



International Union of Radio Science U.S. Commission B

Please reply to:

J. Volakis, Chair	Reyhan Baktur	phone: (435) 797-2955
J. Simpson, Vice-Chair	Dept. of ECE, Utah State Univ.	fax: (435) 797-3054
R. Baktur, Secretary	EL 150, 4120 Old Main Hill	e-mail: reyhan.baktur@usu.edu
	Logan UT 84322	

MINUTES Commission B Business meeting

2016 USNC-URSI

Boulder, CO, USA

January 7, 2016

1. Meeting called to order at 5:15 pm by Chair John Volakis. The room was used by a technical session that had a late close.
2. Guests were introduced by members.
3. John Volakis welcomed members and guests.
4. Minutes of the 2015 Vancouver business meeting were voted and approved.
5. Chair introduced the website and encouraged members to visit it.
6. Chair encouraged members to update the roster, especially the affiliation.
7. Chair gave an overview of the agenda:

Chair report, upcoming meetings, vote requests, committee reports

8. Chair Report-- Officers
 - URSI Comm. B Officers
 - USNC Officers
 - Website
 - USNC-URSI Members and Members at Large
 - Other USNC-URSI Rep
 - Travel, Student Paper Competiton
 - International URSI-B Officers 2015-2017
 - International URSI Officers
9. Chair Report-- Website Information

We have synchronized all meeting minutes onto the commission B page on national academy site: http://sites.nationalacademies.org/PGA/biso/URSI/PGA_080674

The site includes minutes of Business Meetings since 1997, full membership list, nomination form, and other information.

Other links: USNC: <http://www.usnc-ursi.org/>
International URSI-B: <http://www.ursi.org/B/index.htm>
International URSI: <http://www.ursi.org/>

10. Chair Report-- Upcoming Meetings

- AP-RASC conference
- Sembiam Rengarajan commented on 2019 URSI EMTS in San Diego, and encouraged a strong presence of US.
- Joint Meetings.
 - Ross Stone made a correction on 2020 meeting, the chair changed it.
- 2020 North American Radio Science Meeting.
- Two new URSI Triennial Meetings.

11. Chair Report—Action Items

Ten action items to be voted on.

1: USB v.s. CD for the NRSM?

- Ross Stone explained why it is an action item. Government people may have issues with USB. He explained the options of downloading.
- John Volakis said that CDs should not have been options. Steve Weiser concurred with John Volakis.
- Ross Stone commented on the role of USB. Join supported it.

2: Should undergraduate students that submit papers to the conference be eligible for travel grants?

- Ed Kuester asked for clarifications, Sembiam answered.
- Yahya Rahmat-Samii commented that the same rules for graduate students should apply to the undergraduate students and their papers.
- Voted: 1 no, 1 abstention.
- New motion: Can undergraduates compete for the student paper competition?
 - Vote as a discussion item.
 - Moved, second, voted, motion passed (yes).

3: Are we happy with the present IEEE Xplore arrangement?

One-page abstracts are not archived and two-pages summaries have the option of being archived.

- Ed Kuester raised a past issue of one-page abstract being on Xplore and caused problems.
- Karl Warnick mentioned the missing info on the call of paper on 2016 APS.
- Hao Xin said it has been cleared (regarding Karl Warnick's comment).
- Yahya Rahmat-Samii commented that the templates might have an issue. Hao Xin said he was not sure but will check on it.

4: Any suggestion on updating the commission membership lists?

- Moved to the next item, as this is not an issue for our commission.

5: Will our commission participate in 2017 APS-URSI?

- Moved, second, voted. YES.

6: Any suggestion for a plenary session theme for 2017 NRSM?

- There is a list of suggested topics.
- Branislav Notaros mentioned that Comm H has been pushing for extra planet.
- Karl Warnick suggested Antennas for Radio Astronomy.
- John Volakis commented that he has not seen this material (referring to Karl Warnick's suggestion) as the topic.
- Yahya Rahat-Samii commented about the joint and parallel sessions.

7: Ross Stone's book review

8: For full membership, should we require at least a permanent residency?

- Karl Warnick suggested just residency or affiliation.
- Ross Stone explained some historical reasons.
- David Jackson commented that there was no such requirement in National Academy.
- Yahya Rahat-Samii mentioned that there is the associate membership as an option or answer for such a question.
- Motion, moved: Continue the requirements.
 - Vote: 16 Yes, 7 No.
 - Motion passed.

9: Should associate members of the commissions be considered as voting members of the commissions?

- Gary Brown suggested keeping it as it is and see how many associate members we have.
- John Volakis suggested not voting on it.
- Ross Stone suggested that the membership committee should up how many associate members we have.

