

MEETING MINUTES

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting

5:00 – 6:30 pm US Eastern time, Sunday, Nov. 15, 2020

Zoom: <https://oregonstate.zoom.us/j/91067127660?pwd=cVpQTnlUW9BMHBZ1h1RE5UbkRndz09>

Attendees (EC Members, see ATTACHMENT A):

Wade Marcum (OSU), Elia Merzari (PSU), Bao Wen Yang (DEQD, Delta Energy Group), Annalisa Manera (University of Michigan), Fan-Bill Cheung (PSU), Dillon Shaver (ANL), Xiaodong Sun (University of Michigan), Matthew Zimmer (NNL), Igor Bolotnov (NCSU), Lane Carasik (Virginia Commonwealth University), Yang Liu (Virginia Tech), Piyush Sabharwall (INL), Yassin Hassan (Texas A&M), Robert P. Martin (BWXT), Chul-Hwa Song (KAREI), John Luxat (McMaster University), Hisashi Ninokata (Politecnico di Milano), Caleb Brooks (UIUC)

Attendees (Other, see ATTACHMENT A):

Marilyn Delgado (Texas A&M), Minghui Chen (University of New Mexico), Jun Wang (UW), Guillaume Mignot (OSU), Seungjin Kim (Purdue), Steve Arndt (NRC), Subash Sharma (UMASS), David Pointer (ORNL), Mary-Lou Dunzik Gougar (ANS President), Edward Chen (NCSU), Ling Zou (ANL), Jun Fang (ANL), Jake Weinberg (NCSU), Lander Ibarra (ANL), Donna Guillen (Idaho National Laboratory), Guanyi Wang (ANL), Aubrey Whittington (ANS), Cihang Liu, Rodolfo Vaghetto (Texas A&M), Ferry Roelofs (NRG)

Proxies: None

1. Opening: **(Marcum)**

Roll call and quorum met (see **ATTACHMENT A**), Bao-Wen Yang requested for attendees to send email with contact information for record keeping (especially non-EC members).

2. Approval of Meeting Agenda: **(All)**

A DRAFT agenda was provided for approval (See **ATTACHMENT B**)

MOTION: Elia Merzari moved to approve agenda and to add Dr. Song’s request to add the nomination of PC members to 13e.

SECOND: Xiaodong Sun

NO DISCUSSION

APPROVED unanimously

3. APPROVAL OF MINUTES FROM 2020 ANS ANNUAL MEETING: **(Marcum)**

The DRAFT Minutes of the 2022 ANS Annual Meeting are provided for review and approval (**ATTACHMENT C**).

MOTION: Dillon Shaver motioned for approval of minutes
SECOND: Piyush Sabharwall

NO DISCUSSION

APPROVED unanimously

4. Visitors from Student Conferences:
(ATTACHMENT D for student flyer.)

The Program Chair Edward Chen and Financial Chair Jake Weinberg for the 2020, now 2021, ANS Student Conference gave a short update of the upcoming conference. Dates of the conference were confirmed to be April 8th to 10th 2021. All pre-planned panels (13) and workshops (8) are confirmed at this time with also the possibility of more events to be added in the future. Currently the student conference is set to be “in person” and not “virtually online”. The chairs for the conference are planning to meet in January to see what the status of COVID-19 is. Based on the status of COVID-19 sometime in January, they will most likely make a final decision if the conference will take place “in person” or “virtually online,” but for now the conference is scheduled to be for “in person.”

Finances are in good condition. Sponsors for 2020 have agreed to roll over to the new 2021 dates of the conference. Our previous Division donation of \$500 dollars will be rolled over to 2021. Merzari pointed out that an additional \$500-dollar donation from THD, which was approved at the last meeting in June, should increase the THD support donation to a total of \$1000 dollars toward the 2021 student conference in April.

The organizers thanked THD for their contributions and urged continuous support to serve as reviewers and judges.

5. Remarks from ANS Executive Committee: (Danzik Gougar/Arndt)

The ANS President, Mary-Lou Danzik Gougar thanked all Divisions for their work and further recognized THD as the technical heart. She gave an update on the Change Plan for 2020 that was passed in 2019. The Change plan was motivated by the downward trend of membership numbers, revenue and budget deficit of the last few years. Danzik Gougar continued with highlighting key parts of the plan that have already taken effect, such as;

- Concentrating on membership benefits: One new update being a redesign of the Daily Nuclear News Brief Email. It is encouraged that everyone signs up.
- ANS Headquarters Phone: Now ANS Headquarters has a member service call center so that everyone can be correctly directed when calling ANS Headquarters directly.

Danzik Gougar concluded her time with bringing attention to the tech programs scheduled for the week of November 16 to 20th. On 11.16. 20, there will be two keynote speakers. All are invited to virtually attend as the information is to be very thought provoking and should raise excellent questions and awareness. On 11.17.20, representatives from both sectors will lead a virtual discussion on “What is the next big thing in our Industry,” with opportunities to ask questions. On 11.18.20 Mary-Lou will lead a panel on the impact of low dose radiation on people. Discussions will include dosing changes, limits, minimizations, optimizations and so on.

Steven Arndt (ANS Executive Committee Liaison) started by thanking the ANS President and all virtual attendees of the meeting. He then dove into more changes that have taken place from the Change Plan of 2020:

- Individual access to journals, this was not possible before.
- Creating more interesting meetings for Divisions.
- All are encouraged to move forward PDF agendas before meetings start to board committee members.
- THD (Internal Divisions Reward Program) have provided input to the national program about additional awards that should be added to the program. More people deserve to be recognized.
- Please reach out to Arndt directly, if possible, with ideas and questions in regard to improving any of our programs. Of course you can also reach out to other leading members as well.

Arndt and Danzik Gougar concluded with how important it is to “pipe up and help determine the direction of the change plan so that the needs of the various units are met.” The Professional Divisions Committee meets every month, so please make sure THD has representation there.

OPEN DISCUSSION:

QUESTION: Dr. Manera asked if there was an easier way to track meetings in this ANS conference (since there is no Program available).

ANSWER:

- Danzik Gougar explained that everyone can create their own meeting calendar on the website by choosing what meetings you want to attend. She promised to look into how to make the “Program” available in the future.
- Arndt said from next week on they would “try” to make it easier to navigate meeting options.

Marcum commented that Craig Piercy (ANS CEO) has been doing a great job with communicating with divisions across the board, getting things together and having everyone stay on the stay page.

6. ACTION ITEMS FROM 2020 ANS ANNUAL MEETING:

- a. NC to Propose Members for subcommittee to re-write procedures document (Song)
- b. Write proposal for a revised rule on membership committee (Merzari)
- c. NC to work with CSC to define a procedure to populate committee (Song)
- d. Bylaws and Awards (Merzari)

Item 6a: NC to Propose Members for subcommittee to re-write procedures document

Dr. Song proposed that Merzari lead a special committee, with 4-5 volunteers, to prepare updated draft procedure document for revision to bring up in the next June Division meeting for all the board to vote on. In no particular order the volunteers are (see list below) are invited to form a special committee to rewrite procedure document and all the committee chairs will be invited to review this document.

Elia Merzari (Chair), Wade Marcum, Chul-Hwa Song, (~~Lane Carasik~~)**
Bob P. Martin, Xiaodong Sun

[**Update: After the EC meeting, Dr. Lane Carasik requested to not be included on the new subcommittee regarding the rules/bylaws due to his additional responsibilities within ANS National + his employer (Virginia Commonwealth University).]

MOTION: No need (led by nominating committee)
SECOND: No need (led by nominating committee)

NO OPEN DISCUSSION

APPROVED unanimously

Item 6b: Write proposal for a revised rule on membership committee

Discussion led by Dr. Merzari. The rule as it is written is very vague, Merzari advised that is not the time to revise a prescriptive rule. The Membership Committee should attempt a different structure instead. Dr. Merzari will work on a more comprehensive proposal for next meeting. Dr. Merzari emphasized that this is not for changing the bylaws but more so for restructuring how the committee can work more efficiently, especially online so that we can reach more people. For instance, taking advantage of regular monthly webinars so that we can reach a broader range of members. We are, by far, the division with most numbers of the ANS meeting (we have about one quarter of the papers in the ANS meeting), and yet our membership is below several divisions (including PRV, OPD, Fuel Cycle). We are not even in the top three for the total membership.

Marcum explained the action will be left open for restructure and not to be put to vote to change the bylaw.

OPEN DISCUSSION:

QUESTION: Yang asked if there are statistics on papers, suggested approaching authors for potential memberships.

ANSWER: Merzari answered that currently there are no statistics. ANS could potentially be asked to put a statistic together.

Marcum mentioned short term memberships will be easier to get for conferences and so on, so a future statistic of which Divisions new members are supportive of is possible moving forward.

Merzari proposed a new tracking of memberships as well.

Prof. Hassan raised a concern for how much time is spent on papers. Papers were perhaps most important some years ago, but we must concentrate now on other areas. Hassan pointed out most of the current members are from academic or national labs, he suggested to increase efforts in recruiting new members from industry.

Dr. Bob Martin mentioned that one of the reasons for declining industry membership stems from different occupational performance metrics between the “publish or perish”

lab/academia community and industry. The publication outlet provided by ANS encourages lab/academia members at the expense of industry members.”
ACTION TO BE LEFT OPEN UNDER MERZARI’S LEADERSHIP AND OTHER VOLUNTEERS.

No further discussion.

Item 6c. NC to work with CSC to define a procedure to populate committee (Song)

Dr. Song stated that this subject was mostly covered in 6a discussion. Dr. Song stated that the task force will continue to review.

No further discussion.

Item 6d. Bylaws and Awards (Merzari)

Dr. Merzari confirmed the approval of extensive changes to the bylaws in July which are now in effect and can be viewed online. Also two new awards were approved and funded (to start to be awarded in 2021) which can also be viewed online. Awards are carefully described in the newsletter. (See **ATTACHMENT E**)

No further discussion.

7. Chair Report (Marcum)
(Refer to Chair Report - **ATTACHMENT E**)

- a. Esposito Scholarship Establishment (**ATTACHMENT F**) Marcum
- b. Report from Professional Divisions Workshop Marcum
- c. Report from President’s Meeting with Division Chairs (**ATTACHMENT G**) Marcum

Dr. Marcum spoke about Esposito Scholarship (refer to **ATTACHMENT F**): The family will donate \$75,000 dollars by end of year 2020 for the scholarship. The family asks that the scholarship will be a Graduate scholarship with no other specifics detailed to that. Also, Dr. Esposito to be part of the selection of recipient for the scholarship bearing his name with input and final approval still under the THD.

Dr. Marcum agreed to Esposito family requirements of Scholarship so funds can be dispersed and received by the division by the end of the 2020 calendar year.

OPEN DISCUSSION:

Dr. Martin raised concern over reactor safety language.

Dr. Marcum addressed that Reactor safety language to possibly change if not effective.

Dr. Marcum further explained that 1st year Master’s, PhD, Graduate certificate may be eligible to apply for the Esposito Scholarship. It is a one-time scholarship that is available for only one year when received.

Dr. Marcum Notes that there is no mention of fiscal need in family’s language for scholarship.

Dr. Martin mentioned that ANS does already have scholarships for fiscally troubled students.

Dr. Carasik pointed out that since we already have two merit based scholarships, he encouraged everyone to be open minded to students not only based on merit because some students (doesn't matter what graduate year) may have been working while in school and wonderful valid work should not go unnoticed.

Dr. Marcum proposed to include a sub bullet for demonstrative fiscal need for Scholarship.

QUESTION: Dr. Yang: did family indicate how candidate is to be picked? He commented that the criteria looked very general and basic without any specification of merit or need basis, it only asks to be first year graduate student with ANS service record. Is it the family's intention to leave the decision to THD to define the criteria (merit or need or other basis)?

ANSWER: Dr. Marcum responded that the family has a high level of trust in the Division to pick someone for the scholarship which is why the language of the family for the scholarship is so broad.

MOTION: Dr. Marcum proposed to modify the document to include a third sub bullet for demonstrable fiscal need for Scholarship.

SECOND: Xiaodong

OPEN DISCUSSION:

Prof. Luxat mentioned potential record building for students applying. The recommendation is to get nominations in before the end of the year for the following September of candidate.

Dr. Marcum agreed. He stated that the family put strong emphasis on the few bullet points, including the requirement of being a "first year" student. In order to do so, the family increased their original planned contribution from 60K to 75K in order to support a scholarship of \$3000/year.

No more discussion.

APPROVED unanimously

MOTION: Marcum proposed to move forward with proposal, which includes the modified 3rd sub bullet for demonstrable fiscal need for Scholarship.

SECOND: Luxat

APPROVED unanimously.

Marcum expressed appreciation for the dedication of its members. Because of shortness of time, Dr. Marcum doesn't go into full detail. His full report is on the THD website. The report is also provided in **ATTACHMENT G**.

More information on the Esposito Scholarship can be found on the ANS website and in **ATTACHMENT F**.

8. Treasurer's Report (Manera)

Dr. Manera presented the treasurer report on the financial status of THD, she also referred to her Report, which is also published in the last newsletter. The report is also provided in **ATTACHMENT H**.

Key Points:

-

-No changes in budget expenses since last meeting.

NO DISCUSSION

9. Program Committee Report

(Bolotnov)

Dr. Bolotnov provided the dates below:

ATH 2022:	Meeting will have 25 sessions
2021 ANS Annual Meeting:	Meeting will have 9 sessions
2021 ANS Winter Meeting:	Meeting will have 12 sessions and 2 panels
NURETH-19:	Date has been postponed

OPEN DISCUSSION:

Dr. Roelofs updated on the status of NURETH-19 – deadlines for papers were not updated even though NURETH-19 has been postponed to March 2022. In order to minimize impacts for future meetings, including NUTHOS-13, the paper deadlines will not be postponed for more than 3 to 4 months.

For ATH'22, Dr. Sun reported that the organizing team proposes to keep the current ATH meeting dates for 2022 in June as an embedded meeting to the ANS Annual Meeting. The organizing team believes it will not pose any more impact to other meetings than moving to Nov. 2022 as an embedded meeting to the 2022 ANS WM. Detailed discussion was presented in the PC meeting. Dates can be seen online. **See ATTACHMENT I.**

Dr. Merzari – Is concerned with having so many meetings so close together in regard to ATH 2022.

