

# Education in Acoustics Committee

## AGENDA – ED Com Meeting – ASA #183 Nashville

(Thursday, Dec. 1, 2022 – 5:00-6:30pm ET)

This will be a virtual online meeting via Zoom during the ASA Admin Week prior to the ASA 183 Nashville meeting. Zoom link (registration required): [https://psu.zoom.us/meeting/register/tJwpd--vqzlpGtOVm-sCwc1zdd5WDa45EJmO](https://psu.zoom.us/j/9123456789)

**Attendance:** (will be gathered from Zoom registration and Zoom recording/shapshot.)

### Approval of Minutes from May 17, 2022 ASA 182, Denver meeting

Motion to approve minutes as posted –

Seconded –

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### Reflection on the passing of Thomas D. Rossing

Thomas D. Rossing passed away on June 14, 2022, at the age of 93. Tom was a longstanding active member of the Education in Acoustics committee and the Musical Acoustics Technical Committee. Tom received the ASA Silver Medal in Musical Acoustics in 1992 and the ASA Gold Medal in Acoustics in 2009. A staunch supporter of physics and acoustics education, Tom provided the endowment for the Rossing Prize in Acoustics Education, which this committee awards each year to an outstanding and impactful acoustics educator. Tom wrote a brief personal autobiography: <https://www.dropbox.com/s/rw3zpaqhojchdx/ThomasRossingAutobiography-2022.pdf>. An obituary (written by Andrew Morrison) will be published in the next issue of *Acoustics Today*.

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### Reminder of ED special sessions for ASA #183 Nashville

- **Wednesday, Dec. 7**
  - **3aPAb** – 8:20-am11:25am – **My Favorite Homework Problems (based on measurements, demonstrations, or experimental data)**
    - [9 papers](#)
  - **3pED**– 1:00pm-2:00pm – **Rossing Prize in Acoustics Education Prize Lecture**
- **Thursday, Dec, 8**
  - **3pED**– 1:00pm-4:25pm – **Connecting Industry and Education (Part 2) [Hybrid Session]**
    - [9 papers and a Panel Discussion](#)

Note: there are no hands-on demonstration sessions for Nashville (Discussion later)

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## Updates and Awards!

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### Update on JASA Special Issue on Education in Acoustics

The Special Issue of JASA on Education in Acoustics is “in print” . . . there are **41 papers** in this special issue

- authors are from all over the world
- papers about acoustics education and classroom measurements and activities
- papers on pedagogy, project-based learning, outreach, descriptions of educational and practical software, descriptions of acoustics programs and a short course, the use of circuit models
- papers that contain problems and exercises, several papers about teaching acoustics during the COVID-19 pandemic of the past two years, and four papers on teaching musical acoustics.
- paper showcasing a seven-page comic strip created to teach younger students about the history and use of the decibel.
- paper about debunking incorrect online information about the sound power of rocket engines (with suggestions for homework problems) with an Altmetric Attention Score of 405 – top 5% of all research outputs ever tracked by Altmetric.
- Special Guest Editors: Preston Wilson and Dan Russell

## Update on Education in Acoustics Awards

### 2022 Rossing Prize in Acoustics Education

The recipient of the 2022 Rossing Prize in Acoustics Education is **Dr. Kathleen Wage**, Associate Professor of Electrical and Computer Engineering, George Mason Univ.

**Rossing Prize Lecture: Wednesday, Dec. 7 at 1:00pm (Grand Hall C):**

#### **DJ Prof: Reflections on Teaching**

In a short-lived career as a cartoonist for Acoustics Today [Summer 2016], I sketched DJ Prof, an acoustics professor who mixes multiple modes of instruction to engage and excite students. DJ Prof illustrates the concept of active learning, which Freeman et al. called the “preferred empirically validated teaching practice” [PNAS, 2014]. Numerous studies show that active learning courses improve student learning, increase retention rates, and reduce performance gaps in STEM for economically disadvantaged students and females in male-dominated classes. This lecture reflects on my evolution as DJ Prof using examples from acoustic signal processing courses. I will provide a brief overview of the literature on active learning, share a few favorites from my pedagogical playlist, and highlight open questions for the acoustics education community. The session will include interactive exercises. Please bring an open mind, a sense of humor, and a willingness to meet the people sitting near you.

