

# **Announcement and Call for Papers**

**178<sup>th</sup> Meeting**

**Acoustical Society of America**



**Hotel del Coronado  
San Diego, California**

**2-6 December 2019**

<b>Deadline for receipt of abstracts: 8 July 2019</b>
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## MEETING ANNOUNCEMENT AND CALL FOR PAPERS

The 178<sup>th</sup> Meeting of the Acoustical Society of America (ASA) will be held Monday through Friday, 2-6 December 2019 at Hotel del Coronado, San Diego, California. A block of rooms has been reserved at the Hotel del Coronado at discounted rates. Information about the meeting also appears on the ASA webpage at [AcousticalSociety.org](http://AcousticalSociety.org).

**The deadline for receipt of abstracts 8 July 2019. This deadline will be strictly enforced.**

*Susan E. Fox, Executive Director*

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# TECHNICAL PROGRAM AND SPECIAL SESSIONS

## TECHNICAL PROGRAM

Contributed papers are welcome in all branches of acoustics. The technical program will consist of lecture and poster sessions. Technical sessions will be scheduled Monday through Friday, 2–6 December 2019.

Every effort will be made to schedule contributed abstracts in accordance with author and Organizing Committee preferences. However, authors should be prepared to accept assignment to poster sessions. Assignments will take into account: a) author preference, b) program balance, and c) Technical Committee instructions. Abstracts will be rejected if they do not comply with the abstract submission guidelines and submission instructions.

Special sessions described below are planned for the meeting. Authors of invited papers must indicate the title of the special session in which they have been invited to participate when the abstract is submitted. Authors of contributed papers have the option to request placement of their abstracts in these sessions. If no special session placement is requested, contributed papers will be scheduled in sessions with abstracts of similar technical content.

## SPECIAL SESSIONS, ORGANIZERS, AND DESCRIPTIVE SENTENCES

### ACOUSTICAL OCEANOGRAPHY (AO)

Bioacoustics and Acoustical Oceanography: 20 Years Later  
(Joint with: Animal Bioacoustics)  
Organized by: Andone Lavery, Kelly Benoit-Bird

Marine Seismoacoustics  
(Joint with: Underwater Acoustics)  
Organized by: Ralph Stephen, Warren Wood

Observational Acoustical Oceanography: A Look at Enabling  
Technology from Academia and Industry  
(Joint with: ASA Committee on Standards)  
Organized by: Andrey Morozov

Special Session in Honor of Michael Buckingham  
(Joint with: Underwater Acoustics)  
Organized by: Simon Freeman, Grant Deane, David Barclay

### ANIMAL BIOACOUSTICS (AB)

Applications of Machine Learning to Bioacoustics  
(Joint with: Signal Processing in Acoustics, Acoustical  
Oceanography, Computational Acoustics)  
Organized by: Kaitlin E. Frasier, Marie A. Roch

Low-Frequency Sound Production and Passive Acoustic  
Monitoring  
(Joint with: Acoustical Oceanography)  
Organized by: Ana Širović, Jack Butler

Standards in Animal Bioacoustics—Purpose, Need, and Application  
(Joint with: ASA Committee on Standards)  
Organized by: Dorian Houser, Kurt Fristrup

Urban Noise: Its Effects on Animals' Acoustic Communication  
Organized by: Benjamin N. Taft, Kurt Fristrup

### DESCRIPTIVE SENTENCES

On the 20th anniversary of a formative session, the impact of new acoustic tools and deployment platforms on addressing marine biological questions will be discussed

Talks on the interaction between ocean acoustics and the vibration of the solid earth including earthquake and volcano generated T-phases, bottom interacting ocean acoustics, seismic observations of oceanic sounds, marine multi-channel seismology, and the vibration of floating ice

Advances in instrumentation for monitoring the ocean, geologic structures and marine ecosystems

Recognition of the contributions of Michael Buckingham in advancing the study of ocean acoustics, such as the theory of sediment acoustics, ambient noise in the deep ocean and in polar regions, fundamental acoustics theory in complex environments and bubble acoustics. Retrospective, historical, and contemporary papers that address any aspect of these topics are invited

Practical applications of machine learning to address challenges in bioacoustic research

Discussions of what can be learned about the ecology of animals and state of the ecosystem from long-term acoustic data focusing on low frequencies (up to a few kHz)

Recent growth in methods applied to wildlife acoustics has occurred, including assessments of the effects of noise on wildlife, passive acoustic monitoring methods, and procedures to measure animal hearing. For these and other emerging topics, development of normative procedures (standards) encourages comparable measurements and results. This session highlights progress on normative procedures in animal bioacoustics, including national standards development and application

Exploring the profound impact that the city's soundscape can have on the timing, effectiveness, and characteristics of the acoustic signals of animals

## ARCHITECTURAL ACOUSTICS (AA)

### Architectural Soundscapes

(Joint with: Noise)

Organized by: Gary Siebein, Keely Siebein, Hyun Paek

Soundscape measurement, analysis, design and evaluation methods and case studies in architectural settings

### Assembly Space Renovation Challenges

Organized by: Joe Keefe

Acoustical challenges of and solutions for renovated assembly spaces (auditoriums, gymnasiums, atriums, etc.)