Marcum explained options:

Option 1- Take no action

Option 2- Alternate thereof

Dr. Sun– when inquired by the Chair, stated that the organizing team did not plan to make a motion to change the current ATH'22 meeting dates.

OPEN DIALOGUE:

Dr. Merzari: encouraged dialogue from Historical members discussing 3 THD meeting within 6 months.

Prof. Cheung indicated that travel funds should remain the same. The dates should not change because we should expect more papers that are not presented in this period. Things should potentially go well. If they do not, we will learn from our mistakes.

Dr. Zimmer and Dr. Manera: Raised budget issues and concerns having enough papers for all meetings.

Dr. Sun: Suggested that dates should not be changed because audiences are quite different for the three conferences and there will be enough papers for ATH'22 even if the dates remained.

Dr. Yang: Due to all the cancellations of conferences/meeting, agreed with Prof. Cheung that more papers should be expected in 2022 because many researchers will be presenting their work during this pandemic period. He emphasized that there should be no difference in budget for meeting in June or Nov., because most of the companies'/schools budget annually.

Dr. Merzari: Raised awareness that people are not holding onto to papers. People are skipping conferences and just publishing/submitted in journals.

Prof. Sun: Encourages to leave dates as is. Says we have enough papers.

Prof. Sun volunteered, together with Merzari, to discuss with Paula and find out about the decision deadline.

Dr. Marcum summarized that Dr. Sun and Dr. Merzari will contact Paula (Cappelletti) of ANS on when the decision needs to be made on dates. The cutoff date to make a decision is not yet clear. Dr. Yang clarified that the follow up action, if needed, can be decided through an e-voting or an ad hoc zoom meeting.

[Update: Dr. Merzari emailed Paula Cappelletti of the ANS HQ after the conclusion of the THD PC/EC meeting and Paula replied that she would like to know the THD's decision on the ATH'22 date ASAP since the ANS HQ was in the process of evaluating the hotel meeting space for the possibility of embedding another topical meeting to the ANS 2022 Annual Meeting.]

10. Membership Committee Report (Dr. Song)

Dr. Song reported that recent statistics says 200 members have been lost. Dr. Merzari and Dr. Marcum pointed out that membership is usually low at this time of year, which will normally recover later on. This information can be found online and in **ATTACHMENT J**.

NO DISCUSSION

11. Division Website Report (Delgado)

Ms. Delgado updated the committee on the status of the website and said that she intends to ask for statistics to see what pages are visited most. See in **ATTACHMENT K** and on website. Delgado was praised by the Chair (Dr. Marcum) and other members of THD for her excellent work on maintaining the website.

12. Honors and Awards Committee Report (Kim)

Prof. Kim presented the H&A Committee Report (**ATTACHMENT L**):
a. THD Technical Achievement Award – awarded to Dr. Podowski

- b. THD Best Paper Award – In process
- c. Conference Best Paper Award – In possible process (organizers were given option to select the BPA due to the COVID-19 pandemic)

Dr. Merzari pointed out that the THD has allowed conference organizers to select the BPA for their conferences prior to the COVID-19 pandemic.

The report can be viewed on website and in **ATTACHMENT L**.

13. Nominating Committee Report **(Song)**

- a. Nomination of New Division Officers (**ATTACHMENT M**)

Division Chair: Elia Merzari
Vice Chair/Chair Elect: Boa-Wen Yang
Secretary: Annalisa Manera
Treasurer: Igor Bolotnov

APPROVED unanimously

Motioned to nominate Yassin Hassan, Hisashi Ninokata and Xiaodong Sun to serve the H&AC member for a 3-year term to be expired in June 2024, and Xiaodong Sun is nominated to serve the H&AC chair for a 3-year term.

APPROVED unanimously

- b. Nomination of New Division EC Members (**ATTACHMENT M**)

APPROVED unanimously

- c. Nomination of Scholarship Committee Members (**ATTACHMENT M**)

APPROVED unanimously

- d. Nomination of Conference Selection Committee Chair and Members (**ATTACHMENT M**)

APPROVED unanimously

- e. Nomination of PC members (**ATTACHMENT M**)

APPROVED unanimously

14. Old Business **(All)**

- a. Update from NURETH 40th Anniversary Subcommittee (Cheung)

Prof. Cheung updated that a committee of 8 met in August and agreed on one idea. They are going to publish a new special issue of Nuclear Engineering and Design

summarizing the progress so far and highlighting the challenges ahead of Thermal Hydraulics. In order to publish papers online, arrangements must be made with publishers. The peer review process must be done before Thanksgiving so that publishing can happen.

For the issue on PC member, Prof. Cheung suggests that the division only accept up to 3 “brand new” members as to not reach our current 75 max in a too fast pace. We currently have 54 members in total. Dr. Bolotnov supports this suggestion. – This will be considered by Dr. Bolotnov and other members in the next Membership Committee meeting.

MOTION: Cheung motioned that the division only accept up to 3 “brand new” members every year.

SECOND: Bolotnov

NO DISCUSSION

APPROVED: with 14 votes yay and one nay

15. New Business **(Marcum)**

a. NURETH-19 was discussed earlier.

OPEN DIALOGUE:

Dr. Zimmer updated that YMG will host a webinar once a week in 2020. They are looking for content geared toward THD. Webinars would be about an hour and thirty minutes. Dr. Marcum thanked Dr. Zimmer for his work.

16. Adjournment **(Marcum)**

MOTION: Elia motions to adjourn

SECOND: Wang

APPROVED unanimously

ATTACHMENT A
LIST OF ATTENDEES

Roll call

**American Nuclear Society - Thermal Hydraulics Division
Executive Committee Meeting**

5:00 - 6:30 PM US Eastern time, Sunday, Nov. 15, 2020

Zoom: <https://oregonstate.zoom.us/j/91067127660?pwd=cVpQTnlUW9BMHBJZ1hIRE5UbkRndz09>

Executive Committee Members

Name	Organization	Present (Mark as Present)
Wade Marcum	OSU	Present
Elia Merzari	PSU	Present
Bao-Wan Yang	DEQD, Delta Energy Group	Present
Annalisa Manera	University of Michigan	Present
Chul-Hwa Song	KAERI	PRESENT
Yang Liu	Virginia Tech	Present
John Luxat	McMaster University	PRESENT
Hisashi Ninokata	Politecnico di Milano	Present
Piyush Sabharwall	INL	PRESENT
Fan-Bill Cheung	PSU	Present
Yong Hoon Jeong	KAIST	NOT PRESENT
Dillon R. Shaver	Argonne National Laboratory	Present
Xiaodong Sun	University of Michigan	Present
Matt Zimmer	FMP	Present
Fatih Aydogan	Jacksonville University	NOT PRESENT
Igor Bolotnov	NCSU	Present
Lane Carasik	VCU	Present
Yassin Hassan	TAMU	Present
Robert P. Martin	BWXT	Present
Caleb Brooks	UIUC	Present

ATTACHMENT A (CONT...)

LIST OF ATTENDEES

Roll call

American Nuclear Society - Thermal Hydraulics Division

Executive Committee Meeting

5:00 - 6:30 PM US Eastern time, Sunday, Nov. 15, 2020

Zoom: <https://oregonstate.zoom.us/j/91067127660?pwd=cVpQTnlUW9BMHBjZ1hIRE5UbkRndz09>

Other Attendees

Marylin Delgado		Present
Minghui Chen		Present
Jun Wang		Present
Guillaume Mignot		Present
Seungjin Kim		Present
Donna Guillen		Present
Martin Lopez		Present
Jinyong Feng		Present
Shanbin Shi		Present
Steven Arndt		Present
Subash Sharma		Present
David Pointer		Present
Lander Ibarra		Present
Xu Wu		Present
Ling Zou		Present
Jun Fang		Present
Rodolfo Vaghetto		Present
Guanyi Wang		Present
Mary-Lou Dunzik Gougar (ANS President)		Present
Aubrey Whittington		Present
Jake Weinberg		Present
Cihang Liu		Present
Edward Chen		Present
Ferry Roelofs (NRG)		Present

ATTACHMENT B

PROPOSED AGENDA

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting
5:00-6:30 pm US Eastern time, Sunday November 15, 2020

Zoom: <https://oregonstate.zoom.us/j/91067127660?pwd=cVpQTnluUW9BMHBjZ1hIRE5UbkRndz09>
Zoom Password: 718144

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|---|-----------------|
| 1. Opening | Marcum |
| 2. Approval of Meeting Agenda | All |
| 3. Approval of Minutes from 2020 ANS Annual Meeting | All |
| 4. Visitors from Student Conference | |
| 5. Remarks from ANS Executive Committee | Arndt |
| 6. Action Items from 2020 ANS Annual meeting | |
| a. NC to Propose Members for subcommittee to re-write procedures document | Song |
| b. Write proposal for a revised rule on membership committee | Merzari |
| c. NC to work with CSC to define a procedure to populate committee | Song |
| d. Bylaws and Awards | Merzari |
| 7. Chair Report | |
| a. Esposito Scholarship Establishment | Marcum |
| b. Report from Professional Divisions Workshop | Marcum |
| c. Report from President's Meeting with Division Chairs | Marcum |
| 8. Treasurer's Report | Manera |
| 9. Program Committee Report | |
| a. THD Sessions for ANS 2020 Virtual Winter Meeting | Bolotnov/Shaver |
| b. THD Program for 2021 Annual Meeting | Bolotnov/Shaver |
| c. THD Planning for 2021 Winter Meeting | Bolotnov/Shaver |
| d. NURETH-19 Update | Roelofs |
| e. THD Planning for AHT'2022 Embedded Topical | Song/Sun |
| 10. Membership Committee Report | Song |
| 11. Division Website Report | Delgado |
| 12. Honors and Awards Committee Report | Kim |
| a. TAA Update | |
| b. Division Best Paper Award Update | |
| c. Best Paper Conference Awards | |
| 13. Nominating Committee Report | Song |
| a. Nomination of New Division Officers | |
| b. Nomination of New Division EC Members | |
| c. Nomination of Scholarship Committee Members | |
| d. Nomination of Conference Selection Committee Chair and Members | |
| 14. Old Business | All |
| a. Update from NURETH 40 th Anniversary Subcommittee | Cheung |
| 15. New Business | |
| a. NURETH-19 | Marcum |
| 16. Adjournment | Marcum |

ATTACHMENT C

Meeting Minutes of 2020 AM- THD EC Meeting

MEETING MINUTES

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting
5:00 – 6:30 pm US Eastern time, Sunday, June 7, 2020
Zoom: <https://us02web.zoom.us/j/88903836511>

Attendees (EC Members, see Appendix A): Wade Marcum (OSU), Elia Merzari (PSU), Bao Wen Yang (DEQD, Delta energy group), Annalisa Manera (University of Michigan), Fan-Bill Cheung (PSU), Dillon Shaver (Argonne National Laboratory), Xiaodong Sun (University of Michigan), Matt Zimmer (NCSU), Igor Bolotnov (NCSU), Lane Carasik (Virginia Commonwealth University), Yassin Hassan (Texas A&M), Robert Martin (BWXT).

Attendees (Other, see Appendix A): Marilyn Delgado (Texas A&M), Minghui Chen (University of New Mexico), Jun Wang (UW), Caleb Brooks (UIUC), Guillaume Mignot (OSU), Seungjin Kim (Purdue), Jong Kim (KAIST), Karen Vierow Kirkland (Texas A&M), Jinyong Feng (MIT), Shanbin Shi (RPI), Steve Arndt (NRC), Subash Sharma, David Pointer (ORNL), Ishita Trivedi (NCSU), Mary-Lou Dunzik Gougar (ANS president), Edward Chen (NCSU), Ling Zou (ANL), Jake Weinberg (NCSU).

Proxies (EC Members, see Appendix A): Chul-Hwa Song (KAERI) to Wade Marcum, John Luxat (McMaster University) to Bao-Wen Yang, Hisashi Ninokata (Polimi) to Wade Marcum.

1. Opening Chair

Meeting call to order 5:05 pm. Roll call and quorum met (see **Appendix A**).

2. Approval of Meeting Agenda All

A draft agenda was provided (**Appendix B**).

MOTION: Dr. Carasik moved to approve the agenda, with the items 4 and 5 before 3.

SECOND: Bao-Wen Yang.

No discussion.

APPROVED unanimously

3. Visitors from Student Conferences

The chairs for the 2020 student conference gave a presentation, led by conference chair Ishita Trivedi. Ed Chen (program chair) and Jake Weinberg also participated in the presentation. It was noted that the conference was moved to 2021. The conference will be in Raleigh. The 2020 student conference was cancelled.

The organizers mentioned that the financial planning for the 2021 conference proceeds speedily. They have retained 86% of sponsorship revenue.

ATTACHMENT C (Cont.)

The goal of the organizers is to transition everything done for 2020 to 2021. But the program (paper submission and review) will need to be re-done. The organizers thanked reviewers and judges and good participation from THD. Thermal-hydraulics was one of the most popular with 18 out of roughly 120. It is unclear what will be done with old papers. However resubmittal will be required for presentation at the 2021 conference. The organizers noted that the program required extensive planning and it included 13 panels.

The organizers asked the division to consider financial support or award for best paper. A discussion ensued. It was clarified that THD funding was usually allocated to that, but in this instance they have been used for general fund. It was suggested in the discussion to consider using the 2021 THD student conference allocation for this. The discussion was postponed to the treasurer report stage.

4. Remarks from ANS Executive Committee Kelly

Mary-Lou Danzik Gougar (incoming president) introduced herself. She communicated that the board of directors passed the Change 2020 plan. She noted the appointment of Craig Percy as the CEO and an ongoing review and reorganization of staff at ANS. She mentioned that temporarily the board agreed on 25% (division)-75% (HQ) share for the organization of topical meetings. She also gave a particular thanks to students and young members for being pioneers on the virtual meeting.

5. Approval of Minutes from 2019 ANS Winter Meeting All

The Minutes of the 2019 ANS Winter Meeting are provided in **Appendix C**.

MOTION: Approve the minutes (Bob Martin)

SECOND: Lane Carasik

No discussion

APPROVED unanimously.

