

**Biomedical Acoustics Technical Committee Meeting Minutes**  
**November 2, 2011 7:30 PM**  
**San Diego, CA**

**1. Introduce the new chair**

Bob McGough from Michigan State University, Associate Professor in the Department of Electrical and Computer Engineering

**2. Thank the previous chair**

Jeff Ketterling did a great job the last 3 years. His efforts are greatly appreciated.

**3. Welcome new attendees**

New attendees introduced themselves. An attendance sheet was also circulated. 31 people were in attendance. 8 people indicated that they would attend the Hong Kong meeting, and a ninth person indicated 'maybe'.

**4. Google email list:**

sign up for the BA mail list by sending an email to [ASA\\_BATC-subscribe@googlegroups.com](mailto:ASA_BATC-subscribe@googlegroups.com) or [mcgough@egr.msu.edu](mailto:mcgough@egr.msu.edu) or visit [http://groups.google.com/group/ASA\\_BATC](http://groups.google.com/group/ASA_BATC).

Non-ASA members are welcome to join this list.

**5. ASA membership:**

Associate members were recently sent an email asking them to upgrade to full member. This only requires 2 full member signatures with no additional cost for yearly dues. Desks with members ready to sign can be found at the social events at this meeting.

A bylaw change is under consideration, but this will take a while.

Membership growth has been flat in recent years.

**6. Oct 31-Nov 4, 2011 San Diego – Thanks to:**

- a) TPOM representative: Tom Matula
- b) 'Take-a-Student-to-the-Fellows-Luncheon': Christy Holland hosted a student on Thursday
- c) Special session organizers:
  - i. Azzdine Ammi – Thrombolysis and microbubble-mediated therapies
  - ii. Mostafa Fatemi – Biomedical applications of acoustic radiation force
- d) Student Council Representative: Derek Thomas (Kyle Spratt filled in)
- e) Medals and Awards: Ron Roy
- f) Membership Committee: Mike Bailey
- g) ASACOS: Peter Kaczowski and Vera Khokhlova
- h) BA Related JASA and JASA-EL Associate Editors (Based on PACS): Charles Church, Doug Miller, Doug Mast, Robin Cleveland, Mardi Hastings, Oleg Sapozhnikov, Paul Barbone, Joel Mobley, Steve Kargl, Mark Hamilton, Tom Matula, Joel Mobley, and Andrew Szeri

i) BA POMA Associate Editor: Charles Church

### **7. Ad hoc awards committee meeting**

Ron Roy, Mike Bailey, Carr Everbach, and Bob McGough (current and former chairs of BA) met on Wednesday afternoon on November 2. They discussed formalizing the nomination process in BA for award nomination and selection. Awards discussed include the Silver, Gold, Helmholtz-Rayleigh, and Lindsay awards.

Names of nominees for the Silver medal are requested from members of BA. The Silver medal is awarded to acousticians with a well-established research record. The Silver medal cycles through each of the TCs, which is to say that BA will be given the opportunity to name a Silver medalist in the next year or two. Names of potential candidates for the Silver medal, accompanied by CVs and brief statements supporting the nomination, should be emailed to Ron Roy.

Names of potential candidates for the Lindsay award, along with a CV, are also requested from members of BA. The Lindsay award is for active ASA members who are less than 35 years old. Names of potential candidates, along with a CV for each candidate and the candidate's date of birth, should be emailed to Ron Roy. Please note that the potential candidate should not be made aware that he/she is a candidate for the award.

Potential candidates are also requested for the Helmholtz-Rayleigh award. This is a cross-disciplinary award, so nominators from two different TCs are required. To propose a candidate, send Ron Roy an email with the name of the person, a CV, the name(s) of the other TC(s) with whom we should cosponsor the nomination, and a brief statement supporting the nominee.

The internal BA deadline for the Helmholtz-Rayleigh and Lindsay award nominations is April 2, 2012, and the internal BA deadline for the Silver medal is September 10th, 2012. This will give Ron and the awards committee sufficient time to discuss the various candidates and will also give the nominators sufficient time to prepare the nomination packages once the list of candidates has been narrowed down by the awards committee.

A new subcommittee will be formed to collect applications and provide feedback for Fellow candidates in BA. Mike Bailey, who is presently on the membership committee, will lead this subcommittee.

### **8. General Announcements:**

A subcommittee has been organized to develop guidelines for providing travel support for ASA members to attend non-ASA meetings and cosponsored meetings.

For undergraduate participation in Acoustics, some travel awards are available.