10: Early Career Members

- John Volakis suggested that we already have an answer for it (referring to the associate membership), no discussion or voting would be needed.

12. Committee Report—Additional Actions and Discussions before the Technical Report

- Ross Stone gave a presentation on
 - Radio Science to be on IEEE Xplore
 - Radio Science Bulletin: new columns, looking for book review
- Ari Sihvola (International URSI) gave a presentation on upcoming EMTS

13. Committee Report-- Technical Activities Report

Branislav Notaros presented the Technical Activity report (attached at the end of these meeting minutes).

- Branislav Notaros suggested listing special sessions as “special sessions” on the book. Gary Brown explained why we did not do it due to AP having a long process.
- Branislav Notaros argued that this is URSI, why not doing it.
- Branislav Notaros also argued that the special sessions to be pure USNC-URSI NRSM special sessions, and members agreed to discuss the issue further in the Executive Council Meeting, or revisit it in Porto Rico.
- Paper statistics and conference summaries were presented.
- Many members acknowledged a large number of members came to this Boulder URSI. Some returned for the first time after many years, and some came for the first time. This is all due the special sessions and invitations to chair or present at special sessions.
- Solicited ideas of special sessions for 2017 Boulder meetings

14. Committee Report-- Membership Committee

Ed Rothwell presented Membership Committee Report.

15. Chair Report-- Old Business

None.

16. Chair Report-- New Business

None.

17. Adjourned at 6:15 pm.

Respectfully submitted by Reyhan Baktur, Secretary

Guests attended

First Name	Last Name	Affiliation
Ari	Sihvola	Aalto University (Finland)
Georgios	Trichopoulos	Arizona State University
YangQing	Lin	University of Illinois at Chicago
Marco	Poort	University of Illinois at Chicago
Cinzia	Zuffada	JPL
Kamalish	Sauhath	Ohio State University
Seth A	McLormick	ARL

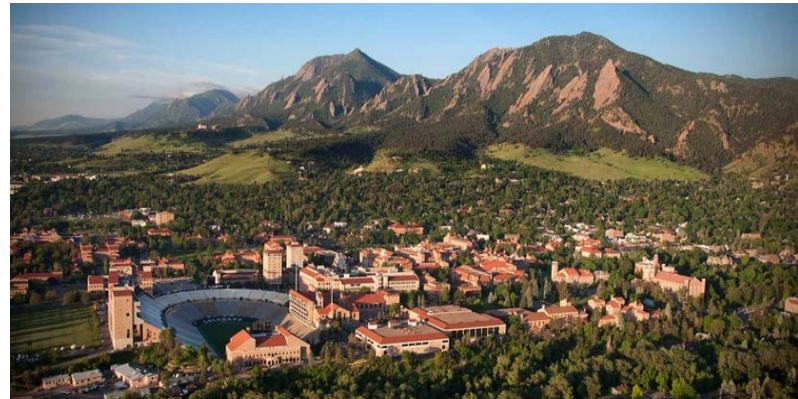
Christopher	Deloglos	Virginia Commonwealth University
Ryan B	Green	Virginia Commonwealth University
Arthur	French	Virginia Commonwealth University
J-C	Chiao	University of Texas—Arlington
Richard	Black	Brigham Young University
Gregory	Makar	Washington State University
Ali	Hassani	University of Wisconsin—Milwaukee
Taha	Yekan	Utah State University
Mehdi	Veysi	University of California—Irvine
Xin-Yu	Liu	University of Houston
Dawei	Li	University of Houston



USNC-URSI Commission-B Business Meeting

Thursday, Jan 7, 2015

5:00 – 6:00 p.m.
Room 1B40



2016 Radio Science Meeting, Boulder CO



AGENDA

USNC Commission-B Business Meeting

- Welcome to members and guests
- Approval of Boulder minutes from 2015 Vancouver Meeting

http://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_169826.pdf

CHAIR REPORT

- Upcoming Meetings
- VOTE REQUESTS from USNC/URSI

COMMITTEE REPORTS

- URSI Publications (Ross Stone)
- Technical Activities Report (Branislav Notaros)
- Membership Comt. (Ed Rothwell, to be presented at Puerto Rico meeting)
- Old business
- New business
- Adjourn



Chair Report

USNC Commission-B
Business Meeting

USNC-B Officers 2015-2017

Chair: **John L. Volakis**

Vice-Chair: **Jamesina Simpson**

Secretary: **Reyhan Baktur**

Chair, TAC: **Branislav Notaros**

Chair, Membership Committee: **Edward Rothwell**

Webmaster:

Chelsea Bock, CBock@nas.edu at National Academies—please send info for posting to Reyhan Baktur

Web Site

http://sites.nationalacademies.org/PGA/biso/URSI/PGA_080674



Chair Report

USNC Commission-B
Business Meeting

USNC Officers 2015-2017

Chair: David Jackson

Past-Chair: Steven C. Reising

Secretary and Chair-Elect: Sembiam Rengarajan

Accounts Manager: Gary Brown

National Acad. BISO Director: Kathie Bailey

National Acad. Senior Program Officer: Ana M. Ferreras

Consult Web Site Below for updates:

http://sites.nationalacademies.org/PGA/biso/URSI/PGA_067360



Chair Report

USNC Commission-B Business Meeting

Our UNSC Site: http://sites.nationalacademies.org/PGA/biso/URSI/PGA_067360

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Board on International Scientific
Organizations
Policy and Global Affairs
The National Academies of
Sciences, Engineering, and
Medicine
500 Fifth Street
Washington, DC 20001 USA
Email: biso@nas.edu
Tel: +1 202-334-2807
Fax: +1 202-334-2231

International Visitors Office
For visa-related issues, visit
[International Visitors Office](#)

Contact
the IVO



Tel: +1 202-334-2807
Fax: +1 202-334-2231
Email: visas@nas.edu

U.S. NATIONAL COMMITTEE FOR URSI

United States National Committee for the International Union of Radio Science Membership

OFFICERS (2015–2017)

Chair



David Jackson; Department of Electrical & Computer Engineering;
University of Houston; Houston, TX 77204-4005; Tel: 713-743-4426;
Fax: 713-743-4444; E-mail: djackson@uh.edu

Secretary



Sembiam Rengarajan; Department of Electrical and Computer
Engineering; California State University; Northridge, California
91330-8346; Tel: 818-677-3571; Fax: 818-667-7062; E-mail:
srengarajan@csun.edu

USNC-URSI

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USNC-URSI Members (2015-2017)

MEMBERS at LARGE

Reyhan Baktur
Danilo Erricolo
Albin J. Gasiewski
W. Devereux (Dev) Palmer
Wayne Scales
Jamesina J. Simpson

A Member-at-Large is someone who does not represent one particular Commission, but rather represents the USNC-URSI as a whole.

These are voting positions.

Society Representatives

Randy Haupt (IEEE AP-S)
David Kunkee (IEEE GRS-S)
T. Joseph W. Lazio (American Astronomical Society)
Robert E. Marshall (American Meteorological Society)
Steven C. Reising (IEEE MTT-S)
Fabiano S. Rodrigues (American Geophysical Union)

Other USNC-URSI Representatives

Student Travel Program & Paper Competition:

Erdem Topsakal

Virginia Commonwealth University



Chair Report

USNC Commission-B
Business Meeting

International URSI-B Officers 2015-2017

Chair: Ari Sihvola (Finland)

Vice-Chair: Kazuya Kobayashi (Japan)



Chair Report

USNC Commission-B
Business Meeting

International URSI Officers 2015-2017

President: Paul Cannon (UK)

Past-President: Phil Wilkinson (Australia)

Vice Presidents:

Subra Ananthakrishnan (India)

Makato Ando (Japan)

Yahia Antar (Canada)

Umran Inan (USA)

Secretary-General: Paul Lagasse (Belgium)

Asst. Secretary-General (Publications): Ross Stone (USA)

Asst. Secretary-General (AT-RASC): George Uslenghi (USA)

Asst. Secretary-General (AP-RASC): Kazuya Kobyashi (Japan)



Chair Report

USNC Commission-B
Business Meeting

Website Information

National Academies web site is our official site:

http://sites.nationalacademies.org/PGA/biso/URSI/PGA_067360

Minutes from the Business Meetings (back to 1997) are there.

Other links:

USNC <http://sites.nationalacademies.org/pga/biso/URSI/index.htm>

International URSI-B: <http://www.ursi.org/en/commission.asp?com=B>

International URSI: <http://www.ursi.org/en/home.asp>

Commission B Website at National Academies:

http://sites.nationalacademies.org/PGA/biso/URSI/PGA_080674

National Academies Main Site

<http://sites.nationalacademies.org/pga/biso/URSI/index.htm>

Announcements

- Please attend Friday's Third Hans Liebe Lecture special event during lunch on Friday.
- Please encourage students to submit papers for the Ernest K. Smith USNC-URSI Student Paper Competition to be held at the 2017 NRSM in Boulder. We need more applicants.
- As decided at the Vancouver Meeting, authors can submit a 2pp summary with copyright form for inclusion in IEEE Xplore or one page abstract. The latter will not be included in IEEE Xplore
- papers that have been published or will be published in the journal *Radio Science* will be archived on IEEE Xplore.
- **Early Career Representatives (EAR) category approved by USNC??**

Upcoming and Future Conferences



Chair Report

USNC Commission-B Business Meeting

See Site <http://www.ursi.org/en/events.asp>

for Future Meetings

Upcoming Meetings

- **2016 IEEE APS/URSI Joint Meeting**, June 26-July, 2016, Paper deadline: Jan 18th
- **2016 URSI EM Theory Symposium**, Aug. 14-18, 2016 Espoo (Helsinki), Finland. (<http://emts2016.org>), Paper submission deadline: Feb 16th
 - Comments from Ari Sihvola (Finland)
- **EuCAP 2016, Davos, Switzerland**, 10 - 15 April 2016
- **2016 ISAP, Okinawa, Japan**, Oct. 24-28, 2016
- **2016 Metamaterials Conference, Greece** 17-22 Sept 2016, papers due: March 6th
- **2016 URSI AP-RASC Conference, Seoul, S. Korea**, August 21-25; Paper Deadline: March 16th
- **2016 iWAT, Coco Beach, FL**, 29 Feb. - 2 March
- **2016 FEM Woskshop**, 25-27 May 2016, Florence, Italy
- **2016 IEEE Phased Array Systems and Technology**, Boston, MA, 18-21 Oct
- **2016 AMTA, Austin, TX**, Oct 30-Nov 4, <http://www.amta2016.org/>
- **2019 URSI Commission B EMTS**, May 27 (short courses), May 28-31 (Technical sessions), San Diego, CA. **Contact Sembiam Rengarajan**

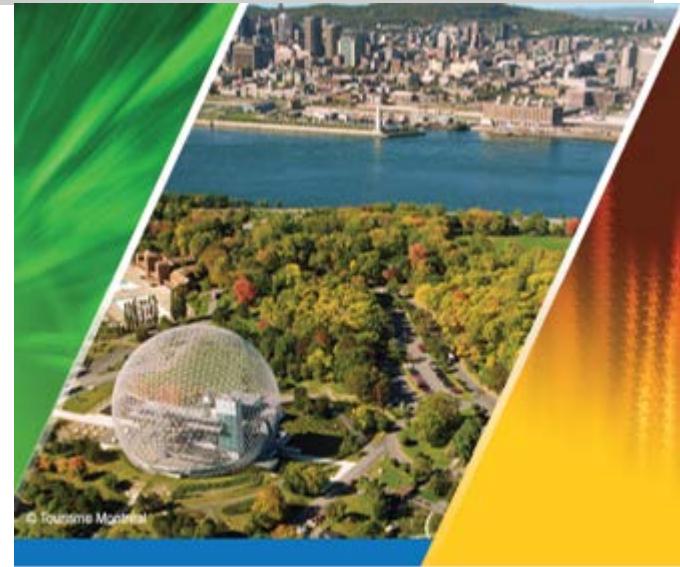
back in U.S. after 42 years (1977 was the last time EMTS was held in U.S.)

AP-RASC: Asia-Pacific Radio Science Conference

- August 21-25, 2016, 63 Convention Centre, Seoul, Korea
- All 10 URSI Commissions
- Invited and open submissions
- Submission deadline: March 15, 2016
- Student Paper Competition
- Young Scientist Awards
- www.aprasc2016.org

GASS: 2017 General Assembly and Scientific Symposium

- 2017 August 19-26, 2017, Palais des Congres, Montreal, Canada
 - Outstanding venue and hotels
- Also, Special Celebration Events Planned due to
- 375th anniversary of Montreal,
- 150th anniversary of Canada



www.gass2017.org

2019 URSI Commission B International Symposium on Electromagnetic Theory

Venue: San Diego, CA (Westin San Diego Hotel)

Dates: May 27-31, 2019

Sponsors: IEEE Antennas and Propagation Society

USNC-URSI (50-50 financial co-sponsors)

- Triennial symposium previously held in the US in 1977 at Stanford along with the IEEE AP Symposium
- Technical program will be managed by the International URSI Commission B
- Local Organizing Committee will manage all other aspects of the symposium
- MOU signed by Roberto Graglia (IEEE APS) and David Jackson (USNC-URSI)
- Hotel (Westin) and PCO contracts have been signed by George Uslenghi and going through the final IEEE approval process.

Upcoming Meetings: Joint Symposia

- 2016, June 25-July 3, San Juan, Puerto Rico, Scott Tyo
 - Paper deadline: **January 18, 2016**
 - Make hotel reservations early if you want to be near conference sessions: El Conquistador, La Vista section
 - Isolated resort: suggest you read TripAdvisor
- 2017, July 9-15, San Diego, CA, Chair: Daniel Sievenpiper
- 2018, July 14-21, Boston, MA,
- 2019, July 7-12, Atlanta, GA
- 2020 Montreal
- **2021, Singapore**

2020 North American Radio Science

- Fairmont Queen Elizabeth Hotel
- July 4-10, 2020
- USNC/URSI voted not to have a National Radio Science Meeting at Boulder

**In Vancouver Meeting, Comm B voted to participate in 2020 NARSM.
Also, Comm B voted not to have a 2020 NRSM.**

Two New URSI Triennial Meetings

- Beginning in 2015, URSI is holding a scientific conference every year
- GASS: 2014, 2017, 2020
- AT-RASC: 2015, 2018, 2021
- AP-RASC: 2016, 2019, 2022
- These two new conferences will be “URSI flagship” conferences
- URSI Board and Coordinating Committee meetings will be held at these meetings
- It is hoped that some Commissions who have their own triennial meetings will merge them into one or both of these two meetings

USNC Requested Action Items

1. Do you prefer USB drives vs. CDs for the NRSM? It was also suggested that the contents of the USB drives (including all of the papers) be placed on a server with an open access. How do you feel about it?
2. In the USNC-URSI Business Meeting it was decided that the student travel grants will be given to undergraduate students as well as graduate students, if they are first and presenting author of a paper from a US university. How do you feel about this?
3. Are you happy with the present IEEE Xplore arrangement (one page abstracts are not archived and two-page summaries have the option of being archived)?
4. Do you have any suggestions on updating the Commission membership lists? Also, is it okay to put the names and affiliations of Members on the Commission website, just as Commission B has done?
5. Will your commission participate in the 2017 AP-S/USNC-URSI meeting in San Diego? (Commissions are encouraged to participate in this joint summer meeting.)

USNC Requested Action Items

6. Do you have any suggestion for a Plenary Session theme for the 2017 NRSRM? If so, which two Commissions would jointly organize it? (This needs to be decided at the Executive Council Meeting this Saturday)
7. Ross Stone is looking for an Associate Editor in charge of the “Book Review” column for the Radio Science Bulletin. Do you have any suggestions
8. For Full Membership in any USNC-URSI Commission there presently is a requirement of US Citizenship or permanent residency. During the USNC-URSI Business Meeting, there was discussion of the possibility of removing that requirement. What is your commission’s opinion? (Note that there is no such requirement for Associate Members).
9. Should Associate Members of the Commissions be considered as voting members of the Commissions? (Presently they are not.)
10. USNC-URSI is in the process of establishing a new membership category called Early Career Member. This category is designed to allow students (and other qualified early-career applicants) to join and become (non-voting) Members of Commissions. Any comments on this?

Action Item 1 USNC Requested Input

Do you prefer USB drives vs. CDs for the NRSM? It was also suggested that the contents of the USB drives (including all of the papers) be placed on a server with an open access. How do you feel about it?

Recommendation for USB or Server Choices.

Action Item 2: USNC Requested Input

In the USNC-URSI Business Meeting it was decided that the student travel grants will be given to undergraduate students as well as graduate students, if they are first and presenting author of a paper from a US university. How do you feel about this?

Should undergrad students that submit papers to conference be eligible for travel grants?

Action Item 3: USNC Requested Input

Are you happy with the present IEEE Xplore arrangement (one page abstracts are not archived and two-page summaries have the option of being archived)?

Discussion Item

Action Item 4 USNC Requested Input

Do you have any suggestions on updating the Commission membership lists? Also, is it okay to put the names and affiliations of Members on the Commission website, just as Commission B has done?

Discussion Item

Action Item 5 USNC Requested Input

Will your commission participate in the 2017 AP-S/USNC-URSI meeting in San Diego? (Commissions are encouraged to participate in this joint summer meeting.)

Vote required for YES _____ **NO** _____

Action Item 6 USNC Requested Input

Do you have any suggestion for a Plenary Session theme for the 2017 NRSM? If so, which two Commissions would jointly organize it?

The following suggestions were made at the Boulder 2014 NRSM for the theme of the plenary talks for Boulder 2016:

- RF Systems and Components for Radar (CDF)
- ALMA (BJ)
- Electromagnetics for Medicine (BK)
- theme from Commissions G and H (TBD)
- Asteroids and Meteors (GHJ)
- Small Satellites (BF)
- EM Interactions with the Nervous System (EK)

Action Item 7 USNC Requested Input

Ross Stone is looking for an Associate Editor in charge of the “Book Review” column for the Radio Science Bulletin.

Please give suggestions to Ross Stone

Action Item 8 USNC Requested Input

For Full Membership in any USNC-URSI Commission there presently is a requirement of US Citizenship or permanent residency. During the USNC-URSI Business Meeting, there was discussion of the possibility of removing that requirement. What is your commission's opinion? (Note that there is no such requirement for Associate Members).

Stay with the U.S. Citizenship/Residency Requirement?

YES _____

NO/Other Suggestion _____

Action Item 9 USNC Requested Input

Should Associate Members of the Commissions be considered as voting members of the Commissions? (Presently they are not.)

YES _____

NO _____

Action Item 10 USNC Requested Input

USNC-URSI is in the process of establishing a new membership category called Early Career Member. This category is designed to allow students (and other qualified early-career applicants) to join and become (non-voting) Members of Commissions. Any comments on this?

Last year (Vancouver), Comm B gave the following answer:

Comm B has an existing junior membership. This will be 'revamped' to encourage more nominations.



Committee Report

USNC Commission-B
Business Meeting

URSI Publications: Ross Stone



Committee Report

USNC Commission-B
Business Meeting

Technical Activities Report: Branislav Notaros



Chair Report

USNC Commission-B
Business Meeting

- ❖ Old Business?
- ❖ New Business?
- ❖ Adjourn

Report of Assistant Secretary General (Publications & GASS) to USNC-URSI

January 2016

**W. Ross Stone
840 Armada Terrace
San Diego, CA 92106 USA
Tel: +1 (619) 222-1915; Fax: +1 (619) 222-1606
E-mail: r.stone@ieee.org**

***Radio Science* to be on IEEE Xplore**

- The URSI-logo journal, *Radio Science*, will be included on IEEE Xplore
- Published by AGU (originally, a USNC-URSI journal)

RADIO SCIENCE Journal of Research NBS/USNC-URSI
Vol. 69D, No. 7, July 1965

Theory of Coil Antennas

Trilochan Padhi

Division of Engineering and Applied Physics, Harvard University, Cambridge, Mass.

(Received October 21, 1964; revised December 12, 1964)

Radio Science to be on IEEE Xplore

- **URSI has major input into determination of Editor-in-Chief, and many URSI people are on editorial board**
- **Back file will also be included**
- **More than two-year effort of Phil Wilkinson, Paul Cannon, and me**

Continuing to Improve *Radio Science Bulletin*

- **Adding new columns: Historical Corner, Early Career Representative, Women in Radio Science, cartoon, Solution Box, Education Column**
- **Looking for book review column Associate Editor**
- **Continuing with special sections: Disaster Management for March 2016**
- **Looking at possibility of getting *RSB* onto Xplore**
- **Always looking for good papers**

GAASS Montreal 2017

- **Commission Chairs are working with session conveners right now**
 - If you want to organize a session at the GAASS, contact the international Commission Chair immediately
 - If you have a topic for open sessions you want included, contact the international Commission Chair immediately
- **The call for papers will be out in the March 2016 time frame**

Report of Assistant Secretary General (Publications & GASS) to USNC-URSI

January 2016

**W. Ross Stone
840 Armada Terrace
San Diego, CA 92106 USA
Tel: +1 (619) 222-1915; Fax: +1 (619) 222-1606
E-mail: r.stone@ieee.org**

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URSI Commission-B Special Sessions & Stats

**7 January 2016
Boulder, Colorado**

**Branislav M. Notaros
Colorado State University**

2016 National Radio Science Meeting

Conference Statistics

Total number of pre-registrants : **339**

Total abstracts and summaries submitted: **389**
(**342 abstracts, 47 summaries**)

Total abstracts and summaries accepted: **375**

Number of sessions: **49**

Total number of Student Travel Grant Award applications: **122**

Technical Sessions:

	2016	2014	2013	2012	2011
Total No. of papers	375	399	364	369	358
Total No. of sessions	49	54	47	47	49
Total No. of travel grants	122	115	100	104	113

Commission B Special Sessions, 2016 USNC-URSI NRSM, Boulder, Colorado

9 special sessions, 54 papers (total URSI: 49 sessions, 375 papers)

Special Session Title	No. of Papers	Organizers
1. Terahertz Antennas and Applications	7	Kubilay Sertel, Ohio State, & Hao Xin, Univ. of Arizona
2. Wearable Antennas and Electronics	5	Manos Tentzeris, Georgia Tech, & Asimina Kiourtis, Ohio State
3. Uncertainty Quantification in CEM and EDA	3	Jamesina Simpson, Univ. of Utah, & Sourajeet Roy, Colorado State
4. Reconfigurable Antennas and Circuits	5	Christos Christodoulou, U. of New Mexico, & Xun Gong, U. of C. Florida
5. 3D Printed Antennas	8	Jacob Adams, North Carolina State, & Hao Xin, Univ. of Arizona
6. Advances in CEM and Emerging Applications	10	Branislav Notaros, Colorado State, & Yahya Rahmat-Samii, UCLA
7. Emerging Applications of Phased Arrays	5	Karl Warnick & Brian Jeffs, BYU
8. Antennas for Small Satellites	5	Reyhan Baktur, Utah State, & David Jackson, Univ. of Houston
9. Energy Harvesting Rectennas and Back-Ends B/D	6	Zoya Popovic, Univ. of Colorado, & John Volakis, Ohio State

Commission B Regular Sessions, 2016 USNC-URSI NRSM, Boulder, Colorado

9 regular sessions, 73 papers (total URSI: 49 sessions, 375 papers)

Regular Session Title	No. of Papers	Organizers
1. B1: Numerical Methods	10	Branislav Notaros, Colorado State University; Melinda Piket-May, University of Colorado
2. B3: Complex Media, Propagation and Metasurfaces	8	Filipo Capolino, University of California Irvine; Robert Burkholder, The Ohio State University
3. B4: Guided Waves and Waveguiding Structures	10	Christos Christodoulou, University of New Mexico; Edward Rothwell, Michigan State University
4. B6: Finite Arrays and Antenna Measurements	4	Jennifer Bernhard, University of Illinois at Urbana-Champaign; Atef Elsherbini, Colorado School of Mines
5. B7: Printed Antennas and Arrays	5	Edward Kuester, University of Colorado Boulder; Ozlem Kilic, The Catholic University of America
6. B8: Scattering	12	Piergiorgio Uslenghi, University of Illinois at Chicago; Danilo Erricolo, University of Illinois at Chicago
7. B14: Antenna Techniques and Measurements	6	Steven Weiss, U.S. Army Research Lab; Gregory Mitchell, U.S. Army Research Lab
8. B15: Antenna Design and Measurements	10	Dejan Filipovic, University of Colorado Boulder; Sembiam Rengarajan, California State University Northridge
9. B17: Antenna Arrays	8	Nader Behdad, University of Wisconsin; Amir Zaghloul, U.S. Army Research Lab

2016 URSI Boulder, Colorado, URSI B Sessions and Papers:

9 URSI B special sessions, **54** papers;

9 URSI B regular sessions, **73** papers

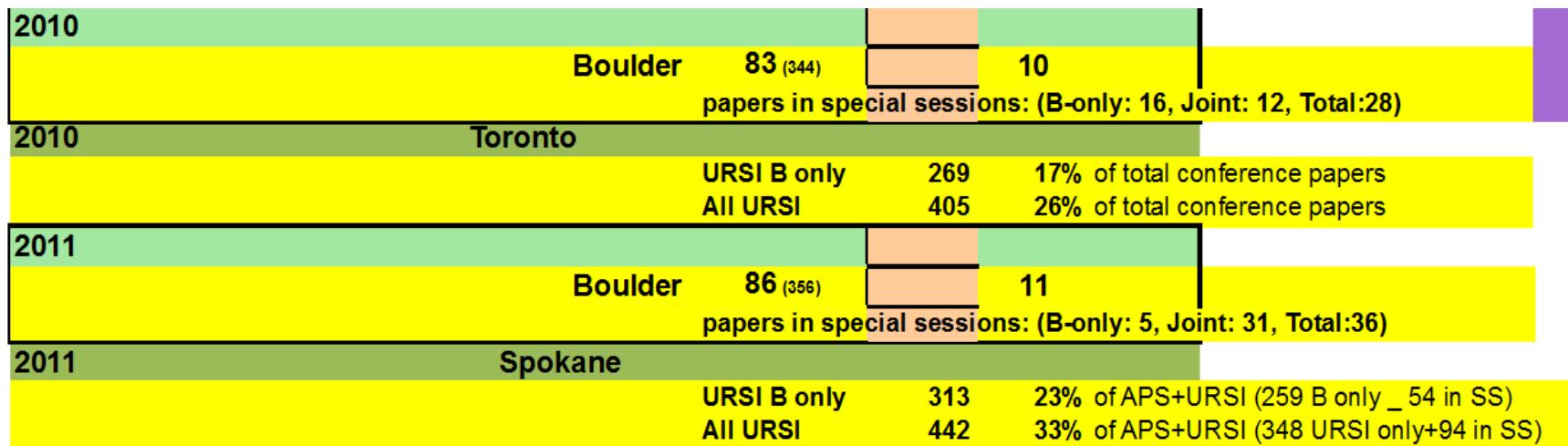
18 URSI B sessions, **127** papers

(total URSI: 49 sessions, 375 papers)

URSI B vs. URSI All (vs. APS/URSI All)

	URSI B	URSI All	APS/URSI All
URSI Boulder 2016	127 (B only 121; joint: 6) (34% of all URSI papers)	375	
APS/URSI 2015 Vancouver	279 (50% of all URSI papers)	549 (30% of all papers)	1836 (accepted – withdrawn)
URSI Boulder 2014	124 (B only 72; joint: 52) (31% of all URSI papers)	394	

Historical Data



2014 URSI Boulder Summary

	Number of Sessions	Number of Papers
URSI Commission-B Total	12 (B) 1 (C/B joint) 1 (F/B joint) 2 (CE/B joint) 3 (K/B joint) <hr/> 19 (Total)	72 5 10 14 <u>23</u> 124
URSI Total (All Commissions)	52	394

2014 URSI B Papers (Boulder, Colorado), attendance:

Total Papers (including joint) in all Sessions: 394 (124 URSI B, including Joint)

URSI B only papers : 72

Papers in joint sessions: 52

USNC-URSI National Radio Science Meetings						
Special Sessions since 2010						
2010	2011	2012	2013	2014	2015	2016
3	9	4	4	7		9

2016 IEEE AP-S/URSI Puerto Rico
AP-S/URSI Joint Special Sessions (16 sessions)
Hao Xin, University of Arizona

Advances in Non-Diffractive Waves

Multiscale Multiphysics Computational Techniques and Applications

Grand Challenges in Computational Electromagnetics for the Next Decade

More than Wearables - Progress on Skin Antennas and Sensors

Electromagnetics, RF and Microwaves in Medicine and Biology

Industrial Applications of Metamaterials

Terahertz Antennas, Systems, and Interconnects

Novel Paradigms, Challenges, Perspectives in Wave Scatter & Propagation

Directive Antennas at THz and Optical Frequencies

Memorial Session for Prof Paul E Mayes

Computational Imaging at Microwave, MMW, and THz Frequencies

4D Arrays as Enabling Technology for Future Wireless Systems

Antenna Design/Analysis Based on Stored Energy & Character Modes

History AP-S: Significant Achievements in Antenna Design, Analysis, and Education

3D Printed Antennas

CubeSat and Small Satellite Antennas

Possible Commission B Special Sessions for the 2017 USNC-URSI National Radio Science Meeting, Boulder, Colorado

1. Terahertz Antennas and Applications	7	Kubilay Sertel, Ohio State, & Hao Xin, Univ. of Arizona
2. Wearable Antennas and Electronics	5	Manos Tentzeris, Georgia Tech, & Asimina Kiourti, Ohio State
3. Uncertainty Quantification in CEM and EDA	3	Jamesina Simpson, Univ. of Utah, & Sourajeet Roy, Colorado State
4. Reconfigurable Antennas and Circuits	5	Christos Christodoulou, U. of New Mexico, & Xun Gong, U. C. Florida
5. 3D Printed Antennas	8	Jacob Adams, North Carolina State, & Hao Xin, Univ. of Arizona
6. Advances in CEM and Emerging Applications	10	Branislav Notaros, Colorado State, & Yahya Rahmat-Samii, UCLA
7. Emerging Applications of Phased Arrays	5	Karl Warnick & Brian Jeffs, BYU
8. Antennas for Small Satellites	5	Reyhan Baktur, Utah State, & David Jackson, Univ. of Houston
9. Energy Harvesting Rectennas and Back-Ends	B/D	Zoya Popovic, Univ. of Colorado, & John Volakis, Ohio State

Antennas and RF Design for Medical Imaging and Sensing Applications B/K

Transformation Electromagnetics and Optics B/D

Computational EM for Atmospheric Scattering and Propagation B/F

EMC, EMI, SI, PI (power integrity) B/E

HF Antenna and System Design (including ionosphere) B/G

EM Inverse Problems and EM/Antenna Measurements B/A

Biosensors B/K/D

Radio Astronomy Arrays B/J

Millimeter wave antennas and back-ends

Reduced size and high power RF devices

RFIDs

MIMO antennas and systems