

MEETING MINUTES

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting

5:00-6:30 pm US Eastern time, Sunday June 13, 2021

Zoom: <https://oregonstate.zoom.us/j/91965274031?pwd=cXJiRytLcVdKY09zd1h2Mzc2SEpUdz09>

Zoom Password: 089300

Attendees (EC Members, see ATTACHMENT A):

Wade Marcum (OSU), Elia Merzari (PSU), Bao-Wen Yang (DEQD, Delta Energy Group), Fan-Bill Cheung (PSU), Dillon Shaver (ANL), Xiaodong Sun (University of Michigan), Matthew Zimmer (NNL), Yassin Hassan (Texas A&M), Robert P. Martin (BWXT), Igor Bolotnov (NCSU), Chul-Hwa Song (KAERI), Caleb Brooks (UIUC), and Piyush Sabharwall (INL).

Attendees (Other, see ATTACHMENT A):

Marylin Delgado (Texas A&M), Minghui Chen (University of New Mexico), Jun Wang (UW-Madison), Steven Arndt (NRC), Guillaume Mignot (OSU), Subash Sharma (UMASS), Xu Wu (NSCU), Shanbin Shi (RPI), Brian Woods (OSU), Karen Vierow Kirkland (TAMU), Jun Liao (WEC), Trevor Howard, Stephen Bajorek (NRC), Michael Riley, Izabela Gutowska, Alper Yildiz, Charles Martin, Seungjin Kim (Purdue), Ling Zou (ANL), John Kelly, Jinyong Feng (MIT), Aubrey Whittington (ANS), Farzad Rahnema (Georgia Tech), Sam Dotson, Jinyong Feng, Musa Moussaoui, Patrick Snouffer, Rodolfo Vaghetto (Texas A&M University), Guanyi Wang (ANL).

Proxies: Xiaodong Sun –Two Proxies (Yang Liu, VT and Annalisa Manera, UMich)

1. Opening: **(Marucum)**

Dr. Marcum opened the meeting. Dr. Yang did a roll call through on-line attendee name count, quorum met (see **ATTACHMENT A**)

Marcum: All documents are located on division website.
Recognize Marilyn Delgado for the great job in posting and maintaining the website making all current and past meeting documents available in a relatively consistent form. It will be a valuable asset post pandemic.

2. Approval of Meeting Agenda: **(All)**
(ATTACHMENT B for PROPOSED AGENDA)

MOTION to approve agenda: Elia Merzari

SECOND: Igor Bolotnov

MEETING AGENDA APPROVED UNANIMOUSLY.

Merzari: Reminder that only executive committee members can vote.

3. Approval of Minutes from 2020 ANS Winter Meeting: (All)

The DRAFT Minutes of the 2020 ANS THD EC Winter Meeting is provided for review and approval (**ATTACHMENT C**, *Minutes-from-2020-ANS-Winter-Meeting.pdf*), *In order to reduce the file size, the attachments of this Minutes are not included. The complete 2020 WM EC Meeting Minutes can be accessed through link http://thd.ans.org/wp-content/uploads/2021/06/PC_Winter-Minutes_2020-11-15-For_Approval.pdf*

Dr. Marcum went over the meeting minutes and recognized Dr. Yang for preparing the minutes in such difficult remote environment. Acknowledged and appreciated all the work that went into these. He also thanked Dr. Sun for raising numbers of important subjects that stimulated some candid and great conversation on a number of subjects during the Winter Meeting last year.

MOTION to accept minutes: Fan-Bill Cheung

SECOND: Xiaodong Sun

MINUTES FROM 2020 EC WINTER MEETING APPROVED UNIAMINOUSLY.

4. Remarks from ANS Executive Committee: (All)

Remarks from ANS Executive Committee presented by ANS president-elect, Dr. Arndt. (**ATTACHMENT D** for *THD Executive Committee Meeting*).

Marcum: Acknowledge Dr. Arndt as new president-elect at the end of this meeting.

Arndt: Give thanks for all who voted for him and the hard work from everyone throughout the year.

Some slides in presentation are from Mary-Lou's presentation at the president's meeting with division chairs about a week ago.

Done most of change plan implementations, going to try to finish that this year.

There are several other major financial issues this year.

One is the sale of the property in La Grange Park (added \$2M to the books), will be moving offices to another part of Chicago.

Another major issue is looking at potentially updating the society computer systems and the technology stack, basically the association management system, which will then hopefully be a lot easier to use for both the staff and volunteers, and allow them to do some of the things they've wanted to do for quite some time in terms of data mining and things like that.

Budget is in pretty good shape, good help from PPP loan/grants.

Starting to see some positive in areas of membership. Continue to work with a challenging budget situation, and continue to need growth in membership.

Had great success in the education program.

Doing well in terms of understanding the new norm and in-person meetings.

Can enhance external participation when get back to in-person conferences.

Currently looking at a model that is going to be implemented at the winter meeting where divisions will have the opportunity to have a couple of their sessions live streamed in addition to in-person meetings. More influential in the field. Published the special report on R&D, which got a lot of positive feedback.

Power point charts show ANS revenues are down, expenses are down, but net assets are actually up. Part of that has to do with the fact that the market is up and we've done well there, but also because we've been able to manage our expenses in these challenging times.

With respect to meetings, they have not only always been a big part of the budget, but also a big part of THD. The slide shows that a lot of meetings were cancelled, some were virtual, some had penalties, some were able to be canceled without penalties either through negotiating with the vendors or through exercising force majeure contracts.

Moving into 2021, ANS is in the process of trying to pick up a lot of the meetings that have been either cancelled or postponed. Going to be a challenge because we have to gather a lot of contents to make good, positive meetings.

One of the recent incredibly positive trends, as shown in the Chart (2020 charts), is that website usages are up. The usage of the newswire has been up dramatically in the last year, part of which has to do with the ramifications of the pandemic, but also a lot of it may have to do with people actually seeking out ANS for content.

Social media usage is up. Presence in LinkedIn as an organization being followed is way up. We should plan on exploring that. There is a spike in twitter engagement.

See a few upticks in established members, undergraduate student members, and young members.

Membership number is not great but is good. Some small upticks. Working on the fundraising campaign.

In regard to the financial model associated with the page charges, it's a very challenging area. We generate a fair amount of revenue for the society in this area. It's something that people don't like, people are very uncomfortable with, it's very challenging for us because most of our competitors are not doing it, but at the same time we've got to figure out some way to make it work. Currently

working on figuring out a better model to reduce or eliminate page charges. It is too premature to comment about it yet.

Governance is improving coordination and communications between the Student Section (SSC), Young Member Group (YMG), and Professional Division (PD), something we're going to focus on this year. Working on some bylaw changes, and of course the national election.

Had a twenty-one and half percent (21.67%) election participation this year, which is actually not bad. If you look at our sister professional societies, this is right in the realm, but would like it to be better.

QUESTIONS/COMMENTS:

Marcum: That's quite informative, a great condensed version of what was presented in the president's meeting with division chairs.

Hassan: How to provide incentive to get people from industry and utility?

It's important to get engineers and young professionals involved.

Our society has a lot from academia, what kind of activity will ANS be doing to improve the (membership) percentage from industry, utility, national lab, etc.?

Arndt: Several things are on-going for that, such as adding executive tracks to the national meetings. Also working on adding general chair from industry and national lab to the three big meetings we have. Encouraging divisions to be more proactive with industry.

For this meeting there are several executive sessions specifically geared towards industry.

Also working on adding general chairs from both the national labs and industry at the 3 big meetings, and we're encouraging some of the divisions that have not been as proactive with industry to be more proactive with industry.

Given the financial situation utilities are in, it's a tough thing to do. We really have to show value, and we really have to provide that demonstrable value to get people interested in being members to participate, being at the division level, at the nation level, or even at the local level.

Also a little bit dependent upon the health of the industry, and hopefully that is improving.

Marcum: For those non-members that register for national conferences, the society is giving 6 months temporary membership.

Whittington: Confirmed 6 months.

Marcum: That does not necessarily align with the value proposition argument that Steven laid out. In the last winter meeting, ANS THD enlisted about 60 folks whom THD

sent emails out to and followed up with in attempts to engage them. Hopefully there will be more robust membership as the result of the ANS sponsored temporary membership.

Hassan: Recognized this as a positive action, ASME also provides 1-year free membership for their registration as incentive to non-members.

Whittington: With our improvement, such as the publications in Nuclear News, we are hoping with these changes to bring in new people who will see the value of our society.

Sabharwall: Looking at the UWC upcoming meeting, most folks who attend UWC do not necessarily attend our national meetings.

ANS OPD is examining ways to enhance the participation. An idea that has been brought up is to have a separate session for industry and utilities as they may have good input from the experience point of view, not necessarily the technical point of view.

5. Continuous improvement of NSE: **(Corradini)**

(ATTACHMENT E for *Continuous-Improvement-of-NSE.ppt*)

Prof. Mike Corradini shared the PowerPoint and discussed continuous improvement in Nuclear Science and Engineering Journal (NSE).

Corradini: NSE is working on improving the journal by further enhancing the quality of the papers and trying to provide a number of improvements.

NSE intends to advance the review process, improve or increase the reviewer pool, expand the scope of the journal, as well as look for ways to reduce the page charges.

NSE now has a number of associate editors and an editorial advisory board thanks to the work of Dr. Farzad Rahnema.

Want to engage the members of ANS division and executive and program committees to identify potential issues that they need to pay attention to and address, as well as encourage special issues on emerging topics.

As part of that, want to put out a survey. Objective of the survey is to improve NSE and re-emphasize NSE actual scope as stated on the website.

Prof. Corradini posted a survey question, an open question posted on-line: "As a potential author, what issues affect your decision (either negatively or positively) when considering the Nuclear Science and Engineering journal as a venue for publishing your research?"

NSE is looking for a list of concerning issues listed according to priorities, the highest ones to lowest. If there are more than a handful of issues, give the top 2 or 3. Survey is now opened on through Survey Monkey, and NSE will send it out after the end of this annual meeting sometime Thursday or Friday.

QUESTIONS/COMMENTS:

Hassan: One of the important items when submitting papers is how fast the decisions are made. 3, 4, or even 5 months are fine, but sometimes the papers promise publishing in 3 to 4 days, which begs to question the quality of the paper. Also, many, especially graduate PhD students, like to have publications, or at least to get reviews. So review time is important, especially for graduating students, speeding review and feedback are critical to get quality papers.

