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1) Call to Order and Introductions (Sembiam Rengarajan)

Sembiam Rengarajan, the Chair of USNC-URSI, called the meeting to order at 5:11 pm MST. The following members of USNC were present at the USNC-URSI Business Meeting.

USNC Officers

Sembiam Rengarajan (Chair)

Michael Newkirk (Secretary and Chair-Elect)

David R. Jackson (Immediate Past Chair)

Gary Brown (Accounts Manager)

National Academies Staff (non-voting)

Ana Ferreras

Commission Chairs

Jeanne Quimby (Commission A Chair)

Jamesina Simpson (Commission B Chair)

Eric L. Mokole (Commission C Chair)

Tom Hanley (Commission F Vice-Chair)

Attila Komjathy (Commission G Chair)

Robert Moore (Commission H Chair)

Jeff Mangum (Commission J Chair)

Majid Manteghi (Commission K Chair)

Society Representatives

David DeBoer (AAS Representative)

Fabiano Rodrigues (AGU representative)

Danilo Erricolo (IEEE AP-S representative)

Members-at-Large

Albin J. Gasiewski

Zova Popovic

Wayne Scales

U.S. Officers of URSI

Ross Stone (Assistant Secretary General - Publications)

George Uslenghi (Vice-President and Assistant Secretary General – AT-RASC)

John Volakis (Vice-Chair, Commission B)

Government Liaisons (non-voting)

Christopher Holloway (NIST)

Sadasiva M. Rao (NRL)

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Also in attendance:

Yahya Rahmat-Samii (USNC Chair 2009-2011 and IEEE-APS/USNC-URSI JMC member) Erdem Topsakal (Student Travel Program and Paper Competition)

2) Approval of the Agenda (Sembiam Rengarajan)

The agenda for the meeting was approved.

3) Approval of Minutes (Sembiam Rengarajan)

The minutes of the January 2017 USNC-URSI Business Meeting in Boulder, CO were approved, with corrections.

4) Report by the Chair (Sembiam Rengarajan)

- Sembiam Rengarajan reviewed the parliamentary procedure.
- The Chair reviewed the URSI and USNC-URSI organizations. The USNC-URSI Committee (the "Committee") was reminded that the voting membership of the Committee consists of 4 officers, 6 Members-at-Large, 10 Commission Chairs, 8 U.S. officers of International URSI, 6 Society Representatives, and one National Academies Representative (Jack Welch). The Chair reviewed the USNC-URSI Leadership (Officers and National Academy Representatives), Commission Chairs, Vice Chairs, Society Representatives, Government Liaisons, Honorary Members, USNC-URSI members holding URSI positions, and USNC-URSI representatives in the Joint Meetings Committee.
- The Chair congratulated Steve Reising, Jamesina Simpson and Ross Stone for individual awards received at the 2017 GASS.
- The Chair thanked Steve Reising for his nine years of excellent service as a USNC-URSI officer, and thanked David Jackson for his outstanding service as Chair during the past triennium (2015-2017).
- Ross Stone serves as the Publications Coordinator in charge of the USNC-URSI Archive. Ross will oversee all issues pertaining to USNC-URSI publications and also interact with the IEEE AP-S on publication issues.
- Erdem Topsakal, Student Coordinator, is in charge of the Ernest K. Smith Student Paper Competition and the Student Travel Grant awards.
- The NRSM Conference Coordinator Christina Patarino was thanked for all her work to make the NRSM successful.
- The Chair recognized the NAS staff members Pamela Gamble for her support of USNC-URSI and Chelsea Bock for her service as the USNC-URSI webmaster.
- Important events at the 2018 NRSM were reviewed: Reception on January 4 at 6:30 p.m., Student Paper Competition and Plenary on January 5 from 8:20 a.m. to 12:00 noon, Student Travel Grant and Mentoring Lunch on January 5 from 12:00 noon to

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1:00 pm, Hans Liebe Lecture on January 6 from 12:15 p.m. to 1:15 p.m., Dinner with Mrs. Liebe on January 6 (by invitation) and Executive Council Meeting on January 7 from 8:00 to 11:00 a.m. Commission Business Meetings were scheduled on January 4 and 5 from 5:00 to 6:00 p.m. and 6:00 to 7:00 p.m.

- The Chair reminded the Committee about the nomination process for new members. All Commissions should use the application process through the "Membership" link on the USNC-URSI website.
- The Chair reviewed the status of the Commission websites, as this was an item of discussion at the 2017 meeting. Some Commissions still do not have their websites in the USNC-URSI website. Some of the Commissions do not have the complete membership information. Some of them do not have minutes of their recent meetings or current information for officers. Chelsea Bock, the USNC-URSI webmaster will help Commissions to update their websites. It is suggested that all Commissions have their members' names and affiliations in their websites. Commission Chairs were given the action to update their pages on the site by February 28, 2018.
- The Chair reminded the Committee that the deadline for abstracts for the 2018 AT-RASC is January 10, 2018, and encouraged Chairs to highlight this at their Business meetings.
- The Chair discussed the need for updating the Commission membership list. He mentioned that Commissions B, F, and G have nice formats. Commissions A, C, D, and E have outdated lists. He suggested a yearly renewal process for members to stay active just like IEEE does. There were suggestions from the floor that each Commission Chair or an officer send an annual email to all members asking them to update their information. If necessary a reminder email should be sent to find out if they want to remain active.

Discussion Items:

- The proposed dates for the 2019 NRSM are January 9-12. According to Christina Patarino, these are the only practical dates at CU Boulder, but feedback is sought from the Commission members. It was noted that some universities start their semester the week of January 7, but also acknowledged that there may be no alternative.
- The Chair asked whether the Committee wished to continue holding the USNC Business and Executive Meetings at the Boulder Marriott, now for the second year. All members were in favor of remaining at the Marriott for future meetings. It was felt that the Boulder Marriott is a better facility.
- The Chair showed the results of the 2017 NRSM Survey. It was noted that nearly half the respondents were students (48%), attendees were generally satisfied with the scientific content, and 2/3 attended sessions from two or more Commissions. It was

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also noted that the Thursday snowstorm altered the schedule and affected attendance at the Commission Business Meetings, Plenary Session and Reception.

- A draft copy of the 2018 NRSM Survey has been distributed. Suggestions on survey questions were sought from the Committee. One unrelated request was to remove the comment about "alcohol" from the registration form to simplify government attendees. Christina will be asked if this can be done.
- The Chair asked whether the contents of the conference USB drive should be made available prior to the start of the conference, to address issues that government workers have with use of USB drives. The Commissions were asked to provide feedback.
- The Chair asked for feedback from the Commission Business Meetings on whether a registration discount should be provided for NRSM.
- There was discussion on adopting a uniform policy across Commissions for having the same set of officers and for how those officers are chosen and how they advance. For example, at least one Commission has no Secretary, and in some Commissions the Secretary is appointed, while the Vice-Chair is elected. Feedback is sought from each Commission's Business Meeting.
- The issue on how to deal with inactive members was discussed. Ross pointed out that some number of years ago the Commissions had to make an effort to contact every member once per triennium to determine if there was still interest in the Commission. In addition, there was a requirement that a member had to make a presentation at a USNC-URSI sponsored conference or attend at least one Business Meeting per triennium to maintain active status. Commission Chairs were asked to discuss at their Business Meetings.
- The Chair asked if there should be a policy on advertising non USNC-URSI conferences on the USNC-URSI website and/or at Commission Business Meetings. An option was to consider some type of USNC-URSI co-sponsorship, similar to what IEEE AP-S does. Technical vs. financial co-sponsorship was described. Ross described the URSI process that could be adopted if USNC-URSI would like to pursue this. There was concern expressed about whether the National Academies might object to the policy and how the quality of these conferences would be assured; however, there was also an acknowledgement that this could help increase awareness of USNC-URSI to the larger scientific community. Feedback is sought from the Commissions.
- The Chair asked the Committee if there should be a clarification in the USNC-URSI Constitution regarding candidates for Officer positions. Specifically, should the candidates be restricted to come from just the voting members or from all members of USNC-URSI? General consensus was that this should be limited to voting members, as experience in the operations of USNC-URSI is necessary. A motion was made (Stone) and seconded (Brown) to revise the Constitution to state that Officer

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candidates can only come from present or past voting members of USNC-URSI. The motion passed.

- The position of Honorary Member was discussed, noting that there are no formal qualifications set forth in the Constitution. Until this year USNC-URSI had two, Tom Butler and Tom Senior, but Tom Senior passed away recently. The Constitution allows up to four, so nominations are sought. Ross agreed to develop a list of qualifications for the position.
- Yahya Rahmat-Samii recommended that the day of the week should be added to at least the session names in the NRSM program book to clarify on what day each session is being held. This would help attendees quickly determine what day of the meeting a given session is being held.

5) Report by the Secretary (Michael Newkirk)

• Michael Newkirk thanked the Committee for their vote of confidence in electing him to the position and looks forward to working with all of them.

6) Report by the Immediate Past Chair (David Jackson)

- David Jackson reviewed some of the projects started during the last triennium. These
 include the USNC-URSI Archive (more details in subsequent report by Ross Stone);
 the USNC-URSI website updates for each Commission; and the creation of a unified
 Commission Membership List.
- With regard to the Commission Membership lists, he reviewed how the lists have been updated and the reasons for the need of a unified membership list. Commission Chairs were asked to provide their lists, but only two of the ten Commissions have responded. The proposed format of the unified list was reviewed. There was some discussion on how the information was to be used. The Committee agreed to the policy that only USNC-URSI Officers and Committee members would have access to the combined list. Ana Ferreras will check the policies of NAS for the retention of membership information. An annual deadline of 28 February was set for each Commission to provide an updated list to USNC-URSI. Mike Newkirk will send out the NRSM 2018 attendee list to aid the Commissions in updating their lists.
- David reviewed the travel support provided by USNC-URSI to their members for attendance at the 2017 URSI GASS: 16 Young Scientist Awards (\$770 each, in addition to \$770 from URSI), 31 Early Career Scientists (\$1,000 each) and 30 regular members (\$750 each). This support was enabled, in part, by a \$30K grant from NSF. All members that applied were supported.

7) Report by the Accounts Manager (Gary Brown)

USNC-URSI's financial situation was updated.

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- Our major expenses are student travel grants, GASS support, awards and prizes. The
 revenue sources are the Boulder meetings and the joint summer meetings with IEEE
 AP-S.
- New Commission Chairs were informed that each gets \$3K to spend on their Commission during their three-year term, which can be used for travel or any other purposes to benefit the Commission. Any requests must first be cleared through Gary Brown, who will then inform NAS that an expense is approved.
- Presently, we have about \$227.6K in our private account, of which about \$39.2K is restricted to specific uses, leaving about \$188.4K available for use. It was noted that we still have not received our revenues from the Vancouver, Puerto Rico and San Diego joint IEEE APS/USNC-URSI symposia. Gary Brown mentioned that the income from the Boulder meeting and the summer joint meeting with AP-S is \$60K based on a conservative estimate. Our normal annual expenses are \$100K (including the student travel support). The account is in good shape given the GASS and travel expenses and the forthcoming AP-S meeting proceeds. There was a discussion of the need for raising money from various sources, including private corporations and foundations. The delay in receiving AP-S funds is due to changes in IRS rules that the IEEE is working through.

8) Report by URSI Vice-President and Assistant Secretary General of AT-RASC (George Uslenghi)

- The 2017 URSI GASS was deemed a scientific and financial success. The Canadian organizers were congratulated for an outstanding meeting. Paul Legasse retired as Secretary General and was made Honorary President of URSI. Regarding the elections, Umran Inan withdrew his candidacy for President of URSI, so the only remaining candidate from Japan, Makato Ando was elected. There were eight candidates for VP; four were elected including George. For Commission officers, there are four USNC-URSI members who are now URSI Commission Chairs: Amir Zagloul (C), Chadrasekar (F), Patricia Doherty (G) and Rich Bradley (J). Only one USNC-URSI member was elected to URSI Vice-Chair, John Volakis (B). USNC-URSI has three Early Career Representatives (ECRs): Hossein Asghari (D), Seebany Datta-Barua (G), and Wen Li (H). It was recommended that USNC identify more Vice-Chair nominations for the next triennium.
- The next GASS will be in Rome (2020) and Sapporo (2023). URSI has started selecting locations six years away to allow more time to identify sites in large cities where competition for conference locations is tight.
- The next AT-RASC will be held in Gran Canaria during May 28 June 1 2018. This will be the same location as the last AT-RASC, but likely the last time at that location. The call for papers was distributed at the URSI GASS in Montreal. The submission site was late in opening due to several issues, so the number of submissions is low and the Committee was asked to encourage their Commission members to submit papers. George is working with the ECR's to finalize the general lectures. He will again be asking for USNC-URSI support of the Student Paper

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Competition, which will create a good will towards USNC-URSI. The first AT-RASC broke even and the AT-RASC 2018 is expected to generate revenue for URSI.

• George is working with Ross Stone to begin an online journal, Radio Science Letters, to complement the Radio Science journal which is controlled by AGU.

9) Report by URSI Assistant Secretary General (Publications) (Ross Stone)

- The Radio Science Bulletin has been on IEEE Xplore since July 2017, as an open access publication, and includes issues back to September 2002. It still has no page charges or author fees.
- The 2017 URSI GASS in Montreal, Canada, had 1485 submissions, of which 1144 were oral presentations and 319 were poster papers. There were 10-15 parallel sessions held over 5.5 days. 56 countries were represented with 23 of those having at least 10 paper submissions. There were 274 Young Scientist submissions, which was a record; 100 of those were supported with travel funds. There were 79 Student Paper submissions, with 10 finalists competing for five prizes. USNC-URSI supported the Student Paper Competition by funding the prizes, for which Sembiam was the lead. The Committee thanked him for his efforts. There were around 1400 in attendance, which was the largest in recent memory. URSI received about \$195K of the proceeds.
- Future GASS will be held at Sapienza University, Rome, Italy, in August 2020 and Sapporo Convention Center, Sapporo, Japan, most probably in August 2023.
- Previously and throughout the URSI GASS 2017, Ross Stone has been responsible for coordinating all URSI GASS-related activities with the LOC except for finances and scientific program coordination.
- For the URSI GASS 2020, the Board intended for Ross Stone to also be the Scientific Program Coordinator Chair. However, the Local Organizing Committee (LOC) wants to handle the SPC role.

10) USNC-URSI Logo Contest (Ross Stone)

■ Fourteen entries were submitted by USNC members prior to the 2017 NRSM. Including the current logo, there were 15 in the logo contest. At that Business Meeting, the Committee decided to do an electronic voting on the logos by USNC-URSI members and all Commission members. Every member was given fifteen points to distribute among his/her logos of choice. The winning logo is shown below (it was the current logo):



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11) Report by USNC-URSI Membership Committee (Ross Stone)

- Ross reviewed the difference between official and individual memberships in URSI and encouraged USNC-URSI members (including Commission members) to apply for the latter. USNC-URSI will automatically endorse USNC-URSI members' applications for URSI membership. The value of URSI membership includes recognition as well as discounted registration at URSI conferences.
- Ross also described the different paths for individual membership in both USNC-URSI Commissions and URSI. These include whether the applicant is already a member of one and seeking the other, as well as if they are not a member of either organization.
- There was some additional discussion about whether there could or should be discounted registration at the NRSM for USNC-URSI members in order to encourage prospective new members to apply.

12) Report by USNC-URSI Publications Coordinator (Ross Stone)

- USNC-URSI Archive
 - Meetings of the USNC-URSI started in 1963, and AP-S joined in. These
 meetings continued through 1973. Most of the abstracts from 1968 onward are
 available with a few missing.
 - o The USNC-URSI National Radio Science Meetings started in 1974. Most of the issues are available, but a few are missing.
 - o The USNC-URSI Radio Science Meetings (the summer meetings that are held jointly with AP-S) started in 1974. Abstract digests for the USNC-URSI portion of the joint AP-S/USNC-URSI summer meetings started in 1974. All issues are available.
 - o Altogether, there are only 11 abstract books that are missing.
 - o Abstracts and summaries of 2008 to present are already in digital form.
 - o A total of 61 abstract books were scanned as PDF with OCR in black and white with graphics rendered using "pseudo-screening".
 - o Bill Davis then optimized the PDFs to reduce the size with a minimal loss of graphics quality.
 - o Resulting PDFs: 1.5 MB to 12 MB each; ~300 MB total.
 - o A created Acrobat index allows searching across the complete set of digests.
 - o The Archive is now available on the USNC-URSI website thanks to the help of Chelsea Bock.

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- o Some additional work remains to translate the most recent digitally-formatted books into the link hierarchy of the website.
- o The Committee thanked Ross Stone, Bill Davis, Warren Stutzman, Gary Brown and Chelsea Bock for their efforts on this project.
- Ross discussed the requests to post the papers (PDFs) from the NRSM on the USNC-URSI website.
 - o The request for downloading is because many attendees cannot use the USB drives. Some examples include restrictions by government and industry employers and the fact that tablets do not have USB ports.
 - O At the last USNC-URSI Business Meeting it was decided to post the papers "at the start" of the meeting, but that was not defined. Three options were discussed: (a) a week in advance; (b) 24 hours before the start of the meeting; or (c) on the first day of the meeting. Regardless of the choice, this would only be announced to registered attendees.
 - o Commission Chairs were asked to discuss this at their respective Business Meetings and provide feedback at the Executive Council Meeting.

13) Report by the JMC USNC-URSI Coordinator (Ross Stone)

- The statistics for the 2017 joint symposium in San Diego were presented. There were 1495 AP-S papers and 437 URSI papers submitted. The accepted papers by AP-S and URSI were 1368 and 410 respectively, for a total of 1778 which is likely a record for the summer joint symposium. There were 1409 oral and 369 poster papers. The USNC-URSI's share of the surplus is about 23%, which is about \$71,858. The vast majority of URSI submissions were one-page abstracts.
- Dave Michelson is the JMC Chair, with AP-S members Scott Tyo, Parveen Wahid, Stuart Long (AP-S Meetings Coordinator) and one more to be added. The USNC-URSI members are Gary Brown, Susan Hagness, Yahya Rahmat-Samii and Ross Stone (USNC-URSI Meetings Coordinator).
- Working with IEEE TAD Finance, MCE, and Gary Brown, we have now worked out how to "carry forward" the USNC-URSI loan amounts directly from the surplus of current joint meetings to future joint meetings. This should save considerable hassle, paperwork, and cost
- The next upcoming joint symposium will be held in Boston, MA, during July 8-14 2018. Steve Best is the general chair. The paper submission deadline is Jan. 15, 2018.
- The dates, venue, and chairs of the future joint symposia are:
 - o July 7-12, 2019, Atlanta, GA, John Papapolymerou;
 - o July 19-24, 2020, Montreal, Canada, Ahmed Kishk; and
 - o July 10-16, 2021, Singapore, Zhi Ning Chen.

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- For the 2021 Singapore meeting it had been suggested by the JMC to have two professional conference organizers (PCOs). A local company (Pacific World) will coordinate hotels, food and beverage, and social programs while CMS will take care of paper handling, registration, financials and IEEE audited items. IEEE MCE was involved in helping identify a local PCO. Dave Michelson made a very productive site visit in December 2017. There has been very positive feedback regarding Singapore subsidies and we hope to have PCO and site contracts signed in early 2018.
- The Joint Meetings Committee is actively seeking proposals for 2022 and later. Contact Ross or Dave Michelson for information on how to propose.
- Future URSI meetings include:
 - o AT-RASC 2018, May 28 June 1, 2018, Gran Canaria. Paper submission deadline is January 10, 2018. All 10 URSI Commissions will participate, lunches at the conference center are included, and Commission Chairs are strongly urged to encourage their members to submit papers.
 - o AP-RASC 2019: March 9-15, 2019, India Habitat Centre, New Delhi, India.
 - URSI Commission B EM Theory Symposium, May 28-31, 2019, Westin San Diego.
 - URSI GASS 2020: August 29 September 5, 2020 Sapienza University, Rome, Italy
- In 2020 the joint symposium will be held at Fairmont Queen Elizabeth Hotel in Montreal. It will be a North American Radio Science Meeting.

14) Report from the National Academies (Ana Ferreras)

- Ana reviewed the mission, organization and priorities of the Board on International Scientific Organizations (BISO), its relationship to the International Council for Science (ICSU) and the organization and roles of the 17 USNCs that it oversees.
- During the 2018 NRSM, 127 travel fellowships (award letters) were offered. Five students declined for various reasons. The students receiving fellowships are expected to attend the Plenary Session, Student Paper Competition, Student Luncheon, and fill out a survey afterwards. Certificates used to be distributed, but many were not picked up by students, so NAS will now provide them only upon request.
- Due to pressure from NAS auditors, now the travel coverage for students will be called a Travel Refund. This approach is better to avoid IRS rules and compliance (last year, a 14% tax on non-US citizens/residents had to be withheld). To address this, now students can register using a code and avoid putting their personal funds up front. Students will be refunded for additional costs up to the award limit after the meeting through an eTER system (students need to provide receipts).

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- Something new this year is the Mentoring Panel as part of the Student Luncheon, modeled after a similar, very successful event held at the 2017 GASS.
- The Women's Reception will be held on Friday from 7:00 to 9:00 p.m.
- The International Visitors Office (IVO) provides an institution-wide service in monitoring the international visa situation. The IVO assists international scientists/engineers and students by bringing their pending visa cases to the attention of the Department of State. Members are encouraged to take advantage of this assistance should they need help with international visitors, as they have been very successful in helping visitors. Details are accessible through a link on the USNC-URSI home page.
- New USNC-URSI Members must complete a new conflict of interest form and returning members must sign the conflict interest form every year.

15) Report from Student Coordinator (Erdem Topsakal)

- There were 127 student travel fellowship applicants with 10 from the Boulder area, 14 from Colorado but outside Boulder, and 103 outside Colorado. Each category gets a different amount in travel reimbursement; all have their registration fee waived. About \$65K is the expected cost for this year, slightly less than last year.
- Erdem requested that the decision dates for the travel awards and the student paper competition finalists be posted on the NRSM site to avoid numerous email inquiries.
 Erdem suggested December 1 for travel awards and December 15 for the student paper competition finalists.
- Erdem recommended we clarify the template for the student papers, since there is a
 discrepancy between the website instructions and the AGU template that it references.
 He also mentioned that there are some students forgetting to upload the required
 advisor letter, but he has been allowing later submissions of this.
- He mentioned that there were 17 student papers and the top seven were ranked by the Commission Chairs to select the top 3 finalists. The three finalists are Yahya Mohtashami (K), Daisong Zhang (K) and Wenyang Li (J). In addition he described the ranking process and said that he may alter the weighting of the reviews to choose the finalists.
- Erdem Topsakal thanked all the Commission Chairs for their work in ranking the papers.
- There was some discussion on adopting the Radio Science review form to standardize the paper reviews, to provide feedback to the students, and to permit efficient submissions for possible subsequent publication in Radio Science.