### 2022 Robert Young Awards for Undergraduate Research

The 2022 application form indicated four (4) awards of up to \$500 each would be awarded. Main ASA office informed us that there was \$3250 available to be awarded for 2022. There were seven (7) applications for the 2022 Robert Young Award. One application was from a student at a university in Canada, while the Robert Young MOU restricts funds to be awarded only to students at US institutions. So, we were not able to consider an award for this student – which is unfortunate since this student participated in SURIEA and it would have been good to encourage a student from an under-represented minority group to continue pursuing research in acoustics.

The remaining six applications were reviewed by the ED COM chair (Dan Russell) and a second EDCOM member (Ben Tucker). The final recommended Robert Young Award amounts for 2022 are as listed below. The total award amount for 2022 is \$2,770 (out of \$3,250 available).

- **Ethan Fort** (SUNY at Buffalo) – “Experimental Realization of a Thermoacoustic Gas Analyzer” – **\$500**
- **Dan Ngyuen** (Simmons Univ) – “Experimental detection of skull-based ultrasonic lamb waves as an intracranial pressure monitoring method” – **\$390**
- **Ana Rodriguez** (Univ. of Florida) – “Exploring the scaffolding of speech motor control and phonological sensitivity in dyslexic children” – **\$480**
- **Jaskirat Sidhu** (Univ. Wisconsin-Madison) – “Accent rating of noise-vocoded and tone-vocoded foreign-accented speech” – **\$500**
- **Jennifer Yang** (New York Unig.) – “Investigating perception-production relations in novice learnings of Madarin lexical tone,” – **\$500**
- **Bohan Zhang** (Johns Hopkins Univ) – “Acoustic trauma repository for mice models,” – **\$400**

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## Upcoming and Future ASA Meetings

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### **ED special sessions for ASA #184 Chicago (May 8-12, 2023)**

#### **Deadline for Submitting Abstracts => December 19, 2022**

- **Assessment of Acoustics Education** – Andy Piacsek and Dan Russell
  - Tools and approaches for the assessment of teaching pedagogy, education research, and evaluation of the effectiveness of teaching methods. Suitable topics include assessment strategies, methods for measuring outcomes, designing and using rubrics, concept inventories, when to start and stop assessment, and how to report measured outcomes.
- **Resources for Teaching Waves in a Physics Class** – Cameron Vongsawad, Andrew Morrison, Andrew Piacsek, Dan Russell
  - Educational resources (websites, online repositories, apps for mobile devices or computers, demonstration apparatus, hands-on activities, etc.) suitable for teaching waves in a physics class, with a specific emphasis on high school physics classes, including AP (advanced placement).
- **When Getting it Right Goes Wrong** – Kim Riegel, John Buck, Dan Russell
  - Even when we do everything the research says about active learning, it is not always successful. Presentations will outline these failures and how we adjust to make them a success.
  - Open mic – panel / open discussion
- **My Favorite Homework Problems (Signal Processing)** – Kathleen Wage, John Buck
  - Homework problems for signal processing classes, including those based on real data, conceptually oriented problems, and good brain teasers.
- **Acoustics Demonstration Extravaganza (with PA and SA)** – Dan Russell

### **ED special sessions for ASA #185 Sydney, Australia (December 4-8, 2023)**

ASA 185 Sydney is a JOINT meeting with the Australian Acoustical Society and WESPAC.

⇒ Website for this meeting is active: <https://acoustics23sydney.org/>

The ASA Technical and Executive councils have asked that special sessions for this meeting involve a co-chair/co-organizer from both the ASA and also the Australian Acoustical society and/or one of the Asian acoustical societies.

**ED Special Sessions** --- Plans for this meeting need to be solidified in Nashville (Fall 2022).

- **Connections between Music and Math** – Andrea Calilhanna and (need additional organizer)
  - Targeted toward younger school students (younger) – focusing on connections between music, math, psychoacoustics
  - Possible collaboration with the Marks institute for Brain Behavior
- **Online Resources for Teaching Acoustics (with a music flavor?)** – Andy Morrison and Joe Wolfe?
  - Descriptive sentence still needed
- **Approaches to Acoustics Education in the Asia Pacific Region** – Marion Burgess and ???
  - Descriptive sentence still needed
- **Distance Learning for Acoustics Professionals Across International Boundaries** – Marion Burgess and Dan Russell
  - Descriptive sentence still needed
- **Teaching Acoustics across Trans-Disciplinary areas** – (organizers needed)
  - Teaching acoustics to non-acoustics professionals (short courses, etc.)
  - Helping Understanding metrics, consulting reports for people without the appropriate background

### **ED special sessions for ASA #186 Ottawa, Canada (May 13-17, 2024)**

- **Artistic vs Technical approaches to Acoustics** – Gordon Ramsey, Olivier Robin, and Andrea Calilhanna
  - Connection between physics & arts . . . connection between acoustics as an art vs math/physics
- **Using Math in Acoustics** – Jill Linz, Kurt Hoffman, Dan Russell . . .
  - Undergraduate focus? . . . teaching the math side of acoustics without the scary math.
- **???** – name . . .
  - Description . . .

