

In Anaheim, CA next month, the THD Program Committee meeting will be held on Sunday November 9, 2014, starting at 2:30 p.m in room

Zambezi. Anyone interested in the program committee activities are invited to participate.

Finally, we would like to express our gratitude to all of the colleagues who devote your time to the Division's activities. Thanks to your 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, we 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. We look forward to many more successful years.

Xiaodong Sun  
Ohio State University  
2014-15 THD Program Committee Chair  
Elia Merzari  
Argonne National Laboratory  
2014-15 THD Program Committee Assistant Chair  
[PCChair@thd-ans.org](mailto:PCChair@thd-ans.org)

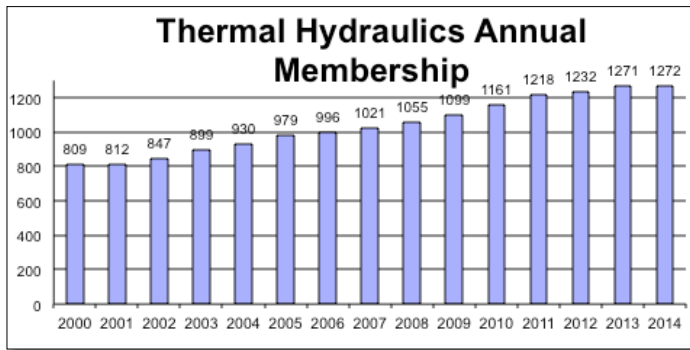
## Report from ATH '14

Special ATH'14 Issue is to be published in Nuclear Technology. As of Oct. 2014, 17 manuscripts have been submitted for publication consideration. Of these, 7 papers have been accepted, 8 are in various stages of review and/or revision, and there are 2 papers that the Editors are having difficulty finding reviewers for and thus, have not yet been reviewed. The Editors expect that the Special Issue will be published online around March 2015 and in print in June 2015.

Donna Post Guillen  
Idaho National Laboratory  
ATH '14 Program Chair  
[donna.guillen@inl.gov](mailto:donna.guillen@inl.gov)

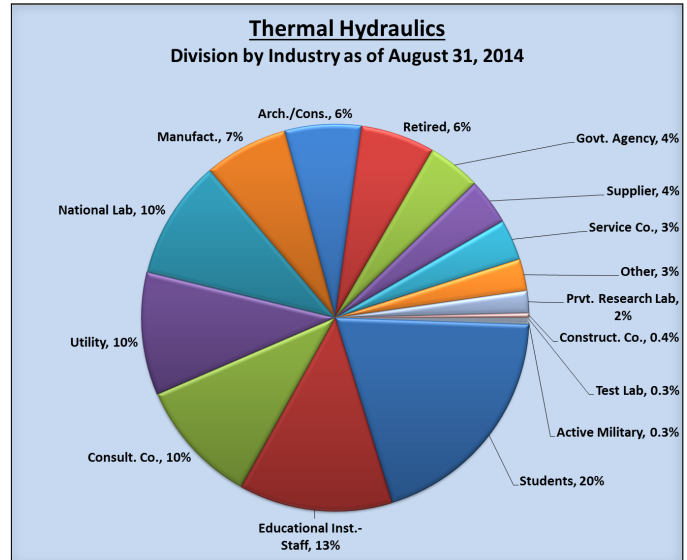
## Membership Committee Report

As shown in the following figure, after years of significant growth, the membership trends for THD have shown signs of leveling off. The THD membership numbers must be viewed in the context of stagnant to slight reductions in overall ANS membership. This can most easily be seen in the increasing fraction of ANS members that have chosen to be members of THD. From 2000 through 2013, the percentage of ANS members that chose to THD members has monotonically increased from 7.2% to 10.6%. The student membership in THD has similar trends to the overall membership. It has increased approximately 80% from 2004 to 2012 before leveling out.



In addition to healthy overall and student membership trends, THD members come from all aspects of the nuclear industry. As shown below, THD has very good representation among students, universities, consulting firms, National Labs, utilities, and architects/construction firms. The THD cordially invites you to become a member of the Division and participate in the Division's activities. Current activities of the Division include paper review, paper presentation, organizing and chairing technical sessions, sponsoring topical meetings, serving on the various subcommittees, including the very active program and honors and awards committees, and supporting student conferences. If you are interested in becoming a member of THD, you can contact ANS membership directly. If you are currently a member and interested in any of the

above activities, please contact any of the THD Officers.



