In This Issue

The ANS Winter Meeting in Orlando, FL is coming up! This issue has information about the meeting and some sessions Young Members will be interested in starting on page 3, be sure to check it out! Also, if you haven't registered already, **registration for the ANS Winter Meeting is still open!** If you have registered, be sure to download the **free conference app**.

Learn about the 2019 Young Professionals Congress, organized by ANS YMG on page 4.

Lastly, if you'd like to write up an article for the YMG Newsletter, please contact the YMG Secretary, Kelsey Amundson (kamundson5@gmail.com). Some possible topics:
-a summary of what your Division does, why it's exciting, and how to get involved,
-your work or current research, and why it's important,
-an upcoming event or meeting that Young Members would be interested in,
-another topic that you think is important related to YMG, ANS, or nuclear in general.

We look forward to your submissions!

Message from the Chair

Nicholas Thompson, YMG Chair

Hello everyone! If you haven't met me in person, my name is Nick Thompson, and I'm the Chair of the Young Members Group. I'm really excited to serve in this role, and I know the rest of the Executive Committee is working hard.

First off, I want to hear from you. If you have an idea, suggestion, or criticism of YMG or ANS, I'd like to hear it. In the past few years, we've had some members with great ideas for a session, panel, webinar, or event, but they didn't know how to get it set up – we want to hear those ideas and help make them a reality. Periodically we'll be sending our requests for ideas or surveys, and please fill them out, it will really help. And if you have something on your mind, you can always email me at thompn4@gmail.com.

If you're new to ANS or to the Young Members Group (YMG), then welcome! The YMG is a Professional Division in ANS specifically focused on helping advance your career, helping you participate in ANS, and also helping you promote nuclear science and technology.

ANS as a whole is at a bit of a turning point – a significant portion of the nuclear community has been retiring, which has created new opportunities for young members, and we have been rising to the occasion. There are many other Divisions in ANS – some examples are Nuclear Criticality Safety, Reactor Physics, and Thermal Hydraulics and right now, many of these Divisions have young members in leadership roles. Here are just a few examples:

Education, Training, & Workforce Development
Daniel Carleton, Treasurer

Nuclear Installations Safety
Matthew Denman, Chair
Eric Harvey, Vice Chair

Mathematics & Computation
Chris Perfetti, Executive Committee
Travis Trahan, Executive Committee

Nuclear Criticality Safety
Theresa Cutler, Program Committee Chair
Alyse Scurlock, Education Chair

Nuclear Nonproliferation Policy
Rian Bahran, Chair
Alicia Swift, Vice Chair
Alexis Trahan, Secretary
Kelsey Amundson, Program Committee Chair
Kate Mummah, Executive Committee

Operations & Power
Piyush Sabharwall, Program Committee Chair
Catherine Perego, Executive Committee
Erin Wehlage, Executive Committee

Radiation Protection & Shielding
Shaheen Dewji, Chair

Reactor Physics
Florent Heidet, Vice Chair
Stephanie Kempf, Executive Committee

Thermal Hydraulics
Piyush Sabharwall, Executive Committee
Dillon Shaver, Executive Committee
Matthew Zimmer, Executive Committee

Additionally, some recent leaders in the YMG (Dave Pointer, Rachel Slaybaugh, Piyush Sabharwall, Elia Merzari, Katy Huff, Brett Rampal, Gale Hauck, William Art Wharton, Darby Kimball) are also leaders in ANS; some are even on the Board of Directors!

If you are a young member and you're interested in getting involved with a Division or Committee, please reach out to me, any of the YMG Executive Committee members, or any of the other young members listed here, they'll be happy to help and give you advice (and if you are having trouble getting in touch with someone, you can always contact them via the Member Directory in the Member Center of the ANS website).

For this year, there are a few areas I'm focusing on: opening YMG up so that it's easier to participate, helping members with outreach, continuing and expanding on our programming at meetings, strengthening ties with other Divisions, and focusing on mentorship.

Again, if you have any ideas, please let me know!

Thanks for your time!

Nick

Nuclear Energy Integration and Load Following

Piyush Sabharwall, Past-Chair, YMG
Nicolas Stauff, Program Committee Co-Chair, YMG

Nuclear power generation plays a vital role in the United States (U.S.) electricity market. In 2016, around 4,000 terawatt-hours of electricity was generated in the US. Of this, around 800 terawatt-hours (20%) was produced through nuclear power. With further enhancement of renewable penetration in the energy mix the economic stability of the market comes under scrutiny because of their intermittent nature, leading to mismatch between variable supply and demand. One prospective solution to the mismatch is nuclear–renewable energy integration (NREI). NREI would couple nuclear and renewable energy technologies, maximizing the value of each power generation source in conjunction with energy storage and industrial process heat applications (e.g., replacing fossil fuels with nuclear-generated heat in industrial thermal processes). The challenge for NREI would be to meet or exceed the performance of fossil fuels for power and industry. To meet this goal, NREI

must support the strengths of each technology while minimizing the weaknesses. For instance, nuclear power plants are optimally operated at constant power for both technical and economic reasons. Solar and wind generators have no fuel costs, but they depend upon seasonal and weather patterns, so mechanisms to accommodate variable loads and renewable availability will also be required.