6. Action Items from 2019 ANS Winter Meeting
- a. Activity on Subcommittee to Support the NURETH 40th Anniversary Merzari
 - b. Proposal on Sehgal's Memorial Award Selection Criteria J. Kim/Schubring
 - c. Proposal on Revision of Division Bylaws & Rules and Procedures Merzari/Martin
 - d. Proposal on Service Award Merzari
 - e. Award Fund Increase to Support TAA Monetary Award B.-W. Yang

Item 6a. The Nominating committee has the action to fill committee. Discussion and motion are postponed to item 13.

Item 6b. Discussion on "Proposal on Sehgal's Memorial Award Selection Criteria" based on document by Honors and Awards Committee provided in **Attachment D (Honors and Awards report)**. The H&A committee did not reach consensus on a proposal due to a lack of consensus on the definition of "early career" requirements. A proposal was prepared at the behest of the THD chair and forwarded to the committee defining "early or mid-career" as within 20 years of the highest degree (see Attachment D.3).

ATTACHMENT C (Cont.)

A lengthy discussion followed on the other requirements in the proposal and in particular the publication requirement. Some urged to postpone vote on the award to reconsider the requirements but other expressed a strong desire to approve the award as soon as possible to ensure the first awardee will be at NURETH-19.

MOTION: To accept the award selection criteria proposal as stated in Attachment D.3 (Merzari).

SECOND: Cheung.

AMENDMENT: Modify proposal such as the publication requirement be: "The candidate must have published at least five (5) articles in NURETH, NUTHOS, ATH, ANS Meetings or relevant journals, with articles presented at a minimum of (2) different NURETH meetings." (Carasik)

SECOND: Bob Martin

No further discussion.

Amendment APPROVED unanimously.

Amended motion APPROVED unanimously

Item 6c. The bylaws task force formed of Dr. Song, Dr. Martin, Dr. Sun and Dr. Merzari reviewed the bylaws/rules changes in recent years. It was discovered that several changes were not submitted to the ANS Bylaws and rules committee making them inactive. Moreover some of the changes are poorly documented on the minutes of the division. The task force thus collected recent changes and proposed a comprehensive revision of the bylaws. (**Attachment E**).

MOTION: Modify bylaws as stated in **Attachment E**. (Sabharwall)

SECOND: Sun

No discussion.

APPROVED Unanimously

The bylaws task force also found the procedures of the division are out of date (often by decades). The task force recommended a committee to update the procedures in coordination with the committee chairs of the division.

MOTION: Form a dedicated subcommittee involving all committee chairs with the goal or re-writing entirely the procedures document. (Shaver)

SECOND: Yang

APPROVED Unanimously

ACTION (Nominating committee): Propose committee members.

Finally the bylaws task force prepared a new rule for the establishment of a scholarship committee (**Attachment F**).

ATTACHMENT C (Cont.)

MOTION: Motion for new rule 9.6 establishing a scholarship committee as stated in **Attachment F** (Shaver).
SECOND: Hassan

APPROVED unanimously.

Item 6d. The H&A committee prepared a proposal for the selection criteria for the Service award (**Attachment D**). The creation of a service award was already approved at the last meeting.

MOTION: Approve selection criteria for the service award as stated in **Attachment D.1**. (H&A committee)
SECOND: Not required

APPROVED unanimously.

Item 6e. The TAA monetary increase was already voted upon at the last meeting. It has already been approved by ANS as of November 2019.

7. Chair Report
- a. Report from Professional Divisions Workshop Marcum
 - b. Report from President's Meeting with Division Chairs Marcum

Dr. Marcum provided only a brief update given the time constraints. It was pointed out that that a new quarterly meeting of CEO with division chairs is now scheduled. A detailed report is provided in **Attachment G**.

8. Treasurer's Report B.-W. Yang
- a. Status of the Division Finances
 - b. Potential Impact of the ANS Change Plan 2020

The Treasurer (Dr. Yang) discussed the financial situation of the division, that remains healthy. A detailed financial report, extracted from the newsletter, is in **Appendix H**.

MOTION: Adopt proposed budget with the stipulation that the 2500\$ for student support are allocated as follows: 2000\$ for ANS meetings and 500\$ for 2021 student conference funding a best paper award (Merzari).
SECOND: Carasik.

In the discussion it emerged that likely the funded allocated for plaques and awards is insufficient.

AMENDMENT: Amend the budget to increase plaque and awards amount to 1250\$ (Sun).
SECOND: Sabharwall.

No further discussion.

Amendment APPROVED unanimously.

No further discussion.

ATTACHMENT C (Cont.)

Amended motion APPROVED unanimously.

- | | |
|---|---------------------------------|
| 9. Program Committee Report | |
| a. 2020 ANS Annual Meeting Program in Phoenix, AZ | Bolotnov |
| b. 2020 ANS Winter Meeting Program in Chicago, IL | Bolotnov |
| c. 2021 ANS Annual Meeting in Providence, RI - Session Planning | Bolotnov |
| d. ATH 2022 Planning | Song/Sun |
| e. NURETH-18 Update | Marcum |
| f. ATH 2020 Update | Benhamadouche /Bolotnov/Merzari |
| g. NUTHOS-13 Update | Ninokata/Sun/Merzari |
| h. NURETH-19 Update | Roelofs |
| i. ICAPP 2020 Update | Sun/Bolotnov |
| j. Motions from the PC Meeting | Bolotnov |

Refer to PC meeting minutes.

- | | |
|---------------------------------|---------|
| 10. Membership Committee Report | Pointer |
|---------------------------------|---------|

The membership committee report is extracted from the newsletter in **Attachment I**.

A Discussion ensued on the membership committee issues, including an unclear rule about the membership of the committee. Dr. Pointer recommended to change the rule to be more reflective of current practice.

ACTION: To write a proposal for a revised rule on membership committee (Merzari)

- | | |
|-----------------------------|---------|
| 11. Division Website Report | Delgado |
|-----------------------------|---------|

Ms. Delgado updated the committee on the status of the website. The committee expressed sincere appreciation for her work.

- | | |
|--|------------------|
| 12. Honors and Awards Committee Report | Schubring |
| a. Proposal on Sehgal's Memorial Award | Schubring/J. Kim |
| b. Others | |

Discussed in item 6.

- | | |
|--|---------|
| 13. Nominating Committee Report | Pointer |
| a. Election for New Division Officers | |
| b. Election for New Division EC Members | |
| c. Candidates for NURETH-20 Conference Screening Committee Members | |
| d. Others | |

Dr. Pointer mentioned the result of the recent ANS elections (**Attachment J – Nominating committee report**). In the nominating committee report it is also mentioned that there is currently an inconsistency between bylaws and rules and the practice concerning the Conference selection committee (SCS). This is related to the issues with the bylaws discussed in item 6. The nominating committee postponed nominations to the CSC

ATTACHMENT C (Cont.)

ACTION ITEM (Nominating committee): Nominating committee to work with CSC to define a procedure to populate the committee and be consistent with bylaws.

Regarding program committee membership, the nominating committee brought forward three motions (they do not need a second).

MOTION: Renew the term of the following 29 Program Committee members through 2022.

- | | |
|-----------------------|-----------------------|
| 1. Steven Arndt | 16. Y. Liu |
| 2. Fatih Aydogan | 17. John Luxat |
| 3. Steven Bajorek | 18. Robert Martin |
| 4. Philippe Bardet | 19. Kurshad Muftuoglu |
| 5. Sama Bilbao y Leon | 20. Hisashi Ninokata |
| 6. Lane Carasik | 21. W. David Pointer |
| 7. H. Chang | 22. Shripad Revankar |
| 8. Xu Cheng | 23. Jovica Riznic |
| 9. Fan-Bill Cheung | 24. Piyush Sabharwall |
| 10. Cesar Frepoli | 25. Chul-Hwa Song |
| 11. Yassin Hassan | 26. Xiadong Sun |
| 12. Rui Hu | 27. Brian Woods |
| 13. Jong Kim | 28. Bao-Wen Yang |
| 14. Seungjin Kim | 29. Ling Zou |
| 15. Si Young Lee | |

APPROVED unanimously.

MOTION: Transition the following 12 Program Committee members to the advisory council with the term expiring in 2025.

- | | |
|----------------------|---------------------------|
| 1. David Aumiller | 7. J.-M. LeCorre |
| 2. Emilio Baglietto | 8. Michael Podowski |
| 3. Brian Collins | 9. Pradip Saha |
| 4. Francesco d'Auria | 10. DuWayne Schubring |
| 5. Randall Gaunt | 11. Kune Suh |
| 6. Takashi Hibiki | 12. Karen Vierow Kirkland |

APPROVED unanimously.

MOTION: Appoint following active THD members to Program Committee membership with terms expiring in 2023.

1. Seung Jun Kim (LANL)
2. Guillaume Mignot (Oregon State)
3. Lander Ibarra (ANL)
4. Shanbin Shi (RPI)
5. Rodolfo Vaghetto (TAMU)
6. Jun Wang (Madison)
7. Su-Jong Yoon (INL)
8. Matthew Zimmer (KAPL)

APPROVED unanimously.

ATTACHMENT C (Cont.)

Dr. Pointer pointed out that the PC has 55 total members with terms expiring in 2020 (7 members), 2021 (10 members), 2022 (30 members) and 2023 (8 members).

At the November 2019 ANS Winter Meeting, the Executive Committee authorized the creation of a special committee to organize a celebration of the 40th anniversary of NURETH at the November 2020 ANS Winter Meeting. The Nominating Committee brings the following MOTION to the Executive Committee.

MOTION: Appoint the following members to the NURETH 40th Anniversary Celebration Committee.

1. Fan-Bill Cheung, Pennsylvania State University (Chair)
2. Yassin Hassan, Texas A&M University
3. Lane Carasik, Virginia Commonwealth University
4. Dillon Shaver, Argonne National Laboratory
5. Elia Merzari, Pennsylvania State University
6. Igor Bolotnov, North Carolina State University
7. Subash Sharma, University of Massachusetts at Lowell
8. Bao-Wen Yang, Delta Energy Group

In the discussion, Dr. Hassan points out the need to recognize founding members of NURETH and THD in this effort.

APPROVED unanimously.

14. Old Business All

No old business.

15. New Business All
a. Actions from Professional Divisions Workshop Marcum
b. Actions from President's Meeting with Division Chairs Marcum
c. Others All

No new business.

16. Adjournment Chair

MOTION: Adjourn (Yang).

SECOND: Merzari.

APPROVED unanimously.

Meeting adjourned at 7:30 pm.

ATTACHMENT D



ANS

Student Conference 2021

North Carolina State University



Nuclear
Engineering

April 8-10, 2021 | Raleigh Marriott City Center | Raleigh, North Carolina



Sponsorship & Exhibition Prospectus



American Nuclear Society
North Carolina State University

April 8th-10th, 2021

Raleigh Marriot City Center

Raleigh, North Carolina

ATTACHMENT D (Cont...

Greetings from the 2021 Planning Committee

Dear Prospective Sponsors and Exhibitors,

We in the Department of Nuclear Engineering and American Nuclear Society at North Carolina State University are eagerly looking forward to April 2021 when we will host students, professionals, and the future leaders in nuclear science and technology at the 2021 ANS Student Conference in Raleigh, North Carolina.

Due to the COVID-19 outbreak, the student conference was rescheduled from its original March 2020 dates, however the organizing team and ANS National are working hard to smoothly transition all plans to the new 2021 dates. We thank all those who were involved in the initial planning phases, including all sponsors and exhibitors, and we hope we can count on your help for planning a successful student conference in 2021. Additionally, if you previously committed sponsorship, the various levels will remain the same and be honored for the 2021 conference.

At North Carolina State University, we aim to...

... **ENLIGHTEN** ourselves about nuclear science and technology as we share and contribute to the field. This student conference brings us together to share insight from student and expert researchers on theories, applications, and innovations. Nuclear science and engineering is ubiquitous in society – from energy, health, defense, non-proliferation, to name a few. In such a widespread field, this conference provides the perfect platform for experts and students to come together and learn about the various ongoing cutting-edge research in different areas of nuclear science and engineering. In the year 2021, we aim to take stock of what we know, what we still need to know, what opportunities are present, and what the future holds.

... **EMBRACE** nuclear science and technology. As we learn, we must support our industry by contributing knowledge and impacting the next frontiers. We hold tight innovations to advance science and engineering across every existing and new industry that nuclear will transform.

... **EMPOWER** ourselves and others with knowledge and enthusiasm for the impact made by nuclear technologies of the past, present, and future. We will change the “not in my backyard” mantra to one of “in my backyard” because of the benefits it provides to societies near and far.

This theme allows us to see our collective role in active learning, living, and sharing of the science engineering and technologies associated with nuclear energy, health physics, plasmas for the life sciences, nuclear non-proliferation, nuclear materials, nuclear computational science, reactor engineering, and nuclear waste management to name a few broad areas. It also arms us with information to share with students and the larger public about the benefits we receive from nuclear science and engineering. We're nuclear engineers, we're innovators, and we're ambassadors for the continued use of an awesome technology in our backyards!

NC State marked the 70th year for its nuclear program in 2020, which, further emphasizes the significance of hosting the ANS Student Conference on-campus to help celebrate this milestone. We enlighten ourselves with our history, embrace our present and empower ourselves as we move ahead.

ATTACHMENT D (Cont...)

ENLIGHTEN | EMBRACE | EMPOWER



We ask you to review our sponsorship and exhibitor packages to determine if any options fit your organization's needs to Enlighten, Embrace, and Empower the next generation of nuclear science and technology leaders. We look forward to working with our sponsors and exhibitors to make the 2021 ANS Student Conference the best in the department's history!

Sincerely,

Ishita Trivedi
General Chair



"#1 Online Master of Nuclear Engineering in 2018"
- Best College Reviews

"#3 Nuclear Engineering Graduate Program in 2020"
- US News and World Report



NC STATE UNIVERSITY

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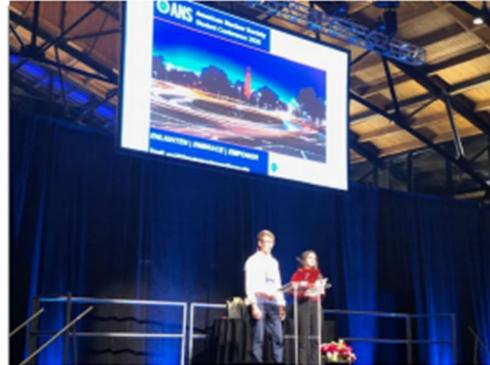
ATTACHMENT D (Cont...)