16) Report by National Academies Representative, Members-at-Large, Society Representatives, Government Liaisons

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- AGU representative Fabiano Radrigues asked Larry Paxton (SPA president) for announcements and news at AGU that would be of relevance to (at least some) of the URSI members. He shared a couple of items of interest:
 - Space Physics and Aeronomy (SPA) members are often radio scientists involved with URSI.
 - o The triennial Earth-Sun Summit (TESS) to be held this year, and with deadline on February 20, 2018.
 - o An initiative is started to increase diversity of AGU fellows. It is an attempt to encourage nominations from a wider and more representative fraction of SPA.

17) Preliminary Report on the 2018 NRSM statistics (Newkirk and Rengarajan)

- Total number of pre-registrants: 350.
- Total abstracts and summaries submitted: 416.
- Total abstracts and summaries accepted: 414.
- Total number of sessions: 59.
- Total number of Student Travel Grant award applications: 128.
- Expecting another 20-50 on-site registrations, based on the last few years.
- About 6% of the papers (25) came from outside the US.

18) Plenary and Special Sessions for the 2019 NRSM in Boulder (Sembiam Rengarajan)

- Sembiam Rengarajan stated that the 2019 Plenary theme should be decided this week; he asked that this be discussed at the Commission Business Meetings.
- Past themes of the Plenary session are: 2018: (G/H) The Wonderful World of Waves in the Near Earth Environment / Radio Navigation Systems: New Challenges and Opportunities; 2017: (CE/J) The Future of the Electromagnetic Spectrum / Fast Radio Bursts: The Story So Far; 2016: (BK) Electromagnetics in Medicine; 2014: (AD) Atom-Based Metrology; 2013: (CF) Remote Sensing and Communication Systems in Disaster Mitigation and Response; 2012: (GH) Global Navigation Satellite Systems and Radio Science; 2011: (USNC Officers) From the Inner World of Subatomic Particles to the Cosmology of the Universe; and 2010: (CE) Anthropogenic and Natural Electromagnetic Environments: Effects on Electronic Systems.
- Topics suggested in 2017:
 - B) Smart City, Big Data, Detection of Gravity Waves.
 - C) A theme on applications of machine learning and data science in electromagnetic systems.
 - F) Small Satellites (Joint B and F) Exoplanets (Joint F and J).
 - H, G) Radio Navigation Systems and Dusty Plasmas and Aeronomy, Wonderful World of Waves in the Near Earth Environment.

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- K) Body Area Networks, which can be joint with K/B/C/D.
- Topics suggested in 2016:
 - F) Possible suggestions include "Exoplanets" joint with Commission J and "Compressive Sensing" joint with Commission B and/or C.
 - G) Commission G supports the exoplanet topic put forth by J.
 - H) Two themes were suggested that would be organized jointly by commissions H, G: Radio Navigation Systems (includes satellite and VLF systems, suggested speakers Jade Morton (Colorado State) and Per Enge (Stanford University); Dusty Plasmas and Aeronomy (special focus on the recent Aeronomy of Ice in the Mesosphere (AIM) mission, suggested speakers Paul Bernhardt (NRL) and James Russell (Hampton University, AIM PI).
 - J) ALMA was the top vote getter.
 - K) There was general interest in ALMA, given the recent good observation results.
- 2015 and 2014 suggested topics:
 - CDF) RF Systems and Components for Radar
 - BJ) ALMA
 - BK) Telemedicine
 - TBD) A theme from Commissions G and H
 - GHJ) Asteroids and Meteors
 - BF) Small Satellites
 - EK) EM Interactions with the Nervous System
- Special sessions for the NRSM 2019 need to be decided by May 1, 2018.
- Commission Chairs may start from the special sessions proposed for the 2018 NRSM that did not materialize.
- A final list of the special sessions from each Commission needs to be prepared, including names and emails for at least two organizers for each session.

