

**MINUTES OF THE MATHEMATICS AND COMPUTATION DIVISION
EXECUTIVE COMMITTEE MEETING
AMERICAN NUCLEAR SOCIETY**

Room Octavius 8, Caesars Palace, Las Vegas, NV – November 6, 2016
2:00 PM – 4:00 PM

Officers Present

Patrick Brantley, Chair
Rachel Slaybaugh, Vice Chair
Wei Ji, Secretary

Ex-Officio: Tunc Aldemir

Executive Committee Members Present

Erin Fichtl
Barry Ganapol
Brian Kiedrowski
Richard Martineau
Steven Hamilton
Tara Pandya
Jean Ragusa
Benoit Forget

Others Present

Jeff Densmore
Forrest Brown
Paul Hulse
David Griesheimer
Todd Palmer
Sebastian Schunert
Emma Redfoot
Madeline Feltus
Dmitriy Anistratov
Ethan Boado
Noah McFerran
Jieun Lee
Daniel Ospina
John Wagner
Han Gyu Joo
Farzad Rahnema

Proxy assigned via email prior to meeting

Member	Position	Proxy to
Aaron Watson	Treasurer	Patrick Brantley
Ryan McClarren	Executive Committee	Patrick Brantley

1. **Call to Order, Attendance, Introductions**

Chair Patrick Brantley called the meeting to order at 2:09 PM. Attendance was recorded (**Attachment A**). The chair then distributed copies of the agenda (**Attachment B**). Counting proxies, a quorum (quorum is eight voting members) was reached with a total of fourteen votes available (twelve present and two proxy).

2. **Officer's Reports**

Secretary's Report: During the Secretary's (Wei Ji) report, the first item raised was approval of the previous meeting minutes (2016 ANS Annual Meeting, New Orleans, LA). A motion was made to approve the minutes by Brian Kiedrowski and seconded by Jean Ragusa. The previous minutes were unanimously approved. Next, a motion was made by Brian Kiedrowski and seconded by Steven Hamilton to approve the agenda for the current meeting. This motion was passed unanimously. The third item discussed was the previous Executive Committee email vote approval of the MCD Best Paper+Presentation \$150 monetary award for student (if presenting author). The last item discussed was the previous Executive Committee email vote approval to contribute \$2,500 to the upcoming ANS Student Conference.

Treasurer's Report: Treasurer Aaron M. Watson was not present at the meeting to give the treasurer's report but had emailed information to the officers prior to the meeting. Chair Patrick Brantley presented the report to the committee. Attached to the email was the Treasurer's Report (**Attachment C**).

Chair Patrick Brantley asked if the committee had any questions to forward to Aaron and none were raised.

Vice Chair's Report: Vice Chair Rachel Slaybaugh organized the MCD roundtable scheduled for Monday (11/07/2016) afternoon on the topic of "highly collaborative software development involving multiple institutions" and the panelists were: Kevin Clarno, Rich Martineau, Kathryn Huff, Aaron Sauers and Arthur Baker. Per convention, organization of the next roundtable will again be the responsibility of Vice Chair Rachel Slaybaugh.

Chair's Report:

Chair Patrick Brantley reported on discussion from the Professional Divisions Committee (PDC). ANS encourages the use of "ANS Collaborate" for committee discussions and communication with the division. Patrick asked if everyone has used it and how it was working. Positive feedback was received from a few members. Wei Ji specifically asked if this is the ANS bylaw that ANS members have to use "ANS Collaborate" for discussions. The answer was no. However, MCD encourages all the members to use "ANS Collaborate" for any MCD/ANS related discussions.

Patrick Brantley will represent MCD by presenting to the ANS Board of Directors on Wednesday. He sent out a draft presentation to the MCD Executive Committee for review before the ANS meeting. Several comments were provided to him by emails. In the meeting, no further comments were provided.

Patrick Brantley reported on discussion from the President's Meeting with Professional Division Chairs. The primary topic from the PDC meeting was the Nuclear Grand Challenges initiative. Patrick pointed out that MCD should actively participate in the initiative. He has started a discussion thread in ANS Collaborate and invited all MCD members to provide input for defining Grand Challenges in MCD. A few replies and suggestions were received. Patrick described a Grand Challenge suggested by John Wagner: "Establish M&S capabilities that change the nuclear systems design and regulation paradigm from reliance on measured data to reliance on simulations with limited to no new experimental data for confirmatory and/or extrapolation purposes. This will require development and demonstration of methods/approach to validate the M&S capabilities." Many members provided feedback regarding the Challenge that John proposed, and a very good discussion followed. Rich, Tunc, Farzad, Patrick, Forrest, John and others individually provide the opinions on the modeling and experiment integration for future reactor design and safety evaluation analysis.

In addition to the Grand Challenge, we discussed other business such as how to add value to membership, raising funds for scholarships or creating new scholarship.

Another topic discussed is about MCD strategic plan. Patrick Brantley pointed out that the last update of the strategic plan was 2003. The MCD should try to develop a new plan to reflect the current needs and challenges that the ANS MCD community faces. Patrick asked Vice Chair Rachel Slaybaugh to participate in drafting the strategic plan and will invite others from the Executive Committee to participate. A discussion has been setup in ANS Collaborate that can be used after the meeting.

In response to encouragement from the Professional Divisions Committee in June 2016 to improve leadership succession within divisions, Patrick Brantley developed a MCD Divisional Roles and Responsibilities document describing the roles of leadership positions in MCD. This document was previously posted in ANS Collaborate and feedback from the Executive Committee incorporated.

Patrick Brantley announced that Paul Hulse is the new MCD Standards Committee Chair. Thanks to Paul for volunteering and taking the lead on the Standards Committee.

The last topic discussed was the possibility of an MCD liaison to AAAS. ANS is an affiliated organization with the American Association for the Advancement of Science (AAAS). MCD is being asked by ANS whether we would like to appoint someone to serve as a representative to the Committee on Mathematics for the AAAS. Madeline Feltus described her experience and the benefit of AAAS at DC section of providing good opportunities for student interns. Rachel Slaybaugh mentioned that AAAS has good fellow programs. Barry Ganapol expressed his willingness to serve as the MCD liaison to the AAAS Committee on Mathematics, as he is already a member of AAAS.

Student Conference and Student Funding Discussions

(The student conference organizers showed up in the middle of the Chair's report at 2:30 pm)

Representatives of the upcoming ANS Student Conference (University of Pittsburgh) stopped in at the MCD Executive Committee meeting. The conference Co-Chairs Miriam

Rathbun and Brendan Stack and Technical Program Chair Christopher D'Angelo introduced the titles/research tracks for the conference at the University of Pittsburgh. They acknowledged the sponsorship and the support from MCD. They mentioned that they need technical paper reviewers and judges for presentations/posters. Patrick encouraged members to actively support the Student Conference and directly contact them if willing to help. A sign-up sheet was distributed. The conference fliers were distributed to the MCD members at the meeting (see **Attachment D**)

3. Standing Committees

- a. Benchmark – Co-Chair Sebastian Schunert presented the recent work he tried to compile. He found computational benchmark problems in several ANL reports. However, the access to these benchmark data is difficult, as the data was not easily copied and pasted for broader dissemination. He seeks the best way to store the data for users to easily access the data. One suggestion Sebastian proposed was to develop a Git repository on GitHub in which benchmark information could be stored and easily accessed/shared by those interested. Sebastian also mentioned that there is a need to move the benchmark development effort to different applications, such as multiphysics benchmark development as these benchmarks are lacking.

Forrest Brown pointed out that the ANL reported benchmark problems are analytic benchmarks, different from experiment benchmarks. The MCD Benchmark Committee has primarily focused on analytic benchmarks that are used to verify computational tools. (Barry Ganapol noted that this is really not correct, as they are computational, not analytical, benchmarks.)

Co-Chair Christopher Perfetti was not present at the meeting but sent his report to MCD before the meeting. His reported was attached in **Attachment E**.

- b. Finance – The finance committee is chaired by the current Treasurer, so the Treasurer's report serves as the finance committee report.
- c. Honors and Awards – Farzad Rahnema remains chair of this committee and encourages everyone to be sure to nominate people for MCD-sponsored awards. Three awards are awarded from MCD: Pomraning Award, Distinguished Service Award, and Young Member's Research Achievement Award. Jan 15th. Deadline. Instructions for nominations are available on the MCD website. Package of fellows are not processed through MCD. Forrest Brown commented that the nominations require too much paper work and inquired whether the Honors and Awards Committee looks at MCD membership to identify the candidates. Farzad Rahnema said they do not, which is a good point to pursue in the future.
- d. Membership – Madeline Feltus provided membership data (**Attachment F**). Members are steadily increasing. 25% student. 10% of total ANS members. Madeline encouraged MCD members to renew their membership before December. Madeline also asked that MCD attempt to identify a new Membership Committee Chair, as she is unable to attend all of the ANS meetings.
- e. Nominating – Tunc Aldemir stated that the nominating committee had selected all of the MCD nominees necessary for the upcoming election.

Rachel Slaybaugh was nominated for Chair,

Dmitriy Anistratov and Piero Ravetto were nominated for Vice Chair,

Diego Mandelli, Matthew Cleveland, and Jonathan Walsh were nominated for Executive Committee (US-members)

Christophe Demaziere and Han-Gyu Joo were nominated for Executive Committee (Non-US members).

A motion was made by Rachel Slaybaugh and seconded by Brian Kiedrowski to approve the nominations. All approved and the nominations were passed unanimously.

- f. Standards – Paul Hulse presented the committee report. His report is attached in **Attachment G**.

4. Program Committee Report

The Program Committee meeting was held prior to the executive committee meeting (1 PM – 2PM). Program Committee Chair Jeff Densmore reported the update from the program meeting. For 2016 Winter Meeting, there were 41 summaries submitted. Among these, 4 were moved to RPD and 2 were moved to NCSD. 4 summaries were rejected and 1 was withdrawn. A total of 30 summaries were to be presented.

Jeff presented the MCD Best Paper+Presentation Award from the 2016 Annual Meeting to Aaron Olson, Anil Prinja, and Brian Franke for their paper “Radiation Transport in Random Media with Large Fluctuations,” with Anil Prinja accepting the award.

Han-Gyu Joo then presented the current status of the M&C 2017 topical meeting organization and paper submissions. The planned activities were on schedule. The conference attracted many paper submissions. All were under review. Han-Gyu encouraged MCD members to volunteer more time for the review of submitted papers. Based on the conference schedule, a fundraising reception for Ely M. Gelbard Memorial Graduate Scholarship will be planned on Tuesday.

5. Other Old Business

Ely Gelbard Scholarship: Rich Martineau provided an update on the Ely Gelbard Scholarship. There was a fundraiser reception for the scholarship at PHYSOR 2016 for which EPRI contributed \$5,000. A net of \$7,245 was raised for contribution to the endowment fund. Forrest Brown expressed appreciation to Rich Martineau, Tom Sutton, Rachel Slaybaugh, and others who have been making great effort in working to raise funds for the Ely Gelbard Scholarship endowment.

Patrick Brantley suggested we transfer \$2,500 from MCD funds to endowment, per the previous proposal to fund the scholarship endowment. Following some discussion, Rachel Slaybaugh suggested that MCD transfer \$7,500 to the scholarship endowment to keep the funding on track. A motion for MCD to transfer \$7,500 to the Ely Gelbard fund was made, seconded, and the Executive Committee voted to approve the motion.

Website and Newsletter responsibility: Patrick Brantley pointed out that based on MCD Bylaws, the Secretary (Wei Ji) has responsibility for both the website and newsletter. As the meeting schedule was very tight, no any discussion occurred. Secretary Wei Ji talked to Patrick after the meeting and indicated that he can be responsible for routine update of the MCD website, and working with Patrick for a newsletter to come out in the spring. A better solution for the future is to form a sub-committee for newsletter planning and dissemination.

6. New Business

Discussion and vote on the two proposals to host the M&C 2019 Topical Meeting: The two proposal presentations were made during the Program Committee meeting, but the final discussion was deferred until the Executive Committee meeting due to time constraints. There were 9 MCD members present (one proxy) for the discussion of the decision on M&C 2019 meeting bids. Among these, 9 were MCD Executive Committee voting members: Patrick Brantley, Barry Ganapol, Benoit Forget, Tara Pandya, Erin Fichtl, Steven Hamilton, Tunc Aldemir, Brian Kiedrowski, and Ryan McClarren (not present but proxy to Patrick Brantley). Program Committee Chair Jeff Densmore was present but did not participate in voting. Other MCD Executive Committee members Wei Ji, Richard Martineau, Jean Ragusa, Rachel Slaybaugh, and Aaron Watson (proxy) were not present and did not participate in the vote because of potential conflicts of interest due to organizational affiliation, participation in proposed conference organization, ANS local section affiliation, etc.

Program Committee Chair Jeff Densmore led the discussion, and voting members provided comments on the advantages and disadvantages of the two potential bids. Comments on the experience of general chair, TPC chair, past conference organization experience, capabilities of leadership, organization collaboration, student support, sponsorship plan, geographical location and distribution, younger member attraction, travel convenience for domestic and international travelers, spouse program etc. were all provided. The general consensus was that both bids were strong. Finally, a vote was performed, with 3 votes for Saratoga and 6 votes for Portland.