ENLIGHTEN | EMBRACE | EMPOWER



Benefits of Sponsorship

The ANS student is the largest single gathering of students studying fields of nuclear science and technology. The ANS student conference provides an opportunity for students to enlighten their peers by showcasing their research results. Additionally, it provides a chance for students to embrace the capabilities of nuclear science and technology through tours of nuclear reactors, fuel fabrication facilities, and more. Finally, it empowers students through invaluable professional development opportunities for students to meet and network with other students, future colleagues, and current industry professionals.



These wonderful opportunities for students attending the conference would not be possible without the generous assistance of conference sponsors. As thanks, our conference provides as much exposure and networking opportunities as possible for sponsors to interact with the best and brightest aspiring scientists and engineers. Sponsorship options are tailored towards each individual company's needs while maximizing company visibility and networking opportunities. Sponsors should pride themselves on the fact that they are supporting the next generation of scientists and engineers by helping students exchange ideas and forge friendships that last a lifetime.

For your company's or organization's investment in the future of nuclear science and technology, we offer several sponsorship options various benefits. Benefits include a booth at the conference career fair, waived registrations ad space, lunch and learn recruiting talks, and for our Platinum Leaders of the Pack, the opportunity to deliver the keynote address at one of the nightly conference dinners. For those organizations looking to participate in the conference without being a sponsor, we offer several different exhibition packages as well.



NC STATE UNIVERSITY

4

ATTACHMENT E

Newsletter and Chair Report



Your THD Leadership Team

We all thank you for joining THD and look forward to working with you to advance our field. Please do not hesitate to reach out to anyone on the leadership team with suggestions or if you'd like to get involved.

Officers

Chair

Wade R. Marcum
Wade.Marcum@oregonstate.edu

Vice Chair/Chair-Elect

Elia Merzari
ebm5351@psu.edu

Secretary

Bao-Wen Yang
bwy01@deltaenergygroup.com

Treasurer

Annalisa Manera
manera@umich.edu

Immediate Past Chair

Chul-Hwa Song
chsong@kaeri.re.kr

Executive Committee

Terms Expiring June 2021

Fan-Bill Cheung
Yong Hoon Jeong
Dillon R. Shaver
Xiaodong Sun
Matthew D. Zimmer

Terms Expiring June 2022

Fatih Aydogan
Igor Bolotnov
Lane Carasik
Yassin Hassan
Robert P. Martin

Terms Expiring June 2023

Yang Liu
John Luxat
Hiashi Ninokata
Piyush Sabharwall
Caleb Brooks

Standing Committees

Technical Program Chair

Igor Bolotnov

Honors & Awards Chair

Seungjin Kim

Webmaster

Marilyn Delgado

YMG Liaison

Matthew D. Zimmer

A Message from the Chair

Dear Friends and Colleagues,

I author this letter during an unprecedented time. The world will never function again in the same manner it has prior to the year 2020. The COVID-19 pandemic has created volatility and uncertainty within our homes and throughout society. We all have family, friends, and colleagues that have been affected and impacted by these trying conditions. Yet, through our current circumstance there exist numerous positive and uplifting examples of how our community has come together to support one another. While not trivializing the hardships that we are experiencing, it is these demonstrable forms of support and community that I choose to focus on here.

The American Nuclear Society hosted its first ever entirely virtual Annual ANS National Meeting in June. In spite of our inability to travel, the participation at this meeting far surpassed recent, past meeting. The Thermal Hydraulics Division (THD) Program Committee and Executive Committee meetings held via Zoom on June 7, 2020 also had greater attendance and participation than recent past meetings. Our community remains strong and engaged. Again, on November 16-19, 2020 the American Nuclear Society will hold its winter meeting virtually. The organization and logistics of moving a traditionally hosted conference to be delivered synchronously across the world are non-trivial; our Society has been phenomenal in creating systems and structures that facilitate engaging dialogues and presentations via remote delivery means. Our Division's [website](#) has continued to grow, evolve and update to more effectively communicate with its members due to the efforts of the THD webmaster – Marilyn Delgado. We plan to post all materials relevant to the [Program Committee and Executive Committee Meetings](#) to this site for ease of access to all members.

The Thermal Hydraulics Division has a fantastic technical program planned during



the 2020 ANS Winter Meeting, including a total of 22 unique technical paper sessions comprising 94 summaries. Additionally, there are three panel sessions which will deliver a riveting dialogue around relevant THD topics. I encourage you all to engage and participate as you're able during this [2020 ANS Winter Meeting](#).

Numerous significant accomplishments have been made this year within the Thermal Hydraulics Division. A complete review and update to the THD's bylaws were conducted through the proactive efforts of Bob Martin, Elia Merzari, and Xiaodong Sun. The Division established the service award to recognize significant and sustained contributions toward the division.

[Continued on p. 2](#)

In this issue

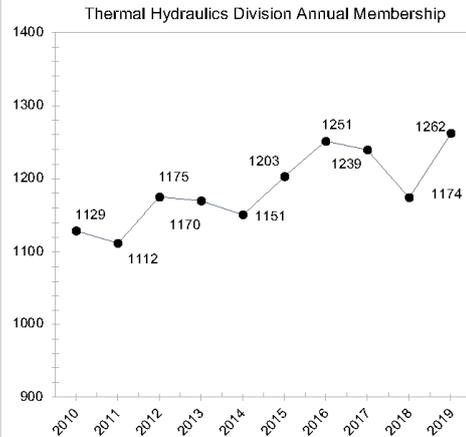
Membership	P.2
Technical Programs	P.3
ANS Annual Meeting Sessions	P.4
Conference Announcements	P.4
Nominating and H&A Committees	P.5
Webmaster Report & New Awards	P.6
Financials	P.7

Membership Committee Report

Membership of the ANS Thermal Hydraulics Division is tracked based on membership renewals and applications submitted during each calendar year.

The data from early 2020 indicate a total of 1262 members, recording the highest division membership for Thermal Hydraulics in history. This exciting feat is due to the contributions of all ANS THD members and should be viewed as a positive metric for success. Continued membership support is vital to our furthering the mission of our division. All THD members are encouraged to contribute to the THD-sponsored meetings, encourage colleagues to join ANS and THD, and to participate in THD governance as their time permits.

Chul-Hwa Song
Membership Committee Chair
THD Membership Committee Chair (2020-2021)
chsong@kaeri.re.kr



Message from the Chair, cont.

Additionally, with a generous donation from the Sehgal family, the Division established the Sehgal Memorial Award (named after Dr. Bal Raj Sehgal), to be distributed at each International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH). These awards are in addition to the recently established Lawrence E. Hochreiter Graduate Scholarship that was awarded for the first time earlier this year.

The Honors and Awards Committee announced the 2020 Thermal Hydraulics Technical Achievement Award. Dr. Michael Z. Podowski was selected for his ground-breaking technical accomplishments in the modeling and computer simulation of single and multiphase flow and heat transfer. Dr. Podowski will be recognized at the conclusion of the General Thermal Hydraulics Session on Monday evening of the ANS Winter Conference. His acceptance presentation will be postponed and delivered at the next NURETH conference. Congratulations, Dr. Podowski, on the much deserved recognition for all that you've accomplished.

The flexibility and creativity of our topical meeting organizers should be recognized. NUTHOS-13 – originally planned to be hosted in Vancouver BC in August of 2020 – has been postponed to 2022. Additionally, NURETH-19, originally planned to be held in Brussels in August 2021, its now planned to take place in March of 2022. Adjustments to these significant logistical efforts are nontrivial; I extend my appreciation on behalf of the THD community to the topical meeting organizers for their perseverance.

On behalf of the executive committee members, I thank you all for your continued involvement and dedication toward the Division and wish you a productive professional activity. I hope to see you all at the ANS Meeting interactions through the Division and Technical Tracks during 2020 ANS Winter Meeting, held virtually.

Wade R. Marcum
ANS 2020-2021 THD Chair
wade.marcum@oregonstate.edu

Technical Program Committee Report

The strong THD presence at the ANS national meetings continues after a first ever Virtual 2020 ANS Annual Meeting.

As the world deals with global pandemic the Winter meeting will be held in Virtual format as well. Despite that, THD have a very impressive program planned for the November event.

A total of **100** summaries were submitted, out of which, based on the reviewer recommendations, a total of **94** 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 efforts: 240 reviews were completed for this Annual Meeting (on average, about 2.4 reviews per paper). All **25** sessions sponsored by THD are listed on the right. One of those sessions (on TCR) is co-sponsored with RPD. In addition, there are 4 VCR/TCR related sessions which are sponsored by RPD and co-sponsored by THD. The links to connect to each session will appear 30 minutes before the session start for registered conference participants.

We expect the submission website for the 2021 ANS Annual Meeting to be open mid-January, which is currently planned to be held in Providence, RI in June 13-17, 2021. THD is again offering a vibrant program with 11 sessions (including two panels):

2020 ANS Winter THD Technical Sessions

November 15-19, 2020

Session	# of papers	Time Slot (ET)
Computational Thermal Hydraulics – I	5	Monday 1pm
Nuclear Power and the Transformational Challenge of Autonomous Operation: AI/ML as an Enabler	Panel	Monday 1pm
Thermal Performance for Integrated Energy Systems: Design, Development and Deployment	Panel	Monday 3:40pm
Experimental Thermal Hydraulics – I	5	Monday 3:40pm
Computational Thermal Hydraulics – II	5	Tuesday Noon
Advancements in SAM Development and Analysis	5	Tuesday Noon
Two-phase Flow and Heat Transfer Fundamentals-I	4	Tuesday 2:40pm
General Thermal Hydraulics-I	4	Tuesday 2:40pm
Education in Thermal Hydraulics	Panel	Tuesday 2:40pm
Experimental Thermal Hydraulics-II	5	Tuesday 4:50pm
Thermofluidics for Transformational Challenge Reactor (co-sponsored with RPD)	6	Tuesday 4:50pm
Multiphysics Simulation	5	Wednesday Noon
Computational Thermal Hydraulics – III	5	Wednesday Noon
Young Professional Thermal Hydraulic Research Competition-I	4	Wednesday 2:40pm
Molten Salt Thermal Hydraulics-I	4	Wednesday 2:40pm
Severe Accident Modeling	3	Wednesday 2:40pm
Molten Salt Thermal Hydraulics-II	4	Wednesday 4:50pm
Computational Thermal Hydraulics-IV	4	Wednesday 4:50pm
Young Professional Thermal Hydraulic Research Competition-II	4	Wednesday 4:50pm
Computational Thermal Hydraulics-V	4	Thursday 10am
Two-phase Flow and Heat Transfer Fundamentals-II	3	Thursday 10am
Computational Thermal Hydraulics-VI	3	Thursday 12:15pm
General Thermal Hydraulics-II	4	Thursday 12:15pm
Computational Thermal Hydraulics-VII	3	Thursday 2:30pm
Experimental Thermal Hydraulics-III	5	Thursday 2:30pm

[Continued on p. 4](#)

Technical Program Committee Report, cont.

1. Two-phase flow and heat transfer fundamentals
2. Computational Thermal Hydraulics
3. General Thermal hydraulics
4. Experimental Thermal Hydraulics
5. Thermal Hydraulics Research and Development in the Versatile Test Reactor (co-sponsor with RPD)
6. Challenges and Opportunities in Thermal Hydraulics of Load-Following Nuclear Systems [P]
7. Thermal-hydraulics research in ARPA-E programs [P]
8. Machine Learning for nuclear thermal-hydraulics
9. Thermal-hydraulics for advanced reactors
10. Thermal-hydraulics research in TCR
11. Thermal Hydraulic R&D Activities in Printed-Circuit Steam Generators for Advanced Nuclear Reactors

At the 2020 ANS Virtual Winter Meeting, the THD Program Committee meeting will be held on Sunday November 15th, 2020, starting at 3:00 pm (<https://oregonstate.zoom.us/j/91067127660?pwd=cVpQTnlUJW9BMHBJZ1hIRE5UbkRndz09>). Anyone interested in the Program Committee activities is invited to participate.

Finally, we would like to express our gratitude to all of the colleagues who devote their 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 paper summaries, volunteering to organize

sessions, and supporting the peer-review of the papers.

Igor A. Bolotnov
NC State University
THD PC Chair

Dillon Shaver
Argonne National Lab
THD Vice PC Chair
PCChair@thd-ans.org

NUTHOS-13 ATH'20

Cancelled

Proceedings of ATH'20
will be issued
electronically.

19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19)

March 6-11 2022 • Brussels, Belgium

Due to the persistence of travel restrictions related to COVID-19 and the current negative outlook, we have decided to postpone the NURETH-19 conference to March 6-11, 2022. See call for papers attached to this newsletter.

As a result the submission of abstracts has been postponed to February 14, 2021. We continue to look forward to hosting you in Brussels very soon.

Lead the Flow. SCK CEN and the von Karman Institute, in collaboration with NRG and ANS, are hosting the 19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics in Brussels, Belgium. Brussels is more than the capital of Belgium: it is the vibrant heart of Europe. In Brussels cultures swirl together in a creative mix of art de vivre, know-how, heritage and surrealism.

The Technical Program Committee is developing an attractive program and has received confirmation on fifteen high-level keynotes. You are invited to submit your abstract to one of the seven technical tracks or twenty-four special topics highlighted on the website www.nureth19.com. Students and young professionals are challenged to present their innovative research in the best poster contest. All participants can send in their most stunning CFD simulation or experiment recording for the movie competition. The meeting will start with pre-conference workshops on Sunday morning and will officially kick-off on Sunday evening with a Welcome reception. The Technical program will run from Monday to Thursday. On Friday technical tours to research facilities and high-tech industrial plants are planned.

Can you already feel the positive energy? We do and we are ready to welcome you!