### Computational Acoustics for Architectural Applications

(Joint with: Computational Acoustics)

Organized by: Laura C. Brill, Michael Vorländer

Showcase of architectural applications for computational acoustic methods

### How Does Speech Perception Work: A Tutorial and Panel Discussion for Architectural Speech Privacy

(Joint with: Psychological and Physiological Acoustics, Speech . Communication, ASA Committee on Standards)

Organized by: Jennifer Lentz, Kenneth W Good ,Jr

A tutorial on speech perception for architectural speech privacy will be presented by a panel of invited speakers

### Large Music Rehearsing Spaces

(Joint with: Musical Acoustics)

Organized by: Brian Corry

Case studies of large music rehearsal spaces. Includes discussion of the needs/desire for the space, or issues with existing spaces, and the design solutions implemented in the new/renovated

### Sound Transmission and Impact Noise in Buildings

(Joint with: Noise, Structural Acoustics and Vibration, ASA Committee on Standards)

Organized by: Matthew Golden, Benjamin M. Shafer

General topics in sound transmission and impact noise in the built environment

### Sustainable Acoustics for Smart Cities

(Joint with: Noise)

Organized by: Siu-Kit Lau, Andy Chung

This session will address the current needs of sustainable acoustics and their environments for smart cities, facilitate the development of the built environment harmonizing with nature and to increase the awareness of acoustics in sustainable architecture and city planning

## BIOMEDICAL ACOUSTICS (BA)

### Application of Quantitative Ultrasound *in vivo* in Humans

Organized by: Jonathan Mamou, Michael Oelze

Recent advances in quantitative ultrasound methods for biomedical applications in humans using *in vivo* including novel technologies to solve a wide range of diagnostic issues

### Cavitation Bioeffects

Organized by: Juliana Simon, Hong Chen

Focuses on topics related to the biological effects of cavitation bubbles, including, lithotripsy, cavitation-mediated drug delivery, and thrombolysis

### Cavitation Nuclei: Bubbles, Droplets, and More

(Joint with: Physical Acoustics)

Organized by: James Kwan, Shashank Sirsi

Exploring new developments on the design and manufacture of cavitation nuclei as well as discussing their response to ultrasound and novel applications

### High Frame Rate Ultrasound Imaging: Technical Developments and Clinical Applications

(Joint with: Signal Processing in Acoustics)

Organized by: Libertario Demi, Alessandro Ramalli

High frame rate ultrasound imaging, based on the transmission of simultaneously focused beams or diverging/plane waves, has become increasingly popular in medical ultrasound imaging. The relevance and broad range and applications of these modalities has pushed the development of many innovative solutions in terms of devices, beam forming schemes and applications that will be discussed and reviewed

### New Frontiers in Doppler Ultrasound

Organized by: Alfred Yu, Jeffrey A. Ketterling

Latest technological advances in Doppler ultrasound, including novel transmit sequences, processing algorithms, phantom design, and new application domains

### Ultrasound Phantom Development and Tissue Characterization

Organized by: Yunbo Liu, Matthew Myers

Topics related to ultrasound phantom development and tissue acoustic property quantifications for both therapeutic and diagnostic ultrasound applications

## COMPUTATIONAL ACOUSTICS (CA)

### Applications of Model Reduction in Computational Acoustics

(Joint with: Structural Acoustics and Vibration, Signal Processing in Acoustics)

Organized by: Kuangcheng Wu, D. Keith Wilson

Model reduction approaches to reduce computational time in analyzing large datasets or to simplify large, complex numerical models. These approaches may be based on physical insights or on advanced numerical techniques

## COMPUTATIONAL ACOUSTICS (CA) (continued)

Parabolic Equation Methods Across Acoustics  
(Joint with: Physical Acoustics, Underwater Acoustics, Acoustical Oceanography, Signal Processing in Acoustics, Structural Acoustics and Vibration)  
Organized by: Michelle Swearingen, Jennifer Cooper

## ENGINEERING ACOUSTICS (EA)

Acoustical Engineering in Consumer Electronics  
(Joint with: Structural Acoustics and Vibration)  
Organized by: Caleb F. Sieck, Edward M. Okorn

Acoustic Holography and Visualization of Sound: Methods and Applications  
(Joint with: Physical Acoustics, Structural Acoustics and Vibration)  
Organized by: Michael Scanlon, Caleb Goates

## EDUCATION IN ACOUSTICS (ED)

Hands-On Demonstrations for Middle- and High-School Students  
Organized by: Keeta Jones, Tracianne B. Neilsen, Daniel A. Russell

Listen-Up and Get Involved!  
(Joint with: Women in Acoustics)  
Organized by: Keeta Jones, Tracianne B. Neilsen, Daniel A. Russell

Mentoring Graduate and Undergraduate Students  
(Joint with: Student Council, Women in Acoustics)  
Organized by: Daniel A. Russell, Kent Gee

Selecting a Textbook for Teaching an Acoustics Course  
(Joint with: Musical Acoustics)  
Organized by: Daniel A. Russell, Jack Dostal

Take 5's  
Organized by: Jack Dostal

## INTERDISCIPLINARY (ID)

Guidance from the Experts: Applying for Grants and Fellowships  
(Joint with: Student Council)  
Organized by: Daniel Guest, Eric Rokni

## DESCRIPTIVE SENTENCES

Comparison of the use of parabolic equation methods in different areas in acoustics

Presentations on the unique acoustical challenges that arise in the development of consumer products

Near-field acoustic holography is a method of recording and displaying three-dimensional sound information as color-coded maps and videos. Contributions are welcome that investigate the underlying principles of holography, new methods for estimating the sound field near a source, the measurement of acoustic parameters, novel hand-held or fixed microphone array techniques with pressure and/or particle velocity transducers, broadband beamforming techniques, and visualization of 3D noise maps on 3D models

Acoustics demonstrations for middle and high school students. No abstracts. ASA member volunteers who interact with students from local area high schools. All equipment for 10-15 demonstrations is provided. Anyone interested in volunteering, please contact [kjones@acousticalsociety.org](mailto:kjones@acousticalsociety.org)

Acoustics demonstrations for middle- and high-school aged Girl Scouts. No Abstracts. Equipment is provided for 10-15 demonstration stations and ASA members show demos and interact with students. Anyone interested in volunteering to help can contact [kjones@acousticalsociety.org](mailto:kjones@acousticalsociety.org)