Brian Kiedrowski made a motion to accept the bid to host M&C 2019 in Portland, Oregon, and Steven Hamilton seconded the motion. The motion was passed by all voting members.

7. Adjournment

After the discussion and voting for the M&C 2019 location, the meeting was adjourned at 4:20 pm.

Attachment A: Attendance

**Mathematics & Computation Division
Executive Committee Meeting
Caesars Palace Hotel
Las Vegas, NV
November 2016**



Name	Initial when present
Only those listed below are voting members of your division	
Patrick Brantley, Chair	<i>Patrick Brantley</i>
Rachel N. Slaybaugh, Vice Chair	<i>RNS</i>
Wei Ji, Secretary	<i>Wei Ji</i>
Aaron M. Watson, Treasurer	<i>proxy to Patrick Brantley</i>
Tunc Aldemir, Immediate Past Chair	<i>Tunc Aldemir</i>
Erin D. Fichtl	<i>Erin Fichtl</i>
Benoit Forget	<i>Benoit Forget</i>
Barry D. Ganapol	<i>Barry Ganapol</i>
Steven P. Hamilton	<i>Steve Hamilton</i>
Brian C. Kiedrowski	<i>Brian Kiedrowski</i>
Richard C. Martineau	<i>Richard Martineau</i>
Ryan G. McClarren	<i>proxy to Patrick Brantley</i>
Tara M. Pandya	<i>Tara Pandya</i>
Jean C. Ragusa	<i>JCR</i>
Others, please PRINT in (if there is not enough space, feel free to use the other side)	
Name	E-mail
Jeff Densmore	<i>jeffery.densmore@unpp.gov</i>
Tom Sutton	<i>Thomas.Sutton@unpp.gov</i>
Forrest Brown	<i>fbrown@lawl.gov</i>
Paul Hulse	<i>Paul.Hulse@sellafieldsites.com</i>
DAVID GRIESHEIMER	<i>david.griesheimer@unpp.gov</i>
Todd Palmer	<i>todd.palmer@oregonstate.edu</i>

Article B10.2 - A quorum for the transaction of business at all Division (or TG) meetings shall consist of fifteen (15) qualified voters or twenty (20) percent of the qualified voters.

Mathematics & Computation Division
 Executive Committee Meeting
 Caesars Palace Hotel
 Las Vegas, NV
 November 2016



Others, please PRINT in

Name	E-mail
Sebastian Schumert	s.schumert@gmail.com
Emma Redfoot	redf3263@vandals.uidaho.edu
Madeline Feltus	madeline.feltus@HQ.DOE.GOV
Dmitriy Anistratorov	anistratorov@ncsu.edu
Ethan Boado	eboado@berkeley.edu
Noah McFerran	nmcferra@ufl.edu
Lee Jieun Lee	lee7632@vandals.uidaho.edu
Daniel Ospina	daniel.ospina@live.com
JOHN WAGNER	john.wagner@ind.gov
HAN Gyu Joo	joshan@snu.ac.kr

Article B10.2 - A quorum for the transaction of business at all Division (or TG) meetings shall consist of fifteen (15) qualified voters or twenty (20) percent of the qualified voters.

Attachment B: Agenda

Executive Committee Meeting Agenda ANS Mathematics And Computation Division 2016 Winter Meeting

Sunday, November 6, 2016 – 2:00-4:00 pm

Caesars Palace
Las Vegas, Nevada

- I. Call to Order, Attendance, Introductions
- II. Officer Reports
 - a. Secretary: Wei Ji
 - i. Approval of minutes from 2016 Annual Meeting in New Orleans, LA (Tunc Aldemir, Brian Aviles sent in approvals by email)
 - ii. Approval of agenda
 - iii. MCD Best Paper+Presentation \$150 monetary award for student (if presenting author) approved via email vote
 - iv. \$2,500 for upcoming ANS Student Conference – approved by Executive Committee by email vote
 - b. Treasurer's Report: Aaron Watson
 - c. Vice-Chair – Roundtable: Rachel Slaybaugh
 - d. Chair: Patrick Brantley
 - i. President's Meeting with Professional Division Chairs
 - ii. MCD Chair presentation to ANS Board of Directors (Wednesday, November 9, 4:00–5:30pm)
 - iii. ANS Nuclear Grand Challenges
 1. Contributed ideas and discussion
 2. ANS President's Special Session, Mon. Nov. 7, 4:30 pm
 - iv. MCD Strategic and Tactical Planning process discussion
 - v. ANS Collaborate discussion – how is it working?
 - vi. Divisional Roles and Responsibilities document
 - vii. Paul Hulse is the new MCD Standards Committee Chair
 - viii. MCD representative to American Association for the Advancement of Science (AAAS) Committee on Mathematics
- III. Standing Committees
 - a. Benchmark:
 - i. Committee chair needed
 - b. Finance: Aaron Watson
 - c. Honors and Awards: Farzad Rahnema
 - i. Discuss process for nomination for Pomraning Award and ANS Fellow
 - d. Membership: Madeline Feltus
 - i. New committee chair needed
 - e. Nominating: Tunc Aldemir

- i. Approve officer/executive committee candidates from Nominating Committee
 - f. Standards: Paul Hulse
 - i. Discuss ANS-10.4 on V&V of computer codes
- IV. Program Committee Report: Jeff Densmore
 - a. Update on technical program for this conference
 - b. Present MCD Best Paper+Presentation Award from 2016 Annual Meeting
 - c. Update on M&C 2017
 - d. M&C 2019 Location Selection
 - i. Executive Committee Discussion
 - ii. Executive Committee Selection Vote
- V. Old Business
 - a. MCD Website and Newsletter responsibility
- VI. New Business
- VII. Adjourn

Students for the 2017 ANS Student Conference will attend the meeting to present at approximately 2:30 pm.

Attachment C: Treasurer's Report

Report respectfully submitted 11/6/2015 by Aaron M. Watson, MCD Treasurer

MCD Treasurer's Report: November 2016

MCD Operating Funds

Balance YTD = \$43,655

Income: YTD = \$1,708

- Member Dues (\$2/member): \$ 1,708
(as of 9/30/2015)

Expenses: YTD = \$3,705

- Awards and Plaques: \$ 205
National ANS Administrative Expense (\$55)
ANS 2016 Annual Student Paper Award (\$150)
- Student Support: \$ 3,500
Wisconsin Student Conference, Jan 2016 (\$2,500)
ANS Conference Student Travel, May 2016 (\$1,000)

Net: YTD = (\$1,977)

MCD Support of Gelbard Scholarship

In November 2014, the MCD Executive Committee voted to expend \$20,000 from the MCD operating funds to partially fund the Eli Gelbard Scholarship.

These funds were disbursed in Dec. 2015 to the Gelbard Scholarship account. The ANS 2016 budget reports have indicated that MCD would contribute an additional \$20k in 2016; that is in error. The agreed-upon plan was \$20k in 2015 and \$2.5k in 2016, 2018, and 2020. I have contacted ANS to correct this error, and this report indicates such.

PHYSOR 2016 Fundraising Event for Gelbard Scholarship

\$7,245 was raised for the Gelbard Scholarship at the PHYSOR 2016 Fundraising reception.

Attachments

1. MCD Budget Report from National ANS as of September 2015

MCD Executive Committee Meeting Minutes
2016 ANS Winter Meeting, Las Vegas, NV

2. MCD YTD Financial Report and Proposed 2017 Budget (Submitted to National ANS November 2016)
3. PHYSOR 2016 Gelbard Fundraising Event monies raised for Gelbard Scholarship

Attachment D: ANS Student Conference Flier



2017

DISPELLING NUCLEAR MYTHS

ANS Student Conference

April 6-9, 2017 | University of Pittsburgh

Call For Summaries

Topics in Nuclear Science and Technology

Officials:

Conference Co-Chair
Miriam Rathbun

Conference Co-Chair
Brendan Stack

Technical Program Chair
Christopher D'Angelo

Format

All summaries must be 1-4 pages and be written in the ANS format found here: ans.org/pubs/transactions.

Submitting Your Summary

Summaries may either be submitted for poster or podium presentations. Both submissions will follow the same timeline. Submitting a summary for one of these presentations does **not** also include you into the innovation competition. Summaries must be submitted electronically and instructions can be found on the conference website.

Technical Tracks

- Accelerator Applications
- Advanced Reactors
- Aerospace
- Biology & Medicine
- Decommissioning & Environmental Sciences
- Detection and Measurement
- Fuel Cycle & Waste Management*
- Fusion Energy and Plasmas
- Human Factors, Instrumentations and Control*
- Isotopes & Radiation
- Materials Science & Technology
- Mathematics & Computation
- Nuclear Criticality Safety
- Nuclear Installations Safety*
- Nuclear Nonproliferation
- Operations & Power
- Radiation Protection & Shielding
- Reactor Physics
- Robotics & Remote Systems
- Thermal Hydraulics

* Division Sponsored Cash Award



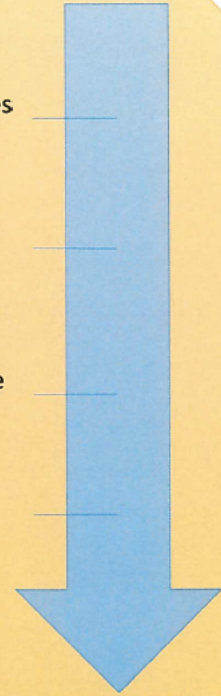
ANS

Submission of Summaries
Nov. 1 – Feb. 1

Author Notification of
Decisions
Feb. 1 – Feb. 15

Revised Summaries Due
Feb. 24

Conference
April 6 - 9



Contact Us

If you have any questions please send them to technical.ansstudent2017@gmail.com or search for answers on our website: ansstudentconference2017.com.

Attachment E: Benchmark Committee Report

On 11/2/16, 7:36 AM, "Perfetti, Christopher M." <perfetticm@ornl.gov> wrote:

Patrick, Sebastian, and Barry,

Unfortunately I won't be able to make it to the Winter Meeting, but I have some ideas for Monte Carlo benchmarks that could be discussed with the committee. It seems like there's a shortage of Monte Carlo benchmarks with definite, known answers. We can (and often do) compare the results of Monte Carlo simulations between codes using experimental benchmarks, but any differences between codes are usually attributed to differences in the nuclear data. The data-induced uncertainty in keff calculations is usually between 0.5% and 1.5%, so it's nearly impossible to judge whether two Monte Carlo codes are truly agreeing.

The MCNP team has developed a suite of analytical benchmarks that they solve using "fake" pseudo-data, and they've been able to show that their code agrees with analytical calculations to within several pcm. Since the statistical uncertainty of their simulations is also several pcm, this comparison really shows that their code gets the right answer and that any discrepancies are truly due to differences in the nuclear data. Forrest's paper on this is available at: https://laws.lanl.gov/vhosts/mcnp.lanl.gov/pdf_files/la-ur-16-24255.pdf

I think developing and standardizing this analytic Monte Carlo benchmark suite would provide an effective path for Monte Carlo code developers to perform Monte Carlo code verification. I believe that MCNP has constructed ACE libraries for their analytic pseudo-data, and we've also done some work constructing pseudo-data using AMPX libraries at ORNL. If we provide a set of problems with analytic solutions and supply both AMPX and ACE data, it should be relatively easy for Monte Carlo code developers to use these data and quickly evaluate the accuracy of their codes. Forming these benchmarks would help serve a number of other purposes in addition to providing a convenient means for code verification; for example, they can also be used (perhaps with real continuous-energy data) to perform cross-code efficiency studies and to evaluate the effectiveness of different variance reduction schemes.

Let me know what you think about these ideas. I should be available during the MCD meeting and would be happy to call in to discuss this issue with the committee.

-Chris

From: Brantley, Patrick S. [brantley1@llnl.gov]
Sent: Tuesday, November 01, 2016 9:07 PM
To: Perfetti, Christopher M.; sebastian.schunert@inl.gov
Cc: Ganapol, Barry D - (bganapol)

MCD Executive Committee Meeting Minutes
2016 ANS Winter Meeting, Las Vegas, NV

14 of 18

Subject: MCD Benchmark Committee

Chris and Sebastian,

I hope you are doing well.

At the last MCD Executive Committee meeting, we appointed you as co-chairs for the MCD Benchmark Committee. I wanted to touch base with you to see if either or both of you are going to be able to attend the MCD Executive Committee Meeting (Nov. 6 at 2 pm) at the upcoming ANS Winter Meeting in Las Vegas. If you are going to be able to attend the Executive Committee Meeting, could you please be prepared to provide a brief report on any activity or plans related to the Benchmark Committee since the last meeting? If neither of you is going to be present, could you please provide me by this Friday a brief written (email is fine) report of any activity or plans.

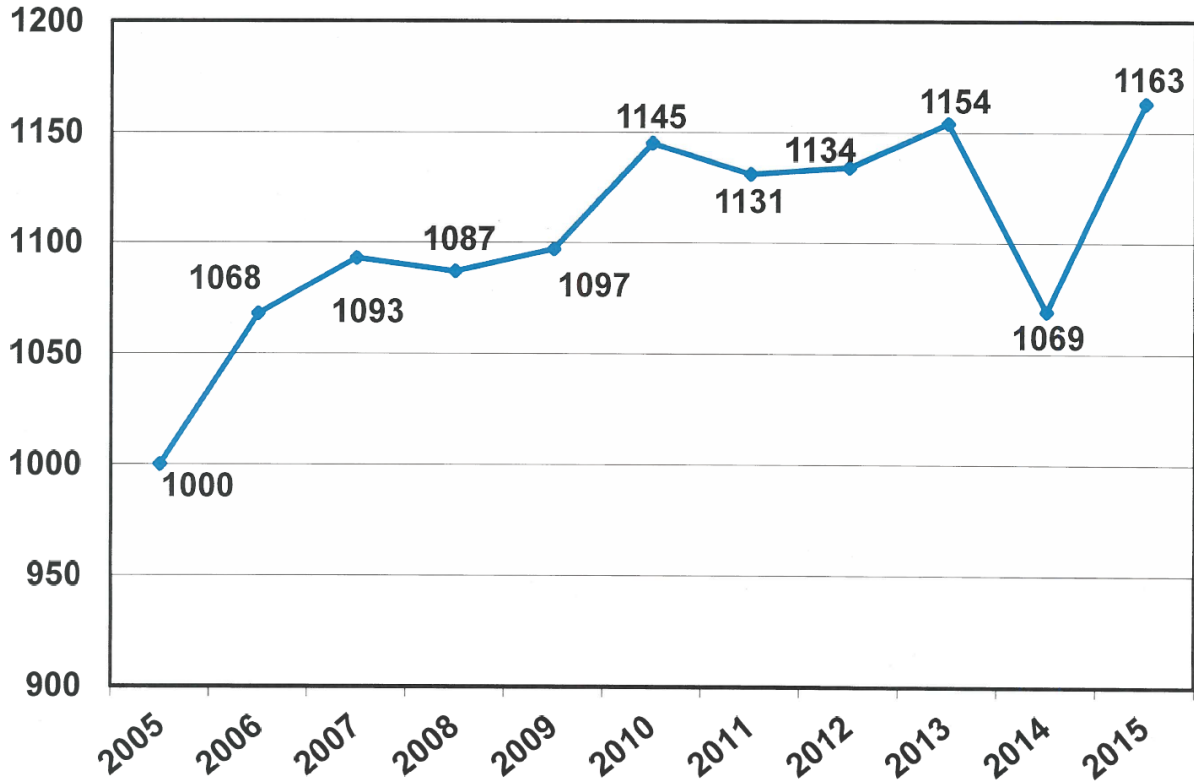
Thanks,
Patrick Brantley
MCD Chair

--

Patrick Brantley
LLNL
[\(925\) 422-8182](tel:9254228182) (V)
[\(925\) 422-8040](tel:9254228040) (F)
B132 R2462 - L095
B111 R631

Attachment F: Membership Committee Report

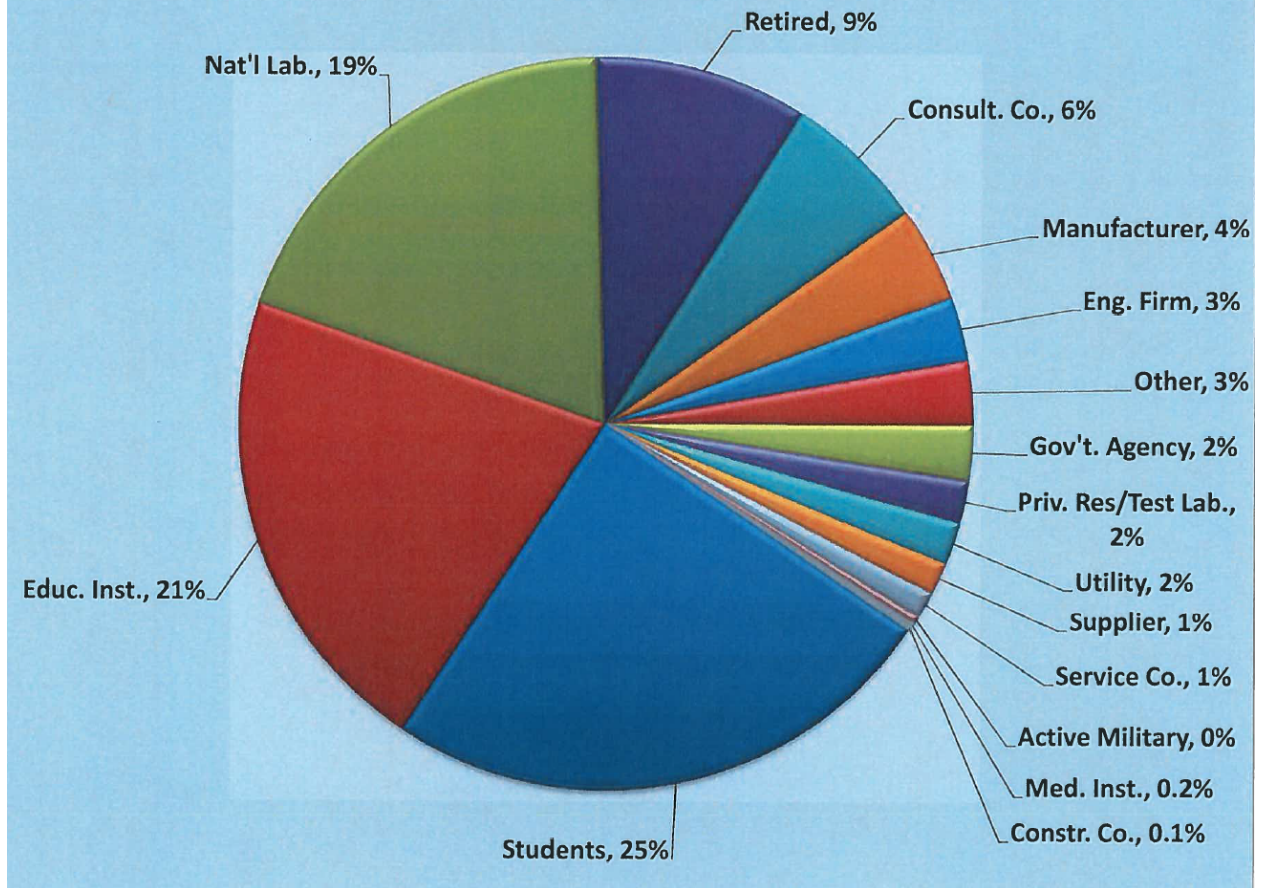
Mathematics & Computation Division Annual Membership



Mathematics & Computation Division (MCD)
Total Membership as of December 31, 2015

Students	25%	213
Educ. Inst.	21%	180
Nat'l Lab.	19%	165
Retired	9%	80
Consult. Co.	6%	54
Manufacturer	4%	36
Eng. Firm	3%	24
Other	3%	24
Gov't. Agency	2%	21
Priv. Res/Test Lab.	2%	16
Utility	2%	16
Supplier	1%	12
Service Co.	1%	10
Active Military	0%	3
Med. Inst.	0.2%	2
Constr. Co.	0.1%	1
Total	100%	857

Mathematics & Computation Division Division by Industry as of December 31, 2015



Attachment G: Standards Committee Report

MCD Standards Committee Report – Paul Hulse

The MCD Standards Committee oversees a number of MCD related standards under the Mathematics and Computation Subcommittee (ANS-10).

Currently these are:

ANS-10.2, “Portability of Scientific and Engineering Software”, which was reaffirmed in 2009. The working group chair is Robert Singleterry.

The working group recommends letting the standard be withdrawn administratively on its 10th anniversary (8/14/19). The standard will need a major re-write to remain current and this is not currently possible given the changes that are occurring in software development at this time.

ANS-10.4, “Verification and Validation of Non-Safety Related Scientific and Engineering Computer Programs for the Nuclear Industry”, which was reaffirmed in 2016. There is currently no working group chair.

The standard has been re-affirmed for a further 5 years however it is recognised that it will need bringing up to date (i.e. it will be difficult to re-affirm in 2021). Currently looking for new working group chair to initiate a revision – a meeting is planned for 4pm on Monday in the Tuscany Room to discuss this.

ANS-10.5, “Accommodating User Needs in Scientific and Engineering Computer Software Development”. This was re-affirmed in 2011, the working group chair is Andy Smetana. A reaffirmation of this standard for a further 5 years is in process.

ANS-10.7, “Non-Real Time, High-Integrity Software for the Nuclear Industry—Developer Requirements”. This was a new standard in 2013, there is currently no working group chair. There is no planned activity for this standard (reaffirmation will be due in 2018).

ANS-10.8, “Non-Real Time, High-Integrity Software for the Nuclear Industry—User Requirements”. This was a new standard in 2015, there is currently no working group chair. There is no planned activity for this standard (reaffirmation will be due in {late} 2020).