A tenure track faculty position in acoustics is available at BU:

<http://www.bu.edu/me/about/employment/facultysearch/faculty-search-acoustics/>

### **9. Education Coordinator:**

Wendy Adams needs career profiles for people in BA

educational site <http://www.exploresound.org/>

Education kits are available from <http://www.exploresound.org/Home/Teachers-Parents.aspx>

### **10. Poster competition**

Organized in Seattle by: Tyrone Porter, Todd Hay, and Kevin Haworth

Judges in Seattle: Todd Hay, Christy Holland, Glynn Holt, Peter Kaczkowski, Jon Lafollett, Michael Oelze, Dong-Guk Paeng, Kausik Sarkar, and Martin Verweij

These are planned yearly in the spring

Survey results:

- a) The poster competition and interaction with judges/other spectators was perceived to be very valuable by the students
- b) Judges agreed that the experience was valuable for the students but the judge's overall experience was varied (probably due to judging too many posters in too little time)
- c) The consensus among the judges seems to be that they'd like to be able to spend more time with each poster (if necessary), and judge fewer posters overall (optimally 3-4 instead of 6)

Nice .ppt slides summarizing the results of the survey are available (perhaps via Google BATC email)

Funds are available for poster competitions in Kansas City and also in Montreal. Tyrone, Todd, and Kevin Haworth are willing to organize poster sessions at these two meetings. However, more judges are needed for future poster sessions.

The poster session was discussed, and it was decided that BA should have a poster competition in both Kansas City and in Montreal. It was suggested that advisors of students should abstain from the judging. After further discussion, it became apparent that there would be a shortage of judges if the advisors abstain. Judges will, however, only evaluate students from other institutions. Eight (8) people signed up to be judges in Kansas City. A suggestion to have students also participate in the judging was also discussed, where the students would also only judge posters from other institutions. Another possibility is that there would be an award for

the best score from the student judges. For example, the award payout might be \$400, \$300, \$200, and \$100 for first, second, and third place and first place indicated by the students. The discussion on these and related topics is presently ongoing.

### **11. Report from Student Council (Kyle Spratt from filling in for Derek Thomas)**

Support for North American students attending the Hong Kong meeting was advertised.

Student elections are upcoming for several TCs.

Thank outgoing student representative: Derek Thomas from UT Austin

New student representative: Jason Raymond from U. of Cincinnati (term starts in Hong Kong)

### **12. ASA Standards committee (ASACOS)**

5 free standards per year for ASA members

A review (and maybe an update of) a Technical report on "Bubble Detection and Cavitation Monitoring" was discussed. Peter Kaczkowski or Vera Khokhlova are the contacts for anyone interested in this.

### **13. Memorial session for Wes Nyborg**

Larry Crum and Junru Wu have offered to organize this special session jointly with PA. This will take place at the Kansas City meeting.

### **14. May 13-18, 2012 in Hong Kong**

163rd meeting of the Acoustical Society of America (ASA), the 8th meeting of the Acoustical Society of China (ASC), the 11th Western Pacific Acoustics Conference (WESPAC) and the Hong Kong Institute of Acoustics (HKIOA) organized by the Hong Kong Institute of Acoustics.

At the Hong Kong Convention and Exhibition Centre

13 May to 18 May, 2012 (Sunday to Friday).

Special Sessions are listed in the call for papers at  
[http://acoustics2012hk.org/pdf/Final\\_Calls\\_9\\_29\\_11\\_10am.pdf](http://acoustics2012hk.org/pdf/Final_Calls_9_29_11_10am.pdf):

- a) Acoustic Microscopy Imaging Methods for Biomedical Applications (Joint with Physical Acoustics), organized by: Jonathan Mamou, Tadashi Yamaguchi
- b) Biomedical Ultrasound Instrumentation, organized by: Qifa Zhou, Lei Sun
- c) Bone Quantitative Ultrasound, organized by: Pascal Laugier, Dean Ta

- d) Subharmonic Contrast Imaging (Joint with Physical Acoustics), organized by: Michel Versluis, Jeffrey Ketterling, Che-Chou Shen, Hairong Zheng, Christy Holland  
6 out of 7 invited speakers have confirmed for this session
- e) Ultrasound Enhanced Drug Delivery, organized by: Constantin Coussios, Juan Tu

TPOM rep on Dec 2 and 3, 2011: Jonathan Mamou

The BATC meeting will be held jointly with the PATC meeting for about one hour in the late afternoon (i.e., 4:30-5:30pm, need to be done by 5:30pm).

Registration, Hotels, PayPal, etc. – other notes on the Hong Kong meeting have been circulated via the Google BATC email.

### **15. October 22-26, 2012 in Kansas City, MO**

Special sessions:

- a) “Biomedical applications of acoustic standing waves” organized by Martin Wiklund, jointly with Signal processing
- b) “Measurement of Material Properties using Wave Propagation Methods” organized by Matt Urban jointly with Signal Processing
- c) Wes Nyborg memorial session? Jointly with PA
- d) “Nonlinear simulations of medical ultrasound” organized by Martin Verweij jointly with PA
- e) “Biomedical applications of Radiation Force” by Mostafa Fatemi jointly with PA

TPOM rep for Kansas City – need a volunteer

Hot Topics – BA will be asked to provide a ‘hot topics’ speaker for KC

#### Fall school for acoustics students:

2 solid days of presentations and discussions held prior to the ASA meeting. Presentations will be given by 6 ASA TCs (AA, EA, MA, N, PP, SC). Each TC will give 2x 1-hour long survey presentations to generate interest. Theme: ‘Acoustic environment’. Limited to 40-50 students.

Additional summer/fall schools are proposed for the future with other technical areas. One suggestion for a future theme was ‘inverse scattering problems.’ No strong objections to the ‘fall school’ were noted.

### **16. June 2-7, 2013 in Montreal, Quebec**

Joint with Canadian Acoustical Association

Special sessions:

- a) "High-frequency ultrasound (20-80 MHz)" organized by Michael Oelze
- b) "Delivery of nucleic acids (DNA, siRNA, antisense oligos)" organized by Tyrone Porter
- c) "Acoustic Microscopy" organized by John Allen
  
- d) "Ultrasound tomography" organized by Yun Jing

TPOM rep – Ron Roy volunteered

### **17. Future meetings**

- a) First week in December 2013 in San Francisco (in Union Square)
- b) May 5-9 2014 in Providence, RI
- c) Oct 27-31 2014 in Indianapolis, IN
- d) Spring 2015 proposed for Penn State
  
- e) Fall 2016 – Hawaii meeting with Japanese Acoustical Society
  
- f) 2017 proposed for Boston.

### **18. Review papers for JASA**

Review papers are requested from eminent people in BA.

If interested, contact Charlie Church and/or the Editor in Chief (Allan Pierce).

Upcoming special issues on Bubbles and Cavitation, Musical Acoustics, Ocean Acoustics, and Acoustics Education. These contain 30 papers on average.

### **19. Plans to replace PACS are being discussed**

The proposed classifications for Biomedical Acoustics are (draft status):

- a) Acoustical characteristics of biological media
  - i. Sound speed
  - ii. Attenuation and absorption
  - iii. Nonlinear acoustic properties
  - iv. Acoustic impedance
  - v. Elasticity
  - vi. Rheology
  
- b) Interaction of acoustic energy with biological systems
  - i. Acoustic propagation and vibration in biological systems
  - ii. Scattering from biological materials
  - iii. Acoustic cavitation in biological materials
  - iv. Biological effects of sound and vibration
  - v. Radiation force and streaming
  - vi. Ultrasound-induced heating

- vii. Acoustic response of tissues, bodies, and organs
  - viii. Human perception of vibration
  - ix. Sound generation within the body
  - x. Processing of biological materials
- c) Proposed classifications for Biomedical Acoustics:
- i. Biomedical acoustic imaging and diagnosis
  - ii. Biomedical ultrasound imaging
  - iii. Detection and imaging of bubble activity
  - iv. Ultrasound contrast agents
  - v. Tissue characterization and quantitative imaging
  - vi. Doppler ultrasound
  - vii. Acoustic microscopy
  - viii. Elasticity imaging
  - ix. Thermoacoustic and photoacoustic imaging
  - x. Diagnosis using audible sound
- d) Therapeutic applications of acoustics in medicine
- i. Hyperthermia and thermal ablation
  - ii. Lithotripsy
  - iii. Cavitation-enhanced therapy
  - iv. Tissue permeation and cellular sonoporation
  - v. Drug delivery
  - vi. Ultrasound-enhanced healing
  - vii. Image-guided therapy
- e) Biomedical instrumentation and measurement techniques
- i. Biomedical ultrasound transducers
  - ii. Beamforming and focusing
  - iii. Biomedical image and signal processing
  - iv. Ultrasound field calibration, exposimetry, and dosimetry
  - v. Tissue-mimicking phantoms
  - vi. Physiological measurements

A separate list will also be sent out via BATC Google email.

Doug Mast is the BA liason to the Editor in Chief for classification system reorganization.

Contact Doug if you have any comments.

## **20. Discussion topics for BATC:**

- a) Starting with the Kansas City meeting, electronic copies only available online in advance. Printed copies will be available only at the meeting. This was discussed, and it was suggested that we have the opportunity to optionally pay \$5 and have the program

mailed to us in advance.

- b) The need for refreshments needed at the BATC meeting was discussed, and an overwhelming vote in favor of continuing the refreshments was collected. It should be noted that, at the technical council meeting on Friday, a plan was suggested to offer beverages outside of the TC rooms where ASA would pay for half of each \$6 beverage. It appears that this plan will be implemented at an ASA meeting in the near future.
- c) does anyone want to propose any technical initiatives?
- d) Other business?

**21. Meeting Adjourned at 9pm**

**22. See you in Hong Kong...**