The mentoring of students at both undergraduate and graduate levels is a vital role of the faculty member and the transition from graduate student to new faculty member requires the former mentee to now become a mentor. Papers will include best practices and guidelines for mentoring graduate and undergraduate students, along with tips for success, selecting students from a pool of applicants, dealing with problem students, mentoring across differences, and developing productive and rewarding mentoring relationships

The process of selecting a textbook when asked to teach a new course (or when the standard text goes out of print) can be a daunting task, given the variety (or lack thereof) of textbooks available for both general topics, undergraduate courses or upper level special topics graduate courses. This session will focus on hints for how to determine which books might be appropriate for an acoustics course (at various levels, undergrad through graduate), how to evaluate the content of a textbook and its appropriateness as a text for the course being taught, how to use a new textbook for your course, and what to do when no single book seems to do provide what is needed

For a Take-Five session, no abstract is required. We invite you to bring your favorite acoustics teaching ideas. Choose from the following: short demonstrations, teaching devices, or videos. The intent is to share teaching ideas with your colleagues. If possible, bring a brief, descriptive handout with enough copies for distribution. Spontaneous inspirations are also welcome. You sign up at the door for a five-minute slot before the session begins. If you have more than one demo, sign-up for two consecutive slots

A panel of successful fellowship winners, selection committee members, and fellowship agency members will answer questions regarding grants and fellowships, application advice, and funding opportunities. The panelists will briefly introduce themselves, followed by a question and answer session with the audience

## INTERDISCIPLINARY (ID) (continued)

Introduction to Technical Committees  
Organized by: Kieren Smith, Alex Padilla, Will Doebler

## MUSICAL ACOUSTICS (MU)

Asian Musical Instruments  
Organized by: James P. Cottingham

Experimental Methods in Musical Acoustics: Best Practices  
Organized by: Andrew A. Piacsek

Machine Learning in Musical Acoustics  
(Joint with: Signal Processing in Acoustics, Computational Acoustics)  
Organized by: Bozena Kostek, Scott H. Hawley

## NOISE (NS)

Community Noise  
(Joint with: ASA Committee on Standards)  
Organized by: Eric Reuter, David Woolworth

Current Trends and Advancements in Applying Acoustics to Smart Cities  
(Joint with: Architectural Acoustics, ASA Committee on Standards)  
Organized by: Brigitte Schulte-Fortkamp, Bennett Brooks

Development of New Sounds for Electric Vehicles  
(Joint with: Psychological and Physiological Acoustics, ASA Committee on Standards)  
Organized by: Klaus Genuit, Brigitte Schulte-Fortkamp

Outdoor Entertainment Noise  
Organized by: David Manley, Tony Hoover

Quiet Supersonic Flights 2018  
(Joint with: Signal Processing in Acoustics)  
Organized by: Jonathan Rathsam, Larry Cliatt

Supersonic Jet Aeroacoustics  
(Joint with: Physical Acoustics and Computational Acoustics)  
Organized by: Alan T. Wall, Kent L. Gee

Workshop on Supersonic Jet Aeroacoustics  
(Joint with: Physical Acoustics, Computational Acoustics)  
Organized by: Alan T. Wall

Transportation Noise from its Consequences to the Solution Set  
(Joint with: Animal Bioacoustics, Underwater Acoustics)  
Organized by: Bonnie Schnitta, James Phillips

## PHYSICAL ACOUSTICS (PA)

Aqueous Acoustic Metamaterials  
(Joint with: Engineering Acoustics, Structural Acoustics and Vibration, Underwater Acoustics)  
Organized by: Matthew Guild, Shane Lani, Jason Smoker

Design of Acoustics Metamaterials: Optimization and Machine Learning  
(Joint with: Structural Acoustics and Vibration, Computational Acoustics)  
Organized by: Feruza Amirkulova

## DESCRIPTIVE SENTENCES

A sample of work from each each Technical Committee, representing each of the unique fields of acoustics represented in the ASA.

Acoustics of all types of Asian musical instruments.

Detailed descriptions of methods and procedures to measure quantities of interest in musical acoustics, including discussion of precision, reliability, and cost

Applications of machine learning techniques and algorithms for mining and classifying musical data, performing creative tasks, synthesizing novel sounds or replicating musical instruments, mimicking emotion and mood in music, and enhancing musical education

Measurement, prediction, and mitigation of community noise

New research into soundscape considerations related to smart growth principles, which are strongly relevant for future urban development

Electric vehicles provide a new challenge for the acoustical design of interior and exterior sounds. Interior sounds are needed to inform the driver about the driving situation and exterior sounds are needed to inform people outside from the approaching car

Outdoor entertainment noise; design, modeling, measurements, and perception

Showcase the experimental design and results from NASA's First Large-Scale Quiet Sonic Boom Community Response Test

Noise characterization of supersonic jets through measurement, modeling, and simulation of aeroacoustic phenomena with applications to jet noise reduction technologies, launch vehicle, payload, and launch pad damage risk models, and personnel and community noise predictions for commercial and military aircraft. Please see also the "Jet Noise Reduction Workshop" on p. 11

See page 11 for details

The effects on people and wildlife from transportation noise (land, air, and sea), as well as innovative solutions for reducing noise

Explores the unique challenges of designing, testing and fabricating acoustic metamaterials in underwater and other aqueous environment

Recent advances in optimization and machine learning allow improved design of acoustics metamaterials. This section solicits submissions pertaining to applications of optimization methods, machine learning methods and data mining to metamaterials with particular emphasis on inverse engineering and predicting structure-property relationships. Topics of interest include but are not limited to inverse design of metamaterials with particular functionality or behavior, property prediction, bandgaps, accelerated simulation and algorithm development, topology optimization

## **PHYSICAL ACOUSTICS (PA) (continued)**

Non-Reciprocal and Topological Acoustics  
(Joint with: Engineering Acoustics)  
Organized by: Michael Haberman, Yun Jing