Nominating Committee Report

The THD nominating committee (NC) for this year is composed of Chul-Hwa Song (Chair), Wade Marcum, Elia Merzari, and Igor Bolotnov (without Vote). The goal of this committee is to nominate members for Division committees, including Division officers.

For the 2021–2022 ANS year, the NC will propose the candidates for the following positions of Division Officers and Executive Committee members: Division Vice-Chair/Chair-Elect, Secretary and Treasurer as Division Officers, and 5 at-large EC members to replace existing EC members whose term is to be expired in June 2021. The official nominations come from the EC and this matter will be discussed at the 2020 Winter meeting.

Per the recently approved Division Bylaws changes that became effective this July, the Honors and Awards Committee (H&AC) shall consist of four (4) past chairs of the Division serving 4-year terms starting at the end of their term, and three (3) general members, who will serve a 3-year term, will also be nominated for the discussion at the 2020 Fall meeting. New chair will be nominated, among general members to be elected, to fill the seat opened by Seungjin Kim whose term expires in June 2021. And Kurshad Muftuoglu, who is to be on the fourth year of service to the H&AC as past Division chair, shall serve as vice-chair for a 1-year term.

Per the recently approved Division Bylaws changes, the Conference Screening Committee (CSC) shall consist of nine (9) members, including the chair, who shall serve a 4-year term and each year at least two (2) members should be newly added. Since all the CSC memberships have been recently expired at the same time after the ANS 2020 Annual meeting, the NC will nominate the CSC Chair to serve a 4-year term and propose the nominees of the CSC members consisting of four (4) sets of two (2) members, whose terms will start immediately after the EC meeting this November, but are to be expired in June 2025, 2024, 2023 and 2022 each, respectively.

Per the recently approved Division Bylaws changes, the Scholarship Committee (SC) shall consist of five (5) to nine (9) members who shall serve a 3-year term, including the Division chair, and each year at least two (2) members should be newly added. Since all the SC memberships need to be newly appointed at the ANS 2020 Winter meeting at the same time, the NC will propose the nominees of the SC members consisting of three (3) sets of members, whose terms will start immediately after the

Honors and Awards Committee Report

The 2020 Thermal Hydraulics Division Technical Achievement Award (TAA) is awarded to Dr. Michael Z. Podowski, (see photo) Professor of Nuclear Engineering at Rensselaer Polytechnic Institute (RPI). He is recognized for his significant contributions toward nuclear reactor



thermal-hydraulics, including: BWR stability analysis, Multiphase Computational Fluid Dynamics (MCFD), the mechanistic modeling of boiling heat transfer and severe accidents, among many other research areas. The citation on his award plaque reads, "For his ground-breaking technical accomplishments in the modeling and computer simulation of single and multiphase flow and heat transfer." The TAA award ceremony will be held at the ANS Winter meeting after the session "Experimental thermal-hydraulics -I" to be held on November 16th 2020. Professor Podowski will be delivering a lecture concerning his TAA award at NURETH-19.

Prof. Seungjin Kim
Purdue University
THD H&A Committee Chair (2020-2021)
seungjin@purdue.edu

EC meeting this November, but are to be expired in June 2024, 2023 and 2022 each, respectively.

The division NC would like to encourage members interested in becoming more involved to contact one of the leadership positions listed above. In particular, the Division is usually in need of volunteers for technical meeting session organizers and paper reviewers.

On behalf of the NC committee, I wish to thank all of our new Division officers and committee members for agreeing to serve the Division in the next years along with all those rolling off committees for their past service.

Dr. Chul-Hwa Song
KAERI
Nominating committee Chair (2020-2021)
chsong@kaeri.re.kr

Two new awards established

At the executive committee meeting of the Thermal-hydraulics division held in June 2020, the committee approved the establishment of two awards: (i) the Bal-Raj Sehgal Memorial Award and (ii) the meritorious service awards.

Both awards have then been approved by the American Nuclear Society National Honors and Award Committee, the Finance Committee and the Board of Directors. **We are now accepting nominations for 2021!** Following is a brief description of both awards. *For more information see: <https://www.ans.org/honors/>*

The *Bal-Raj Sehgal Memorial Award* recognizes an early-career to a mid-career individual for his/her exceptional and/or sustained contributions to the thermal-hydraulics field with a particular focus on the application of thermal-hydraulics to nuclear reactor safety. The award consists of an engraved plaque and a monetary award of \$2,000. It is awarded every 2 years and presented at the nearest NURETH conference to arrive. **The next deadline for nominations is August 1st, 2021.** The recipient is expected to deliver a keynote lecture at the NURETH conference at which the award is presented in coordination with the conference organizers.

A highly visible and respected world leader in thermal hydraulics and nuclear safety research, Professor Sehgal was a fixture at the NURETH conferences with which he had a special affinity, regularly invited to deliver a keynote or plenary lectures. While he would engage in serious technical discussions with his peers and colleagues, he would often be seen interacting with the younger generations to transfer his considerable knowledge and experience. He was active in TH Division affairs, serving as TH Division Chair and receiving the Thermal Hydraulics Technical Achievement Award.

Dr. Sehgal was an outstanding scientist and researcher, a great teacher and mentor, a prolific author (360 articles), and a tireless servant to the community. During the course of his career, he was inducted into numerous societies and academies, notably as elected member of the Swedish Royal Academy of Engineering Sciences, the U.S. National Academy of Engineering, and the Lithuanian Academy of Sciences and fellow of the American Nuclear Society and the American Society of Mechanical Engineers. For his wide-ranging and impactful contribution to research and science of nuclear safety, he was recognized with numerous awards, including the Seaborg Medal, the Technical Achievement

Webmaster Report

The THD website is undergoing a lot more foot traffic than before given the increase in online connections and virtual meetings. This is being taken into account for the website in order to make it easy to navigate. There have been some minor changes with the color schemes and inclusion of new modules specific to the virtual meetings. Also, there is a new page for past virtual conferences. Hopefully with these new additions, the investment of the members of the THD committee to the society is evident and attracts new members to visualize their future with the committee. We will see you online soon!

Ms. Marilyn Delgado
Texas A&M University
THD Webmaster
mdelgad17@tamu.edu

Award, and the Thomson Award for Reactor Safety from the American Nuclear Society. This award, established in collaboration with his family, honors his legacy.

The *Thermal Hydraulic Meritorious Service Award* recognizes an individual for sustained and exemplary service to the nuclear thermal-hydraulic profession. Service can be in the form of: (1) Leadership in the thermal-hydraulic division (THD) of ANS. (2) Leadership in national and international research and engineering programs related to thermal-hydraulics. (3) Individual non-technical contributions that lead to the betterment and growth of the profession as a whole. (4) Educational contributions aimed at the next generation of thermal-hydraulic engineers. (5) Advocacy for thermal-hydraulic research and development.

Emphasis is placed on sustained, well-recognized, service contributions over a number of years but single exceptional one-time contributions may also be considered. The award consists of an engraved plaque and a monetary award of \$1,000. It is presented at the ANS Annual Meeting. **The next deadline for nominations is March 1st, 2021.**

Please consider nominating yourself or a colleague for these awards.

Elia Merzari
Pennsylvania State University
THD Vice-Chair (2020-2021)
ebm5351@psu.edu

Financial Report

The budget for 2021 was approved at the June meeting (Table 1):

- 2500\$ are allocated for student support (\$2000 for ANS meetings and \$500 to fund a best paper award at the 2021 student conference).
- The budget for awards and plaques is increased to \$1250.
- There were two major movements in the general account: an income of \$25,054 (thanks to the generous contribution from NURETH-18) and a major disbursement of \$29,192 to the award funds (\$21,000 to fund the service award, and \$8,192 to support the increase of TAA fund). The general account has new balance of \$41,748 (see Table 1).

Table 1: ANS THD Budget

	2019	2020		2021	
	Actual	Budget	Actual through 9/30/2020	Proposed	Approved
Balance Forward from Previous Year	\$51,459	\$72,984	\$72,984	\$43,698	\$43,698
Budget Funds					
Member Dues Allocation (\$2/ full dues member, \$1 / reduced dues member)	\$1,325	\$2,300	\$817	\$2,300	\$2,300
Student Support (ANS Change Plan)				3000*	\$0
Division Income	\$25,054				
Total Income	\$26,379	\$2,300	\$817	\$5,300	\$2,300
Budget Expenses					
Newsletters, Website					
Awards & Plaques	\$851	\$1,250	\$661	\$645	\$1,250
National Meeting Costs					
Topical Meeting Costs					
Division Officer Expenses					
Student Support	\$3,000	\$2,500	\$500	\$2,500	\$2,500
Future Activity					
Scholarship/NEED Funding	\$1,000	\$500	\$29,692	\$500	\$500
YMG Support					
Other Expenses	\$3				
Total Expenses	\$4,854	\$4,250	\$30,853	\$3,645	\$4,250
Net	\$21,525	(\$1,950)	(\$30,036)	\$1,655	(\$1,950)
Total Year End Funds	\$72,984	\$71,034	\$42,948	\$45,353	\$41,748

* These funds will not be available in 2021 due to delays in the ANS plans.

November 2020
ANS Thermal Hydraulics
Division Newsletter
(Issue No. 33)

Elia Merzari, Editor
THD Vice Chair (2020-2021)
<http://thd.ans.org>



American Nuclear Society
Thermal Hydraulics Division

Table 2: ANS THD Awards Funds

	Hochreiter	TAA	Services
Balance Forward from 12/31/2018 Year	\$ 63,000	\$ 35,881	\$ -
Budget Funds			Starting 2020
Investment Gain (up to 12/31/2019)	\$ 12,739	\$ 7,255	\$ -
Division Designated (2020)		\$ 8,192	\$ 21,000
Total Income	\$ 12,739	\$ 15,447	\$ 21,000
Budget Expenses			
Awards	\$ -	\$ 1,000	\$ -
Plaques	\$ -	\$ 73	\$ -
Other Expenses	\$ -	\$ -	\$ -
Total Expenses	\$ -	\$ 1,073	\$ -
Net	\$ 12,739	\$ 14,374	\$ 21,000
Total Year End Funds	\$ 75,739	\$ 50,255	\$ 21,000
Spending Limit (4.92%)	\$ 3,726	\$ 2,473	\$ 1,033

As shown in Table 2 for all three award funds:

- The TAA award account started at a fund level of \$35,881, with incomes from investment gain (\$7,255, a 20.22% annual gain) and division designated fund transfer (\$8,192 transferred from the general account), after deducting \$1,000 for TAA award and \$72.5 for the plaque, the expected budget balance will be **\$50,255** (not account for the investment gain/loss in 2020). This new balance will raise the spending limit to \$2,472.55 (4.92%) sufficient to support the increase of TAA award from \$1,000 to \$2,000.
- With the investment gain of \$12,739 (20.22% gain), the Lawrence Hochreiter scholarship account reaches a new balance of \$75,739, not including the investment gain/loss in 2020.
- The newly established Service Award fund was set up with a disbursement of \$21,000 from the General account, which will allow a pending limit of \$1,033 (4.92%)

Annalisa Manera
THD Treasurer (2020-2021)



19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19)

March 6 - 11, 2022 • Brussels, Belgium • The Square

CALL FOR PAPERS - NEW DATES (v.10)

EXECUTIVE CHAIRS

General Chairs

Hamid Ait Abderrahim, SCK CEN
Jean-Paul Chabard, EDF
Xiaodong Sun, University of Michigan

Honorary Chairs

Yassin Hassan, Texas A&M
Hisashi Ninokata, Politecnico di Milano
Michel Giot, UCLouvain

Technical Program Committee Chair

Elia Merzari, Penn State University

Technical Program Committee Co-chairs

W. David Pointer, ORNL
Chul-Hwa Song, KAERI
Ferry Roelofs, NRG

Steering Committee Chair

Steve Bajorek, US NRC

ABSTRACT DEADLINE: FEBRUARY 14, 2021

FEBRUARY		SUBMISSION OF ABSTRACTS: February 14, 2021
APRIL		ABSTRACT ACCEPTANCE: April 30, 2021
JUNE		DRAFT PAPER SUBMISSION: June 30, 2021
AUGUST		PAPER REVIEW NOTIFICATION: August 31, 2021
SEPTEMBER		FINAL PAPER SUBMISSION: September 30, 2021

GUIDELINES

The limit for abstract submissions is 250 words. The limit for full-paper submissions is 16 pages. The conference proceedings will be distributed on a flash drive. Selected papers will be published in the Special issues of Nuclear Technology, Nuclear Science and Engineering, and Nuclear Engineering and Design.

ABOUT THE MEETING

NURETH is one of the premier gatherings for experts in nuclear reactor thermal hydraulics and related topical areas. The meeting is held every two years. SCK CEN, the Von Karman Institute and NRG are pleased to host NURETH-19 in Brussels, Belgium. Brussels is more than the capital of Belgium: it is the vibrant heart of Europe. In Brussels cultures swirl together in a creative mix of art de vivre, know-how, heritage and surrealism. It has everything to make your stay unforgettable!