David Aumiller  
 Bettis Atomic Power Laboratory  
 2014-2015 Membership Committee Chair  
 ANS Thermal Hydraulics Division  
 david.aumiller@unnpp.gov

## Young Professional Report

The Thermal Hydraulics Divisions has organized its annual "Young Professional Thermal Hydraulics Research Competition", co-sponsored by the ANS Young Member Group, to be held during the 2014 ANS Winter Meeting. This competition, jointly sponsored by the YMG, includes seven accepted summaries from six unique organizations, demonstrating the sustained interest in this activity. For more information about this competition, please contact: Rui Hu ([rhu@anl.gov](mailto:rhu@anl.gov)), Wade Marcum ([Wade.Marcum@oregonstate.edu](mailto:Wade.Marcum@oregonstate.edu)) or Philippe Bardet ([bardet@gwu.edu](mailto:bardet@gwu.edu)).

The Young Members Group (YMG) is a division of the American Nuclear Society (ANS). YMG provides young professionals with opportunities to expand their technical knowledge and network with

internationally recognized authorities and industry leaders. Part of YMG's mission is to collaborate with other Divisions and Groups in developing technical and non-technical content of particular interest to young professionals for topical and national meetings (for more information on YMG's mission check <http://ymg.ans.org/about-us/our-mission/>).

All regular ANS members 35 years old or younger, or within 5 years of their last degree are YMG members. Moreover, YMG is happy to report that the ANS board recently approved a new initiative for all ANS graduate students to be members of the group as well. It is our hope that many graduate students of THD will actively participate in our activities. The next YMG executive committee meeting will be held In Anaheim on Monday November 10<sup>th</sup> at 11:30 a.m. - 1 p.m. Location: Magic Kingdom 1. Please come and join us!

Among the many activities that are currently ongoing with YMG are: the planning for the Young Professionals Congress 2015 (to be held November 8-12 2015 in Washington, DC), initiatives to foster young member division involvement, and a new scholarship to honor the late Hans Loewen. We are also looking for ways to improve our communication strategy, and We are always looking for energetic young members to get involved in governance. If you are interested in this opportunity or any activities of YMG contact

Rui Hu and Elia Merzari  
Elia Merzari: [emerzari@anl.gov](mailto:emerzari@anl.gov).  
Rui Hu : [rhu@anl.gov](mailto:rhu@anl.gov)

## Website 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. The website is meant to provide up-to-date information on the division's activities. Recent announcements

include the 2014 Young Professional Thermal Hydraulics Research Competition announcement, call for papers to the TH Topical Meeting on Advances in Thermal Hydraulics announcement, and an announcement for NUTHOS-10 and NURETH-16, respectively.

Moreover, 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.

Wade Marcum  
Oregon State University  
2014-2015 Webmaster  
ANS Thermal Hydraulics Division  
[wade.marcum@oregonstate.edu](mailto:wade.marcum@oregonstate.edu)

## Division Contact Information

Current Division Officers and Executive Committee members are listed below.

### Current Year THD Officers (June 2014 – June 2015)

Division Chair:  
Si Young Lee, [si.lee@srnl.doe.gov](mailto:si.lee@srnl.doe.gov)  
Vice Chair/Chair-Elect:  
DuWayne Schubring, [dlschubring@ufl.edu](mailto:dlschubring@ufl.edu)  
Secretary:  
Seungjin Kim, [skim@psu.edu](mailto:skim@psu.edu)  
Treasurer:  
Muftuoglu, A. Kurshad, [kurshad.muftuoglu@ge.com](mailto:kurshad.muftuoglu@ge.com)

### Executive Committee Members

Fan-Bill Cheung (2017) [fxc4@psu.edu](mailto:fxc4@psu.edu)  
Jong Kim (2017) [jongkim@mail.kaist.ac.kr](mailto:jongkim@mail.kaist.ac.kr)  
Si Young Lee (2015) [si.lee@srnl.doe.gov](mailto:si.lee@srnl.doe.gov)  
DuWayne L. Schubring (2015) [dlschubring@ufl.edu](mailto:dlschubring@ufl.edu)  
Xu Cheng (2015) [xu.cheng@kit.edu](mailto:xu.cheng@kit.edu)  
Francesco D'Auria (2015)



francesco.dauria@dimnp.unipi.it  
 Paolo Ferroni (2017) ferronp@westinghouse.com  
 Takashi Hibiki (2015) hibiki@purdue.edu  
 Seungjin Kim (2015) sxk86@psu.edu  
 Kurshad Muftuoglu(2015)  
 kurshad.muftuoglu@ge.com  
 Donna P. Guillen (2017) donna.guillen@inl.gov  
 W. David Pointer (2015) pointerwd@ornl.gov  
 Chul-Hwa Song (2015) chsong@kaeri.re.kr  
 Igor A. Bolotnov (2016) igor\_bolotnov@ncsu.edu  
 Lane B. Carasik (2016) lcarasik@tamu.edu  
 Elia Merzari (2016) emerzari@anl.gov  
 Michio Murase (2016) murase@inss.co.jp  
 Donald Todd (2016) donaltdodd@numerical.com  
 Wade R. Marcum (2017)  
 wade.marcum@oregonstate.edu  
 Hans Gougar\* [hans.Gougar@inl.gov](mailto:hans.Gougar@inl.gov)  
 \* *Chair of the ANS Professional Divisions  
 Committee, ex officio member without vote*