## **PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS (PP)**

Open Source Audio Processing Tools for Hearing Research  
(Joint with: Speech Communication)  
Organized by: Volker Hohmann, Caslav Pavlovic

## **SIGNAL PROCESSING IN ACOUSTICS (SP)**

Eco Active Sonar  
(Joint with: Animal Bioacoustics)  
Organized by: Brian Ferguson, R. Lee Culver

Memorial Session in Honor of Ed Sullivan  
(Joint with: Underwater Acoustics)  
Organized by: Ning Xiang, Brian Ferguson, Zoi-Heleni Michalopoulou

Signal Processing for Architectural Acoustics and Noise Control  
(Joint with: Architectural Acoustics, Noise)  
Organized by: Matthew Scott Byrne, Siu-Kit Lau, Kainam Thomas Wong

Signal Processing for Biological Transients  
(Joint with: Animal Bioacoustics, Underwater Acoustics, Acoustical Oceanography, Speech Communication)  
Organized by: Simon Freeman, Blaine Harker, Philip Caspers

## **SPEECH COMMUNICATION (SC)**

Self-Perception in Speech Production  
Organized by: Sarah Bakst, Caroline Niziolek

Universal and Experiential Influences on Phonetic Perception  
Organized by: Matthew Masapollo, Linda Polka

## **STRUCTURAL ACOUSTICS AND VIBRATION (SA)**

Acoustic Metamaterials  
(Joint with: Physical Acoustics, Signal Processing in Acoustics)  
Organized by: Christina Naify, Bogdan Popa

Acoustics of 3D-Printed Materials and Structures  
Organized by: Alexey Titovich, Stephanie G. Konarski

Computational Methods for Mid-Frequency Structural Acoustic Problems  
(Joint with: Computational Acoustics)  
Organized by: Anthony Bonomo, David Raudales

Flow-Induced Vibration and Noise  
(Joint with: Noise)  
Organized by: Kuangcheng Wu, Robert M. Koch

Novel Methods for Energy Dissipation in Structures  
(Joint with: Noise, Physical Acoustics, Engineering Acoustics)  
Organized by: Jerry H. Ginsberg, J. Gregory McDaniel

## **DESCRIPTIVE SENTENCES**

Topological phases, a hallmark of modern condensed matter physics, as well as non-reciprocity, have recently been identified in acoustic systems. This session will showcase new theoretical and experimental developments in these two burgeoning fields

Open tools for research: Hardware and software tools that can be used to investigate novel fitting strategies and algorithms for hearing devices will be shown and can be tried

Ecological (Eco-) Active Sonar is a concept for high-resolution wideband forward-looking sector scan active sonar featuring "unremarkable" sonar transmissions. The biological sonar of dolphins is one example of eco-active sonar. Another example is pulse compression sonar, also known as low probability of intercept or covert active sonar, which transmit low source level, wideband coded signals of long duration that do not disturb the marine ecosystem. This special session considers the properties and effectiveness of eco-active sonars

Celebration of Edmund J. Sullivan's life (an ASA Silver Medalist) and his contributions to model-based signal processing, including, but not limited to synthetic aperture acoustic arrays, and Bayesian methods in signal processing

All aspects related to the signal processing for architectural acoustics and noise control including imaging, source identification, characterization and active noise control in rooms and open spaces. Both theoretical and applied research are welcome

Most biological sounds, whether terrestrial or aquatic, are broad-band and transient in nature. This session will explore the various signal processing approaches employed by bio-acousticians and others to understand the context in which transient sounds are made, with a focus on sharing techniques across disciplines

Recent research exploring talkers' use of self-produced auditory information to guide speech production

Recent research on the development of phonetic perception, focusing on universal biases and experience-dependent perceptual changes that take place both in infancy and throughout life, including speculation about underlying mechanisms and processes

Contributions on theoretical and computational analysis of new metamaterial structures, experimental validation, characterization of prototype unit cells or bulk materials, and applied demonstrations.

Investigation of additive manufacturing for acoustic and vibration applications, including scaled, multi-materials, and other complicated structures fabricated from plastics, metals, etc.

Exploration of novel computational techniques along with extensions of existing methods, for the modeling of acoustic-structure interaction problems that fall in the mid-frequency range

This session focuses on analytical, computational, and/or experimental investigations into the generation of sound and/or structural vibration with steady or unsteady fluid flow-related origins

This session focuses on a diverse range of innovative concepts for enhancing damping and energy dissipation in structures

## **STRUCTURAL ACOUSTICS AND VIBRATION (SA) (continued)**

Treatment Methods and Computational Analysis of Vehicles  
(Joint with: Computational Acoustics, Engineering, Noise)  
Organized by: Benjamin M. Shafer, Michael T. Rose

## **UNDERWATER ACOUSTICS (UW)**

Comprehensive Nuclear-Test-Ban Treaty International Monitoring  
System: A Global Sensor Network with Scientific and Civil  
Applications in Hydroacoustics  
(Joint with: Acoustical Oceanography, Signal Processing in Acoustics)  
Organized by: Peter Loring Nielsen, David L. Bradley, Mario  
Zampolli, Georgios Haralabus

Ship Source Level Estimation: Methods and Measurements  
(Joint with: Animal Bioacoustics)  
Organized by: Dag Tollefsen, David P. Knobles, David Hannay

## **DESCRIPTIVE SENTENCES**

Explores the various modern methods of assessing, predicting, and treating sound and vibration in vehicles

The CTBT's IMS consists of a network of different sensor technologies designed to detect nuclear explosions worldwide. This session provides an overview of the IMS and its utilization to study regional and global physical hydroacoustic phenomena, including ocean basin and global-scale propagation, wave conversion, earthquake source mechanisms, three-dimensional underwater acoustic propagation marine mammal acoustics, ocean ambient noise, and Antarctic underwater acoustics

Estimation of ship source levels from acoustic sensor data in shallow water environments, including measurement techniques and analysis of recent data sets

# **OTHER TECHNICAL EVENTS AND INFORMATION**

## **ULTRASOUND MODELING WORKSHOP**

A 3-hour hands-on workshop using an HITU SIMULATOR will be offered at the San Diego ASA meeting on Monday morning, 2 December. This workshop is sponsored by the Biomedical Acoustics Technical Committee and will be available to all who are interested. There is no fee to participate, however, you are asked to register online or use the printed registration form on page 23 at the time you register for the meeting.