SUBMIT AN ABSTRACT

www.nureth19.com



NURETH-19 HOSTS

Katrien van Tichelen, SCK CEN
Philippe Planquart, VKI
Ferry Roelofs, NRG



19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19)

March 6 - 11, 2022 • Brussels, Belgium • The Square

TECHNICAL TRACKS

HIGH-QUALITY PAPERS (16 PAGE MAXIMUM) ARE SOLICITED IN THE FOLLOWING AREAS

1. FUNDAMENTAL THERMAL HYDRAULICS

- 1a Fundamental Thermal Hydraulics
- 1b Two-phase Flow and Heat Transfer
- 1c Boiling and Condensation
- 1d Interfacial Area Transport
- 1e Natural Circulation
- 1f Reactor Core & Sub-channel Thermal Hydraulics
- 1g Experimental Methods and Instrumentation
- 1h Turbulent Heat and Mass Transfer

2. COMPUTATIONAL THERMAL HYDRAULICS

- 2a Thermal Hydraulics System Code Analysis
- 2b Computational Fluid Dynamics
- 2c Computational Multi-Fluid Dynamics
- 2d Multi-scale Analysis
- 2e Multi-physics Analysis
- 2f Multi-species Analysis

3. VERIFICATION, VALIDATION AND UNCERTAINTY QUANTIFICATION

- 3a Verification & Validation
- 3b Experiments and Databases for Validation
- 3c V&V for CFD
- 3d V&V for Thermal Hydraulics Codes
- 3e Best Practice Guidelines

4. WATER-COOLED REACTORS OPERATION AND SAFETY

- 4a LWR Operation and safety
- 4b HWR Operation and safety
- 4c Transient and Accident Analysis
- 4d Scaling Issues
- 4e BEPU Analysis and Challenges in Licensing
- 4f Instabilities and Nonlinear Dynamics
- 4g Next Generation LWRs

5. SEVERE ACCIDENTS

- 5a Severe Accidents
- 5b Design Features for Severe Accident Mitigation
- 5c Natural Convection
- 5d Debris Bed Cooling
- 5e Fuel-Coolant Interaction
- 5f Hydrogen Management
- 5g Fission Product Behavior
- 5h Containment Thermal Hydraulics

6. LIQUID METAL THERMAL HYDRAULICS

- 6a Turbulent Heat Transport Modelling
- 6b Fuel Assembly and Core Thermal Hydraulics
- 6c Pool Thermal Hydraulics
- 6d Chemistry Control
- 6e Sloshing and gas entrainment
- 6f Solidification
- 6g System Thermal Hydraulics
- 6h Severe Accidents and Containment

7. ADVANCED REACTORS

- 7a Advanced Reactors General
- 7b Small Modular Reactors
- 7c High-Temperature Gas-Cooled Reactors
- 7d Salt-Cooled High-Temperature Reactors
- 7e Molten Salt Fueled Reactors
- 7f Supercritical Water Reactors

8. SPECIAL TOPICS

- 8a Versatile Test Reactor
- 8b Transformational Challenge Reactor
- 8c UQ Methods for CFD
- 8d DNS for Model Development
- 8e Reduced Order Methods
- 8f CONUSAF/FONESYS
- 8g Sub-channel Code Analysis
- 8h Fluid Structure Interaction
- 8i Accident Tolerant Fuel
- 8j Machine Learning in Thermal Hydraulics
- 8k GEMINI-collaboration
- 8l All-regime Two-Phase Flow Modelling
- 8m Post-Fukushima Daiichi Accident Forensic
- 8n Nuclear Thermal Hydraulics Program UK BEIS
- 8o High Performance Computing
- 8p Advanced Instrumentation for TH Experiments
- 8q Thermal Hydraulics for Fusion
- 8r Microreactor Thermal Hydraulics
- 8s IAEA CRP on Benchmark Analysis of FFTF Loss of Flow Without Scram Test
- 8t Reflood Thermal Hydraulics Benchmark: Experimental Effort and Code Validation
- 8u Reliability of Passive Systems
- 8v IPRESCA project

POSTER COMPETITION

Join the new 2-minute poster pitch competition. For each poster a full paper should be submitted in the system. All posters will be presented during the conference. The winning posters presenters will receive special attention. Deadline: 30 Nov '21

MOVIE COMPETITION

Prepare a one-minute movie of your experiment, simulation, or other related topic. All accepted movies will be shown during the conference and winning movies will be shown at a special event.

Movies submission deadline: 30 November 2021.



ATTACHMENT F

The Dr. Vincent J. Esposito Thermal Hydraulic Graduate Scholarship

American Nuclear Society
555 N. Kensington Ave.
La Grange Park, IL 60526
708-352-6611



Proposal to Establish a Scholarship Fund in Honor of Dr. Vincent J. Esposito American Nuclear Society October 27, 2020

Overview

ANS respectfully presents to its Thermal Hydraulics Professional Division (THD) and Scholarship Policy and Coordination Committee the following proposed scholarship.

A generous inaugural gift of \$75,000 from Carl Esposito will establish the **The Dr. Vincent J. Esposito Thermal Hydraulics Graduate Scholarship**. The scholarship will continue for a period of no less than 10 years and after this period under the discretion of ANS and THD.

ANS is a 501(c)(3) not-for-profit and thus all charitable contributions, such as the proposed gift to establish the scholarship, are fully tax deductible as allowed by law. The contribution will establish the principal necessary to fund the scholarship through annual investment earnings.

The Vincent J. Esposito Thermal Hydraulics Scholarship

Scholarship details:

- Academic Level: Masters, PhD, or Graduate Certificate Program – First Year Student
- Academic/Research Discipline: Thermal Hydraulics or Reactor Safety
- Total award is \$3,000 for the year
- This is a one-year, one-time award and non-renewable (once a student receives the scholarship, they are ineligible to receive a subsequent award).
- Additional considerations will be given to those candidates who:
 - Have a record of service to ANS
 - Enrolled in a University with a graduate program in Nuclear Engineering including Masters, PhD or Graduate Certificate

Award criteria:

- Academic performance
- Letters of recommendation from two faculty and/or employers
- A summary of accomplishments that includes honors, awards, professional work activities, and special interest activities
- A description of long-term and short-term professional objectives. Research interests aligned with the Division's topical areas will be given greater weight

Note: The establishment of the scholarship is contingent on both THD approval and accommodating Dr. Esposito's request to be a part of the selection process for his named

ATTACHMENT F (Cont...)

American Nuclear Society
555 N. Kensington Ave.
La Grange Park, IL 60526
708-352-6611



scholarship (as a non-transferable member given the opportunity to provide feedback – final approval would remain under the jurisdiction of THD).

About the ANS Thermal Hydraulics Professional Division:

Currently chaired by Wade R. Marcum, ANS Thermal Hydraulics Professional Division provides a forum for focused technical dialogue on thermal hydraulic technology in the nuclear industry. Specifically, this will include heat transfer and fluid mechanics involved in the utilization of nuclear energy. It is intended to attract the highest quality of theoretical and experimental work to ANS, including research on basic phenomena and application to nuclear system design.

The division's mission: To establish, stimulate, and maintain quality technical and professional approaches in all areas of Nuclear Thermal Hydraulics.

In furtherance of this mission the Division shall devote itself specifically to:

- The advancement and dissemination of knowledge of thermal and hydraulic phenomena as they pertain to the steady state design or transient performance of equipment in nuclear power plants and other segments of the nuclear fuel cycle.
- Aid in the integration and dissemination of thermal hydraulics information developed in research and design programs and from experience with operating nuclear reactors.
- Promote effective interchange of thermal hydraulics information among the many professional groups and organizations participating in the development and application of nuclear reactor technology.
- Provide a basis for interaction between the nuclear industry and regulatory groups.

Vincent J. Esposito Biographical Sketch

A nuclear fuel and safety analysis expert, Dr. Vincent J. Esposito was recently recognized by ANS for his 50-year commitment as a member. Joining the Society in 1969, he has served on the Public Policy Committee and Executive Committee of the Mathematics and Computation Division, and is now a participant in the Fuel Cycle & Waste Management and Thermal Hydraulics divisions. Vincent also represented the Society as its Congressional Fellow in 2013, and has chaired and spoken at ANS local section and national meetings.

Currently an adjunct professor of nuclear engineering at the University of Pittsburgh, Vincent retired from Westinghouse where he spent over 40 years of his career in a variety of engineering and management roles. His last 10 years were spent as a vice president of the company's Asian nuclear fuel business.

During his time with Westinghouse, Vincent was involved in discussions with the Department of Commerce, the State Department, and the Department of Energy regarding nuclear fuel issues.

ATTACHMENT F (Cont...)

American Nuclear Society
555 N. Kensington Ave.
La Grange Park, IL 60526
708-352-6611



He also assisted in the recovery efforts following both the Three Mile Island and the Fukushima Daiichi accidents. Vincent represented Westinghouse on the Nuclear Energy Institute's Fuel Task Force, focusing on uranium and enrichment as it related to the Russian Suspension Agreement. Vincent's national and international knowledge and experiences assisted him in landing the Glenn T. Seaborg Congressional Science and Engineering Fellowship with ANS. One of his references for the position, University of Pittsburgh Director of Nuclear Engineering John Metzger, praised Vincent's work stating, "his experience encompasses an extremely broad range that will provide a rich and unique resource... there is no better way for our industry's message to be heard on the Hill."

In 2013, as the ANS Congressional Fellow in Washington D.C., Vincent assisted in the preparation of questions addressing Yucca Mountain as a viable final repository, worked on decreasing the time frame for the U.S. export license process of transferring nuclear technology to a foreign entity, and pursued activities related to industry radiation standards for low doses / dose rates. He also reviewed publications on the Fukushima accident to determine specific regulatory and safety lessons learned.

About American Nuclear Society Scholarships

The American Nuclear Society student members are the future of the society and ANS believes in rewarding those members for their academic, service, and leadership excellence. ANS scholarships are awarded to applicants that have personified the high standards set by the Society and since 1979, over \$5 million in scholarships have been distributed.

Scholarships are awarded to incoming freshmen, undergraduates, and graduate students, and are distributed at the beginning of each school year. Evaluation is based upon numerous factors, such as, academic excellence, leadership within the Society, references, career goals, and financial need.

Supporting the next generation in nuclear is of great value. The Society's scholarship program ensures students – incoming freshman, undergraduates, and graduate students – can begin or maintain their academic studies in a variety of nuclear-related disciplines.

About the American Nuclear Society

ANS is the premier organization for those that embrace the nuclear sciences and technologies for their vital contributions to improving people's lives and preserving the planet.

ANS membership is open to all and consists of individuals from all walks of life; including engineers, doctors, students, educators, scientists, soldiers, advocates, government employees, and others. Celebrating its 70th anniversary in 2024, ANS is committed to advancing, fostering, and promoting the development and application of nuclear sciences and technologies to benefit

ATTACHMENT G

ANS President & CEO Meeting with Division/Committee Chairs

November 4, 2020

Division chairs met together with the president (Mary Lou Dunzik Gougar) and CEO (Craig Piercy) on November 4, 2020. The following comprises a bulletized list of topics covered during the meeting including the present progress of activities during years 2020 and plans for action from ANS leadership during 2021. To set the stage for the conversation, President Dunzik Gougar opened with remarks and acknowledged that membership has been decreases over the past decade and is currently at ~9300 (~11100 in 2013 for reference). A copy of the presentation slides presented at the meeting are attached to the end of this brief report.

Update from President and CEO

2020

- Substantial ANS Change Plan Implementation
- Staff Reorganization (20% FTE reduction)
- Went remote/ culture shift
- Rebuilt IT Infrastructure from the ground up (OPD)
- Virtual Meeting platform / EPRS
- Web programming up 500% by volume (YMG)
- Redesigned Nuclear News / ANS Newswire
- Fine tuning team responsibilities / performance
- PDC renewed and solved problems

2021

- Continue Change Plan implementation
- Focus on expanded membership “Be a Nuke”
- Return to physical meetings in the “New normal.”
- Engagement with new Congress/Administration
- R&D Task Force Report
- Upgraded ANS News-wire / Daily Brief / Redesigned Radwaste Solutions
- Weekly Webinars
- Expanded external funding / Development / Programs
- Diversity, Equity and Inclusion
- Crisis communications/Rapid Response
- Closer look at Nuclear Workforce Needs
- *Nuclear in Every Classroom*
- Renew / Change Associated Membership System (AMS), associate Platforms

Budget Discussion

2020 Budget Forecast

Category	2020 Forecast	2020 Budget	Variance
Operating Revenues	\$ 4,929,970	\$ 7,309,812	\$ (2,379,842)
Operating Expenses	\$ 6,251,448	\$ 8,216,836	\$ (1,966,338)
Operating Deficit	\$ (1,321,478)	\$ (908,024)	\$ (413,454)
Non-Operating Items	\$ 6,383	\$ 141,853	\$ (135,470)
Net Overall Deficit	\$ (1,315,095)	\$ (766,171)	\$ (548,924)

2021 Budget – Current Draft

Category	2020 Forecast	2020 Budget	Variance
Operating Revenues	\$ 7,280,470	\$ 7,309,812	\$ 370,658
Operating Expenses	\$ 8,775,149	\$ 8,217,836	\$ 560,313
Operating Deficit	\$ (1,094,679)	\$ (908,024)	\$ (186,655)
Non-Operating Items	\$ 330,935	\$ 141,853	\$ 189,082
Net Overall Deficit	\$ (763,744)	\$ (766,171)	\$ 2,427
PPP Loan Forgiveness	\$ 811,570	-	\$ 811,570
Net Surplus	\$ 47,826	\$ (766,171)	\$ (813,997)

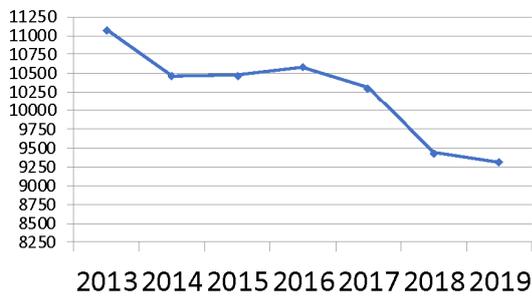
Budget hit harder than originally forecasted, particularly because of the lack of topical meetings and cancelation of meetings. Expenses are relatively minimized at this point within the society on FTE and other expenses to maintain minimum function. Focus is going toward methods for increasing revenues now rather than decreasing expenses due to the optimization of expenses that have taken place over the past several years.