### **Committee Chairs (June 2014– June 2015)**

Program Committee:  
 Xiaodong Sun, sun.200@osu.edu  
 Honors and Awards Committee:  
 Hisashi Ninokata, hisashi.ninokata@polimi.it  
 Nominating Committee:  
 David Aumiller, David.aumiller@unnpp.gov  
 Membership Committee:  
 David Aumiller, [David.aumiller@unnpp.gov](mailto:David.aumiller@unnpp.gov)

The list of contact information is provided by the Nominating Committee. 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.

David Aumiller  
 Bettis Atomic Power Laboratory  
 2014-2015 Nominating Committee Chair  
 ANS Thermal Hydraulics Division  
 David.aumiller@unnpp.gov

## **Student Involvement Report**

### **Annual Winter Meeting Poster Session:**

The ANS 2014 Winter Meeting will feature the annual student poster session that will include THD relevant posters. This poster session allows for undergraduate and graduate students to attend the winter meeting and present their research or professional activities. It is estimated that there will be at least 5 relevant THD posters. The poster session are sponsored and hosted by the Education, Training, and Workforce Development Division and the Alpha Nu Sigma National Honor Society. Additionally, the poster session will be at 11 a.m. to 1 p.m. in the Exhibit Hall on Tuesday November 11<sup>th</sup>.

### **ANS 2015 Texas A&M Student Conference:**

The 2015 student conference will be held at Texas A&M University on April 9-11, 2015. The theme of the conference is “Powering Tomorrow Together” and will feature a focus on the international growth of nuclear applications and power. The conference will feature technical sessions similar to the national meetings and is expected to have several THD relevant sessions. The conference website is at <http://engineering.tamu.edu/nuclear/about/ans-student-conference>. If you are interested in being a reviewer for the research summaries submitted to the conference, please email [ANStechical2015@gmail.com](mailto:ANStechical2015@gmail.com) with your contact information.

Additionally, the Student Section Committee and the Texas A&M Student Conference planning committee expresses great appreciation to THD for its past and current support of the ANS conferences.

## **Community News**

### **Introducing a young member to the THD community**

My name is Paul Harmon. I am a student member of the Thermal Hydraulics division from Oregon State

University (OSU) pursuing a master's degree in nuclear engineering. As a native Oregonian, it is with pleasure that I recently returned to the Willamette Valley. I travelled out of state for my undergraduate degree in mechanical engineering at Grove City College in Western Pennsylvania. Studies there included fundamental fluid dynamics and mechanical vibrations. After graduation, I moved to Boston, Massachusetts and found employment at Axcelis Technologies, Inc. designing and detailing systems in the source region of ion implanters. After working there for two years and gaining valuable experience in new product design, I accepted a department fellowship sponsored by the Nuclear Regulatory Commission to study nuclear engineering at OSU. Having returned to the west coast, I am now taking classes and conducting research in the area of mechanical vibrations due to fluid flow.

member of ASME, serving as president my senior year. This opened up opportunities for participating in engineering competitions and STEM outreach to grade-school children. I hope to participate in and support the American Nuclear Society in the near future.

This spring I conducted experiments in support of research in plate-type fuel for Idaho National Laboratory. Using strain gauges applied to the surface of various thin plates in thin fluid channels and supporting their long edges using specific variations of point and line contacts, I observed and recorded plate vibration after plucking them in air and water. After transforming the data to the frequency domain, I determined their natural frequencies and reported the results with confidence intervals based on variations in measurements over multiple tests. This testing has helped me to appreciate some of the nuances of creating and conducting an experimental method with numerous factors that will be useful in developing my thesis research.

There are many benefits of living in the Pacific Northwest, including scenic hiking, excellent skiing, easy biking, and wonderful tide pools on the coast. I enjoy these activities immensely, and take advantage of them when I can. Football was a formative sport through college, teaching me the value of close teamwork and perseverance in the face of adversity. I continue to enjoy following college football. As an undergraduate, I was an active