## **HOT TOPICS**

A "Hot Topics" session sponsored by the Tutorials, Short Courses, and Hot Topics Committee will cover the fields of Education in Acoustics, Acoustical Oceanography, and Speech Communication.

## **EXHIBIT**

An instrument and equipment exhibition will be located near the registration area and meeting rooms and will open on Monday, 2 December, with an evening reception serving lite snacks and a complimentary drink. Exhibit hours are Monday, 2 December, 5:30 p.m. to 7:00 p.m., Tuesday, 3 December, 9:00 a.m. to 5:00 p.m., and Wednesday, 4 December, 9:00 a.m. to 12:00 noon.

The Exhibit will include computer-based instrumentation, scientific books, sound level meters, sound intensity systems, signal processing systems, devices for noise control and acoustical materials, active noise control systems, and other exhibits on acoustics.

Contact the Exhibit Manager for information about participating in the exhibit: Dan Cooke, Director of Advertising and Exhibit Sales, AIP Publishing, LLC, 1305 Walt Whitman Road, Suite 300, Melville, NY 11747-4300, Tel: 516-576-2629; E-mail: dcooke@aip.org.



## **EARLY CAREER ACOUSTICIANS RETREAT (EAR)**

The Acoustical Society of America (ASA) seeks to engage and foster members by hosting the Early-Career Acousticians Retreat (EAR) 2019! EAR is a two-day workshop for early career professionals in the field of acoustics focused on developing leadership and networking skills for early career professionals in the field of acoustics. The workshop also will allow you to connect and socialize with your fellow early career acousticians as well as more senior members of the Society, learn about mentoring relationships and about the Society, and contribute to the future of ASA.

Registration for EAR 2019 is FREE for up to 30 registrants. FREE Registration includes 3 meals as well as \$500 towards lodging and transportation. After 30 participants, registration costs \$150.

The workshop will be held at the Hotel del Coronado in San Diego, CA, beginning on Friday, December 6th, 2019 at 3:30 p.m. and ending on Saturday, December 7th, 2019 at 1:00 p.m.

Apply for EAR here. Applicants must be within 10 years of their last degree and not currently students. Applications are due July 15, 2019 by 5 PM EST. For questions about EAR, contact Tessa Bent (tbent@indiana.edu), Martin Lawless (martin.lawless@cooper.edu), or Derek Olson (dolson@nps.edu).

## **OPEN MEETINGS OF TECHNICAL COMMITTEES**

Technical Committees will hold open meetings on Tuesday, Wednesday, and Thursday evenings. These are working, collegial meetings. Much of the work of the ASA is accomplished by actions that originate and are taken in these meetings including proposals for special sessions, workshops, and technical initiatives. All meeting participants are cordially invited to attend these meetings and to participate actively in the discussions.

## **PROCEEDINGS OF MEETINGS ON ACOUSTICS (POMA)**

All authors of San Diego meeting papers are encouraged to submit a pdf manuscript to ASA's Proceedings of Meetings on Acoustics (POMA). Things to note:

- There is no publication fee, but presentation of the paper at the meeting is mandatory.
- POMA does not have a submission deadline. Authors may submit manuscripts before or after the meeting; note, however, that review will not take place until after the meeting.
- POMA has new Word and LaTeX manuscript templates and cover pages are now generated automatically at the time of publication.
- Published papers are being both indexed in scholarly venues and highlighted on Twitter and Facebook.
- Visit <http://asa.scitation.org/pma/authors/manuscript> for additional information, including recent changes to the manuscript preparation/submission process.

## **ITINERARY PLANNER, MOBILE APP AND MEETING PROGRAM**

An itinerary planner and mobile app will be available for the San Diego meeting. A complete meeting program will be mailed as Part 2 of the October issue of JASA. Abstracts will be available on the ASA webpage <AcousticalSociety.org> in November.

## ABSTRACT SUBMISSION GUIDELINES

An abstract of not more than 200 words is required for each paper, whether invited or contributed. **Abstracts longer than 200 words will be truncated.** Authors must submit abstracts online (see page 24).

### ABSTRACT SUBMISSION GUIDELINES

**All abstracts must be submitted by 8 July 2019.** This deadline will be strictly enforced. Abstracts submitted via postal mail or e-mail will not be accepted. Abstracts will be rejected if they do not comply with the instructions.

Authors should be prepared to accept assignment to lecture or poster sessions.

Authors of invited papers must indicate the title of the special session in which they have been invited to participate at the time the abstract is submitted.

Authors of contributed papers may request placement of their abstracts in special sessions. The request will be honored, if possible, but there is no guarantee such abstracts will be scheduled in the requested sessions.

If no special session placement is requested, contributed papers will be scheduled in sessions with abstracts of similar technical content.

### ABSTRACT SUBMISSION GUIDELINES

Submitted abstracts will not necessarily be accepted for the meeting. Acceptance is based on the following factors: adherence to the guidelines given here, clarity of writing, originality of the contribution, appropriateness of the subject matter to the ASA, correctness of the content, and the significance of the contribution. The ASA reserves the right to reject any submitted abstract without giving extensively documented reasons.