ANS President & CEO Meeting with Division/Committee Chairs

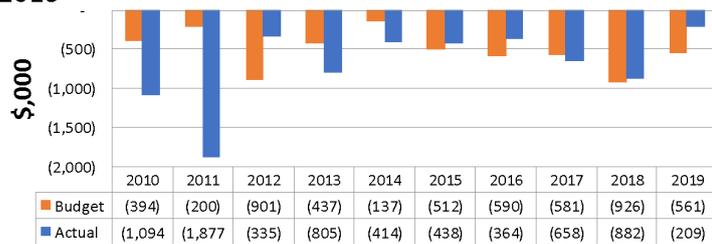
American Nuclear Society

11/4/2020

Total Membership as of December 31, 2019



ANS Operations - (Budget, Actual) 2010 - 2019



ANS Change Plan 2020

- Continuing downward trend in membership and upward trend in budget deficit demanded change
- Change Plan 2020 developed by group of past Presidents and Board members
- Board of Directors passed Change Plan in June 2019 and Implementation Plan in November 2019
- Overall objectives
 - More strategic fundraising and targeted spending to serve members
 - Stabilize and grow membership numbers
 - Improve member benefits (e.g. new member service center)
- New Executive Director/CEO, Craig Piercy, hired late 2019

3

Change Plan 2020 Implementation

We have implemented major portions of the Change Plan on time or ahead of schedule:

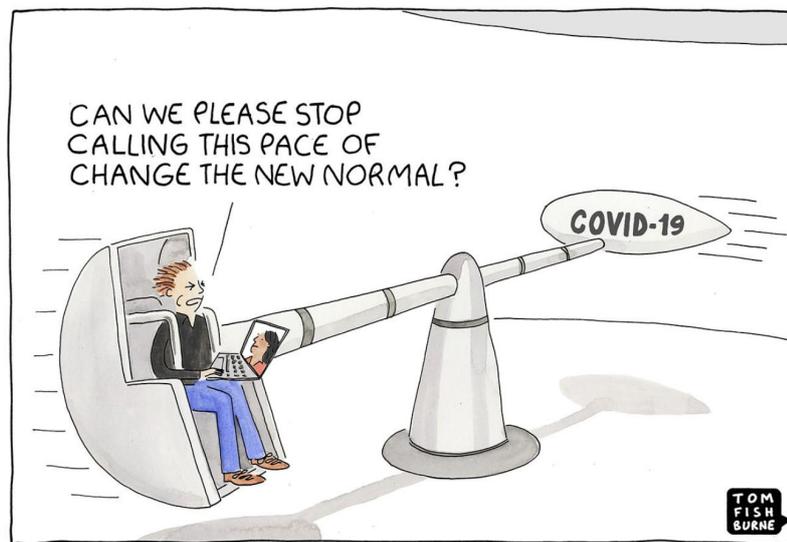
- 1ANS Operations Model
- Holistic long-range plan, schedule, and approval process for topical meetings
- Publications Redesign
- Fundraising plan 2020-2025
- YMG Seat
- Center Strategic Plan
- More effective External Communications
- Philanthropic Board member (advisor)

Others are scheduled for on-time completion in 2021 or 2022

- Board Onboarding process
- International board seat reform / regional structure
- Annual evaluation of Membership Dues and Levels
- Eliminate the Honorary Lifetime Membership Category
- All members are members by 2023

A few items are delayed

- Handbook and manual rewrites
 - Membership surveys
 - Rules changes
-



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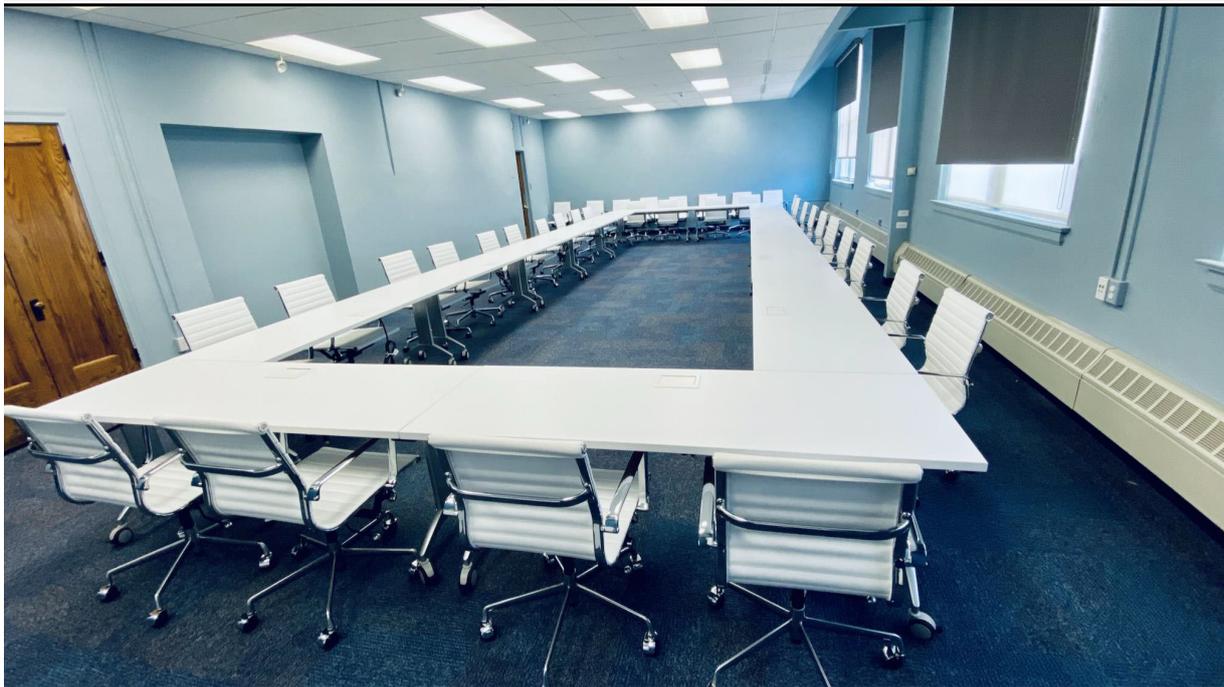
2020

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2021



- Continued Change Plan implementation
- Focus on expanding membership “Be a Nuke.”
- Return to physical meetings in the “new normal.” (PC/JF)
- Engagement with new Congress / Administration
- R&D Task Force report
- Upgraded ANS Newswire / Daily Brief/redesigned Radwaste Solutions
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- Expanded external funding / Development / Programs
- Diversity, Equity and Inclusion
- Crisis communications/Rapid Response
- Closer look at Nuclear Workforce Needs
- *Nuclear in Every Classroom*
- Renew/Change AMS system, associated platforms





2020 Budget Forecast



Category	2020 Forecast	2020 Budget	Variance
Operating Revenues	\$4,929,970	\$7,309,812	(\$2,379,842)
Operating Expenses	\$6,251,448	\$8,217,836	(\$1,966,388)
Operating Deficit	(\$1,321,478)	(\$908,024)	(\$413,454)
Non-Operating Items*	\$6,383	\$141,853	(\$135,470)
Net Overall Deficit	(\$1,315,095)	(\$766,171)	(\$548,924)

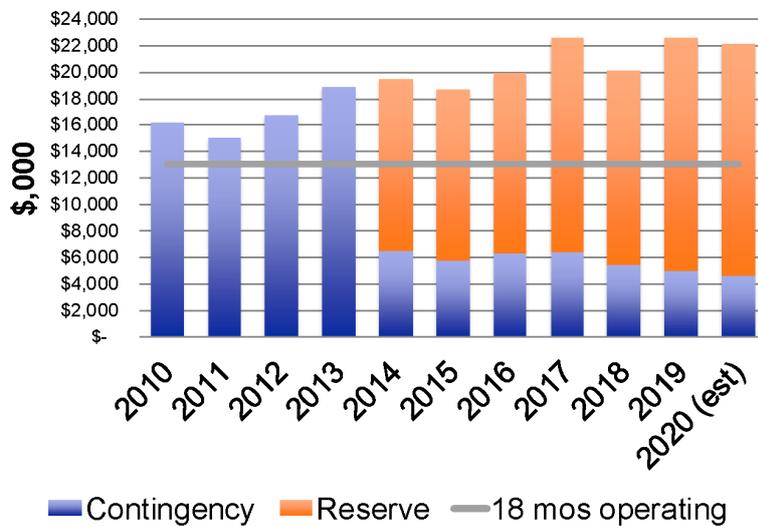
2021 Budget – Current Draft



Category	2021 Budget	2020 Budget	Variance
Operating Revenues	\$7,680,470	\$7,309,812	\$370,658
Operating Expenses	\$8,775,149	\$8,217,836	\$560,313
Operating Deficit	(\$1,094,679)	(\$908,024)	(\$186,655)
Non-Operating Items*	\$330,935	\$141,853	\$189,082
Net Overall Deficit	(\$763,744)	(\$766,171)	\$2,427
PPP Loan Forgiveness	\$811,570	\$-	\$811,570
Net Surplus	\$47,826	(\$766,171)	(\$813,997)

*Non-operating items includes investment earnings of \$400K (2%) in 2021.

Investment Portfolio



12

Final Thoughts



For Division Chairs...

For Committee Chairs...

Questions/Discussion



American Nuclear Society

ans.org

ATTACHMENT H

THD Financial Report

Financial Report

The budget for 2021 was approved at the June meeting (Table 1):

- 2500\$ are allocated for student support (\$2000 for ANS meetings and \$500 to fund a best paper award at the 2021 student conference).
- The budget for awards and plaques is increased to \$1250.
- There were two major movements in the general account: an income of \$25,054 (thanks to the generous contribution from NURETH-18) and a major disbursement of \$29,192 to the award funds (\$21,000 to fund the service award, and \$8,192 to support the increase of TAA fund). The general account has new balance of \$41,748 (see Table 1).

Table1: ANS THD Budget

	2019	2020	2020	2021	2021
	Actual	Budget	Actual through 6/30/2020	Proposed	Approved
Balance Forward from Previous Year	\$51,459	\$72,984	\$72,984	\$43,698	\$43,698
Budget Funds					
Member Dues Allocation (321 full dues member, \$1 / reduced dues member)	\$1,325	\$2,300	\$817	\$2,300	\$2,300
Student Support (ANS Change Plan)				3000*	\$0
Division Income	\$25,054				
Total Income	\$26,379	\$2,300	\$817	\$5,300	\$2,300
Budget Expenses					
Newsletters, Website					
Awards & Plaques	\$851	\$1,250	\$661	\$645	\$1,250
National Meeting Costs					
Topical Meeting Costs					
Division Officer Expenses					
Student Support	\$3,000	\$2,500	\$500	\$2,500	\$2,500
Future Activity					
Scholarship/NEED Funding	\$1,000	\$500	\$29,692	\$500	\$500
YMG Support					
Other Expenses	\$3				
Total Expenses	\$4,854	\$4,250	\$30,853	\$3,645	\$4,250
Net	\$21,525	(\$1,950)	(\$30,036)	\$1,655	(\$1,950)
Total Year End Funds	\$72,984	\$71,034	\$42,948	\$45,353	\$41,748

* These funds will not be available in 2021 due to delays in the ANS plans.

November 2020
ANS Thermal Hydraulics
Division Newsletter
(Issue No. 33)

Elia Merzari, Editor
THD Vice Chair (2020-2021)
<http://thd.ans.org>

Table2: ANS THD Awards Funds

	Hochreiter	TAA	Services
Balance Forward from 12/31/2018 Year	\$ 63,000	\$ 35,881	\$ -
Budget Funds			Starting 2020
Investment Gain (up to 12/31/2019)	\$ 12,739	\$ 7,255	\$ -
Division Designated (2020)		\$ 8,192	\$ 21,000
Total Income	\$ 12,739	\$ 15,447	\$ 21,000
Budget Expenses			
Awards	\$ -	\$ 1,000	\$ -
Plaques	\$ -	\$ 73	\$ -
Other Expenses	\$ -	\$ -	\$ -
Total Expenses	\$ -	\$ 1,073	\$ -
Net	\$ 12,739	\$ 14,374	\$ 21,000
Total Year End Funds	\$ 75,739	\$ 50,255	\$ 21,000
Spending Limit (4.92)	\$ 3,726	\$ 2,473	\$ 1,033

As shown in Table 2 for all three award funds:

- The TAA award account started at a fund level of \$35,881, with incomes from investment gain (\$7,255, a 20.22% annual gain) and division designated fund transfer (\$8,192 transferred from the general account), after deducting \$1,000 for TAA award and \$72.5 for the plaque, the expected budget balance will be **\$50,255** (not account for the investment gain/loss in 2020). This new balance will raise the spending limit to **\$2,472.55 (4.92%)** sufficient to support the increase of TAA award from \$1,000 to \$2,000.
- With the investment gain of \$12,739 (20.22% gain), the Lawrence Hochreiter scholarship account reaches a new balance of \$75,739, not including the investment gain/loss in 2020.
- The newly established Service Award fund was set up with a disbursement of \$21,000 from the General account, which will allow a pending limit of \$1,033 (4.92%)

Annalisa Manera
THD Treasurer (2020-2021)



ATTACHMENT I



19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19)

March 6 - 11, 2022 • Brussels, Belgium • The Square

CALL FOR PAPERS - NEW DATES (v.10)

EXECUTIVE CHAIRS

General Chairs

Hamid Ait Abderrahim, SCK CEN
Jean-Paul Chabard, EDF
Xiaodong Sun, University of Michigan

Honorary Chairs

Yassin Hassan, Texas A&M
Hisashi Ninokata, Politecnico di Milano
Michel Giot, UCLouvain

Technical Program Committee Chair

Elia Merzari, Penn State University

Technical Program Committee Co-chairs

W. David Pointer, ORNL
Chul-Hwa Song, KAERI
Ferry Roelofs, NRG

Steering Committee Chair

Steve Bajorek, US NRC

ABSTRACT DEADLINE: FEBRUARY 14, 2021

FEBRUARY	SUBMISSION OF ABSTRACTS: February 14, 2021
APRIL	ABSTRACT ACCEPTANCE: April 30, 2021
JUNE	DRAFT PAPER SUBMISSION: June 30, 2021
AUGUST	PAPER REVIEW NOTIFICATION: August 31, 2021
SEPTEMBER	FINAL PAPER SUBMISSION: September 30, 2021

GUIDELINES

The limit for abstract submissions is 250 words. The limit for full-paper submissions is 16 pages. The conference proceedings will be distributed on a flash drive. Selected papers will be published in the Special issues of Nuclear Technology, Nuclear Science and Engineering, and Nuclear Engineering and Design.

ABOUT THE MEETING

NURETH is one of the premier gatherings for experts in nuclear reactor thermal hydraulics and related topical areas. The meeting is held every two years. SCK CEN, the Von Karman Institute and NRG are pleased to host NURETH-19 in Brussels, Belgium. Brussels is more than the capital of Belgium: it is the vibrant heart of Europe. In Brussels cultures swirl together in a creative mix of art de vivre, know-how, heritage and surrealism. It has everything to make your stay unforgettable!

