



Board on International Scientific Organizations

U.S. National Committee for the
International Union of Radio Science

National Academy of Sciences

International Union of Radio Science U.S. Commission B

	<i>Please reply to:</i>	
J. Simpson, Chair	Reyhan Baktur	phone: (435) 797-2955
B. Notaros, 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

2018 USNC-URSI
National Radio Science Meeting
Boulder, CO, USA
January 5, 2018

1. Branislav Notaros passed around attendance sheets.
2. Chair Jamesina Simpson called meeting to order at 5:06 p.m.
3. Welcome to members and guests.
4. Introduction of guests.
5. Motion, second, and vote to approve minutes from San Diego July 2017 meeting. Minutes approved.
6. Thanks to John Volakis and Branislav Notaros for their service.
7. Introduction of new officers: Jamesina Simpson as USNC-URSI Commission B chair, Branislav Notaros as USNC-URSI Commission B vice chair, Satish Sharma as technical activities chair of USNC-URSI Commission B, Sembiam Rengarajan as USNC-URSI chair, Michael Newkirk as USNC-URSI secretary, and David Jackson as immediate past chair of USNC-URSI.
8. Individual membership for URSI is now an option, one may apply at www.ursi.org.
9. Upcoming conferences listed (please see Jamesina Simpson's presentation slides for details)
10. Discussed 2019 USNC-URSI NSRM:
 - Meeting days of 9-12 Jan. were proposed.
 - Discussed when to post abstracts, ideas for plenary session, special session topics, possible short courses and workshops. Voted, motion passed.
 - Motion, second, and vote to post abstracts one week before the meeting. Motion passed.

- Special session topics suggested: Smart Cities, Cybersecurity.
- Plenary topics: DARPA reconfigurable phased arrays.
- David Jackson suggested adding “breakfast tutorials”.
- Discussion: Should we advertise and/or technically co-sponsor non-URSI meetings?
 - Ross Stone suggested that this be brought up for discussion at the USNC level.
- Discussion and suggestion: Encourage students and young scientists to become Early Career Members.

11. Technical Activities Report

- 2018 NRSM statistics
 - Pre-registrants: 356
 - Abstracts and summaries: 416 submitted, 414 accepted
 - Sessions: 59
 - Student travel grant award applications: 128, 6% non-U.S. papers
 - 10 Commission B special sessions with 70 papers, 8 regular sessions with around 51 papers.
- Discussion: advertise more internationally, but keep the meeting around 400 papers
- Call for special session topics for 2019 NRSM, please contact Satish Sharma, ssharma@mail.sdsu.edu
- Invite contributions on optics and nanoantennas.

12. Committee Report-- Membership Committee

- Ed Rothwell Presented Membership Report
- George Uslenghi had a student apply online for early career membership, what happened?
 - The issue was looked into and later found out that the student nominated was actually approved for membership at the previous summer meeting in San Diego. Issue resolved.
- Membership guidelines reviewed: technical competence and interest, publication/presentation numbers.
- Nominees for full membership: Salvatore Campione - Sandia, Ahmed Hassan - UMKC, Francesco Monticone - Cornell, Payal Majumdar – Patent law, TX, Joshua Kovitz – GTRI.
- Associate membership: Shubhendu Bhardwaj – FIU.
- Motion, second, and vote to approve all nominees. Motion passed.

13. Chair Report

- Logo competition to replace USNC-URSI logo. The outcome of the competition was the decision to leave the present USNC-URSI logo as it is.

14. Chair Report-- Old Business

None.

15. Chair Report-- New Business

None.

16. Meeting adjourned.

Minutes taken by Karl Warnick for Reyhan Baktur.
Respectfully submitted by Reyhan Baktur, Secretary.

Guests attended

Mark Rueindana, Junming Diao, Mert Hidayetoglu, Aiyin Liu, Jordan Budhu, Vignesh Manohay, Yikun Huang, Jacob Adams, Salvatore Campione, Marco Roort, Yangqing Liu, Shubhendu Bhardwaj, Joshua Kovitz, Payal Majumdar, Junyu Shen, Vivek Bharanbe, Deanna Sessions, Ryan Green, Abdulaziz Haddab, Ben Orborn, Ahmed Balakhder, Mohmammad Al-Kheldi

Members attended

Nader Behdad, Jamesina Simpson, Edward Rothwell, Gary Brown, Filippo Capolino, Danilo Erricolo, George Hanson, Gregory Huff, David Jackson, Joseph Kotulski, Majid Manteghi, Eric Mokole, Gokhan Mumcu, Branislav Notaros, Yahya Rahmat-Samii, Sembiam Rengarajan, Edward Rothwell, Ross Stone, Erdem Topsakal, Piergiorgio Uslenghi, John Volakis, Karl Warnick, Donald Wilton

USNC-URSI Commission-B Business Meeting

Friday, 5 January 2018
5:00 – 6:00 p.m.

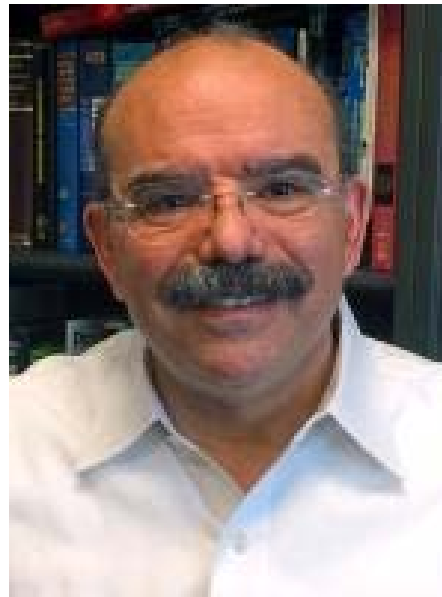
2018 USNC-URSI National Radio Science Meeting
Boulder, CO
January 4-7, 2018



- Welcome to members and guests
- Approval of the minutes of the San Diego meeting, July 2017
- CHAIR REPORT
- COMMITTEE REPORTS
 - Technical Activities Report (Branislav Notaros)
 - Membership Committee (Edward Rothwell)
- Old business
- New business
- Adjourn



Thank you to John Volakis for his service
as Chair during the last triennium!





Thank you to Branislav Notaros for his service
as Technical Activities Chair during the last triennium!



USNC-URSI Commission B Officers 2018-2021

Chair: Jamesina Simpson (University of Utah)

Vice-Chair: Branislav Notaros (Colorado State University)

Secretary: Reyhan Baktur (Utah State University)

Chair, TAC: Satish Sharma (San Diego State University)

Chair, Membership Committee: Edward Rothwell (Michigan State University)

Webmaster: Chelsea Bock at National Academies (cbock@nas.edu)

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

USNC-URSI Officers 2018-2021

Chair: Sembiam Rengarajan (California State University – Northridge)

Past-Chair: David Jackson (University of Houston)

Secretary and Chair-Elect: Michael Newkirk (Johns Hopkins APL)

Accounts Manager: Gary Brown (Virginia Polytechnic Institute and State University)

Individual Membership in URSI

- URSI has established Individual Members, Individual Associate Members, and Fellows
- Fellow by invitation only
- Individual Members and Associate Members by application through www.ursi.org
 - Requirements similar to USNC membership
 - Benefits: recognition, registration discounts at URSI meetings, and at some URSI cosponsored conferences (e.g., some IEEE conferences)
 - Notification of *RSB*
- USNC-URSI Commission members encouraged to apply: will be automatically endorsed by USNC

USNC-URSI Archive

http://sites.nationalacademies.org/PGA/biso/URSI/index.htm

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Contact BISO

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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

BISO Events Calendar

[Events of US National Committees and international unions associated with BISO](#)



U.S. NATIONAL COMMITTEE FOR URSI

The National Academy of Sciences is the U.S. adhering body of the [International Union for Radio Science \(URSI\)](#), and NAS manages the relationship with URSI through the U.S. National Committee (USNC) for URSI. URSI is a non-governmental and non-profit organization under the [International Council for Science](#), responsible for stimulating and coordinating, on an international basis, studies, research, applications, scientific exchange, and communication in the fields of radio science.

WHAT'S NEW

2018 National Radio Science Meeting in Boulder, Colorado
The 2018 NRSM, sponsored by the USNC-URSI, is scheduled for Thursday through Sunday, January 4 through 7, in Boulder, CO.

The USNC-URSI is also proud to host the Ernest K. Smith Student Paper Competition. Student papers and top three paper awards will be presented on **Friday, January 5**. More information is available at www.nrsmboulder.org or by contacting the Student Paper Chair, Professor Erdem Topsakal, at etopsakal@vcu.edu.

NEW: Visit the USNC-URSI Meeting Archives
The USNC-URSI has compiled proceedings from annual NRSMs and joint Radio Science Meetings with AP-S on one webpage, located on the menu at the right of your screen under "USNC-URSI Meeting Archives." All proceedings are available as downloadable PDFs. Anyone with proceedings from a meeting that we are currently missing may contact Ross Stone at r.stone@ieee.org or Chelsea Bock at cbock@nas.edu.

URSI GASS 2017 in Montréal, Canada
For the 32nd time since the inception of URSI, Radio Scientists from across the world gathered for the URSI General Assembly and Scientific Symposium on August 19-26, 2017 in Montréal, Canada. This conference was a unique opportunity to learn about recent advances in all fields of Radio Science, as covered by all ten URSI Commissions.

The USNC-URSI awarded 85 total travel fellowships to those attending the GASS in three different categories: 17 to graduate students, 32 to early career scientists, and 36 to commission members. URSI was also able to award numerous GASS travel grants as part of its Young Scientists Program, supported by the French and Japanese Member Committees. The complete list of award finalists is

USNC-URSI

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USNC-URSI Meetings Archives

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Related Links

Contact the USNC-URSI

[David R. Jackson](#), Chair
[Sembiam Rengarajan](#), Secretary
[Steven C. Reising](#), Immediate Past Chair

Click
Here!

Upcoming Conferences of Interest (1)

- 2018 Int. Workshop on Antenna Technology (iWAT), Nanjing, China, March 5-7
- 2018 ACES Conference, Denver, CO, March 24-29
- 2018 IEEE Conf. on Antenna Measurements & Appl. (CAMA), March 27-28
- 2018 EuCAP, London, UK, April 9-13
- 2018 2nd AT-RASC, Gran Canaria, 28 May-1 Jun
- 2018 ImBioC Conference, Philadelphia, June 14-15
- 2018 IEEE APS/URSI Symposium, Boston, MA, July 14-21.
- 2018 IGARSS, Valencia, Spain, July 23-27
- 2018 ANTEM, Aug. 19-22



Upcoming Conferences of Interest (2)

- 2018 ICEAA / IEEE APWC, Columbia, Sept. 10-14
- 2018 ISAP, Busan, Korea, Oct. 23-26
- 2019 AP-RASC, New Delhi, India, March 9-15
- 2019 URSI Commission B EMTS, San Diego, CA, May 27-31
- 2019 IEEE APS/URSI Symposium, Atlanta, GA, July 7-12
- 2020 IEEE APS/URSI Symposium and North American Radio Science Meeting, Montreal, Canada, July 19-24 **(there will not be a USNC-URSI meeting in Boulder in 2020)**
- 2020 URSI GASS 2020, Rome, Italy, Aug 29 – Sept 5
- 2021 IEEE APS/URSI Symposium, Singapore, July 10-16

2019 USNC-URSI National Radio Science Meeting

- The optimal dates are 9-12 Jan., 2019. Are there any issues / concerns with these dates?
- Should the abstracts be available on the USNC-URSI website one week in advance, 24 hours in advance, or on the first day of the conference?
- Did you like the themes of the plenary session today? Ideas for the plenary session in 2019?
- Ideas for special sessions for 2019?
- Do you have ideas for short courses, workshops, or tutorials?



Other Discussion Items

- Should we advertise non-URSI conferences on the USNC-URSI web page?
- Should USNC-URSI technically co-sponsor other meetings?
- Encourage students and young scientists to become Early Career Members.



Future Conferences

- The Joint Meetings Committee is actively seeking proposals for 2022 and later.
- Contact Ross Stone or Dave Michelson if you want information on how to propose.

Commission-B
Business Meeting

Committee Report



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U.S. National Committee for the
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National Academy of Sciences

Technical Activities Report: Branislav Notaros

Commission-B
Business Meeting

Committee Report



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Membership Committee: Ed Rothwell

Commission-B Business Meeting



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U.S. National Committee for the
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- ❖ Old Business?
- ❖ New Business?
- ❖ Adjourn



URSI Commission-B
Technical Activities Report
5 January 2018
Boulder, Colorado

Branislav M. Notaros
Colorado State University



2018 National Radio Science Meeting

Conference Statistics

Total number of pre-registrants: 356

Total abstracts and summaries submitted: 416

Total abstracts and summaries accepted: 414

Number of sessions: 59

Total number of Student Travel Grant Award applications: 128

	2018	2017	2016	2014	2013	2012	2011
Total No. of papers	414	421	375	399	364	369	358
Total No. of sessions	59	56	49	54	47	47	49
Total No. of travel grants	128	137	122	115	100	104	113

National Radio Science Meeting

Conference Statistics

Year	# Papers	# Sessions	# Travel Grants
2011	358	49	113
2012	369	47	104
2013	364	47	100
2014	399	54	115
2015	NARSM	NARSM	NARSM
2016	375	49	122
2017	425	56	137
2018	414	59	128

National Radio Science Meeting

Conference Statistics

Registration as of Close of Online Pre-Registration

Year	Early Reg.	Late Reg.	Student/Ret. Early	Student/Ret. Late	Total
2011	159	30	146	12	347
2012	158	40	134	18	350
2013	161	31	139	13	344
2014	134	35	149	11	329
2015	NARSM	NARSM	NARSM	NARSM	NARSM
2016	163	17	149	10	339
2017	143	33	136	30	342
2018	165	23	50	5+111*	354

*111 includes early and late registration by student travel awardees

2017 and 2018 National Radio Science Meeting Conference Statistics

2017		2018	
Country	Papers		Papers
United States	404	United States	390
Canada	6	Canada	9
South Africa	4	Taiwan	3
Kuwait	3	Russian Federation	2
?	2	Czech Republic	2
Japan	1	Japan	2
France	1	France	2
China	1	Turkey, South Korea, Nigeria, India, China (1 each)	5
Brazil	1		
Australia	1		
Total	424	Total	416

2017: About 5% of the papers (20 papers) have come from outside the U.S.

2018: About 6% of the papers (25 papers) have come from outside the U.S.

Commission B Special Sessions, 2018 USNC-URSI NRSN, Boulder, Colorado

10 B special sessions, **70** papers, **8** B regular sessions, **51** papers (total URSI: **59** sessions, **414** papers)

Special Session Title	No. of Papers	Organizers
1. Millimeter-Wave and 5G Antennas and Systems	6	Shubhendu Bhardwaj, Florida Int. Univ., & Joshua Kovitz, Georgia Tech
2. Nonmagnetic and Nonreciprocal Devices	7	Ethan Wang, UCLA, & Andrea Alu, Univ. of Texas
3. Advances in Computational Electromagnetics on Modern Computers	5	Ali Yilmaz, Univ. of Texas, & Zhen Peng, Univ. of New Mexico
4. Emerging Applications of Phased Arrays	7	Karl Warnick, BYU, & Elias Alwan, Florida Int. Univ.
5. Adv. Theory & Applications of Metamaterials	9	Filippo Capolino, UC Irvine, & Ashwin Iyer, Univ. of Alberta
6. Adv. Analysis, Design, & Appl. of WG Structures	10	Michael Havrilla, Air Force Ins of Tech, & Edward Rothwell, Michigan State
7. Wearable Antennas and Electronics	7	Asimina Kiourti, Ohio State, & Bashir Morshed, Univ. of Memphis
8. Antennas for Specialized Platforms: SmallSats, UAVs, and UUVs	5	Reyhan Baktur, Utah State, & David Jackson, Univ. of Houston
9. 3D Printed Antennas	9	Hao Xin, Univ. of Arizona, & Jacob Adams, North Carolina State
10. Techniques for Modeling of Waves in Plasmas (BGH)	5	Robert Marshall, Robert Lysak, Mark Golkowski

Commission B Special Sessions, 2017 USNC-URSI NRSM, Boulder, Colorado
10 special sessions, 70 papers (total URSI: 59 sessions, 414 papers)

Commission B Regular Sessions, 2017 USNC-URSI NRSM, Boulder, Colorado
8 regular sessions, 51 papers (total URSI: 59 sessions, 414 papers)

Commission B Special Sessions, 2017 USNC-URSI NRSM, Boulder, Colorado
8 special sessions, 63 papers (total URSI: 56 sessions, 421 papers)

Commission B Regular Sessions, 2017 USNC-URSI NRSM, Boulder, Colorado
10 regular sessions, 75 papers (total URSI: 56 sessions, 421 papers)

Commission B Special Sessions, 2016 USNC-URSI NRSM, Boulder, Colorado
9 special sessions, 54 papers (total URSI: 49 sessions, 375 papers)

Commission B Regular Sessions, 2016 USNC-URSI NRSM, Boulder, Colorado
9 regular sessions, 73 papers (total URSI: 49 sessions, 375 papers)

NEXT: Commission B Special Sessions, 2019 USNC-URSI NRSM, Boulder, Colorado

Special Session Title	No. of Papers	Organizers
1. Millimeter-Wave and 5G Antennas and Systems	6	Shubhendu Bhardwaj, Florida Int. Univ., & Joshua Kovitz, Georgia Tech
2. Nonmagnetic and Nonreciprocal Devices	7	Ethan Wang, UCLA, & Andrea Alu, Univ. of Texas
3. Advances in Computational Electromagnetics on Modern Computers	5	Ali Yilmaz, Univ. of Texas, & Zhen Peng, Univ. of New Mexico
4. Emerging Applications of Phased Arrays	7	Karl Warnick, BYU, & Elias Alwan, Florida Int. Univ.
5. Adv. Theory & Applications of Metamaterials	9	Filippo Capolino, UC Irvine, & Ashwin Iyer, Univ. of Alberta
6. Adv. Analysis, Design, & Appl. of WG Structures	10	Michael Havrilla, Air Force Ins of Tech, & Edward Rothwell, Michigan State
7. Wearable Antennas and Electronics	7	Asimina Kiourti, Ohio State, & Bashir Morshed, Univ. of Memphis
8. Antennas for Specialized Platforms: SmallSats, UAVs, and UUVs	5	Reyhan Baktur, Utah State, & David Jackson, Univ. of Houston
9. 3D Printed Antennas	9	Hao Xin, Univ. of Arizona, & Jacob Adams, North Carolina State
10. Techniques for Modeling of Waves in Plasmas (BGH)	5	Robert Marshall, Robert Lysak, Mark Golkowski

please send suggestions to **Satish Sharma**, ssharma@mail.sdsu.edu



USNC/URSI Commission B Membership Committee

Ed Rothwell (Chair) – Michigan State University
George Hanson – University of Wisconsin-Milwaukee
Kathleen Melde – University of Arizona
Don Wilton – University of Houston

Commission B Business Meeting
Boulder, CO
July 2018

Membership Guidelines

- Required qualifications:
 - technical competence
 - evidence: nominee's publications
 - interest in the activities of URSI
 - evidence: nominee's participation in URSI symposia
- Minimum publication/presentation numbers:
 - Early Career Member
 - Co-author of one URSI presentation in Commission B and attendance at one USNC-URSI symposium
 - Associate Member
 - minimum of 2-3 publications
 - two URSI presentations (at least one in Commission B)
 - Full Member
 - U.S. citizen or permanent resident
 - minimum of 5-6 publications
 - three URSI presentations (at least two in Commission B)

Commission B Nominees

■ For Full Membership:

■ Salvatore Campione

- P.O. Box 5800 MS-1152 Albuquerque NM 87185
- sncampi@sandia.gov (505) 844-3418
- sponsor: Filippo Capolino

■ Ahmed Hassan

- 5110 Rockhill Rd, KC, MO 64110
- hassanam@umkc.edu (816) 235-6219
- sponsor: Jamesina Simpson

■ Francesco Monticone

- Cornell University, Phillips Hall, Ithaca, NY 14853-5401, USA
- francesco.monticone@cornell.edu (607) 255-9471
- sponsor: Andrea Alu

■ Payal Majumdar

- 575 N. Dairy Ashford Rd, Suite 1102, Houston, Texas 77079
- payalmajumdar.udsc@gmail.com (619) 737-7696
- Sponsor: David Jackson

Commission B Nominees

- Joshua M. Kovitz

- Georgia Tech Research Institute, 400 10th St NW, Atlanta, GA 30318
- joshua.kovitz@gtri.gatech.edu (404) 407-6889
- Sponsor: Yaya Rahmat-Samii

- For Associate Membership:

- Shubhendu Bhardwaj

- 10555 West Flagler Street, EC 3910, 33174, Miami, FL
 - sbhardwa@fiu.edu (540) 624-9098
 - sponsor: John Volakis

- For Early Career Membership:

Salvatore Campione

- U.S. permanent resident
- Ph.D., 2013, University of California Irvine
- Professional experience
 - 2016-present: Senior Member of Technical Staff, Electromagnetic Theory Department, Sandia National Laboratories
 - 2014-2016: Postdoc, Applied Photonics Microsystems Department, Sandia National Laboratories
- Research areas
 - Optics, metamaterials, scattering, plasmonics, metasurfaces
- Qualifications summary (Full Member)
 - Journal pubs: 66 (IEEE, JOSA, APL, Phys. Rev. B, etc.)
 - URSI-B presentations: 12
 - Participation in URSI:
 - NRSM 2011-2013, AP/URSI 2017, EMTS 2016, GASS 2017 (Young Scientist Award)

Ahmed Hassan

- U.S. permanent resident
- Ph.D., 2010, University of Arkansas-Fayetteville
- Professional experience
 - 2015-present: Assistant Professor & Director of Multiscale Multidisciplinary Electromagnetics Lab, University of Missouri-Kansas City
 - 2012-2015: Post-doctoral Researcher, NIST
 - 2011-2012: Post-doctoral Fellow, University of Arkansas-Fayetteville
- Research areas
 - Nanoelectromagnetics, Bioelectromagnetics, EMC/EMI, Microwave imaging, NDE
- Qualifications summary (Full Member)
 - Journal pubs: 18 (IEEE Trans AP/MTT/BME, AWPL)
 - URSI-B presentations: 19
 - Participation in URSI:
 - NRSM 2010, 2016, 2017, AP/URSI 2008, 2010-2013, 2015-2017, Session chair at 2017 AP/URSI

Francesco Monticone

- U.S. permanent resident
- Ph.D., 2016, University of Texas, Austin
- Professional experience
 - 2017-present: Assistant Professor, Cornell University
- Research areas
 - Metamaterials, nanostructures, nanophotonics
- Qualifications summary (Full Member)
 - Journal pubs: 32 (Science, Nature Communications, Nature Nanotechnology, etc.)
 - URSI-B presentations: 14
 - Participation in URSI:
 - NRSM 2013, AP/URSI 2013-2017, session chair 2016 AP/URSI

Payal Majumdar

- U.S. permanent resident
- Ph.D., 2012, University of Delhi, South Campus
- Professional experience
 - She is currently a Technical Advisor at Conley Rose PC, Houston, TX
 - 2012-2014: Post-doctoral Research Fellow, Kuang-Chi Institute of Advanced Technology, Shenzhen, China
- Research areas
 - Wireless Communications, Metamaterials, Optical Physics, Antenna Design, Microstrip Antennas, Computational Electromagnetics, Radio Frequency (RF), and Microwave Design
- Qualifications summary (Full Member)
 - Journal pubs: 13 (Electromagnetics, IET Microwaves, Antennas & Propagation, etc.)
 - URSI-B presentations: 7
 - Participation in URSI:
 - AP/URSI 2010, 2015, 2017, InCMARS 2008, ICMARS 2010, GASS 2017 (Early Career Scientist Award)

Joshua Kovitz

- U.S. citizen
- Ph.D., 2015, University of California, Los Angeles
- Professional experience
 - 2017-present: Research Engineer, GTRI
 - 2015-2017: Post-doctoral Scholar, UCLA
- Research areas
 - Deployable Arrays for SmallSats, Antenna and Microwave Device Modeling, Low-loss Reconfigurable Antennas and Feed Networks
- Qualifications summary (Full Member)
 - Journal pubs: 10 (Trans. AP, AP Magazine, AWPL, Proc. IEEE)
 - URSI-B presentations: 12
 - Participation in URSI:
 - AP/URSI 2011-2016 (session chair, 2014), NRSM 2011-2014, 2018 (session chair), GASS 2017 (attended business meeting) , 2017 URSI Young Scientist Award

Shubhendu Bhardwaj

- Non-U.S. citizen, Non-PR
- Ph.D., 2017, The Ohio State University
- Professional experience
 - 2017-present: Assistant Professor, Florida International University
- Research areas
 - Textile antennas, slow-wave structures, EBGs, metamaterial-based transmission lines, computational and multiphysics electromagnetics, mm-wave and terahertz antennas
- Qualifications summary (Associate Member)
 - Journal pubs: 6 (J. AP, AWPL, Trans. AP, MOTL, etc.)
 - URSI-B presentations: 7
 - Participation in URSI:
 - NRSI 2012-2014, 2017, 2018 (session chair 2018), AP/URSI 2013-2017, GASS 2017 (Early Career Scientist Award, First place in Student Paper Competition)

Membership Committee Recommendations

- The Committee unanimously recommends
 - Election to full member for
 - Salvatore Campione
 - Ahmed Hassan
 - Francesco Monticone
 - Payal Majumdar
 - Joshua Kovitz
 - Election to associate member for
 - Shubhendu Bhardwaj