The presentation, and therefore the abstract, must be relevant to the field of acoustics, and focus on scientific developments, applications, standards, or education. Statements of political advocacy or explicit advertisement of products or services must be avoided.

### ABSTRACT DISCLOSURE STATEMENTS

Authors will be asked to answer the following questions during the submission process:

- Compliance with ethical principles
- Confirmation that all authors are aware of and agree with the submission of abstracts on which their names appear

### ABSTRACT LIMITATIONS

- Authors contributing papers in Speech Communication are also encouraged to select poster-style presentation which is the default for Speech Communication sessions.

- Contributed papers in Psychological and Physiological Acoustics and Underwater Acoustics may be scheduled for lecture or poster presentation.

- While authors may indicate a preference for presentation style, it may not always be possible to honor the request. Authors should be prepared to accept assignment of their abstracts to either lecture or poster presentation.

### ACKNOWLEDGMENT OF RECEIPT OF ABSTRACTS SUBMITTED ONLINE

Corresponding authors will receive an e-mail message confirming that their abstracts have been received. Acceptance notices will be sent to authors in August.

## ASA BEST PAPER AWARDS FOR STUDENTS AND YOUNG PRESENTERS

Several ASA Technical Committees offer Best Paper Awards to students or young presenters at meetings. Authors need not be members of ASA to qualify. **If you want your paper to be considered for an award, you must indicate this when you submit your abstract.** Please read the entry qualifications to be sure that you are eligible and follow the instructions for entering the individual Technical Committee competitions that appear on pages 25 and 26.

## **AUDIO-VISUAL AND SPECIAL EQUIPMENT AND SOFTWARE**

### **AUDIO-VISUAL EQUIPMENT**

PC computers with monaural audio playback capability, computer projectors, and laser pointers will be provided in all lecture sessions. All other equipment is considered special equipment. Refer to the "Special Equipment" section below for additional information. Mac computers will not be provided.

### **SPECIAL EQUIPMENT, COMPUTER EQUIPMENT, AND SOFTWARE**

Any equipment other than PC computers with monaural audio playback capability, computer projectors, and laser pointers is "special equipment." Requests for special equipment (e.g., stereo sound, special speakers) must be specified at the time of abstract submission. Provision of unusual special equipment will depend upon availability and cost. Special software requests should also be made, if required.

Stereo sound is considered special equipment and must be requested when your abstract is submitted.

Please be specific about your audio needs, including number of channels and preferred loudspeaker arrangement.

### **POSTER SESSION BOARDS**

Poster boards and fastening materials will be provided. Poster boards are 8 ft. wide by 4 ft. high.

### **PROJECTION GUIDELINES FOR AUTHORS**

A PC computer with monaural playback capability and projector will be provided in each meeting room on which all authors who plan to use computer projection will load their presentations. Authors should bring computer presentations on a USB drive to load onto the provided computer before the start of their sessions. Authors also have the option to connect their own laptops to the computer projector, however authors using their own laptops must also arrive at the meeting room at least 30 minutes before start of the session to setup this connection. Assistance in loading presentations onto the computers and switching to alternate computers will be provided.

If you utilize your own computer for your presentation you should also bring your presentation materials on a USB drive as a backup. This may solve any possible interface or cable problems between your computer and the projector.

Note that only PC format will be supported so authors using Macs must save their presentations for projection in PC format. Also, authors who plan to play audio or animations during their presentations should ensure that their sound and animation files are also saved on the USB drive. They must also provide their own connectors.

Guidelines for use of computer projection will be supplied with acceptance notices.

### **AUDIO/VISUAL PREVIEW ROOM**

Computer presentations can be reviewed by authors in the audio/visual preview room at the meeting.

## **JET NOISE REDUCTION WORKSHOP**

ASA is partnering with the United States Jet Noise Reduction Science and Technology Panel to hold a workshop targeting emerging trends and technologies in jet noise solutions. The workshop will occur on Friday, 6 December from 8:45 a.m. to 4:00 p.m., and is open to all meeting registrants.

### **ABSTRACT**

Transformative solutions to reduce the impacts of noise from supersonic jet propelled aircraft, particularly military fixed-wing fighters, are driven by national health and safety requirements to protect the hearing of warfighters and political pressures from communities in areas of high military aircraft activity. Jet noise reduction technology is limited to solutions that do not affect military aircraft performance requirements to fly faster and farther. In this workshop, distinguished leaders will present special lectures regarding the current climate and future outlook for the most promising jet noise reduction solutions. They will also discuss real-world applications in a panel Q&A session.

### **REGISTRATION AND LUNCHEON**

All workshop participants are required to register for the ASA San Diego meeting and to also register for the workshop. There is no additional charge to register for the workshop. There is an option to register for lunch for \$25. Students and Early Career Professionals within 3 years of their terminal degree may register for lunch for \$10. Registration is offered as the “Jet Noise Workshop Luncheon” on the registration options page.

### **SUPERSONIC JET NOISE SPECIAL SESSION**

This workshop is being held in conjunction with the ASA special session, “Supersonic Jet Noise,” hosted by the Noise and Physical Acoustics Technical Committees on 5 December. If you plan to attend both events full-week registration is required.

## **TUTORIAL ON EFFECTIVE MEDIA INTERACTIONS TRAINING WORKSHOP**

The ASA Public Relations Committee and the American Institute of Physics Media Services team will present a tutorial titled "Effective Media Interactions Training Workshop" on Monday, Monday, 2 December, at 7:00 p.m.

### **ABSTRACT**

The Public Relations Committee and the AIP Media Services team present this hands-on workshop for meeting attendees who are interested in effectively communicating scientific work to the public. This workshop is strongly recommended for individuals who regularly speak to reporters or who may do so in the future. The workshop will consist of short presentations by media professionals to provide a toolkit of specific ideas and techniques for speaking to the media as well as structured small group activities that will give participants an opportunity to discuss and apply those techniques. Participants should come prepared to give a one-minute "elevator talk" about their own research. The workshop will provide some perspective of the "other side" -- how journalists and other media professionals approach their work -- and participants will leave with a strong understanding of best practices, recommendations and strategies for ensuring their scientific ideas are correctly interpreted.

