

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

Marriott Wardman, Washington, DC – October 29, 2017
2:00 PM – 4:00 PM, Location: Park 8222

Officers Present

Rachel Slaybaugh, Chair
Dmitriy Anistratov, Vice Chair
Wei Ji (joined the meeting at 2:50 pm), Secretary
Aaron Watson, Treasurer

Ex-Officio: Patrick Brantley

Executive Committee Members Present

Matt Cleveland
Barry Ganapol
Brian Kiedrowski
Jonathan Walsh
Ryan McClarren
Tara Pandya

Others Present

Kyle Anderson
Jeff Densmore
Bob Grove
Forrest Brown
Andy Smetana
David Griesheimer
Todd Palmer
Steven Hamilton
Christopher Perfetti
Miran Rathbun
Sebastian Shunert
Tom Sutton
Dan Gill
Richard Vasques

Proxy assigned via email prior to meeting

Member	Position	Proxy to
Benoit Forget	Executive Committee	Rachel Slaybaugh
Erin Davis	Executive Committee	Mathew Cleveland
Diego Mandelli	Executive Committee	Tunc Aldemir
Wei Ji	Secretary	Rachel Slaybaugh

1. Call to Order, Attendance, Introductions

Chair Rachel Slaybaugh called the meeting to order at 2:00 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 thirteen votes available (eleven present and three proxy).

2. Officer's Reports

Secretary's Report:

- i. Minutes from 2017 Annual Meeting in San Francisco, CA previously approved by Executive Committee via email (Tara Pandya, Rachel Slaybaugh, Brian Kiedrowski, Patrick Brantley, Ben Forget, Aaron Watson, Erin Fichtl, Dieglo Mandelli, and Ryan McClarren sent in approvals by email)
- ii. Approval of agenda: approved unanimously.

Treasurer's Report: Treasurers report was sent out electronically (**Attachment C**). Aaron Watson summarized the report. M&C conference funding has not shown up yet, but Aaron Watson will follow up. The financial status of EC is healthy.

Vice Chair's Report: Vice Chair Dimitry Anistratov organized the MCD Current Issues in Computational Methods Roundtable scheduled for Monday (10/30/2017):
Title: Transport Algorithms for Multiphysics Problems: Needs and Challenges

Panelists: Thomas Brunner (LLNL), Daniel Gill (NNL), and Robert Lowrie (LANL)

Per convention, organization of the next roundtable will be still Vice Chair Dmitriy Y. Anistratov's responsibility.

Chair's Report:

Rachel Slaybaugh reported her observation from the President's Meeting with Professional Division and Committee Chairs. There is concerted effort at society level to get finances in order. Currently, ANS has a structural financial deficit. Actions will be taken to remove unimportant events from program. Bob Coward is challenging the society to become more relevant and trying to function more effectively.

No actions have been taken on strategic planning. MCD is doing well, but ANS is not. Services that do not add value will hopefully disappear.

3. Standing Committees

- a. Benchmark – Schubert gave report. A MCD Github repository has been created. Currently not high activity, but process is created to facilitate the distribution of benchmarks. Currently in need of advertising. Sebastian Schubert is looking for ideas of how to make this useful. Barry Ganapol kinetics benchmark is being used as a starting point. Chris Perfetti has been working on getting analytical Monte Carlo benchmarks to generate input files. Forrest Brown suggested Sood and Forster benchmarks be added.

Rachel Slaybaugh asked how to get people involved with contributing and using benchmarks. Barry Ganapol suggested a competition or prize.

Forrest Brown suggested that the types of benchmarks be clarified and distinguished. Three types: analytical, experimental, and computational performance. Forrest Brown likes the idea of analytical benchmarks, suggested that experimental ones be avoided, computational benchmarks.

Sebastian Schunert focused on convenience of access.

Dimitri Anistratov suggested that benchmark committee suggest they look at C5G7 benchmark experience.

Brian Kiedrowski suggested a prize for impactful benchmark.

Matt Cleveland suggested a “bounty” for benchmarks in demand.

Sebastian Schunert discussed having utility scripts for processing data and Slaybaugh suggested speaking with PyNE developers for lessons learned.

URL: <https://github.com/ANSMathCompDivision>

- b. Finance – The finance committee is chaired by the current Treasurer, so the Treasurer’s report (See **Attachment C**) serves as the finance committee report. Aaron Watson discussed the report and raised issue of how we are going Gelbard fellowship. Discussion occurred later in the meeting.
- c. Honors and Awards – Farzad Rahnema completed his term and Rivetto has agreed to take the role. Slaybaugh will send email to ANS to make official. Rachel Slaybaugh raised the issue of nomination of MCD members for ANS fellows. Brian Aviles is a new ANS Fellow. Tom Sutton suggested that people consider colleagues at other institutions. Tim Burke and Brian Kiedrowski received a Best Paper + Summary Award.
- d. Membership – Madeline Feltus can no longer serve as Chair of this committee, so we need a new chair. Position is currently open. The attached report reflects the current status of the MCD membership (**Attachment D**).
- e. Nominating – Patrick Brantley thanked Tod Palmer, Forrest Brown, and Anil Prinja for the nominations. A slate of candidates has been developed for the upcoming election.
- f. Standards – Paul Hulse was not present but sent the committee report. His report is attached in **Attachment E**. Rachel Slaybaugh discussed the report. ANS 10.4 standard working group was formed and is meeting on Monday at 4 PM. Andy Smetana suggested members consider

4. Program Committee Report

Steve Hamilton presented the program committee report. More reviewers are needed for ANS MCD. Reminder email of expectation of reviews to MCD members sent out near end of review process.

5. Other Old Business

Gelbard Scholarship Status:

Voted to award \$5k and should be able to receive award for 2018-2019 AY, currently at \$52,131 and \$70k. Fundraisers are becoming increasingly ineffective. Need to solicit donations and new ideas. The MCD members from NNL will look into whether contributions. An option is to move MCD funding into Gelbard fellowships. The Dannels balance is very high relative to output. May be opportunity to give our more, increase amount, or possibly move. David Griesheimer will investigate the possibility. Forrest Brown suggested that they mention to newsletters. David Griesheimer suggested that members could contribute. Matt Cleveland suggests matching from MCD up to a certain amount. Sebastian Schunert suggests possibly looking at startups. Rachel Slaybaugh will send material to executive committee plus Rich Martineau to try to coordinate fundraising.

MCD will need to contribute about \$1k to give \$3500 award. David Greisheimer will confirm what needs to be done to distribute the \$3500 scholarship. Rachel Slaybaugh will discuss with ANS Student Sections Committee and NEDHO, and work with Wei Ji to promote scholarship. MCD committee discussed adding a required statement for how their research related to MCD. The application website has been online:

<https://app.smarterselect.com/programs/41148-American-Nuclear-Society>

6. New Business

No new business was raised.

Student Conference and Student Funding Discussions

Representatives for the 2018 ANS Student Conference presented at 3:00 pm. The MCD executive committee unanimously decided to fund best paper awards in the MCD area at the ANS student conference, \$100 for undergraduate, and \$100 for graduate.

Andy Klein attended our meeting at 3:30 pm to give an update on the nine ANS grand challenges. They were announced in June. Andy Klein identified 12 divisions to lead challenges; encouraged MCD and THD to be involved jointly with moving the modeling and simulation grand challenge forward.

7. Adjournment

At 3:35 pm, Tara Pandya made a motion to move to adjourn and Patrick Brantley seconded the motion. The motion was passed by all voting members.

Attachment A: Attendance

Name	email	org
Tom Sutton	Thomas.Sutton@UNNPP.gov	NNL
Bob Grove	grovere@ornl.gov	ORNL
Dimitry Anistrator	anistrator@ucso.edu	
BARRY GANAPAL	GANAPAL@COWBOY.ARE.ARIZONA.EDU	UA
Patrick Brantley	brantley1@llnl.gov	LLNL
DAVID GRIESHEIMER	david.griesheimer@unnpp.gov	NNL
MIRIAM RATHBUN	miriamrathbun13@gmail.com	MIT
Steven Hamilton	hamiltonsp@ornl.gov	ORNL
Tara Pandya	pandyatm@ornl.gov	ORNL
Forrest Brown	fbrown@lanl.gov	LANL
Jon Walsh	walsh@llnl.gov	LLNL
Aaron M Watson	watsona4@gmail.com	NNL
Wei Ji	jiw2@rpi.edu	RPI
Jeff Deiswore	jeffery.deiswore@unnpp.gov	NNL
Matthew Cleveland	matthew cleveland@lanl.gov	LANL
Kyle Anderson	kanderson29@wisc.edu	UW-Madison
Sebastian Schunert	sebastian.schunert@inl.gov	INL
Dan Gill	daniel.f.gill@gmail.com	NNL
Rachel		

Attachment B: Agenda

Executive Committee Meeting Agenda ANS Mathematics and Computation Division 2017 Winter Meeting

Sunday, October 29, 2017 – 2:00-4:00 pm
Park 8222
Marriott Wardman Park,
Washington, D.C.

- II. Call to Order, Attendance, Introductions
- III. Officer Reports
 - a. Secretary: Wei Ji
 - i. Minutes from 2017 Annual Meeting in San Francisco, CA previously approved by Executive Committee via email (Tara Pandya, Rachel Slaybaugh, Brian Kiedrowski, Patrick Brantley, Ben Forget, Aaron Watson, Erin Fichtl, Dieglo Mandelli, and Ryan McClarren sent in approvals by email)
 - ii. Approval of agenda
 - b. Treasurer's Report: Aaron Watson
 - c. Vice-Chair – Roundtable: Dimitry Anistratov
 - d. Chair: Rachel Slaybaugh
 - i. Professional Division Committee report
 - ii. President's Meeting with Professional Division and Committee Chairs report
 - iii. MCD Strategic and Tactical Planning discussion
 - 1. Current status of MCD Strategic Plan
 - iv. Divisional Roles and Responsibilities document reminder
- IV. Standing Committees
 - a. Benchmark: Chris Perfetti and Sebastian Schunert
 - b. Finance: Aaron Watson
 - c. Honors and Awards:
 - i. Thank you to Farzad Rahnema for his service
 - ii. Discuss process for nomination for ANS Fellow
 - d. Membership:
 - i. New committee chair needed
 - e. Nominating: Patrick Brantley
 - i. No nominations required at this time
 - f. Standards: Paul Hulse
 - i. Request from PDC Chair to discuss division standards support activities at Executive Committee meetings
- V. Program Committee Report: Jeff Densmore
 - a. Update on technical program for this conference
 - b. Update on M&C 2019

VI. Old Business

- a. Ely M. Gelbard Memorial Graduate Scholarship status/discussion
 - i. At June 2017 we moved \$5k into the fund and voted to use our operating funds to pay the required amount to give the scholarship of \$3500 in 2018/19 ay.
 - ii. Fund status update.
 - iii. What should we do next?

VII. New Business

VIII. Adjourn

Students for the 2018 ANS Student Conference will attend the meeting to present at approximately 3:15 pm.

President Andy Klein will attend our meeting at approximately 3:30 pm to discuss moving the “accelerate utilization of simulation and experimentation” Nuclear Grand Challenge forward.

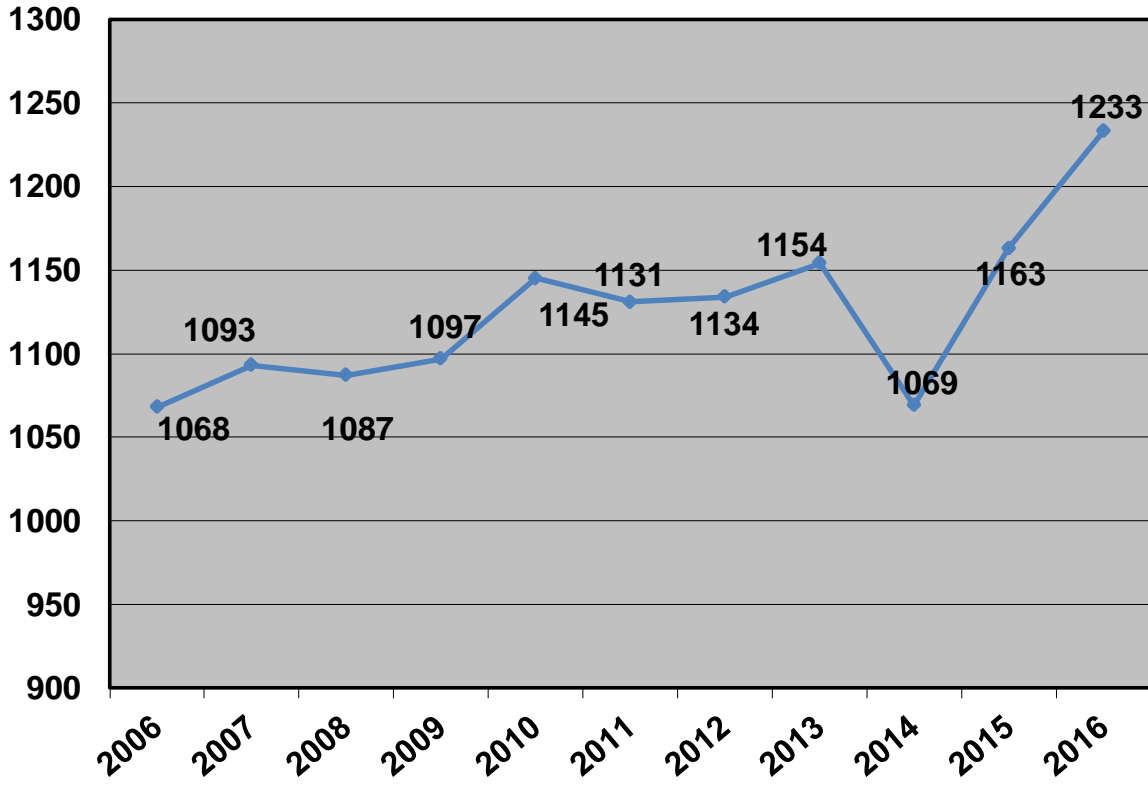
Attachment C: Treasurer's Report

MCD Treasurer's Report: September 2017 - **MCD Operating Funds**

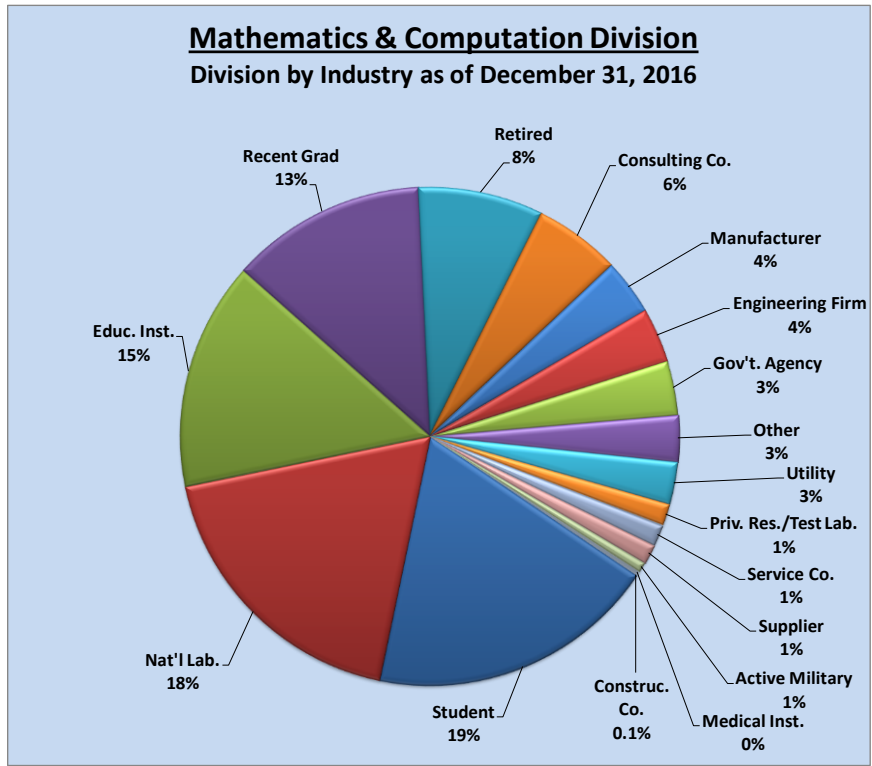
	Actual 9/30/2017	Budget 9/30/2017	Variance
Revenues			
Dues Revenue Allocation: DUES REVENUE ALLOCATION -MCD	1,848.00	1,603.00	245.00
Total Dues Revenue Allocation	1,848.00	1,603.00	245.00
Meeting Revenue: Meeting Revenue - MCD		15,000.00	(15,000.00)
Total Meeting Revenue		15,000.00	(15,000.00)
Total Revenue	1,848.00	16,603.00	(14,755.00)
Expenditures			
Awards, Plaques: Awards/Plaques - MCD		750.00	(750.00)
Total Awards, Plaques		750.00	(750.00)
National Meeting Costs: National Meeting Costs - MCD		750.00	(750.00)
Total National Meeting Costs		750.00	(750.00)
Student Support: 2017 STUDENT CONFERENCE SUPPORT 2017 NATIONAL MEETING STUDENT PROGRAM SUPPORT	2,500.00 1,000.00	3,500.00	
Total Student Support	3,500.00	3,500.00	
Scholarship & NEED Funding: MCD SUPPORT OF GELBARD SCHOLARSHIP FUND	5,000.00	20,000.00	(15,000.00)
Total Scholarship & NEED Funding	5,000.00	20,000.00	(15,000.00)
Other Expenses: FEDEX USPS ALLOCATION - MARCH 2017 2017 YOUNG PROFESSIONAL CONGRESS SUPPORT FEDEX USPS ALLOCATION - MAY 2017 PRINTING ALLOCATION - MAY 2017	123.20 1,000.00 25.84 0.27	30.00	1,119.31
Total Other Expenses	1,149.31	30.00	1,119.31
Total Expenditures	9,649.31	25,030.00	(15,380.69)
Net Surplus/(Deficit)	(7,801.31)	(8,427.00)	625.69

Attachment D: Membership Committee Report

Mathematics & Computation Division Annual Membership



Mathematics & Computation Division (MCD)			
Total Membership as of December 31, 2016			
Student	19%	232	
Nat'l Lab.	18%	228	
Educ. Inst.	15%	183	
Recent Grad	13%	156	
Retired	8%	100	
Consulting Co.	6%	69	
Manufacturer	4%	45	
Engineering Firm	4%	44	
Gov't. Agency	3%	43	
Other	3%	37	
Utility	3%	34	
Priv. Res./Test Lab.	1%	17	
Service Co.	1%	17	
Supplier	1%	16	
Active Military	1%	8	
Medical Inst.	0%	3	
Construc. Co.	0.1%	1	
Total	100%	1,233	



Attachment E: Standards Committee Report

MCD Standards Committee Report – Paul Hulse

Current standards activity is centred on ANS-10.4 and ANS-41.5 as detailed below.

The current Mathematics and Computation standards cover the design and development of both high integrity and non-safety related software, and the verification and validation of radiological data for waste management. In particular the following standards are current:

ANS-10.2, “Portability of Scientific and Engineering Software”, which was reaffirmed in 2009. The working group chair is Robert Singleterry. 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. Therefore the standard will be administratively withdrawn on its 10th anniversary (8/14/19).

ANS-10.4, “Verification and Validation of Non-Safety Related Scientific and Engineering Computer Programs for the Nuclear Industry”, is reaffirmed until 2021. Robin Jones of Southern Nuclear has formed a working group to work on this standard. This working group is meeting on Monday at 4PM in Park 8222, and members are encouraged attend.

ANS-10.5, “Accommodating User Needs in Scientific and Engineering Computer Software Development”. This was re-affirmed in 2016, the working group chair is Andy Smetana. There is currently no planned activity for this standard, but reaffirmation will be due in 2021.

ANS-10.7, “Non-Real Time, High-Integrity Software for the Nuclear Industry—Developer Requirements”. This was a new standard in 2013 with Charles Martin as working group chair. The standard is due for review by 2018. At the moment, it is likely that there will be a recommendation to re-affirm the standard for a further 5 years. Please send any comments on the standard to Paul Hulse.

ANS-10.8, “Non-Real Time, High-Integrity Software for the Nuclear Industry—User Requirements”. This was a new standard in 2015 with Keith Morrell as working group chair. There is currently no planned activity for this standard, where reaffirmation will be due in 2020.

ANS-41.5, “Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation”. This standard was re-issued in 2012 with Saleem Salaymeh as working group chair. ANSI have granted an extension to this standard until the 31st December 2019. The standard is quite different from the other MCD standards which makes it not an obvious fit. The intention is to check if other consensus committees and/or professional divisions might be a better fit.