Corradini: About the review time, it has been reduced substantially. Used to be somewhere over 6 months, and now down to around 3 or 4 months. The biggest difficulty in his experience as the Associates Editor is getting reviewers to review the papers in a timely fashion, but NSE has found a way to at least encourage reviewers so that, the time between them accepting to review a manuscript, and then getting their comments back, and then getting them to the authors, has been reduced significantly.

Encourage all EC members to respond when get the email, please respond and responses will be anonymous.

6. YPC Event - Sponsorship Request: (Snouffer)

(ATTACHMENT F – *Virtual YPC21 flyer*)

Patrick Snouffer introduces the upcoming YPC conference with PowerPoint presentation (see attached)

Snouffer: The Young Professional Congress happens every 2 years, usually aligned with the DC winter meeting for young members, students, and people outside of ANS as early professionals. Patrick Snouffer is co-chairing the YPC this year with Kelsey Amundson and are looking for sponsorship support.

The conferences provide professional experience for future leaders of the nuclear industry, and bring them all together.

This year it'll be a 2-day virtual program, so ends up reducing their cost a lot.

The theme is to advocate for yourself, the industry, the world, and it'll be held Friday November 12th and Saturday November 13th (no longer an embedded meeting to the ANS WM) through Zoom.

Doing a few breakout sessions that are really geared towards professional development of young members in the industry.

Cost for the meeting is expected to be much less because it is virtual. Expect around a \$5,000 to \$6,000 budget for it.

There are sponsorship levels at \$250, \$500 and \$1000, and with this, if you sponsor at the \$500 Silver level, there are virtual coffees beforehand where the divisions would talk to young members and early career professionals. At \$1000 level for sponsoring a session, YPC is working on some sort of virtual social event, and the division would be able to have a member on the team.

YPC is encouraging people who attend the Young Professional Congress to also attend the winter meeting by giving them a discount.

Looking for division support. In the past, usually get 10 divisions to help support, and usually have between 100 and 150 students attending on a full day, though those numbers are a little uncertain with a virtual meeting. Looking for support from THD.

QUESTIONS/COMMENTS:

Hassan: Thanks Patrick for the good presentation. Is the Young Professional Congress only for US, or are other participants from all over the world welcomed?

Snouffer: One of the other reasons why they are going virtual is to try to allow other members, or other attendees to come.

You don't actually have to be an early career, the contents are just geared towards that.

Also trying to work with NAYGN, North American Young Generation Nuclear, and the women and nuclear groups to bring in people outside of ANS membership, as well.

Hassan: Suggest that on the first slide, for the picture that shows a section of the world, should show the whole world (to represent encompassing participants from Africa, Europe, Asia, etc.) instead of just the US section of the world. Would show more that they accept everyone.

Marcum: Patrick to email the materials to Wade so that he can send it to Baowen Yang for record.

7. Action Items from 2020 ANS Annual Meeting: (Merzari) (ATTACHMENT G for *Membership Committee Proposal*)

Prof. Elia Merzari presented and discussed the task that was entrusted to him at the previous EC meeting, to put together a proposal to interpret the bylaw and rules regarding the membership committee.

Merzari: The goal is to put together a proposal to interpret the bylaw and rules the TH Division has for the membership committee, which are not very descriptive in the current form. Does not have indications of who the chair of the membership committee should be. It only states that there should be no fewer than 3 members and that the Vice Chair, Secretary, and Treasurer should be members of the committee.

Historically, as the past chair was considered the chair of the committee, but the committee has not, at least in the past 10 years, appear to have been a very active committee based on the meeting minutes. Historically, this committee has not done much other than reporting the status of membership and provided some numbers in working with ANS.

However, the rules of the bylaw clearly state that the duty of the committee is actually to bring the advantages of the thermal-hydraulics division membership to the attention of qualified candidates. So the role of the committee is really an advocacy role. There were some exceptional couple of years when this role was discussed, for example, during the time when David Aumiller was the division chair, the role of Membership Committee was discussed, and there were some actions in terms of membership and trying to fulfill these duties.

Overall, the duty of this membership committee has not been the focus of our community, which was fine when the membership was growing, like in the past 10 years; however, recently there was a small dip in membership, could just be a fluke or part of a normal up and down trend for the year, and we still might end up with a positive number by the end of the year.

Currently there are 971 members in the division, it is possible to grow back to the 1,100 that we had last year. Very often, we had the highest growth among ANS divisions. With our current membership of around 1,000 members, we are far below RPD, OPD, and other divisions, in fact, we are a middle sized division although we have a program that is by far the largest. Furthermore, we have very successful conferences such as NURETH and even embedded ATH meeting.

So the idea is to bring back the membership committee to its original role that is stated in the bylaws and the rules, which is to actually provide advocacy for division across the board and devise ways to promote the value to broad range of active candidates, including, as Professor Hassan mentioned, people in industry.

There is also great international membership potential. There is a large international attendance in our international conference (NURETH) even when it is in the US, but our international membership is only 10%. This is because it's hard to convince international members that there is an advantage in joining an American society. At 10%, we have about 100 international members, that's far below the attendees in NURETH. Industrial participation has been very low, which need some more effort.

Another concern is student participation. Through interactions with student members, we've seen some students express discomfort in attending the meetings, probably because those in-person meetings are so often so very packed that they felt intimidated. Students are very important because they are the pipeline of the division, so if we have an image problem with the students, or some issues in recruiting them is a big problem.

The proposal is to have an 11-person membership committee with 5 statutory members, which would be the chair of the division, the vice-chair, the secretary, the treasurer, and the past-chair of the division, whom would all serve 1-year terms, and 6 at-large members with 3-year terms, 2 members renewed every year, and the chair of the committee will be one of these at-large members.

The goal would be to try to have a diverse committee among the at-large members so that we can have three representative members from industry, young members,

students, under-represented groups, and international participants. The goal of this committee is to fulfill the goal stated in the bylaw.

Would like to revise the division's value proposition and advocate membership to **ALL** eligible individuals, and work with other committees of division to conceive activities that promote value to our membership and to provide an accurate picture of our division, which is now much easier to do thanks to the work that ANS HQ has done.

I would also like to recognize Aubrey for sending useful snapshots of the division that will help with the membership of the committee.

I wish to have motion to accept this proposal.

Final suggestion is not to revise the bylaws right now, but just to try out the plan/proposal. This plan is consistent with the current rules, so want to see if this plan will work out. Then, can change the bylaw accordingly without changing the rules every year.

QUESTIONS/COMMENTS:

Marcum: Just to expand on a few points: this has been something ongoing for quite some time. Our membership number has been healthy in spite of our efforts in trying to cultivate a culture of embracing new members. While many of us enjoy culture within our division, we tend to have very candid, direct and frank conversation in which we got feedback about our culture being intimidating and not necessarily welcoming to folks who are not acclimatized to it. This is simply expanding upon Elia's comments with respect to students' impasse in meetings and feeling intimidated. We've received multiple direct and indirect feedbacks on several occasions. This action has been carried forward for over a year now.

So this is not a formal change in policy or bylaw, the proposal is actually to adjust behaviors, not really policy. This proposal still requires a motion to approve, although the proposal itself does not require a change of procedure or bylaw.

Merzari: I echo Dr. Marcum's interpretation, would like a motion to do this so that it is documented and represents a policy for this division going forwards.

Marcum: If no one is willing to motion to approve, are there alternate suggestions that someone might have that they're willing to motion?

Martin: I have a concern about the potential dilution of opportunity due to the increase to 11 members. Often only a few people end up doing 90% of the work and there is no subcommittee outside of the committee.

Merzari: I agree that 11 is a large number. I envision that the 6 at-large members will do the core work. The other 5 members are statutory members because they are required by the bylaws, but they are usually busy with other official duties, so they'd be there more as observers, with longer terms.

Martin: Who really "owns" the committee then? The chair?

Merzari: The chair of the committee would “own” responsibility for the committee.

Martin: So who is that? Is that nominated among the 11 members?

Merzari: It would be one of the 6 at-large members.

Martin: Nominated by the EC committee?

Merzari: No, that would be the nominating committee. All appointments need to be nominated by the nominating committee and approved by the EC as stated in the bylaws.

Cheung: Is this the same committee that nominates the new PC members and EC members?

Merzari: The nominating committee is the one that nominates PC members and EC members. The membership committee does not nominate anyone.

Cheung: Then the name should be clarified because we also call them the nominating committee.

Merzari: Yes, I agree.

The only rule that relates to the membership committee is the first line in the Membership Committee proposal (*[9.3 Membership Committee]*) stating that “*The membership committee will be composed of 11 members:*”. The five 5 statutory members are required by the bylaws.

Martin: Would also be nice to identify a matrix that we can track, for example, having a goal of reaching 2000 members by 2026. There’s a lot of membership that’s outside of our control because we ebb and flow with the national environment, for example, if there’s general interest and increase in investment for nuclear, which of course is something we are seeing now. How do we measure what the committee does with respect to what is going on nationally?

Merzari: Good suggestion. Would add to the tasks for the committee to develop a matrix to evaluate our performance as a division. It is not necessarily the Membership Committee’s task to evaluate this matrix, it should be the division’s, it should be a global efforts.

Marcum: I agree with Robert. Examining the past history, our membership has been quite steady following the trend of national membership. Over the last year and half or so, started seeing the very early stage of a bifurcation of that trend, or it might just be noise and it might bounce right back up next year. However, other divisions are now quite active with on-line presence and engaging with young members and student groups, and frankly, we are not.

So, maybe the figure of merit should not be the total membership, but rather the fraction of our membership within ANS. There are several divisions that have big uptick over the 15 months and their membership decorations are measurable and not within the noise. THD has a small downtick which is within the noises, but is going towards the opposite direction.

Shaver: It is a really good proposal and what's the alternative? We do nothing? And by the time we figure out it is too late?

Marcum: There is nothing to lose except that it requires effort from this committee. Again, the proposal here is not to change the bylaw or procedures, instead, it is intended to change the committee's behaviors and conducts.

Martin: A reminder that we are expected by the Professional Divisions, and of course the board of directors, to maintain strategic plans and succession plans, and they get updated at least every two years. It would be important to know that a proposal like this is consistent with the strategic plan. Make sure that it's all coordinated together. Keep in mind, we did have strategic plans and succession plans. Part of our succession plan is to put more conscious effort to bring in younger people who are the more fertile demographic for new people. Where is that at? Who owns it now?

Merzari: We have not had an updated succession plan for several years now.

Martin: It is all part of our mission here and the governing side of the division. We really need to bring that forward and hang something like this on top of that.

Merzari: Is the suggestion not to do this, keep business as usual, and revise this as a part of succession plan?

Martin: No, the way we capture the objectives of the division is in the strategic and succession plans, and a proposal like this fits the plan.

Should put some teeth on it, and move on with this. Cannot wait for another 6 months to meet, need to resurrect this from Dave Aumiller's tenure, and capture this as an action for next meeting.

Merzari: It has stayed unchanged far longer than 3 years. We have not met with the board every two years. There are no matrix for PDC anymore either, so PDC doesn't track this stuff anymore. It is on his to-do list once he became chair. Agree with Robert Martin and will take them on as action items if Wade is willing to allow him to re-take a look at those documents and add them.

Marcum: Of course. It is too important for us to continue sitting on.

MOTION to approve the proposal of the membership committee as written: Xiaodong Sun

SECOND: Dillon Shaver

Discussion: None

IN FAVOR: Counted, 18 (including 3 proxies) out of the 20 are in favor

TWO ACTION ITEMS:

- 1. Elia Merzari to provide an update on the strategic and succession plans.**

2. The nominating committee chair to provide, as soon as possible, the names of the members at-large.

8. Chair Report: (Marcum/Merzari)

Dr. Marcum reported mainly based on the Report from President's Meeting with Division Chairs (**ATTACHMENT H** for *Report from President's Meeting with Division Chairs*) and YMG Liaison Program.

a. Report on President's meeting with Division Chair

Marcum: Refer to documents on website.

Note that the relationship between the president and CEO is much different now than it has been traditionally in the past with the division chairs. Craig is actually incredible with communicating with the chairs, so Elia will begin to meet with Craig quarterly or monthly and hear updates through one-on-ones. Much better communications than in the past. Don't hesitate to reach out with any questions about what's reported on site.

b. YMG Liaison Program

Dr. Merzari updated the status of YMG Liaison Program based on request from Dr. Marcum.

Merzari: Matt Zimmer is our liaison.

They'll have more interactions between the divisions, so they're trying to make sure the liaison is both very active within the division and very active with the YMG.

Matt's going to try to reach out to you to try to be active in their activities. Please commit to those, and if you have trouble with that, please let us know.

YMG is doing a lot of interesting things right now, including webinars, and they even have a slack group where they are trying to really help people communicate.

There might be potential for us to be active in the slack group and advertise THD that way.

Zimmer: Fortunately, we are in relatively good standing with YMG. Not many liaisons actually reach out that often, but we do.

9. Treasurer's Report: (Manera)

Marcum: Not available at the moment.

Annalisa Manera has taken on a new role, and it's a definite timeline, meaning it's an annual appointment across seas.

Once she lands, he will engage with her more proactively making sure that they can get a budget proposal out quickly so that the executive committee can get it approved, presented, and moving forward shortly. The budget is static both fall and spring. Based on the Spring Newsletter, our financial status is quite healthy.

We have been doing quite well with incomes from successful conferences and some recent scholarship donations. Encourage everyone to read the newsletter.

10. Program Committee Report: (Bolotnov/ /Merzari/ /Sun/Cheung)
(Attachment H: PC Report AM2021).

Bolotnov:

a. THD Sessions for ANS 2021 Virtual Meetings

For this Annual Meeting, there are 10 sessions, including 2 panels.

Note, presentations are now 15 minutes long, so the session chairs please keep that in mind.

For details, please see the PDC board website for minutes from this meeting.

b. THD Planning for 2021 Winter Meeting

Bolotnov: Located in DC.

The admission window for papers close July 12th.

Reviews are due August 15th.

Please look out for his emails soliciting the reviews, and please submit paper contributions for your sessions (total 12 sessions and 2 panels).

c. THD Planning for 2022 Annual Meeting

Bolotnov: The discussion on 2022 annual meeting was quite brief with main focus on the embedded topical for ATH 22, and most of the contributions are for the embedded topical.

d. NURETH-19 Update

Merzari: NURETH-19 will be held March 6 to 11, 2022.

It's been postponed because of the pandemic.

Received about 1,030 abstracts.

The draft paper deadline is at the end of June.

The review process is ongoing, thanks to all that participated.

If interested in being a reviewer, please contact him directly. So far everything is expected to be held on time. The deadline might be extended, but not guaranteed

e. THD Planning for AHT'2022 Embedded Topical

Sun: ATH'22 is going to be held in June around 12th to 16th.

This year it is going to be located in Anaheim. It's in a different hotel than before, it's going to be in Anaheim Hilton.

Call for papers is going to be out in July, so if any members are interested in helping with a special session for this embedded topical, please contact David Pointer, Dr. Song, or Xiaodong Sun directly.

f. NURETH-20 Proposal Request

Cheung: Sent out the request for proposal more than a month ago, and July 15th will be the deadline for proposal submission.

Intend to work with the conference screening committee to send the decision to EC by the end of July, and want to urge EC to approve quickly so as to allow the host of the organization to have enough time to meet all the deadlines, which will be coming up in August and September.

Marcum: Reach out to Professor Cheung or Dr. Marcum for questions. Contact information are on the call for proposals.

Thanks everyone for a wonderful, crazy, intense, anxious, stressful couple of years. Had the privilege of leading three executive committee meetings and every single one of the virtual meetings. Appreciate the active contribution everyone has maintained within the last 15 months.

Transition meeting chair to Elia Merzari.

Merzari: Thanks Dr. Marcum for his leadership and contribution.

A plaque was shipped to Dr. Marcum in appreciation of his service.

Request that both Dr. Marcum and Dr. Song bring their plaques to the next in-person meeting for in-person presentation and a photo-op.

11. Membership Committee Report: (Song)
(Attachment I: PC Report AM2021).

Dr. Song reports from Korea

Song: The THD division membership dropped slightly below 1,000 at 971 in early 2021, which corresponds to a decrease of more than 200's (291) members when compared to maximum number of 1,262 in the 2019. Even when compared to last year's number, there is a decrease of over 100 in membership. Really need to have promotion efforts to increase our membership in this division.

We have a competitor, a newly born division on aerospace. Some of our THD members might feel more geared towards that new division.

Merzari: Please refer to the newsletter for a snapshot with the distributions of division memberships by industry, and the division between international and US members.

12. Website Report: (Delgado)

Delgado: The website has just been updated to have all the documents and to keep track of this current session they're having.

There is now a new page called Past Meeting Documents for anyone who needs to go back to look at the documents that we don't have a special page for.

The website usage is a lot higher than before because of all these meetings, and hopefully, even as we go back to in-person meetings, we can still utilize the website.

QUESTIONS/COMMENTS:

Sun: Need to change the name for the HQ liaison. (New Staff liaison to the EC-- Tim Covery?)

Merzari: Will send Marylin a couple of other notes and names to be listed.

The honors awards committee has one name wrong. Should also list a vice chair position now.

13. Honors Committee Awards: (Kim)

Kim: The technical achievement award was awarded to Professor Michael Podowski last fall, he would like to give TAA a lecture in person, but that lecture is yet to be scheduled.

Towards the end of 2020, also selected THD's best paper award, and it was awarded to the paper entitled as *PRESSURE AND OSCILLATORY FLOW EFFECTS ON THE TWO-PHASE FLOW AND HEAT TRANSFER IN A ROD BUNDLE*, which was authored by Grant Garrett, Faith Beck, Douglas Miller, Brian Lowery, Fan-Bill Cheung, Stephen Bajorek , Chris Hoxie, and Kirk Tien. Believe this will be awarded during the meeting Monday this week.

Haven't received any TAA nominations as of today, so if anyone has someone in mind to nominate for the TAA award of 2021, please forward it to the incoming chair.

QUESTIONS/COMMENTS:

Merzari: Incoming chair will be Dr. Sun.

Reminder that August 1st will be the deadline of the first nomination of the Sehgal Memorial Award. His family would really like this to take place.

Dr. Bolotnov will arrange the Best Paper award presentation into the Program and make sure Grant Garrett will be there.

Bolotnov: It might be at the end of the sessions on Monday.

Either add to program or alter the end of the sessions.

Cheung: ANS already sent the plaque and check to Grant.

Professor Cheung to check with Grant if he prefers to have the ceremony at the end of sessions or in-person later at the ANS meeting. Need to consider that he might be graduated by then.

14. Nomination Committee Report (Song)

Dr. Chul-Hwa Song reported on the NC (Nomination Committee) activities.

Song: National election took place over this Spring. Elected new division leaderships. According to our division Succession Plan, Dr. Elia Merzari has been nominated as incoming division chair, Dr. Baowen Yang as the incoming vice-chair, Dr. Annalisa Manera as incoming secretary, and Dr. Igor Bolotnov as incoming division treasurer. As for EC memberships, there are 5 at-large members whose terms are to be expired at the close of this meeting. Therefore, there are new at-large members: two new nominations, including Xiadong Sun and Dillon Shaver, and 3 replacing nomination: David Pointer (ORNL), Hyoung Kyu Cho (Seoul University), and Musa Moussaoui (OSU), a student representative. They filled the spots vacated by Professor Fan-Bill Cheung, Yong Hoon Jeong, and Matt Zimmer. Professor Cheung has been serving the division for 2 consecutive terms, so he has been replaced by the new members.

Sends appreciation to Matt Zimmer for his 3 years' contribution to the advancement of this division and for also serving as a student representative.

In regard to the scholarship committee members and conference selection committee members, those chair and the members' positions were nominated during the last November meeting, and they were all unanimously approved by EC in the division. Therefore, the scholarship committee and conference selection committee are both in operation. Dr. David Pointer is the Chair for the Scholarship Committee and Prof. Cheung is the Chair for the Conference Selection Committee.

There are new nominated PC members. Six (6) PC members extend their membership for another 3 years, two (2) PC members are moved to advisory board, and four (4) new members are added to the PC. There is no need for any motion for this proposal.

QUESTIONS/COMMENTS:

Merzari: The motion is coming from the nominating committee?

Song: Yes. We have 6 members extending their membership, and 4 new members.

Merzari: If there's a motion from the nominating committee, don't need a second, but do need a vote.

The same motion moves 2 members to the advisory committee?

Bolotnov: Yes.

Song: The six extended PC members include Maria Avramova, Caleb Brooks, Jinyong Feng, Donna Guillen, Ferry Roelofs, and Jun Liao, whose terms expire in 2024. The four new PC members include Victor Petrov, Subash Sharma, Guanyi Wang, and Darius Lisowski, whose terms expire in 2024. Two members who are moving to the advisory board are Paolo Ferroni and Jeffery Lane, whose terms expire in 2026.

Merzari: Thank you, so we don't need a second.

Motion Approved UNANIMOUSLY.

Merzari: Regarding the ceremony for the Best Paper Award, Dr. Bolotnov is to work with Prof. Cheung on the format of presenting the award.

15. Old Business: **(All)**

Prof. Fan-Bill Cheung gives an update on the NURETH 40th anniversary celebration activities/preparation.

Cheung: NURETH 40th anniversary update. With the strong support of Professor Yassin Hassan, have successfully recruited more than 10 papers for a special issue of NED. Altogether, twelve papers were invited for the special edition of NED, and 11 of them are already available online.

Each paper provides very comprehensive review of the particular topics in thermal- hydraulics, and there are a number from old timers as author or co-authors, including Neil E. Todreas, Dick (Richard T.) Lahey, and Mamoru Ishii, just to name a few. These are not just regular papers. Some are actually over 100 pages long. Hopefully, these papers will benefit the entire international technical community, and will certainly provide a nice memory. The title of this NED special issue is "NED Special Issue for 40th NURETH Anniversary Celebration".

Because of the pandemic, will not have any in-person celebration. Maybe, if everyone feels it is adequate, it can be done at NURETH-19.

Merzari: Agrees, will see if the organizers are able to have an event like that during NURETH-19.

Next item, there's been a push recently for successful webinars.

YMG has offered to co-sponsor webinars with THD. Our division should have somebody (not necessarily a committee) to really push this and try to collect material to develop webinars. It is going to become increasingly important. One thing that can be done, as suggested by Bob Martin is to have Keynotes and Plenary's tapes available on-line, but it can also be contents specifically developed for webinar. Will continue to discuss this topic.

If anyone wants to volunteer to drive this, let them know. Please talk to him in person or by email.

Zimmer: Willing to help, especially with the coordination with YMG in the future.

16. Adjournment: **(All)**

- Yang: Remind everyone who made presentations today to please send presentation materials to Baowen Yang by email.
Requested Dr. Song and Dr. Bolotnov to send lists of new memberships to Baowen Yang for meeting minutes in order to avoid any mistakes.
- Bolotnov: Will send document and Cc Marilyn for website documents.
- Yang: Further requested Marilyn to send any documents, which were received but not yet posted on the web, including Mike's presentation.
- Song: Introduced new EC member, Musa Moussaoui.
- Moussaoui: Introduces himself. A PhD student from Oregon State University.
- Zimmer: I emphasize the importance of student participation. The reason I am here is because I got invited by Igor and Dillon. New membership often starts with people in this meeting taking initiative and inviting others. Please invite friends.
- Shaver: If Matt contacts him in July, would probably have some content ready to go.
- Sabharwall: There's a scholarship committee that David Pointer lead, which had 6 participants, was that discussed?
- Merzari: No, because David is not present.
- Sabharwall: I would like to emphasize that Adam Kraus (Penn State) was the winner of the Hochreiter scholarship.

ACTION ITEM: In the next meeting, going to have a standing scholarship committee item for the next agenda.

MOTION to adjourn: Sabharwall

SECOND: Bolotnov

ALL IN FAVOR, meeting adjourned.

ATTACHMENT A

Roll Call

American Nuclear Society – Thermal Hydraulics Division

Executive Committee Meeting

5:00-6:30 pm US Eastern time, Sunday June 13, 2021

Zoom: <https://oregonstate.zoom.us/j/91965274031?pwd=cXJiRytLcVdKY09zd1h2Mzc2SEpUdz09>

Zoom Password: 089300

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	NOT PRESENT
Chul-Hwa Song	KAERI	PRESENT
Yang Liu	Virginia Tech	NOT PRESENT
John Luxat	McMaster University	NOT PRESENT
Hisashi Ninokata	Politecnico di Milano	NOT 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

Proxies: Xiaodong Sun -- 3 Proxies

ATTACHMENT A (CONT...)

Roll Call

American Nuclear Society – Thermal Hydraulics Division

Executive Committee Meeting

5:00-6:30 pm US Eastern time, Sunday June 13, 2021

Zoom: <https://oregonstate.zoom.us/j/91965274031?pwd=cXJiRytLcVdKY09zd1h2Mzc2SEpUdz09>

Zoom Password: 089300

Other Attendees

Marilyn Delgado		Present
Minghui Chen		Present
Jun Wang		Present
Guillaume Mignot		Present
Seungjin Kim		Present
Patrick Snouffer		Present
Farzad Rahnema,		Present
Jinyong Feng		Present
Shanbin Shi		Present
Steven Arndt		Present
Subash Sharma		Present
Sam Dotson		Present
Musa Moussaoui		Present
Xu Wu		Present
Ling Zou		Present
Jun Fang		Present
Rodolfo Vaghetto		Present
Guanyi Wang		Present
Karen Vierow Kirkland		Present
Aubrey Whittington		Present

Trevor Howard		Present
Stephen Bajorek		Present
Michael Riley		Present
Izabela Gutowska		Present
Alper Yildiz		Present
Charles Martin		Present

ATTACHMENT B

PROPOSED AGENDA

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting

5:00-6:30 pm US Eastern time, Sunday June 13, 2021

Zoom: <https://oregonstate.zoom.us/j/91965274031?pwd=cXJiRvltcVdkY09zd1h2Mzc2SEpUdz09>

Zoom Password: 089300

- | | |
|---|-----------------|
| 1. Opening | Marcum |
| 2. Approval of Meeting Agenda | All |
| 3. Approval of Minutes from 2020 ANS Winter Meeting | All |
| 4. Remarks from ANS Executive Committee | Arndt |
| 5. Continuous Improvement of NSE | Corradini |
| 6. YPC Event – Sponsorship Request | Snouffer |
| 7. Action Items from 2020 ANS Annual meeting | |
| a. Write proposal for a revised rule on membership committee | Merzari |
| 8. Chair Report | |
| a. Report from President's Meeting with Division Chairs | Marcum |
| b. YMG Liaison Program | Merzari |
| 9. Treasurer's Report | Manera |
| 10. Program Committee Report | |
| a. THD Sessions for ANS 2021 Virtual Annual Meeting | Bolotnov/Shaver |
| b. THD Planning for 2021 Winter Meeting | Bolotnov/Shaver |
| c. THD Planning for 2022 Annual Meeting | Bolotnov/Shaver |
| d. NURETH-19 Update | Roelofs |
| e. THD Planning for AHT'2022 Embedded Topical | Song/Sun |
| f. NURETH-20 Proposal Request | Cheung |
| 11. Membership Committee Report | Song |
| 12. Division Website Report | Delgado |
| 13. Honors and Awards Committee Report | Kim |
| a. TAA Update | |
| b. Division Best Paper Award (to be recognized at Monday Session) | Marcum |
| 14. 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 | |
| 15. Old Business | All |
| a. Update from NURETH 40 th Anniversary Subcommittee | Cheung |
| 16. New Business | All |
| a. Division Organized Webinars | Merzari/Marcum |
| 17. Adjournment | Marcum |

ATTACHMENT C

In order to reduce the file size, the attachments of this Minutes are not included. The complete 2020 WM EC Meeting Minutes can be accessed through link http://thd.ans.org/wp-content/uploads/2021/06/PC_Winter-Minutes_2020-11-15-For_Approval.pdf

ATTACHMENT D

THD Executive Committee Meeting.pptx

6/24/2021



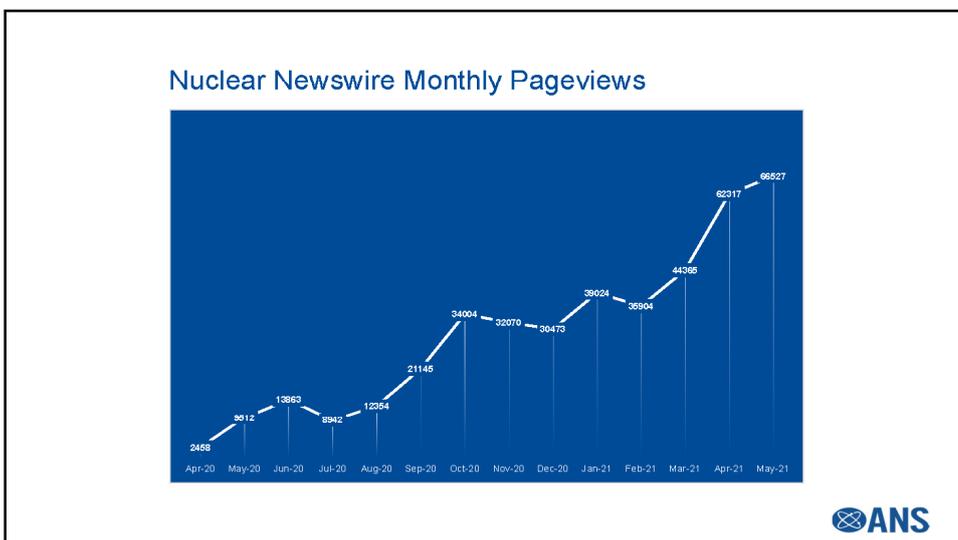
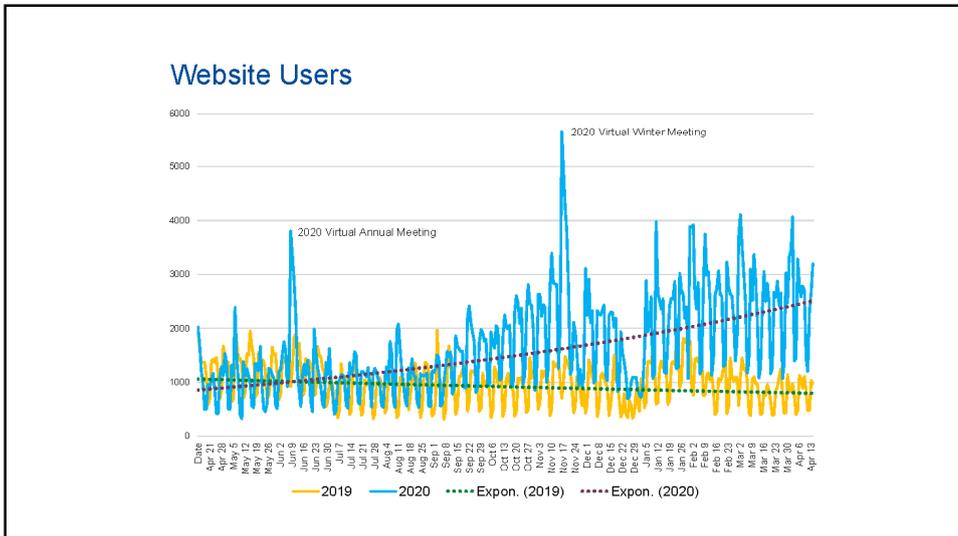
A white slide with a grey network diagram background. The text reads: "Emerging from COVID stronger", "President's report", and a bulleted list of achievements and needs. The ANS logo is in the bottom left.

President's report

Emerging from COVID stronger

- Change plan substantially implemented
- Opportunity for continuing strategic planning and action
- Active Professional Divisions Committee / solving problems
- Net improvement to 2020 ANS financial position, despite pandemic
- 2021 budget will end with a net budget surplus
- Sale of property in 2022 would add another \$2M to the books
- Continuing needs
 - Grow membership and continue to improve benefits
 - Grow philanthropy
 - Deploy and expand K-12 programs
- Expand radiation communication activities
- Update bylaws
- Grow rapid response capability
- Raise awareness of clean nuclear energy

ANS



2021 Fundraising Campaign

Launch Summer 2021

2021 Goal \$650,000

Target
Support for *Nucleus: Center for the Advancement of Nuclear Science and Technology*

- K-12 activities expansion / Nuclear in Every Classroom
- Radiation Communication / A Dose of Reality
- Workforce development/diversity

Donor Base

Foundation and government entities – Grants and awards seeking support for specific strategic initiatives

Corporate – Primary prospects include companies that have a history of large philanthropic gifts to the original CNSTI fundraising campaign and/or to the Navigating Nuclear appeal

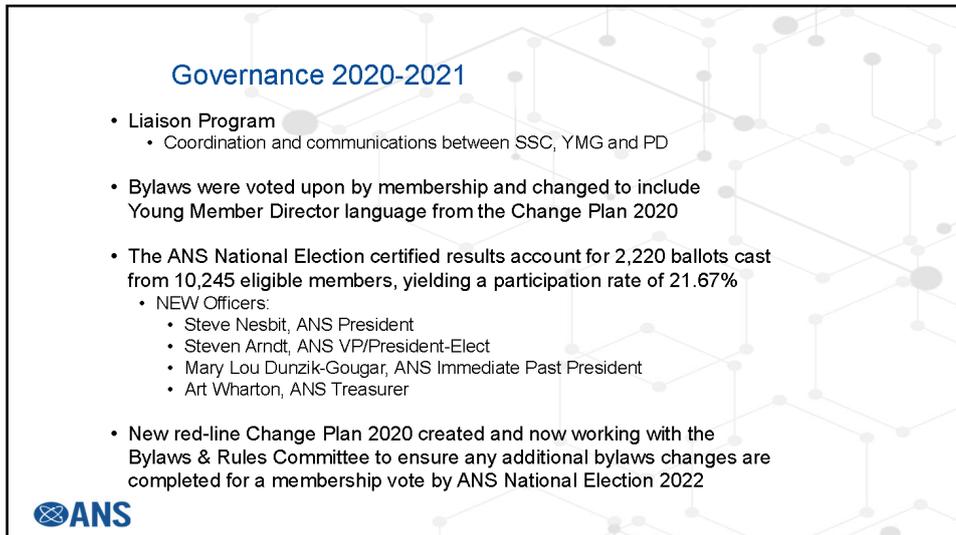
Individual – Primary prospects (via a direct mail solicitation) include high wealth ANS members, Legacy Circle donors, and Honors and Awardees



Page Charges

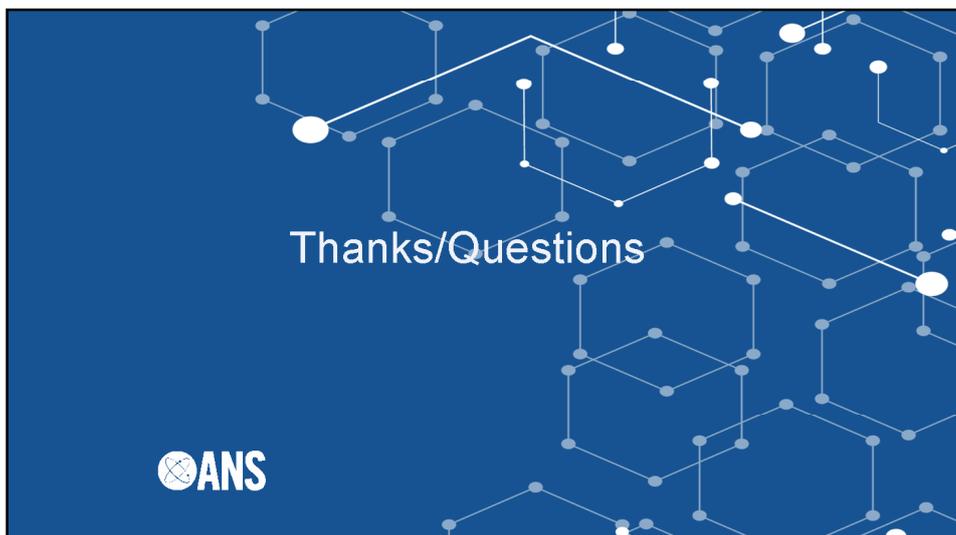
- **Current financial model**
 - Publications is a revenue generator for the society, the revenue gained from publications is meant to support the other programs of the society.
 - Revenue for our three journals, topical proceedings, and transactions can be mostly split into two categories, subscriptions and page charges
 - Page charge breakdown
 - Transaction; \$100/page, has been cut to \$50/page in 2021
 - Journals; \$60/page
 - Topicals vary significantly
 - The revenue from subscriptions and page charges has decreased over the years.
- **Bridging the gap**
 - Potential Open Access platform could increase revenue
 - Raising rates
 - Meeting reg fees
 - Membership rates
 - Subscriptions
 - Grant/Fundraising
 - Allow for a page limit i.e. 10 pages for free (see IEEE and ASME)





Governance 2020-2021

- **Liaison Program**
 - Coordination and communications between SSC, YMG and PD
- Bylaws were voted upon by membership and changed to include Young Member Director language from the Change Plan 2020
- The ANS National Election certified results account for 2,220 ballots cast from 10,245 eligible members, yielding a participation rate of 21.67%
 - **NEW Officers:**
 - Steve Nesbit, ANS President
 - Steven Arndt, ANS VP/President-Elect
 - Mary Lou Dunzik-Gougar, ANS Immediate Past President
 - Art Wharton, ANS Treasurer
- New red-line Change Plan 2020 created and now working with the Bylaws & Rules Committee to ensure any additional bylaws changes are completed for a membership vote by ANS National Election 2022



Thanks/Questions



ATTACHMENT E
Continuous-Improvement-of-NSE

6/24/2021

Nuclear Science & Engr
Survey

Mike Corradini, Associate NS&E Editor

Background and Motivation

- ANS wants to improve NS&E by further enhancing the quality of the papers, impact factor, throughput, and shortening the time from submission to final decision to publication.
- Several initiatives are in the works based on the current issues such as: review process, reviewer pool, scope of the journal, page charges, and expansion of the editorial board and editorial advisory board.
- We wanted to engage the members of the ANS division executive and program committees to identify the potential issues that we need to pay attention to and address, as well as to encourage special issue of NSE on emerging research topics.
- The objective of this survey is to improve the NS&E and reemphasize NS&E actual scope as stated on NS&E website: "...NS&E is widely recognized as an outstanding source of information on fundamental and applied research in all scientific areas related to the peaceful use of nuclear energy, as well as on applications of nuclear particles and radiation."

Survey Question to ANS Members

As a potential author, what issues affect your decision (either negatively or positively) when considering the *Nuclear Science and Engineering* journal as a venue for publishing your research? Please list your issues according to your priorities (highest to lowest) and feel free to provide any comments you wish and suggestions as to how to address the issues. Your anonymous comments/suggestions will greatly help ANS and the NSE editorial board as we continue to improve the journal.

Also, please feel free to contact the editor, Farzad Rahnema (farzad@ans.org) directly if you prefer.

- Link to the survey question:
<https://www.surveymonkey.com/r/MNKNFJX>

Continuous Improvement of NSE Prof. Michael Corradini

ANS wants to improve NSE by further enhancing the quality of the papers, impact factor, throughput, and shortening the time from submission to final decision to publication.

Several initiatives are in the works based on the current issues such as: review process and pool, scope of the journal, page charges, and expansion of the editorial board and editorial advisory board.

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Link to the survey question: <https://www.surveymonkey.com/r/MNKNFJX>

ATTACHMENT F

Virtual YPC21 flyer.pdf



Virtual Young Professionals Congress 2021

Friday, November 12 | 1:00 pm - 8:30 pm EDT

Saturday, November 13 | 10:00 am - 3:00 pm EDT

YPC creates an immersive personal and professional development experience for the nuclear industry's highly motivated next-generation future leaders. Early career professionals and students will engage with industry leaders, policy influencers, and advocacy experts! The two-day YPC will enrich the attendees with thought leadership and communication skills aimed at their career growth.





Preliminary Schedule (All times in EDT)

Friday, November 12

1:00 pm Virtual Lunch/Coffee Hour
 2:00 pm Welcome
 2:15 pm Plenary
 3:15 pm Break
 3:30 pm Professional Development
 Keynote
 5:00 pm Break
 5:15 pm Breakout Session 1
 6:15 pm Break
 6:30 pm Social
 8:30 pm End Social

Saturday, November 13

10:00 am Virtual Coffee Hour &
 IYNC Pitch Competition
 11:00 am Welcome
 11:05 am Plenary
 12:05 pm Break
 12:10 pm Breakout Session 2
 1:10 pm Break
 1:25 pm Breakout Session 3
 2:25 pm Closing Remarks/Raffle
 3:00 pm End YPC

Sponsor Information

Approximately 150 highly-motivated student and early career professionals are expected to attend this two-day event with networking opportunities

\$1000 – Gold

- Company/organization logo on conference website
- Have a virtual room in the networking coffee hour
- Host a team for the trivia social*
- Sponsor a session or plenary
- 10 complimentary registrations

\$500 – Silver

- Company/organization logo on conference website
- Have a virtual room in the networking coffee hour
- 5 complimentary registrations

\$250 – Bronze

- Company/organization logo on conference website
- 2 complimentary registrations

*One company/organization technical representative will join a team for the trivia social and have the opportunity to recruit/advertise at the social.

For more information contact Co-Chairs:

Kelsey Amundson (kamundson5@gmail.com)
 Patrick Snouffer (snoupa@gmail.com)



ATTACHMENT G

Membership committee proposal v2.pdf

Membership committee proposal

Elia Merzari, Wade Marcum

Background. Historically, THD membership committee activities have been limited to reporting an update on membership numbers. However the tasks of the membership committee are clearly stated in the bylaws:

9.3. Membership Committee – Shall be composed of not fewer than three (3) members, including the Vice-Chair, Secretary, and Treasurer, who shall be charged with the duty of bringing the advantages of the Thermal Hydraulics Division membership to the attention of qualified candidates.

As written, the bylaws identify an advocacy role for the membership committee. This role in recent years has not been fulfilled. As the membership numbers were rose within the Division, there was no need for recruitment and membership advocacy on behalf of the Membership Committee. Now, we however face a few challenges, as well as a few opportunities:

1. Thermal Hydraulics Division membership has begun to fall for the first time in more than a decade. It is unclear if this is an anomaly or a trend that will be realized. A few Possible causes for this drop in Division membership may be a result from:
 - a. Lack of in-person technical sessions hosted in the recent past, among others.
 - b. Lack of effort in transitioning technical content to a virtual platform when compared to other professional divisions in ANS.
2. Our international membership is very small when compared to the huge international participation in NURETH, ATH and even ANS meetings. This may be a very significant opportunity.
3. Industry participation in our division is at very low levels. This is a long term trend, that is not limited to THD. There has been for a while the question of what THD (and ANS) bring in terms of value to people in industry.
4. Finally, we have observed/heard anecdotally recently troubling signs of lack of engagement of students with the division. This is concerning for the pipeline of the division. We may have an image problem.

This is a good time to put a thoughtful, long term plan into place with the goal of increasing our membership. We would like to push for a broad effort to revitalize membership, revisit our value proposition and develop additional content creation activities. *Given active participation in the division and successful meeting organization we see as a reasonable target goal to reach 2,000 members by 2026 (2x in 5 years).*

Proposal. We propose to revitalize the membership committee by re-interpreting rule 9.3, without at the moment modifying it. After a two-year period, the EC will review the effectiveness of this proposed model, and make a decision to formally modify the rule.

The membership committee will be composed of 11 members:

5 statutory members (1-year term)

1. Chair of the division
2. Vice-chair of the division (Vice-chair of the committee)
3. Secretary
4. Treasurer
5. Past-chair of the division.

6 at-large members with 3-year terms (2 members nominated every year), including the chair of the committee.

The chair will serve a 3-year term. Special effort will be dedicated to selecting members from the following groups:

1. Industry
2. International
3. Young members
4. Students
5. Under-represented groups

The committee will be tasked to:

1. Refine value proposition and advocate membership to individual eligible and in particular to the groups listed above;
2. Work with other committees of the division to conceive activities that promote value to our membership;
3. Provide an accurate picture for the division membership in collaboration with ANS.

ATTACHMENT H

Report from President's Meeting with Division Chairs

6/24/2021

Meeting with Committee and Division Chairs

Mary Lou Dunzik-Gougar, President
Craig Piercy, CEO

PRESIDENT'S REPORT

President's report:
Emerging from COVID stronger

- Change plan substantially implemented
- Opportunity for continuing strategic planning and action

VISION
Nuclear technology is critical to the global solutions to energy and climate change.

MISSION
Advance, build, and use the development and innovation of nuclear science, engineering, and technology to benefit society.

GUIDING PRINCIPLES
To successfully advance our Mission and achieve our strategic objectives, the following key ANS Principles are defined:

- Be In Demand:** The industry, services, organizations, needs, and requests of ANS provide significant benefits to members and stakeholders. We focus on members and clients to build and grow the value of our organization and our members' careers.
- Be Informed:** The world is moving around us and we must be prepared to respond. We are receptive and take action to ways that enhance needs and opportunities, as well as to our products and services to influence and make with the world's progress.
- Be Informed:** Nuclear technology is critical to the world's energy and climate change solutions. We focus on the global energy market to drive the industry's innovation and growth to benefit society.
- Be Informed:** The nuclear industry is committed to innovation from science, engineering, and technology to benefit society. We focus on the global energy market to drive the industry's innovation and growth to benefit society.

President's report:
Emerging from COVID stronger

- Thank **you**
- Some stats

Number	Type
63	presentations
10	interviews
8	conferences/symposia
22	domestic LS
6	international LS
29	SS
7	non-ANS presentations
5	publications
3	video
3	podcasts
6	webinars

OBJECTIVES

Accelerate Member Professional Development

- Enrich careers through high value resources and opportunities to improve the knowledge, skills, and abilities of our members
- Promote and facilitate network building between professionals across all fields and from all regions of the nuclear community
- Highlight and recognize excellence and contributions; bestow honors and awards for industry leading professionals

Promote Innovation in Nuclear Technology

- Reimagine and deliver forums and products that enable information sharing and advance topics important to nuclear technology
- Inquire and produce informative technical publications and products to highlight the importance of nuclear technology and motivate advancement around the globe
- Lead development of consensus-based standards for nuclear science, engineering, and technology; our implementation and commercialization of advanced reactors

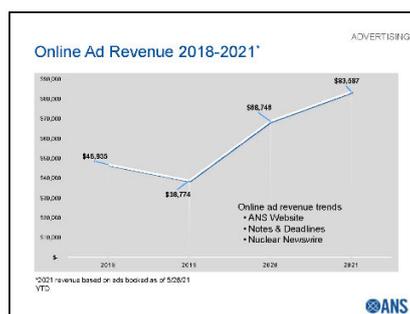
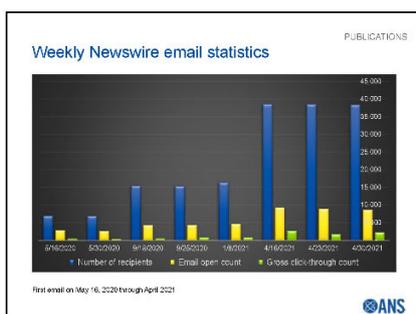
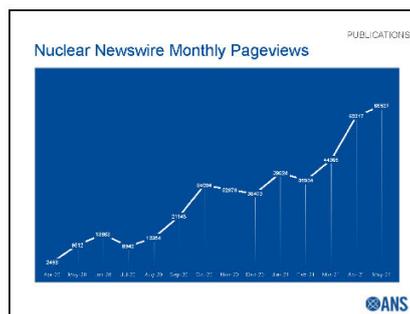
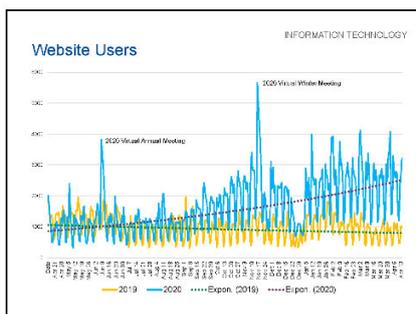
Excel in Engaging and Informing the Public and Students

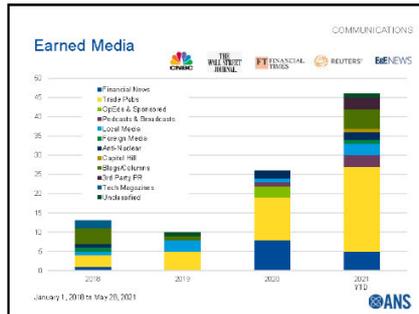
- Capitalize the public, highlight the many benefits that nuclear technology brings to people's lives every day
- Drive enthusiasm for nuclear technology through K-12 STEM education, nuclear technology curriculum available to every student in the U.S.
- Advocate for and invest in nuclear science, engineering, and technology careers; promote student engagement and developing future leaders

Advocate for Nuclear Technology

- Cultivate grassroots efforts to enable effective communications between members, the public, and policymakers
- Lead public discussions on significant domestic and international developments; lead international advocacy efforts
- Engage and influence policymakers and opinion leaders through direct dialogue and compelling written, visual, and online materials

6/24/2021



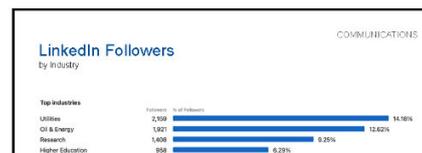
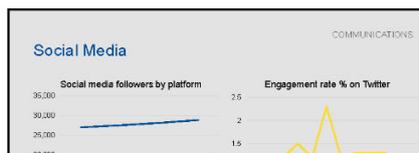


LinkedIn Followers

May 2020 to April 2021

Company	Total Followers	New Followers	Number of updates	Engagement rate
American Nuclear Society	16,893	6,601	529	3.97%
Nuclear Energy Institute	27,221	1,243	164	1.06%
U.S. Nuclear Regulatory Commission	24,409	4,219	121	4.99%
International Atomic Energy Agency (IAEA)	93,334	20,205	161	0.0%
World Nuclear Association	20,985	4,441	161	16.7%
U.S. Department of Energy (DOE)	176,538	21,144	164	0.1%
OECD Nuclear Energy Agency	12,212	4,139	164	16.7%
Nuclear Power	21,100	4,114	161	0.1%
Canadian Nuclear Association	7,642	919	50	4.9%

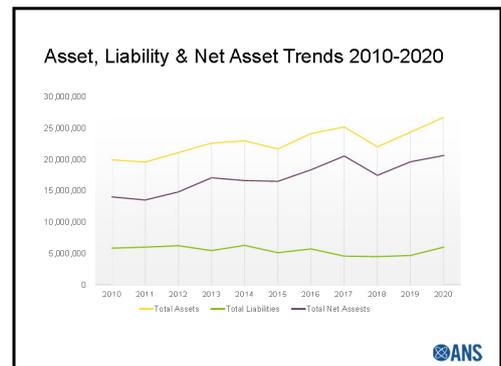
COMMUNICATIONS



President's report: Emerging from COVID stronger

- Change plan substantially implemented
- Opportunity for continuing strategic planning and action
- Active Professional Divisions Committee / solving problems
- Net improvement to 2020 ANS financial position, despite pandemic
- 2021 budget will end with a net budget surplus
- Sale of property in 2022 would add another \$2M to the books
- Continuing needs
 - Grow membership and continue to improve benefits
 - Grow philanthropy
 - Deploy and expand K-12 programs
 - Expand radiation communication activities
 - Update bylaws
 - Grow rapid response capability
 - Raise awareness of clean nuclear energy

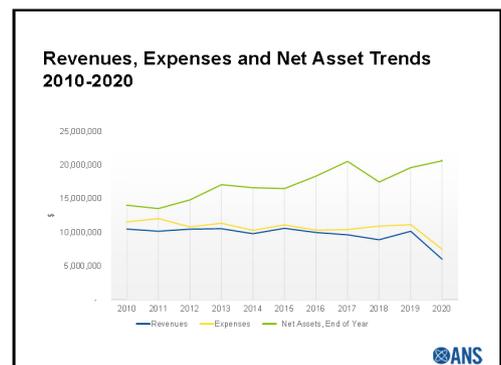
COMMUNICATIONS

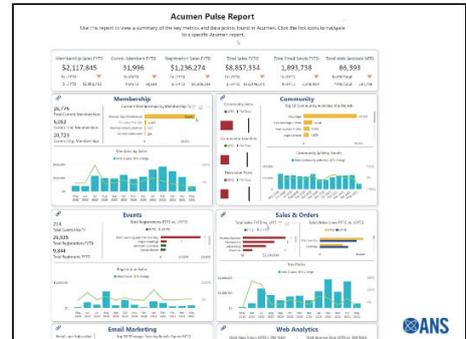
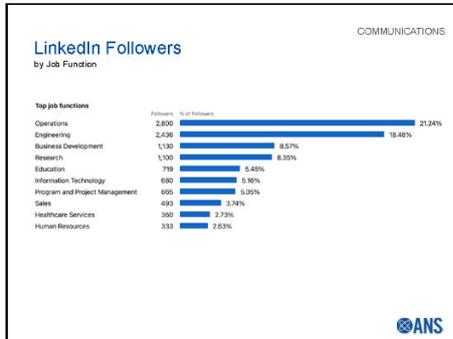


CEO report: emerging from COVID stronger

- Stronger team
- Understanding the new normal / in-person meetings
- R&D report: thought leadership
- Community has more influence in the field
- Progress toward long term fiscal sustainability/more to be done
- Tech stack replacement process commenced
- Diversity, equity and inclusion / continued focus

CEO REPORT





Membership Numbers

MEMBERSHIP

Category	April 2021	April 2020	Final 2020
Established	3,638	3,528	3,956
Winter Meeting Trial Members	1,103	0	1,147
Emeritus	679	684	719
Young Members	753	626	832
Recent Grad	326	432	384
Students - Grad	542	556	784
Students - Undergrad	869	569	980
Lifetime	579	519	565
Honorary Life	146	161	152
Honorary Life NN	712	724	723
TOTAL	9,347	7,769	10,242

Note that membership ga are now reviewed based on anniversary date, so figures will fluctuate more than previous years.

Organization Members
2021 - 67 (As of May 20)
2020 - 74 (As of December 30)

ANS

Membership Renewal Automation

MEMBERSHIP

Old Subject	Old CTA	New Subject	New CTA	New Preview Text
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
Membership Renewal	Renew Now	Renew Now	Renew Now	Ready for another year of great collaboration?
Membership Renewal	Renew	Renew Now	Renew Now	Ready for another year of great collaboration?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?
The 2021-2022 Board	Join Now	Join Now	Join Now	Ready for the year of 2021-2022?

ANS

Revenue & Expense Summary

Revenues & Expenses	4/30/21 YTD Actual	12/31/21 Forecast	2021 Budget
Revenues	\$2,601,199	\$9,215,826	\$8,345,779
Expenditures	\$2,422,497	\$8,654,276	\$9,509,524
Surplus / (Deficit) before Investment Earnings	\$177,703	\$561,550	(\$1,163,745)
Investment Earnings	\$1,233,751	\$400,010	\$400,000
Overall Surplus / (Deficit)	\$1,411,454	\$961,560	(\$763,745)



9

2020 Meetings

MEETINGS

	Budget	Actual
Meeting Revenue	\$ 3,043,233	\$ 868,731
Meeting Expenses	\$ 2,535,568	\$ 1,039,561
Net Surplus (Deficit)	\$ 507,665	(\$162,955)

Meeting	
Student Conference	Cancelled with penalty - \$45,000 – postponed to 2021 (deposit paid in 2020, carried over to 2021)
PHYSOR	Exercised force majeure option
NETS	Exercised force majeure option
TOFE	Exercised force majeure option (moved to embed in Winter)
AccApp	Cancelled with penalty - \$60,370
Annual Meeting	Cancelled with penalty - \$113,415.13 – virtual
UWC	Cancelled without penalty
ICRS 14/RPSD	Cancelled without penalty – rescheduled for 2021
Winter	Exercised force majeure option – virtual (TOFE Embedded)

2021 Operating Forecast

	Year End Projected 2021 (4/30/21)	Budget 2021	\$ Variance Forecast to Budget	% Variance
Revenue	\$9,215,826	\$8,345,779	\$870,047	10.4%
Expenses	\$8,654,276	\$9,509,524	(\$855,248)	(9.0%)
Net Surplus / (Deficit) before Investment Activity	\$961,560	(\$763,745)	\$1,725,305	



10

2021 Meetings

MEETINGS

	Budget	Actual
Meeting Revenue	\$ 3,644,863	
Meeting Expenses	\$ 3,079,713	
Net Surplus (Deficit)	\$ 565,150	

Includes Staff Labor

Meeting	
CONTE	Cancelled without penalty – virtual
Student Conference	Cancelled without additional penalty from 2020 – virtual
Annual Meeting	Exercised force majeure option – virtual (NPIC.&HMIT Embedded)
UWC	Planned to be in-person
ICRS 14/RPSD	Cancelled with penalty - \$93,437.50 (rescheduled for 2022, 50% of cancellation fee will be applied to 2022 Meeting)
M&C	Planned to be in-person
PSA	Planned to be in-person
YPC	Separated from Winter Meeting due to date shift – virtual
Winter	Planned to be in-person (DESD Embedded) (AccApp Embedded)

Governance 2020-2021

GOVERNANCE

- Bylaws were voted upon by membership and changed to include Young Member Director language from the Change Plan 2020
- The ANS National Election certified results account for 2,220 ballots cast from 10,245 eligible members, yielding a participation rate of 21.67%
- New red-line Change Plan 2020 created and now working with the Bylaws & Rules Committee to ensure any additional bylaws changes are completed for a membership vote by ANS National Election 2022



Year-End Goal

DEVELOPMENT

CNSTI	\$45,309
General	\$886,830
Total	\$712,139

YTD REVENUE

CNSTI	\$20,984
General	\$30,851
Total	\$51,835

Development Department Revenue September 2017-May 2021: \$2.4 million

January 1 - April 30, 2021



Thanks/Questions



Membership Renewal Automation

MEMBERSHIP

Membership Renewal Schedule

Rolling Calendar
 From: 06/01/2021
 To: 06/30/2021
 (Click on a date to view details)

Order	Month	Category	Start	End														
Order 1	June	Category 1	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 2	June	Category 2	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 3	June	Category 3	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 4	June	Category 4	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 5	June	Category 5	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 6	June	Category 6	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 7	June	Category 7	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 8	June	Category 8	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 9	June	Category 9	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 10	June	Category 10	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 11	June	Category 11	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022
Order 12	June	Category 12	06/01/2021	06/30/2021	07/01/2021	07/31/2021	08/01/2021	08/31/2021	09/01/2021	09/30/2021	10/01/2021	10/31/2021	11/01/2021	11/30/2021	12/01/2021	12/31/2021	01/01/2022	01/31/2022



PUBLICATIONS

Two New Books Published

Three Mile Island and Beyond
Includes Denton's retelling of the accident with chapters conveying his career-long message of safety being the paramount factor in the use of nuclear technology.

Light Water Reactor Materials Volume II: Applications
Textbook describing the behavior of nuclear materials during service in light water reactors.



MEMBERSHIP

2021 Key Membership Growth Priorities

Retention

- Change from calendar to anniversary renewal cycle
- Email automation to increase efficiency and effectiveness
- Continuing to send mailed invoices and phone outreach

Recruitment

- Recruitment campaign to launch in June
- Content marketing to leverage Nuclear Newsline weekly email
- Change Plan discounts for Student/Local Section members
- Nonmembers national meeting attendees to receive free memberships

Engagement

- Increase awareness and use of member benefits
- Track member engagement to improve communications



ANS President and CEO Meeting with Committee and Division Chairs

Message from the President

- President Dunzik-Gougar summarized her efforts over the course of the year in numbers
 - o 63 presentations
 - o 10 interviews
 - o 8 conferences/symposia
 - o 22 domestic LS
 - o 6 international LS
 - o 29 SS
 - o 7 non-ANS presentations
 - o 5 publications
 - o 3 videos
 - o 3 podcasts
 - o 6 webinars
- The change-plan has been substantially implemented at this point since 2019.
- A goal is to realize the opportunity for continuing strategic planning and action moving forward.
- The President presented the following observations Emerging from COVID:
 - o Change plan substantially implemented
 - o Opportunity for continuing strategic planning and action
 - o Active professional divisions committee/solving problems
 - o Net improvement to 2020 ANS financial position despite pandemic
 - o 2021 budget will end with a net budget surplus
 - o Sale of property in 2022 would add another \$2M to the books.
 - o Continuing needs
 - Grow membership and continue to improvement benefits
 - Grow philanthropy
 - Deploy and expand k-12 programs
 - Expand radiation communication activities
 - Update bylaws
 - Grow rapid response capability
 - Raise awareness of clean nuclear energy.

Message from the CEO

- The CEO presented the following observations emerging from COVID
 - o Stronger team
 - o Understanding the new normal /in-person meetings
 - o R&D report: thought leadership
 - o Community has more influence in the field
 - o Progress toward long term fiscal sustainability/ more to be done
 - o Tech stack replacement process commenced

- Diversity, equity and inclusion / continued focus.
- The society took a heavy hit on penalties tied to canceled conferences in 2020, however these have been burdened and the division doesn't see risk moving forward of substantiation in future canceled conferences.
- Website is significantly increased in traffic over the past year. It was noted that much of this is a result of the digitization of publications and access via the website.
- Online revenue has increased through adds, and others and will continue to increase through 2021.
- General media coverage has increased by approximately 100% from 2019 to 2020 and the society is already increased by 100% between 2020 and 2021 only half way through the year.
- Social media increases have been observed as well with the largest growth rate occurring through LinkedIn.
- Membership numbers look healthy generally, although its always difficult to project year-end membership numbers.
 - Set up a contract with Acumen to monitor more accurately and track numbers related to figures of merit tied to membership, membership structure, rates, etc.
- Developed more proactive efforts to facilitate membership renewal through email pushes.
- Discussed selling assets in Chicago over the course of 2021 and net profit projected to be made from that.
- Discussed 2021 Fundraising Campaign to target K-12 activities expansion, Radiation Communication, and Workforce development/diversity.
- Provided update on governance from 2020 through 2021
 - Young Member Director inclusion
 - ANS National Election certified with a participation rate of 21.67% in voting
 - New red-line change plan 2020 created and now working with the bylaws & rules committee to ensure any additional bylaws changes are completed for a membership vote by ANS National Election 2022.

ATTACHMENT I

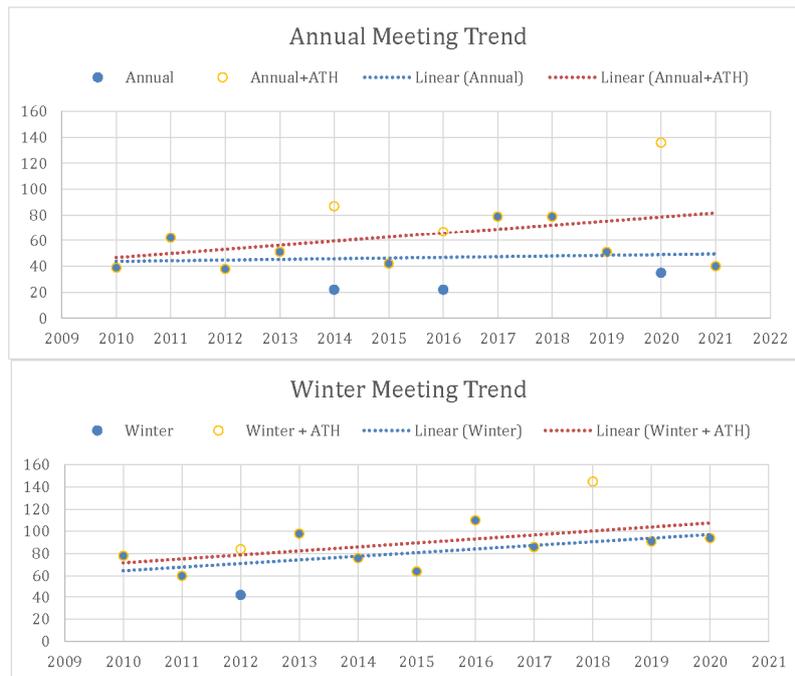
PC Report AM2021

2021 ANS Virtual Annual Meeting

I.A. Bolotnov and D. Shaver

A total of 40 summaries were submitted to the proposed sessions sponsored by the Thermal Hydraulics Division at the ANS 2021 Annual Meeting. The number was in line with the expectations in the virtual format during the COVID-19 pandemic. Our division submitted the session slate in time, meeting the deadline. We will host a total of 10 sessions (including 2 panels). All sessions will be hosted via Zoom meeting, at 2 pairs of sessions being hosted in parallel due to the high number of THD sessions and shortened meeting schedule. Note that each presentation is now 15 minutes + 5 minutes Q&A (5 minute shorter than in previous meetings). ANS representative will be moderating the sessions. Meeting registration is required to access the session link which will be available 30 minutes before the start of each session.

Below are two graphs showing submission trends for the ANS meetings.



Reconciled review recommendations for the summaries are as follows:

	1	Accept
	33	Accept with Revision (A/R)
	5	Reject Unless Revised (R/R)
	1	Reject
<hr/>	<hr/>	<hr/>
Total	40	

We note that rejection rates (R/R+R) are steady in recent years at roughly 20% and this year this number is at 15%. We also encourage the authors to respect the process and time the reviewers dedicate to evaluate the summaries and thus to strictly follow the ANS template and submit summaries with all the required sections. After another round of rigorous review process for the revised R/R summaries, a total of 39 summaries are included in the ten THD summary sessions at this conference.

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

There were 136 review recommendations that needed to be coordinated from 37 reviewers. The average number of reviews per paper was ~3.4, which is slightly above average. We had about 25% of the reviewers participating in the process. The reviewers' support is much appreciated, but we need to stimulate more participation to even out the effort between the program committee members.

Recent reviewer participations were as follows:

Year	Location	Number of Reviews	Number of reviewers
2021	Providence, R.I. (Online)	136	37
2020	Chicago (Online)	278	43
2020	Phoenix (Online)	85	21
2019	D.C.	258	40
2019	Minneapolis	127	24
2018	Orlando	No general sessions (ATH only)	
2018	Philadelphia	188	32
2017	D.C.	222	28
2017	San Francisco	264	39
2016	Las Vegas	337	45
2016	New Orleans	87	20
2015	San Antonio	135	28
2015	Anaheim	212	33
2014	Reno	80	17
2014	D.C.	284	29
2013	Atlanta	137	23
2013	San Diego	129	22
2012	Chicago	116	17
2012	D.C.	179	22
2011	Hollywood	148	14
2011	Las Vegas	148	20
2010	San Deigo	102	21
2010	D.C.	135	22
2009	Atlanta	191	25
2009	Reno	73	11
2008	Anaheim	89	19

The review process was made possible by valuable contributions from:

Martin, Robert	10	Zimmer, Matthew	3
Riznic, Jovica	9	Addad, Yacine	2
Carasik, Lane	8	Brooks, Caleb	2
Bolotnov, Igor	7	Chen, Minghui	2
Lisowski, Darius	7	Howard, Trevor	2
Sun, Xiaodong	6	Fang, Jun	2
Yoon, Su-Jong	6	Feng, Jinyong	2
Wang, Jun	6	Kong, Ran	2
Cho, Hyoung Kyu	5	LaBrier, Daniel	2
Guanyi, Wang	5	Liu, Qingqing	2
Jin, Yue	5	Shi, Shanbin	2
Zhang, Sheng	5	Sharma, Subash	2
Cheng, Xu	4	Ali, Amir	1
Kim, Seung Jun	4	Kimber, Mark	1
Roelofs, Ferry	4	Ibarra, Lander	1
Cheung, Fan-Bill	3	Lin, Ching-Sheng	1
Hua, Thanh	3	Marcum, Wade	1
Petrov, Victor	3	Total:	136
Shaver, Dillon	3		
Wiggins, Cody	3		

THD has a total of ten (10) sessions including 2 panels.

While ANS system lists Chair and Alt. Chair positions, THD considers both as Co-Chairs and kindly requests to share the Session Chair responsibilities during the session.

Session	# of papers	Time Slot (ET)	Chair	Alt. Chair
Computational Thermal Hydraulics – I	5	Monday 1pm	Maria N. Avramova	Mihai Diaconeasa
General Thermal Hydraulics and Heat Transfer Fundamentals	5	Monday 3:15pm	Jun Wang	Subash L. Sharma
Challenges and Opportunities in Thermal Hydraulics of Load-Following Nuclear Systems [P]	0	Tuesday Noon	W. David Pointer	Igor A. Bolotnov
Thermal Hydraulics Research in ARPA-E Programs [P]	0	Tuesday 2:15pm	Ling Zou	Kevin R. Robb
Thermal Hydraulic R&D Activities in Printed-Circuit Steam Generators for Advanced Nuclear Reactors	6	Tuesday 4:30pm	Sang J. Kim	Xiaodong Sun
Thermal Hydraulics Research in VTR and TCR Programs	5	Tuesday 4:30pm	Wade R. Marcum	Lander Ibarra
Thermal Hydraulics for Advanced Reactors	5	Wednesday Noon	Robert P. Martin	Dillon R. Shaver
Computational Thermal Hydraulics - II	5	Wednesday 2:15pm	Jinyong Feng	Darius D. Lisowski
Experimental Thermal Hydraulics	5	Wednesday 4:30pm	Shanbin Shi	Victor Petrov
Computational Thermal Hydraulics - III	3	Wednesday 4:30pm	Elia Merzari	Guillaume P. Mignot
Total number of papers:	39			

Additional Notes:

- All paper presentations are **20 minutes each** (15-minute talk + 5-minute Q&A and transition to the next speaker).
- ANS recommends to use the following script before the first talk of the session:

Welcome & thank you for joining the [session title] session. I am [name], the chair for this session. There are a few items that I want to discuss with all of you before we begin.

First, all our meeting sessions will be recorded and posted on the ANS Meeting Portal. The recordings will be available only to registered meeting attendees. Please follow the ANS behavior and ethics policies. Both are listed on the resources page of the meeting portal.

Second, please keep your microphone muted at all times unless you are speaking. During the Q&A session, please use the "participants" menu—the button is at the bottom of the screen next to the green share screen button—to "raise your hand," which is at the bottom of the participant window. Once the session chair calls on you, you may unmute and ask your question. You may also use the chat function to type your question.

Thank you for participating and enjoy the session.