### **LECTURE NOTES**

Lecture notes will be available at the meeting in limited supply. Those who preregister by 28 October 2019 are guaranteed receipt of a set of notes.

### **TUTORIAL LECTURE PREREGISTRATION**

This tutorial is limited to 60 participants. To partially defray the cost of the lecture, a registration fee is charged. The fee is USD \$15 for registration received by 28 October 2019 and USD \$25 thereafter including on-site registration at the meeting. The fee for students with current ID cards is USD \$7 for registration received by 28 October 2019 and USD \$12 thereafter, including on-site registration at the meeting. Register online at <AcousticalSociety.org> or use the printed registration form on page 23 to register for the Tutorial.

# SHORT COURSE ON ACOUSTOFLUIDICS

## INTRODUCTION

Acoustic wave propagation in solids and fluids and through interfaces; nonlinear effects including acoustic streaming and turbulence; bulk fluid, free surface, and suspended particle physical effects; phenomena and applications; future work.

## OBJECTIVE

Acoustic waves have found new utility in microfluidics in recent years, providing an enormously powerful ability to manipulate fluids and suspended particles in open and closed fluid systems. In this course, we discuss fundamental and powerful concepts of acoustic wave generation and propagation with exploration of new phenomena observed at small scales, particularly in the context of useful applications. We introduce the basics of solid and fluid mechanics alongside acoustics, and show how to apply these to the rather more challenging discipline of nonlinear acoustics responsible for acoustofluidics. We furthermore provide tutorial methods for fabricating microacoustic devices with examples. Finally, we consider notable and recent innovations in the discipline, including rapidly rechargeable batteries, atomization technologies for disinfection and pulmonary drug delivery, and observation of cell and organism effects from non-cavitating ultrasound. Especially curious physical phenomena at the nano-scale will also be shown, and, along the way, the fascinating underlying physics tying together the acoustics, fluid dynamics, and broader physical phenomena appearing in these systems will be described.

## INSTRUCTOR

James Friend is a Professor at the Center for Medical Devices and Instrumentation in the Department of Mechanical and Aerospace Engineering, Jacobs School of Engineering, and the Department of Surgery, School of Medicine at the University of California, San Diego, leading the Medically Advanced Devices Laboratory. His research interests are principally in exploring and exploiting acoustic phenomena at small scales. Professor Friend currently supervises a team of 7 PhD students and 2 post-docs, has over 260 peer-reviewed research publications (H-factor = 44) and 27 patents in process or granted, completed 33 postgraduate students and supervised 19 postdoctoral staff, and been awarded over \$25 million in competitive grant-based research funding.

## PROGRAM

Sunday, 1 December 2019, 1:00 p.m. to 5:00 p.m.  
Monday, 2 December 2019, 8:30 a.m. to 12:30 p.m.

## REGISTRATION

The full registration fee is USD \$300 (USD \$125 for students) and covers attendance, instructional materials and coffee breaks. The number of attendees will be limited so please register early to avoid disappointment. Only those who have registered by 28 October 2019 will be guaranteed receipt of instruction materials. There will be a USD \$50 discount off the full registration fee (discount does not apply to student fee) for registration made prior to 28 October 2019. Full refunds will be made for cancellations prior to 28 October 2019. Any cancellations after 28 October 2019 will be charged a USD \$25 cancellation fee. Register online at [AcousticalSociety.org](http://AcousticalSociety.org) or use the printed registration form on page 23. If you miss the preregistration deadline and are interested in attending the course, please send an email to [asa@acousticalsociety.org](mailto:asa@acousticalsociety.org).

<b>FUNDING OPPORTUNITIES</b>
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### **STUDENT TRANSPORTATION SUBSIDIES**

A student transportation subsidies fund has been established to provide limited funds to students to partially defray transportation expenses to meetings. No reimbursement is intended for the cost of food or housing. The amount granted each student depends on the number of requests received. To apply for a subsidy, submit a proposal by e-mail to be received by 28 October 2019 to: Jolene Ehl, [jehl@acousticalsociety.org](mailto:jehl@acousticalsociety.org). The proposal should include your status as a student; whether you have submitted an abstract; whether you are a member of ASA; method of travel, and approximate cost of transportation.

### **YOUNG INVESTIGATOR TRAVEL GRANTS**

The Committee on Women in Acoustics (WIA) sponsors Young Investigator Travel Grants to help with travel costs associated with presenting a paper at the San Diego ASA meeting. Young professionals who have completed their doctorate in the past five years are eligible to apply if they plan to present a paper at the San Diego meeting, are not currently students, and have not previously received the award. Each award will be approximately \$500 with four awards anticipated. Awards will be presented by check at the WIA luncheon at the meeting. Both men and women may apply. Applicants should submit a single PDF file (named <last name>\_<first name>\_YI.pdf) that includes 1) a paragraph explaining how this award will enable their attendance at the ASA meeting, 2) a copy of the abstract for their presentation at the meeting, and 3) a current resume/vita showing their involvement in the field of acoustics and in the ASA. The PDF file should be e-mailed to Jen Lentz <[jjlentz@indiana.edu](mailto:jjlentz@indiana.edu)>. Deadline for receipt of applications is 15 October 2019.