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## Updates from ED subcommittees

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### **SMMfL (Students Meet Members for Lunch)** – Martin Lawless, Chair

Update . . .

### **ED Outreach Subcommittee** – Dan Russell, Gordon Ramsey, Kim Riegel, Kurt Hoffman, Brian Monson, Jill Linz, Andrea Calilhanna.

- Lively discussion during our last EDCOM meeting resulted in forming of a subcommittee to explore options for a more effective demonstration outreach activities for future ASA meetings – including a demonstration show with hands-on activities for younger students as well as workshops for teachers.

[Updates . . .](#)

### **Teaching Activity Kit 2.0 Subcommittee** – Keeta Jones, Andrew Morrison, Kim Riegel, Dan Russell, Andrea Calilhanna, Ben Tucker, David Brown.

- At the ASA 181 Seattle meeting, the Executive Committee denied the request from ED to continue setting aside a recurring line item of \$20,000 for the development, assembly, and shipping of the ASA Teaching Activity Kits..
- **Need Teaching Activity Kit subcommittee to become more active (working between ASA meetings) to develop alternative method of developing and disseminating Kit 2.0**
- Any budget request for 2023 will need to be submitted at the Fall 2022 ASA 183 Nashville Meeting.

[Updates . . .](#)

## Reports from ASA Outreach and Education Coordinator (Keeta Jones)

### Report from SURIEA 2022 (in-person)

- One-week (in-person) first week in June Acoustics Summer School held in Chicago (*Kim Riegel, Eric Reuter, Adrian KC Lee*)
- 10-week research / industry internships with mentors/sponsors
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### SURIEA 2023

- Reviewing applications for Mentors and participants for SUREIA 2023
- Exploring funding sources for 2023 and beyond.
- Anyone interested in serving on the SURIEA subcommittee?
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**Plans for BOOTHS and STEM Fairs for 2023**

- Budget Requests (need to be submitted in Nashville)
  - \$5000 – Booths Initiative (SACNAS, AAPT, AAAS, NSBP, SWE)
  - \$2000 – Booth Kits – purchase and distribution of ASA swag items at outreach events.
  - **\$9700 – ASA sponsorship of ISEF (International Science & Engineering Fair)**
  - \$3000 – ASA sponsorship of USASEF (USA Science & Engineering Festival)
  - \$3000 – ASA sponsorship for PhysCon

**Followup Discussion Item #1: Outreach Activities by ED during ASA meetings**

Discuss the current and future status of traditional ED outreach activities:

- **Hands-on Demonstrations** (targeted to local area middle-/high-school students)
- **Listen-Up and Get Involved** (targeted to local area Girl Scout Troops)- Women in Acoustics

**OPEN DISCUSSION about Hands-on Demonstration Outreach Activities:**

Name – comment

**Followup Discussion Item #2: Budget Cuts from Executive Council that Affect ED**

As an administrative committee, ED submits budget requests to the Outreach Administration Council for approval. OAC forwards approved requests to the Executive Council for final approval and fund allocation. The Executive Council is currently looking for ways to reduce financial burden for ASA. In March, 2022 Dan Russell (ED chair) was asked to submit a report, responding in detail to a series of questions from the EC to explain and defend the mission and goals of the Education in Acoustics Committee, to assess the effectiveness of ED activities, and to justify ED budget requests. (This *Report can be made available to ED members upon request*).

**OPEN DISCUSSION about ED Budget Requests for ISEF, Booths initiative and:**

Name – comment.

**New Business . . . things to think about for the Future of ED COM**

What about an Acoustics Educational Repository for posting homework problems, lab experiments, lectures notes, course materials (exclusive to ED members). Should we form a subcommittee to think about this?

Examples: <https://www.slrp.net/>  
<http://tinyurl.com/getAER>  
<http://tinyurl.com/shareAER>

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**7:00pm – Call to Adjourn:**

Moved by:

Seconded by: