



International Union of Radio Science U.S. Commission B

*Please reply to:*

## MINUTES Commission B Business meeting

2014 IEEE APS & URSI

Memphis, TN, USA

Memphis, TN, USA

July 3, 1944

1. Chair Sembiam Rengarajan announced that meeting was going to be delayed for 20 minutes.
2. George Uslenghi noted that his name was missing from the last meeting minutes. He also pointed out that many other names were missing.
3. Meeting called to order at 5:20 pm.
4. Chair Sembiam Rengarajan welcomed the members and guests.
5. Chair Sembiam Rengarajan encouraged members and guests to sign the signing sheets.
6. Guests were introduced.
7. Minutes of the 2014 Boulder business meeting were approved.
8. Chair Report-- Officers

USNC-B Officers for 2012-2014 were reviewed

USNC-B Officers for 2015-2017 were announced

USNC Officers for 2012-2014 were reviewed

USNC Officers for 2015-2017 were announced

International URSI-B Officers for 2012-2014 were reviewed

International URSI Officers for 2012-2014 were reviewed

## 9. Chair Report-- Website Information

USNC-B: <http://www.ece.uic.edu/~URSICommB/>

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

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-- URSI Meetings

Announcements were made regarding XXXI GASS (2014) and student paper competition in 2016 NRSM Boulder meetings. There is not NRSM Boulder meeting in 2015.

## 11. Chair Report-- Discussion items regarding the 2015 North American Radio Science Meeting

- Will USNC provide student travel support since there is no Boulder meeting? If so CNC would provide similar support to Canadian students.
- Will there be a USNC student paper competition in Vancouver, BC? If so CNC would like to join to make it North American Radio Science Competition. Is it possible to open it to all students?
  - Sembiam asked how members feel about whether there should be student travel support for the 2015 Vancouver meeting.
  - Gary Brown gave his input about first checking into budget. NSF has budget cut. He pointed out that we could guarantee that we will do as much as we can, but do not know how much NSF will cover.
  - David Jackson gave his input. He pointed out how AP feels about it.
  - John Volakis felt there are a lot of “ifs”.
  - Discussed about when will hear from NSF.
  - Raj Mittra asked the typical amount of money we got from NSF. Ross Stone answered the amount to be around 45K from NSF, 60K is what is paid for student travel, from a separate account.
  - George Uslenghi stressed the importance of the North American Radio science meeting. He thought there should be a student paper competition.
  - A suggestion was made to look into alternative funding sources. Gary Brown did answer that they had tried a different funding agency, but they had tried, and would try more such as ONR.

## 12. Chair Report-- Upcoming URSI EMT Symposia

Announcements were made regarding 2016 (Espoo, Finland) and 2019 (USNC URSI B proposal for San Diego, CA) URSI EM Theory Symposia.

#### 13. Chair Report-- Two New URSI Triennial Meetings

George Uslenghi talked about the two meetings, introduced the location and the nature of the meetings.

Beginning in 2015, URSI will be holding a scientific conference every year

- GASS: 2014, 2017, 2020
- AT-RASC: 2015, 2018, 2021
- AP-RASC: 2016, 2019, 2022

#### 14. Chair Report-- Upcoming Joint Symposia

Announcements were made for APS/URSI for 2015, 2016, 2017, 2018 (will be hosted in one of the two currently proposed location), and 2019.

Additional future meetings may be found on the AP-S and URSI websites. (<http://www.ieeeaps.org/> and <http://www.ursi.org/>)

#### 15. Chair Report-- Other Meetings of Interest

Announcements were made for the following meetings: Metamaterials 2014, ISAP 2014, IWAT 2015, EuCAP 2015.

Additional future meetings may be found on the AP-S and URSI websites. (<http://www.ieeeaps.org/> and <http://www.ursi.org/>)

#### 16. Committee Report-- Technical Activities Report

Christos Christodoulou presented the Technical Activity report (attached at the end of these meeting minutes).

Summary of session title, numbers of papers, chairs. 2014 Boulder meeting.

A bit of a history of numbers of special sessions, both boulder URSI and APS/URSI  
Christo concluded his report.

John Volakis asked a question on how many papers were in the conference (submitted, accepted, and rejected).

Gary Brown made an announcement about the URSI abstract.

#### 17. Committee Report-- Membership Committee

Ed Rothwell presented Membership Committee Report.  
Reminders were made for qualifications for both associate and full members.

Three nominees listed were reviewed for full membership.

Yang Li  
Amit Patel  
Hao Xin

All were elected unanimously.

David Jackson suggested that we should encourage the students to become associate members. Question is if the qualifications are too strict. Ross Stone suggested having professors to advertise to students, encouraging them to apply.

18. Chair Report-- Old Business

None.

19. Chair Report-- New Business

None.

20. This is Sembiam's last meeting as the chair.

21. Adjourned at 6:00 pm.

### **Guests in Attendance**

R.D.Graglia (Politecnico di Torino), Sun Hong (US Naval Research Lab.), Taeyoung Yang (Virginia Tech), Mojtaba Fallafour (UIUC), Qi Dai (UIUC), O Fu-Gang Hu (NUS, Singapore), Zhenchao Yang (BYU), James Eck (BYU), Amit Patel (HRL Labs), Maria Pour (University of Manitoba), Norma Rilsy (Northrop Grumman), Natalie Cartwright (SUNY New Paltz), David Roper (University of Delaware), Tom Miller (Navy), Brandan Good (Navy)

### **Members in Attendance**

Professor Andria Alu, Dr. Ioannis M. Besieris, Prof. Sembiam Rengarajan, Prof. Jamesina Simpson, Prof. Reyhan Baktur, Prof. Gary Brown, Prof. Chalmers M. Butler, Prof. Christos Christodoulou, Dr. Christopher Holloway, Prof. Leo C. Campel, Prof. Stuart A. Long, Dr. Robert J. Mailloux, Dr. Ronald J. Marhefka, Prof. Kathleen Melde, Prof. Raj Mittra, Prof. Sima Noghanian, Prof. Branislav Notaros, Raoul Ouedraogo, Prof. Kurt Edmund Oughstun, Prof. Yahya Rahmat-Samii, Dr. Edward J. Rothwell, Prof. Tapan Sarkar, Dr. Balasubramaniam Shanker, Prof. Erdem Topsakal, Prof. Donald R. Wilton, Dr. Amir I. Zaghloul, Prof. Weng Cho Chew, Prof. Joseph Costantine, Prof. William Davis, Prof. Atef Z. Alsherbeni, Dr. Franco Flavis, Prof. Cynthia Furse, Prof. Akira Ishimaru, Prof. David Jackson, Prof. Ozlem Kilic, Dr. Joseph Kotulski, Prof. Majid Manteghi, Dr. Jeffrey Nanzer, Prof. Andrew Peterson, Prof. Kubilay Sertel, Prof. Jiming Song, Dr. Youssef Tawk, Prof. George Uslenghi, Prof. Karl Warnick, Prof. Daniel Weile

Respectfully submitted by  
Reyhan Baktur  
Secretary



## **USNC-URSI Commission-B Business Meeting**

Tuesday, July 8, 2014

5:00 – 6:00 p.m.

Room L3

2014 IEEE APS / USNC-URSI Radio Science Meeting,  
Memphis, TN, July 6-11, 2014



# AGENDA

USNC Commission-B  
Business Meeting

- Welcome to members and guests
- Approval of the minutes of the Boulder meeting, January 2014

## CHAIR REPORT

## COMMITTEE REPORTS

- Technical Activities Report (Christos Christodoulou)
- Membership Committee (Edward Rothwell)

- Old business
- New business
- Adjourn



# Chair Report

USNC Commission-B  
Business Meeting

## USNC-B Officers 2012-2014

Chair: Sembiam Rengarajan

Vice-Chair: John Volakis

Secretary: Jamesina Simpson

Reyhan Baktur

Chair, TAC: Christos Christodoulou

Chair, Membership Committee: Edward Rothwell

USNC-B Webmaster: Sharad Laxpati



# Chair Report

USNC Commission-B  
Business Meeting

## USNC-B Officers 2015-2017

Chair: John Volakis

Vice-Chair: Jamesina Simpson

Secretary: Reyhan Baktur

Chair, TAC: Christos Christodoulou ?

Chair, Membership Committee: Edward Rothwell

USNC-B Webmaster: Sharad Laxpati



# Chair Report

USNC Commission-B  
Business Meeting

## USNC Officers 2012-2014

Chair: Steven C. Reising

Past-Chair: Yahya Rahmat-Samii

Secretary and Chair-Elect: David Jackson

Accounts Manager: Gary Brown



# Chair Report

USNC Commission-B  
Business Meeting

## USNC Officers 2015-2017

Chair: David Jackson

Past-Chair: Steven C. Reising

Secretary and Chair-Elect: TBD

Accounts Manager: Gary Brown



# Chair Report

USNC Commission-B  
Business Meeting

International URSI-B Officers 2012-2014

Chair: Giuliano Manara (Italy)

Vice-Chair: Ari Sihvola (Finland)



# Chair Report

USNC Commission-B  
Business Meeting

## International URSI Officers 2012-2014

President: Phil Wilkinson (Australia)

Past-President: François Lefeuvre (France)

### Vice Presidents:

Subra Ananthakrishnan (India)

Makato Ando (Japan)

Paul Cannon (UK)

George Uslenghi (USA)

Secretary-General: Paul Lagasse (Belgium)

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



# Chair Report

USNC Commission-B  
Business Meeting

## Website Information

**USNC-B:** <http://www.ece.uic.edu/~URSICommb/>

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

Other links:

**USNC:** <http://www.usnc-ursi.org/>

**International URSI-B:** <http://www.ursi.org/B/index.htm>

**International URSI:** <http://www.ursi.org/>



# Chair Report

USNC Commission-B  
Business Meeting

## URSI meetings

- XXXI General Assembly and Scientific Symposium of the International Union of Radio Science, August 16-23, 2014, Beijing, China. (You will need a Chinese visa. Strongly suggest using visa service.)
- There is no NRSM in Boulder in 2015. You are encouraged to attend the IEEE AP-S Symposium and USNC/CNC North American Radio Science Meeting in Vancouver, BC, July 19-25, 2015.
- NRSM, Boulder, CO, Jan. 6-9, 2016. (Saturday Jan. 9 will only be used as a conference day if the number of submitted papers requires it.)
- Please encourage your students to submit full papers for the Ernest K. Smith USNC-URSI Student Paper Competition to be held at the 2016 NRSM in Boulder. We need more applicants.



## Chair Report

USNC Commission-B  
Business Meeting

### Discussion items regarding the 2015 North American Radio Science Meeting

- Will USNC provide student travel support since there is no Boulder meeting. If so CNC would provide similar support to Canadian students..
- Will there be a USNC student paper competition in Vancouver, BC. If so CNC would like to join to make it North American Radio Science Competition. Is it possible to open it to all students?



## Chair Report

USNC Commission-B  
Business Meeting

### URSI meetings

- URSI EM Theory Symposium, Aug. 14-18, 2016 Espoo (Helsinki), Finland.  
(<http://emts2016.org>).
- USNC-URSI Commission B has proposed to host the 2019 URSI EM Theory Symposium in San Diego, CA. The selection process will take place during the URSI GASS Commission B business meeting in Beijing.



# Chair Report

USNC Commission-B  
Business Meeting

## Two New URSI Triennial Meetings

- Beginning in 2015, URSI will be holding a scientific conference every year
  - GASS: 2014, 2017, 2020
  - AT-RASC: 2015, 2018, 2021
  - AP-RASC: 2016, 2019, 2022
- AT-RASC: Atlantic Radio Science Conference
  - All 10 URSI Commissions
  - May 18-25, 2015, ExpoMeloneras Convention Centre, Gran Canaria
- AP-RASC: Asia-Pacific Radio Science Conference
  - All 10 URSI Commissions
  - August 22-26, 2016, Jeju Island, Korea



# Chair Report

USNC Commission-B  
Business Meeting

## Upcoming Joint Symposia

- July 19-25, 2015, Vancouver, BC, Canada. Lot Shafai
- June 25-July 3, 2016, San Juan, Puerto Rico. Scott Tyo
- July 9-15, 2017, San Diego, California. Daniel Sievenpiper
- 2018: Steve Best (Boston? Las Vegas?)
- 2019: John Papapolymerou (Atlanta, GA)

Additional future meetings may be found on the AP-S and URSI websites. (<http://www.ieeeaps.org/> and <http://www.ursi.org/>)



# Chair Report

USNC Commission-B  
Business Meeting

## Other meetings of interest

- Metamaterials 2014: Eighth International Congress on Advances on Electromagnetic Materials in Microwaves and Optics, August 25-28, 2014, Copenhagen, Denmark
- ISAP 2013: International Symposium on Antennas and Propagation, December 2-5, 2014, Kaohsiung, Taiwan
- 2015 International Workshop on Antenna Technology (IWAT 2015) Small Antennas, Innovative Structures, and Applications, March 4-6, 2015, Seoul, South Korea ([www.iwat2015.org](http://www.iwat2015.org)).
- European Conference on Antennas & Propagation (EuCAP 2015), April 12-17, 2015, Lisbon, Portugal ([www.eucap2015.org](http://www.eucap2015.org)).

Additional future meetings may be found on the AP-S and URSI websites. (<http://www.ieeeaps.org/> and <http://www.ursi.org/>)



# Committee Report

USNC Commission-B  
Business Meeting

Technical Activities Report: Christos Christodoulou



# Committee Report

USNC Commission-B  
Business Meeting

Membership Committee: Ed Rothwell



## Chair Report

USNC Commission-B  
Business Meeting

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



# **URSI Commission-B Special Sessions & Stats**

**July 2014  
Memphis, TN**

**Christos Christodoulou  
University of New Mexico**

# All 2014 URSI-B Boulder Sessions

| Session Title                                | Number of papers | Chairs or Organizers                      |
|--|------------------|---|
| Advances in Antenna Arrays                   | 9                | John Volakis<br>Atef Elsherbeni           |
| Metamaterials Structures                     | 10               | Filippo Capolino<br>Yahya Rahmat-Samii    |
| Antenna Theory, Design and Measurement       | 10               | Dejan Filipovic<br>Christos Christodoulou |
| Scattering and Inverse Scattering            | 5                | Danilo Erricolo<br>Piergiorgio Uslenghi   |
| Wideband Antennas                            | 4                | Kubilay Sertel<br>Sembiam Rengarajan      |
| Complex Media & Novel Materials for Antennas | 5                | James Breakall<br>Michael Havrilla        |
| Guided Waves and Waveguiding Structures      | 4                | Filippo Capolino<br>Hao Xin,              |
| Microstrip & Printed Devices and Antennas    | 5                | Sembiam Rengarajan<br>Gregory Huff        |
| Electromagnetic Interaction and Coupling     | 5                | David Jackson<br>Zoya Popovic             |
| Terahertz Applications                       | 5                | Hao Xin<br>John Volakis                   |
| Antenna Theory and Design                    | 4                | Everett Farr<br>Gregory Huff              |
| Numerical Methods                            | 6                | Branislav Notaros<br>Atef Elsherbeni,     |

# 2014 URSI-B Joint Sessions at Boulder

| Session Title   | Number of papers | URSI Commission | Organizers  |
|---|------------------|-----------------|---|
| Biophotonics  | 5                | B/K             | Jamesina Simpson<br>Ilker Capoglu                   |
| Small Satellite Radio Science and Technology          | 10               | B/F             | William Blackwell<br>Reyhan Baktur,                 |
| Cognitive Radio and Signal Processing                 | 5                | B/C             | Christos Christodoulou<br>Jean-Francois Chamberland |
| Spectrum Challenges and Changes                       | 9                | B/CE            | Lawrence Cohen<br>Thomas Higgins                    |
| Wireless Power Transfer and Energy Harvesting Systems | 5                | B/CE            | Majid Manteghi<br>Danilo Erricolo                   |
| Advances in Human Body Modeling for Sensing           | 9                | B/K             | Yahya Rahmat-Samii<br>Erdem Topsakal                |
| Terahertz Medical Imaging                             | 9                | B/K             | Kubilay Sertel<br>Zachary Taylor                    |

# 2014 URSI Boulder Summary

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

## 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 Meeting

### Special Sessions since 2010

|  | 2010 | 2011 | 2012 | 2013 | 2014 |
|--|------|------|------|------|------|
|  | 3    | 9    | 4    | 4    | 7    |

# 2012 IEEE Int. Symposium & USNC/URSI Meeting (13 total)

| Session Title   |  |  | Organizers   |
|---|--|--|--|
| <i>Theoretical, Algorithmic, and Technological Advances in EM inverse scattering</i>              |  |  | Andrea Massa, Aria Abubakar and Magda El-Shenawee        |
| Advances in Commercial EM Simulation Tools  |  |  | C.J. Reddy, Jay Kralovec and Aldo Petosa                 |
| Cognitive Radio: Improvements through the integration of electromagnetic and communication theory |  |  | Daniela Tuninetti, Natasha Devroye and Agostino Monochio |
| Electrodynamics and applications of carbon nanotube and graphene systems                          |  |  | George Hanson and Christophe Caloz                       |
| Terahertz technology  |  |  | Hao Xin and Goutaum Chattopadhyay                        |
| AMTA Special Session –Advances in antenna and RCS measurement technology                          |  |  | Ivan J. Lahaie and Chris Coleman                         |
| Future trends in Radar  |  |  | Lorenzo Lo Monte and Gary Scalzi                         |
| Challenging canonical scattering problems and new EM Problems involving Special Materials         |  |  | Guido Lombardi and Andrea Alu                            |
| Flexible 2D and 3D printed Antennas   |  |  | Reyhan Bakur and Cynthia Furse                           |
| Antenna Feed systems for space and terrestrial applications                                       |  |  | Sudhakar Rao, Nuria Llombart Juan and Isamu Chiba        |
| The legacy of Harold Wheeler  |  |  | Ted Simpson and Walter Kahn                              |
| Prof. Robert Kouyoumjian Memorial session: Asymptotic HF and Hybrid Methods                       |  |  | Prabhakar Pathak and Giuliano Manara                     |
| Evaluation Techniques for compact Multi Element Antennas For MIMO                                 |  |  | Rodney Vaughan and Jane Yun                              |

# 2013 IEEE Int. Symposium & USNC/URSI Meeting (10 total)

| Session Title  |  |                         | Organizers         |
|--|--|-------------------------|--------------------|
| Advances in Antenna Impedance Matching   |  |                         | Richard Ziolkowski |
| Advances in Commercial EM Simulation Tools   |  |                         | C.J. Reddy         |
| Advances in RFID Sensing: An Emerging Wireless Identification and Sensing Technology     |  |                         | Leena Ukkone       |
| Traveling Wave Antennas - in honor of Prof. Carlton H. Walter                            |  |                         | Johnson Wang       |
| AMTA Special Session - Advances in RF Measurement Technology                             |  | Ivan LaHai              | Com A              |
| Terahertz Antennas and Other Technologies  |  | Hao Xin                 |                    |
| Metasurfaces for Guidance and Radiation  |  | Anthony Grbic           |                    |
| Numerical Weather Prediction Supporting Electromagnetic Wave Propagation Modeling        |  | Robert Marshal          | Com F              |
| Passive Intermodulation (PIM) and High Power Effects in Antennas and Wireless Interfaces |  | Alexander G. Schuchinsk |                    |
| Printed MIMO Antenna Implementations and Challenges                                      |  | Mohammad S. Sharawi     |                    |

# 2014 IEEE Int. Symposium & USNC/URSI Meeting (16 total)

| Session Title  | Organizer(s)   |
|--|--|
| Complex and Artificial Electromagnetic Analysis and Design-in Honor of Professor Mario Sorolla                       | Francisco Falcone  |
| Computational Modeling of Stochastic Uncertainty in Electromagnetic Components and Systems: Methods and Applications | Susan C. Hagness<br>Cynthia Furse<br>Costas D. Sarris                    |
| Terahertz Antennas, Systems, and Interconnects   | Goutam Chattopadhyay<br>Hao Xin  |
| Antennas and Propagation, A History of the Society and Its Technology  | Ted Simpson  |
| Additive Manufacturing in Antenna Technologies   | Mark Mirotnik<br>Brandon Good  |
| Time-domain Arrays for Innovative Communication and Sensing Systems  | Andrea Massa<br>Shiwen Yang<br>Paolo Rocca                               |
| Antenna, System, and Spectrum Sharing Issues in Cognitive Radio and Cognitive Radar                                  | Taeyoung Yang<br>Christos Christodoulou<br>Amir I. Zaghloul              |
| 3D/Additive and Inkjet-Printed Antennas and Large-Area Antenna Arrays  | Manos M. Tentzeris<br>Kate Duncan  |
| Multi-Scale and Multi-Physics Solvers  | Levent Gürel<br>Weng Cho Chew  |
| Millimeter-wave Lenses and Beam Shaping Applications for Mobile Communications                                       | Jungsuek Oh  |
| Localized Waves: Theory, Experiments and Applications  | Mohamed A. Salem<br>Christophe Caloz                                     |
| Antennas and Sensors for Unmanned Air Systems  | Karl F. Warnick  |
| Numerical weather prediction supporting electromagnetic wave propagation modeling                                    | Robert Marshall<br>Tracy Haack   |
| Novel Antenna Systems for Space and Ground Applications  | Yoshio Inasawa<br>Nuria Llombart<br>Sudhakar Rao<br>Goutam Chattopadhyay |
| Wearable and Implantable Antennas  | Bhaskar Gupta  |
| Algebraic and Kernel-Dependent Solvers for Integral Equations  | Levent Gürel   |