Nuclear power is almost exclusively a baseload electricity generation technology in the U.S. but is used for load-following in some other countries like in France. Load-following is investigated for nuclear reactors to increase their competitiveness in deregulated markets with subsidized renewable electricity. This may be achieved by avoiding generating electricity during low demand or high renewable production periods (which can be associated with low/negative prices), and by selling some ancillary services (reserve participation). The overall benefit of nuclear load following is to increase the revenue of the nuclear power plant while providing lower and more stable electricity market pricing by preventing large variations in electricity prices associated with enhanced renewable penetration, thus being a win-win for the utility and ratepayers.

Most nuclear reactor technologies have the potential to allow some load-following operation and could be optimized to increase their maneuverability. Due to differences in physics, some advanced reactor technologies like fast reactors, could be particularly well suited to provide higher flexibility. Research laboratories in conjunction with academia and industry across the nation are studying these aspects and energy integrated systems to create a competitive nuclear technology future to alternative energy sources and help develop technology that will shape the next decade and more of U.S. leadership in global market.

ANS Winter Meeting Events of Interest

Young Members Group
Program, Monday, 10:00 am - 11:00 pm
Executive, Monday, 12:30 am - 1:30 pm

National Meetings: How National and Topical Meetings are Organized and Executed – Panel
Monday, 1:00 – 3:35 pm

(Current Issues in LWR Core Design and Reactor Engineering Support – Panel)
Monday, 1:00 – 3:35 pm

(Strategy Development for Junior Faculty – Panel)
Monday, 3:50 – 6:00 pm

(Applications of the NEAMS Workbench – Panel)
Monday, 3:50 – 6:00 pm

(Eighty Years with Nuclear Fission – Panel)
Monday, 3:50 – 6:00 pm

Perspectives on the ANS Congressional Fellowship – Panel
Tuesday, 10:15 am – 12:00 pm

Achieving a Work/Life Balance – Panel
Tuesday, 1:30 – 3:40 pm

Micro Nuclear Reactor Concepts for Special Purpose Applications – Panel
Tuesday, 1:30 – 3:40 pm

Getting Involved in a Professional Society – Panel
Tuesday, 3:55 – 6:05 pm

(Hand Calculation Methodology and Use – Panel)
Wednesday, 10:15 am – 12:00 pm

(Outreach for Nuclear Science and Engineering – Tools and Strategies in the Precollege Space – Panel)
Wednesday, 10:15 am – 12:00 pm

(Progress in DOE's Nuclear Technology Research and Development Programs – Panel)
Wednesday, 1:30 – 3:40 pm

A full list of the 2018 Winter program can be found on the free conference app or in the conference program.

2019 Young Professionals Congress

Catherine Perego, YPC General Chair, YMG Treasurer

YPC 2019 is looking for volunteers!

YPC is a one-day program held in conjunction with the ANS Winter Meeting every other year. It provides a unique opportunity for young professionals in the nuclear industry to attend sessions, which provide attendees with professional development skills, and broad network opportunities. YPC 2017 was a successful topical meeting with over 200 registrants, and included involvement from all ANS professional divisions and outside organizations such as NAYGN and Third Way. If you have ideas on how to make YPC 2019 even more valuable for the attendees, please contact Catherine Perego, General Chair [peregocm@westinghouse.com] to be added to the planning committee.

Join us for the

Diversity Social!

Organized by the Diversity & Inclusion in ANS Committee

Tuesday, November 13, 2018

8 to 10 pm

Myth Bar

Hilton Bonnet Creek Hotel

All are welcome.

Thank you to those who contributed to make this social possible!

Massachusetts Institute of Technology

ANS Young Members Group

Canadian Nuclear Laboratories

Idaho National Laboratory

University of Michigan

University of Tennessee

University of Idaho

Oregon State University

Idaho State University

University of Wisconsin

CEADS Group

University of Illinois

NCSD's Second Annual Criticality Safety Design Competition

The NCSD Criticality Safety Design Competition is back for the 2018 Winter Meeting! Our members have created a fun and engaging criticality safety calculation problem to test your skills, and new this year, we have divided the challenge into two categories: Undergraduates and Graduate Students/Young Members. No need to be an expert, there will be a hints session during our Education Committee meeting Sunday, so be sure to start working on the problem before you arrive and have your questions ready!

We look forward to your participation!

When: Competition packets will be available for download before the ANS meeting, starting Monday November 5th. All submissions due by noon on Tuesday November 13th. Special Hint Sessions Sunday November 11th during the NCSD Education Committee meeting.

Who: All student and YMG attendees of the Winter Meeting.

Why: The thrill of competition, bragging rights, and hopefully you'll learn about criticality safety engineering too! The prizes for each category include NCSD award dinner tickets ($90 value, Tuesday Nov 13 at 7pm) and official ANS award certificates, $150 Amazon gift cards for each first place, and an Amazon Echo for each second place.

Check http://ncsd.ans.org for more details & to download the competition packet!