

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Baltimore Section
September Executive Committee Meeting Report
17 September 2018

This report summarizes the proceedings of the IEEE Baltimore Section Executive Committee (ExCom) meeting held on Monday, September 17, 2018 at the National Electronics Museum (NEM, <http://www.nationalelectronicmuseum.org>), Linthicum, MD.

Attendees:

Sherwood Olson (Chair)
Neville Jacobs
Ben Menachery
David Obler
Tom Burke
Barin Nag
Boris Gramatikov
John Dentler
David Kisak
Garima Bajwa
Robert Berkovits
Anna Romaniuk

I. Call to Order

- i. Sherwood called meeting to order at 6:45 pm.

II. Introductions

III. Approval of Prior ExCom Minutes

- IV. June 2018 minutes was called by the Chair. Sherwood pointed out the attendees list may not be correct. Minutes will be updated.

V. Executive Reports

a. Chair: Sherwood Olsen discusses his executive report

- i. Picnic is on October 6th Saturday.
 1. Register for the picnic.
 2. Member can bring side dishes and/or desserts.
 3. More information regarding the picnic will be coming soon.
- ii. Elections
 1. Please vote for:
 - a. IEEE President-Elect 2019
 - b. IEEE USA President-Elect 2019
 - c. Region 2 Director-Elect 2019-2020
 - d. IEE Division IX Director -Elect 2019
 - e. IEEE Technical Activities Vice President – Elect 2019
- iii. Brain-Computer-Interface (BCI) Steering Committee updates.
 1. Included B2CI in the section's budget.
 2. Anne Arundel Community College is an active participant.
 3. Planning for an event at NEM in March 2019.
 4. Keeping BCI in the Mid-Atlantic region.
- iv. IoT Weather Station workshop at Loyola University on September 22, 2018.
- v. Innovative Smart Grid Activities (ISGT) North America 2019 in D.C.

b. Vice-chair: Dan White (not present)

- i. NTR

c. Treasurer: Ken Wong (not present)

- i. Sherwood presented the financials

d. Secretary: Farhat Shah (not present)

- i. Sherwood asked Ben to take the minutes.

VI. Committee, Chapter and Affinity Group reports

a. Educational Activities (Boris Gramatikov)

- i. Looking for speaker in area of AI and machine learning.

b. Nominations and Appointments (David Kisak)

- i. Election for section executives for 2019 is coming up in November.
- ii. There are at least four candidates planning to run for the four positions.
- iii. Candidates biodata will be published in October.

c. Student Activities (Neville Jacobs)

- i. Neville briefed student activities (see Appendix A.)
- ii. Plan to improve the performance of the Robot by strengthening Robot's legs.

d. R2 Employment & Career Activities Coordinator (Anna Romaniuk)

- i. Work with companies to encourage YP and WIE with career development

e. Webmaster (Sherwood Olson)

- i. Volunteer website is up to date.
- ii. IEEE website is migrating soon.
- iii. Links to Robot Challenge & Educational Activities sites will be preserved.

f. Aerospace and Electronics Systems (Tom Burke)

- i. Oct. 9th Presentation at NEM on Navigation: The Road to GPS and Getting Beyond
- ii. Co-sponsored by CH02182 - Washington/Baltimore/No VA Sections Chap, CAS04

g. Communications Society (Anna Romaniuk)

- i. Anna is the new chair of Comm. Society Chapter.
- ii. September meeting is cancelled.
- iii. Looking for two presentations in the near future.
- iv. New Horizons asteroid encounter will be presented in spring.
- v. Distinguish lecture presentation at College Park (Joint section) in November.
- vi. STEM Program at Bryn Mawr on Oct. 13th

h. Computer Society (Barin Nag)

- i. NTR

i. Electromagnetic Compatibility (Robert Berkovits)

- i. Trying to organize two joint meetings with EMBS and MTT.

j. Young Professionals (Garima Bajwa)

- i. NTR

VII. Old Business

- i. Wait till the new projector for the purchase of RGB to HDMI converter and HDMI cable.

VIII. New Business

- a. New Projector for the NEM.
- b. Sherwood will check out the current projector and report the status
- c. Mean time Sherwood motioned to purchase a new projector for the museum costing not more than \$1000. Tom seconded the motion and the motion passed.
- d. Sherwood reported after the meeting that the Projector is working fine.

- e. Since the current projector is functioning section decided to hold off purchasing a new projector.

IX. Announcements

- i. UMBC Student Branch Presentation file will be emailed since they couldn't make it for the meeting.

X. Meeting Adjournment

- i. Meeting adjourned at 8:20 pm

Appendix A

Student Activities 9-17-18 (Neville Jacobs)

1. The first meeting was held today of the Robot Committee for the new Academic year 2018-19. Many items were covered including implementing some of the suggestions from the survey conducted last year, and spreading responsibilities for the various functions that need to be covered this year. We would also like to get some new people on the committee.

2. The key request from teachers was to strengthen the robot's legs, so Summer became the opportunity to review these options while still proceeding to place orders for the kits needed to satisfy the expected school requirements. It turned out to be quite complicated.

3. Two options were considered: Toughening the steel the 2-56 threaded rods are made from, or, replacing the 2-56 rods with 4-40 rods. It turned out there were problems and comparable additional costs for both approaches. Since switching to 4-40 rods was unproven and would require changes to the design and machining one of the mating parts, so toughening the 2-56 threaded rods seemed to be the preferred option.

4. Upon advice from heat-treating experts, we tried switching from our previous type 304 stainless steel to a carbon steel and eventually to a 17-4PH stainless steel. We ordered samples of threaded rods in carbon steel and found that both 2-56 and 4-40 rods became significantly distorted and made two attempts at carburizing and heat treating. Literature from suppliers suggests that 17-4PH can be heat treated without distortion since it is performed at a much lower temperature (900°F vs over 2000°F). Threaded rods in 17-4PH stainless steel were not available in the market-place, so our only option seemed to be to get them specially made for us. There were difficulties in getting both the 17-4PH material in the correct diameter (now have two sources), and finding a machine shop willing and able to get the threads rolled or cut (we are close to getting a quote from one source, but they want to run some samples before quoting). We also contacted Dr. Robert Pond, a metallurgist from Loyola University to get advice on the possible use of 17-7PH Condition C stainless steel in the event that we couldn't get 17-4PH (only preliminary responses so far).

5. The bottom line is that going to a Precipitation Hardening Stainless steel is a viable option though there will be some added expense. It will cause an increase in the kit price of about \$6 a kit (could be more). Using a 4-40 steel rod would also add an increase of about \$6, but that proposal is uncertain as it has not been tried before (a previous attempt failed because the fabricated parts were defective). On the other hand we do not know that if the 2-56 17-4PH threaded rod do not get distorted during heat-treating, they will work perfectly in the robots. Unfortunately, we do not have time to get samples made, and as it turns out, the cost of the samples is comparable to the cost of an entire batch.

6. The Robot Committee has been considering these options, and the consensus suggests that a modest price increase in the kits is sustainable in the marketplace (we have held the price constant for over 20 years), and that we should move ahead with the Precipitation Hardness stainless steel rods if we can get them. The expenses incurred with developing this process should be considered a development cost, and referred to PACE for partial reimbursement. (~~\$~~543.06)