19) Comments by CNC Chair (Dave Michelson)

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- CNC thanked USNC-URSI for support of the URSI GASS 2017 in Montreal:
 - o 1141 registrants.
 - o Significant surplus.
 - o First URSI Canada Summer School.
 - o Special thanks to NRC Conference Services.
- Canadian URSI conferences have a long history of success.
 - o AP-S/URSI 2015 (Vancouver) returned the largest surplus ever.
 - o After 2010 Toronto, 2015 Vancouver, and 2020 Montreal, CNC will propose to JMC that Canada host AP-S/URSI 2025 as well.
- Canada follows JMC activities closely.
 - o JMC Initiatives 2017:
 - Significantly sped up AP-S/URSI conference closing with help from IEEE MCE - from three years to nine months.
 - Simplified rollover of URSI loans by requesting a major change to IEEE Policy.
 - End result: USNC will get its share of conference surpluses faster and with less hassle than ever before.
 - o AP-S/URSI 2022 and beyond:
 - The Call for Proposals has been published.
 - JMC is looking for USNC assistance in soliciting strong U.S. proposals.
 - As noted, CNC intends to offer a proposal for 2025.
- URSI Canada initiatives 2018-2020:
 - o Membership in the Engineering Institute of Canada
 - Publicize URSI's unique strengths and attributes to a broader community.
 - Initiative support from URSI Central, NRC and EIC.
 - o Greater emphasis on both International Cooperation and Humanitarian Initiatives.
 - o Greater cooperation with USNC-URSI at both the Committee and Commission levels.
 - Looking forward to informal discussions during this NRSM.

20) Action Items for Commission Business Meetings (Michael Newkirk)

• Mike will email the Commission Business Report form with these actions:

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- 1. The optimal dates at CU Boulder for the 2019 NRSM are 9-12 January 2019. Provide feedback on issues/concerns with those dates.
- 2. In those Commissions that do not currently have a Secretary, discuss the recommended implementation of elected Secretary. This applies only if the Secretary is expected to advance to Vice-Chair and Chair.
- 3. Feedback is sought on allowing advertising of non-URSI conferences on the USNC-URSI webpage. Are there any issues or concerns?
- 4. Each Commission is to update their page on the USNC-URSI website by the end of February 2018. Chelsea Bock at NAS is prepared to assist.
- 5. Remind members of the 2020 NARSM in Montreal, which means there will be no NRSM in January 2020. All commissions are expected to participate and hold business meetings as they would at NRSMs.
- 6. Discuss and vote on when the abstracts (contents of the USB drive) should be made available on the USNC-URSI website: (a) one week in advance; (b) 24 hours in advance; or (c) on the first day of the meeting
- 7. Comments on the Plenary Session in 2018 did you like the theme?
- 8. Suggestions are sought for the Plenary Session for the 2019 NRSM.
- 9. Discuss and provide special sessions for the 2019 NRSM by the end of May.
- 10. Please encourage students and young scientists to become Early Career Members (ECMs).
- 11. Discuss plans to annually update (by end of each February) your Commission's membership list to include purging inactive members, and forward the result to the USNC-URSI Secretary.
- 12. Short courses were discussed last year, with general consensus to adopt them so long as they are not expensive and are the day prior to the sessions. Short course concepts and potential speakers are sought.

21) Old Business (Sembiam Rengarajan)

David Jackson revisited the idea of holding workshops, short courses or tutorials during the NRSM, which was brought up last year. Several ideas were discussed, including content, timing and organization. Commissions were asked to discuss at their Business Meetings.

22) New Business (Sembiam Rengarajan)

• Ana Ferreras noted that there was an ARO grant to support student travel costs, but that grant has expired. She is seeking contacts to submit a proposal for a grant.

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• Ana Ferreras noted the IAU will hold the 30th congress in Vienna, Austria. A new category for junior members is being created.

23) Adjournment

The meeting adjourned at 9:39 p.m. MST.