SUBMIT AN ABSTRACT

www.nureth19.com



NURETH-19 HOSTS

Katrien van Tichelen, SCK CEN
Philippe Planquart, VKI
Ferry Roelofs, NRG

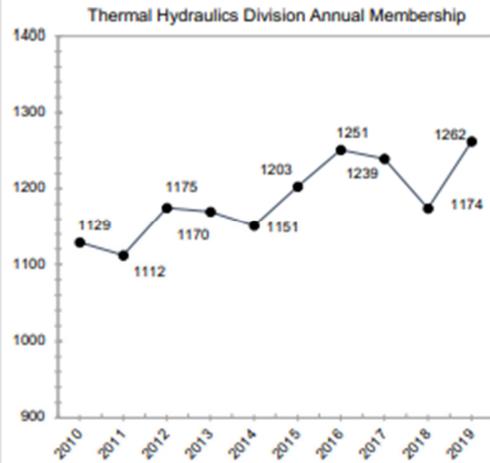
ATTACHMENT J Membership Committee Report

Membership Committee Report

Membership of the ANS Thermal Hydraulics Division is tracked based on membership renewals and applications submitted during each calendar year.

The data from early 2020 indicate a total of 1262 members, recording the highest division membership for Thermal Hydraulics in history. This exciting feat is due to the contributions of all ANS THD members and should be viewed as a positive metric for success. Continued membership support is vital to our furthering the mission of our division. All THD members are encouraged to contribute to the THD-sponsored meetings, encourage colleagues to join ANS and THD, and to participate in THD governance as their time permits.

Chul-Hwa Song
Membership Committee Chair
THD Membership Committee Chair (2020-2021)
chsong@kaeri.re.kr



ATTACHMENT K Webmaster Report

Webmaster Report

The THD website is undergoing a lot more foot traffic than before given the increase in online connections and virtual meetings. This is being taken into account for the website in order to make it easy to navigate. There have been some minor changes with the color schemes and inclusion of new modules specific to the virtual meetings. Also, there is a new page for past virtual conferences. Hopefully with these new additions, the investment of the members of the THD committee to the society is evident and attracts new members to visualize their future with the committee. We will see you online soon!

Ms. Marilyn Delgado
Texas A&M University
THD Webmaster
mdelgad17@tamu.edu

ATTACHMENT L H & A Committee Report

THD Honors & Awards Committee Report

Members: Lane Carasik; Bill Cheung; Seungjin Kim (Chair); Wade Marcum; Robert Martin; Kurshad Muftuoglu; David Pointer; Chul-Hwa Song

▪ THD Technical Achievement Award (TAA)

- Dr. Michael Z. Podowski, Professor of Nuclear Engineering at Rensselaer Polytechnic Institute (RPI) is selected for 2020 TAA
- “For his ground-breaking technical accomplishments in the modeling and computer simulation of single and multiphase flow and heat transfer”
- Formal recognition is to be given at the end of *Experimental TH Experiment I* session on Monday, 11/16. TAA Lecture will be given at NURETH-19

▪ THD Best Paper Award (BPA)

- Papers from ATH '20 and NUTHOS have been reviewed by the conference Technical Program Committee members – Led by Dr. Igor Bolotnov, THD PC Chair.
- Five top papers are to be nominated to THD H&A Committee for review/section.

▪ Conference Best Paper Award

- Under the special circumstance with COVID-19, THD will allow the conference organizers of ATH and NUTHOS to select one Best Paper award each if organizers wish so.

ATTACHMENT M

Nomination Committee Report

American Nuclear Society Thermal Hydraulics Division
Executive Committee Meeting
November 15, 2020

Nominating Committee Report

C.-H. Song, W. Marcum, E. Merzari, and I. Bolotnov (ex-officio)

The THD Nominating Committee (NC) is composed of the current Division Chair, Vice Chair, Program Committee (PC) Chair, and the Immediate Past Division Chair, and is chaired by the Immediate Past Division Chair. The goal of this committee is to nominate members for Division committees, including Division officers. The Division NC for the 2020-2021 ANS business year is composed of Chul-Hwa Song (Chair), Wade R. Marcum, Elia Merzari, and Igor Bolotnov (Ex-officio, without Vote).

Current Division Officers and Executive Committee (EC) members are listed below.

Division Officers (June 2020 – June 2021)

- Division Chair: Wade R. Marcum (OSU)
- Vice Chair/Chair-Elect: Elia Merzari (PSU)
- Secretary: Bao-Wen Yang (Delta Energy Group)
- Treasurer: Annalisa Manera (UMich)

EC Members

- Term (~June 2021): F.-B. Cheung, Y.H. Jeong, D.R. Shaver, X. Sun, M.D. Zimmer
- Term (~June 2022): F. Aydogan, I.A. Bolotnov, L.B. Carasik, Y.A. Hassan, R.P. Martin
- Term (~June 2023): Y. Liu, J. Luxat, H. Ninokata, P. Sabharwall, C. Brooks

Division Committee Chairs (June 2020 – June 2021)

- Program Committee: Igor Bolotnov (NCSU)
- Honors and Awards Committee: Seungjin Kim (Purdue)
- Nominating Committee: Chul-Hwa Song (KAERI)
- Membership Committee: Chul-Hwa Song (KAERI)

At the close of the June 2021 EC Meeting, Wade Marcum will become the ex-officio Immediate Past Chair and Elia Merzari will become the Division Chair. Nominations for Officer positions are accepted from the THD membership at large or recruited from ANS THD committees. The ANS annual election is held in April and certified at the ANS Annual Meeting in June.

Annual Officer and Executive Committee Elections

For the 2021-2022 business year beginning at the close of the ANS Annual Meeting on June 2021, the following positions will be filled: Division officer roles (Vice Chair, Secretary, and Treasurer) and the five (5) expiring at-large EC members. Renominations are accepted for at-large EC members, but at-large EC members may not serve more than two consecutive three-year terms. The official nominations come from the EC and this matter is to be discussed at the ANS 2020 Winter Meeting.

Regarding the new nomination of the Division Officers and at-large EC members, the NC brings to the EC the following MOTION:

- Per the ANS THD succession plan, Bao-Wen Yang is automatically nominated as Vice Chair and Annalisa Manera is automatically nominated as Secretary.
- Igor Bolotnov (NCSU) is nominated as Treasurer.

ATTACHMENT M (Cont...)

- The following five (5) at-large EC members, whose terms is to be expired in June 2024, are nominated: Two (2) renomination members (Xiaodong Sun, Dillon R. Shaver), and three (3) replacing nomination members (W. David Pointer (ORNL), Hyoung Kyu Cho (SNU), Musa Moussaoui (OSU)) to fill the spot to be vacated by F.-B. Cheung, Y.H. Jeong and Matt Zimmer.

Honors and Awards Committee Nominations

Per the recently approved Division Bylaws changes that became effective this July, the Honors and Awards Committee (H&AC) shall consist of four (4) past chairs of the Division serving a 4-year term starting at the end of their term, and three (3) general members to be elected with a 3-year term.

Regarding the new nomination of the H&AC at-large members, the NC brings to the EC the following MOTION:

- Yassin Hassan, Hisashi Ninokata and Xiaodong Sun: Nominated to serve the H&AC member for a 3-year term to be expired in June 2024, and
- Xiaodong Sun: Nominated to serve the H&AC chair for a 3-year term to fill the seat opened by Seungjin Kim whose term expires in June 2021.

Per the recently approved Division Bylaws changes, Kurshad Muftuoglu, who is to be on the fourth year of service to the H&AC as past Division chair, shall serve vice-chair for a 1-year term.

Conference Screening Committee Nominations

Per the recently approved Division Bylaws changes, the Conference Screening Committee (CSC) shall consist of nine (9) members, including the chair, who shall serve four (4) years and each year at least two (2) members should be newly added.

Since all the CSC memberships have been recently expired after the ANS 2020 Annual Meeting at the same time, the NC brings to the EC the following MOTION regarding the new nomination of the CSC membership, whose terms will start immediately after the EC meeting this November:

- Term expired in June 2025: Dominique Bestion (CEA, Retired), Fan-Bill Cheung (PSU), Robert P. Martin (BWXT)
- Term expired in June 2024: Francesco D'Auria (UNIFI), Jong H. Kim (KAIST)
- Term expired in June 2023: Hisashi Ninokata (POLIMI), Ferry Roelf (NRG)
- Term expired in June 2022: Xu Cheng (KIT), Wade R. Marcum (OSU), and
- Fan-Bill Cheung is nominated to serve the CSC chair by replacing John Luxat whose term expired this June.

Scholarship Committee Nominations

Per the recently approved Division Bylaws changes, the Scholarship Committee (SC) shall consist of five (5) to nine (9) members, who shall serve a 3-year term, and each year at least two (2) members should be newly added.

Since all the SC memberships need to be newly appointed at the ANS 2020 Winter Meeting at the same time, the NC brings to the EC the following MOTION regarding the new nomination of the SC membership, whose terms will start immediately after the EC meeting this November:

- Term expired in June 2024: Xu Cheng (KIT), Fan-Bill Cheung (PSU), W. David Pointer (ORNL)
- Term expired in June 2023: Seungjun Kim (LANL), Kurshad Muftuoglu (GE)
- Term expired in June 2022: Piyush Sabharwall (INL), Dillon R. Shaver (ANL), and
- W. David Pointer is nominated to serve the SC chair for a 3-year term.

Per the recently approved Division Bylaws changes, the Division chair shall automatically join the SC activities as a member for a 1-year term.

ATTACHMENT M (Cont...)

Program Committee Nominations

Per the recently approved Division Bylaws changes, the Program Committee (PC) membership shall be composed of no more than seventy-five (75) members, including the Division Chair and Vice Chair, and the Immediate Past Chair of the Division.

The NC brings to the EC the following MOTION regarding the expiration, renewal and new nomination of the PC membership, following the recommendations by the PC chair, whose terms will start immediately after the EC meeting this November:

- Membership expiring in 2020: Three (3) members
- Renomination (term expiring in 2023): Two (2) members
- New nomination (term expiring in 2023): One (1) member

Details of the PC membership can be found in the [Appendix-1](#). If proposed motions are approved, the PC will have 54 total members with terms expiring in 2021 (8 members), 2022 (23 members), 2023 (17 members), 2024 (5 members) and 2025 (1 member).

The THD Nominating Committee would like to encourage members interested in becoming more involved to contact one of the leadership positions listed above. In particular, the Division is usually in need of volunteers for technical meeting session organizers and paper reviewers.

On behalf of the NC committee, I wish to thank all of our new Division officers and committee members for agreeing to serve the Division in the next years along with all those rolling off committees for their past service.

Chul-Hwa Song
Korea Atomic Energy Research Institute (KAERI)
ANS THD Nominating Committee Chair (2020-2021)
chsong@kaeri.re.kr ; chs7266@gmail.com

ATTACHMENT M (Cont...)

Appendix-1: Proposed PC Membership Renewal and Nominations (2020 Fall)

PC Membership renewal and nominations

2020 Winter Meeting

PC Members with terms expiring in 2020:

1. Sofiane Benhamadouche
2. Don Todd
3. M. Murase

Proposed action:

Extend the membership for another 3 years (terms to expire in 2023):

1. Sofiane Benhamadouche
2. Don Todd

Move to advisory board (term expiring in 2025):

1. M. Murase

Add a new member (term to expire in 2023):

1. Youho Lee

PC Members with terms expiring in 2021:

- | | |
|-------------------|------------------|
| 1. Maria Avramova | 5. Donna Guillen |
| 2. Caleb Brooks | 6. Jeffery Lane |
| 3. Jinyong Feng | 7. Jun Lao |
| 4. Paolo Ferroni | 8. Ferry Roelofs |

PC Members with terms expiring in 2022:

- | | |
|-----------------------|-----------------------|
| 1. Steven Arndt | 13. Si Young Lee |
| 2. Steven Bajorek | 14. Wade Marcum |
| 3. Philippe Bardet | 15. Kurshad Muftuoglu |
| 4. Sama Bilbao y Leon | 16. W. David Pointer |
| 5. H. Chang | 17. Shripad Revankar |
| 6. Xu Cheng | 18. Jovica Riznic |
| 7. Fan-Bill Cheung | 19. Chul-Hwa Song |
| 8. Cesar Frepoli | 20. Dillon Shaver |
| 9. Rui Hu | 21. Xiaodong Sun |
| 10. Yong Hoon Jeong | 22. Brian Woods |
| 11. Jong Kim | 23. Ling Zou |
| 12. Seungjin Kim | |

ATTACHMENT M (Cont...)

PC Members with terms expiring in 2023:

- | | |
|-------------------------------------|-----------------------------|
| 1. Fatih Aydogan | 10. Robert Martin |
| 2. Sofiane Benhamadouche (EDF) | 11. Elia Merzari |
| 3. Igor Bolotnov | 12. Shanbin Shi (RPI) |
| 4. Lane Carasik | 13. Don Todd |
| 5. Seung Jun Kim (LANL) | 14. Rodolfo Vaghetto (TAMU) |
| 6. Mignot, Guillaume (Oregon State) | 15. Jun Wang (Madison) |
| 7. Yassin Hassan | 16. Su-Jong Yoon (INL) |
| 8. Lander Ibarra (ANL) | 17. Matthew Zimmer (KAPL) |
| 9. Youho Lee (SNU) | |

PC Members with terms expiring in 2024:

1. Hisashi Ninokata
2. Yang Liu
3. John C. Luxat
4. Piyush Sabharwall
5. Bao-Wen Yang

PC Members with terms expiring in 2025:

1. Annalisa Manera

The PC will have **54** total members with terms expiring in 2021 (8 members), 2022 (23 members), 2023 (17 members), 2024 (5 members) and 2025 (1 member).

Advisory council with the term expiring in 2025:

- | | |
|----------------------|---------------------------|
| 1. David Aumiller | 8. Michael Podowski |
| 2. Emilio Baglietto | 9. Pradip Saha |
| 3. Brian Collins | 10. DuWayne Schubring |
| 4. Francesco d'Auria | 11. Kune Suh |
| 5. Randall Gaunt | 12. Karen Vierow Kirkland |
| 6. Takashi Hibiki | 13. M. Murase |
| 7. J.-M. LeCorre | |