### **DEPENDENT CARE SUBSIDIES**

The Committee on Women in Acoustics (WIA) sponsors Dependent Care Subsidies to help offset dependent care costs associated with attending the San Diego ASA meeting. Meeting attendees are eligible to apply if they plan to present a paper at the San Diego meeting or hold a leadership position in ASA. Each subsidy will be approximately \$500 with four awards anticipated. Both men and women may apply. Applicants should submit a single PDF file (named <last name>\_<first name>\_DepCare.pdf) that contains the following: name, contact information/affiliation, title of presentation or leadership role and main technical committee(s), a paragraph describing current and past involvement with ASA, a paragraph describing how subsidy would offset dependent care expenses while attending the ASA, and an estimated budget for the trip (including other sources of available funding). Submit materials by e-mail to Rachael Frush Holt <[holt.339@osu.edu](mailto:holt.339@osu.edu)>. Deadline for receipt of applications is 15 October 2019.

<b>STUDENT ACTIVITIES</b>
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### **STUDENT ORIENTATION AND MEET AND GREET**

A New Students Orientation will be held from 5:00 p.m. to 5:30 p.m. on Monday, 2 December, for all students to learn about the activities and opportunities available for students at the San Diego meeting. This will be followed by the Student Meet and Greet from 5:30 p.m. to 6:45 p.m. where refreshments and a cash bar will be available.

### **STUDENTS' RECEPTION**

The Students' Reception will be held on Wednesday, 4 December, from 6:00 p.m. to 8:00 p.m. This reception, sponsored by the Acoustical Society of America and supported by the National Council of Acoustical Consultants, will provide an opportunity for students to meet informally with fellow students and other members of the Acoustical Societies of America. All students are encouraged to attend, especially students who are first time attendees or those from smaller universities.

### **STUDENTS MEET MEMBERS FOR LUNCH (SMMfL)**

A student in the SMMfL program meets one-on-one with an ASA member over lunch during the ASA meeting. The purpose is to encourage students, as they embark on their acoustical careers, to network with more senior members. Each lunch pairing is arranged to ensure a good match between the student's and member's acoustical interests. Each participant pays for his/her own meal. Students who wish to participate should check the SMMfL check box in the on-line preregistration form. They will be contacted later for additional information to assist with the matching process. The Students Meet Members for Lunch program is sponsored by the Committee on Education in Acoustics.

### **STUDENT COUNCIL FELLOWSHIP PANEL**

A panel of successful fellowship winners, selection committee, and fellowship agency members will offer advice and answer questions.

### **OTHER INFORMATION FOR STUDENTS**

Students are also encouraged to visit the official ASA Student Home Page at <https://asastudents.org>.



## **PLENARY SESSION, AWARDS CEREMONY, SOCIAL EVENTS, LUNCHEONS**

### **PLENARY SESSION AND AWARDS CEREMONY**

The ASA Plenary session will be held Wednesday afternoon, 4 December, where Society awards will be presented and recognition of newly-elected Fellows will be announced.

### **SOCIAL HOURS**

Two socials with complimentary buffets and cash bars will be held on Tuesday and Thursday, 3 and 5 December at The Hotel Del Coronado.

The ASA hosts these social hours to provide a relaxing setting for meeting attendees to meet and mingle with their friends and colleagues as well as an opportunity for new members and first-time attendees to meet and introduce themselves to others in the field. A second goal of the socials is to provide a sufficient meal so that meeting attendees can attend the open meetings of the Technical Committees that begin immediately after the socials.

### **WOMEN IN ACOUSTICS LUNCHEON**

The Women in Acoustics luncheon will be held on Wednesday, 4 December. The fee is USD \$25 (students USD \$15) for preregistration by 28 October 2019 and USD \$30 (students USD \$15) at the meeting. Those who wish to attend this luncheon must register online at [AcousticalSociety.org](http://AcousticalSociety.org) or use the printed registration form on page 23.

### **SOCIETY LUNCHEON AND LECTURE**

A Society Luncheon and Lecture sponsored by the College of Fellows will be held Thursday, 5 December, at 12:00 noon. This luncheon is open to all attendees and their guests. The lecture topic and speaker will be announced at a later time. Register online by 28 October 2019 at [AcousticalSociety.org](http://AcousticalSociety.org) or use the printed registration form on page 23. Tickets cost is USD \$30.00 each.

### **JAM SESSION**

The College of Fellows will host the ASA Jam Session on Wednesday, 4 December, at 8:00 p.m. Bring your axe, horn, sticks, voice, or anything else that makes music. Musicians and non-musicians are all welcome to attend. A full PA system, backline equipment, guitars, bass, keyboard, and drum set will be provided. All attendees will enjoy live music, a cash bar, and all-around good times. Don't miss out.

### **FUN RUN/FUN WALK**

A 5k fun run/walk will be held on Tuesday at 5:00 p.m. on Coronado beach. Meet at the Hotel Del back lawn at 4:45 p.m. The course is a double out-and-back with a marked turnaround. Runners and walkers can join for 1 mile, 3k, or 5k. Registration not required -- just show up! You will need to sign a waiver before the race.

ASA 5km fun run 2011 (photo credit: Peter Gerstoft)



## TRANSPORTATION AND TRAVEL INFORMATION



### AIR TRANSPORTATION

San Diego is served by the San Diego International Airport. Taxi fare to the Hotel del Coronado is approximately \$30.

### GROUND TRANSPORTATION

Hotel del Coronado has teamed up with Uber to provide safe and easy transport to your destination. To get your first Uber ride free (up to \$20), sign up at or download the app and enter the promo code “hoteldel.”

To arrange for private car service, contact LaCosta Limousine at 1-888-299-5466. Approximate taxi fare each way to popular San Diego destinations: San Diego International Airport – \$30; Zoo – \$25, SeaWorld – \$40, Downtown/Gaslamp – \$25, La Jolla – \$75, Legoland – \$120, Safari Park – \$130, Coronado Ferry Landing – \$8. Click for information about the Coronado Ferry. You may also contact Del Concierge for assistance at or 1-800-HOTEL-DEL.

### DRIVING DIRECTIONS/PARKING INFORMATION

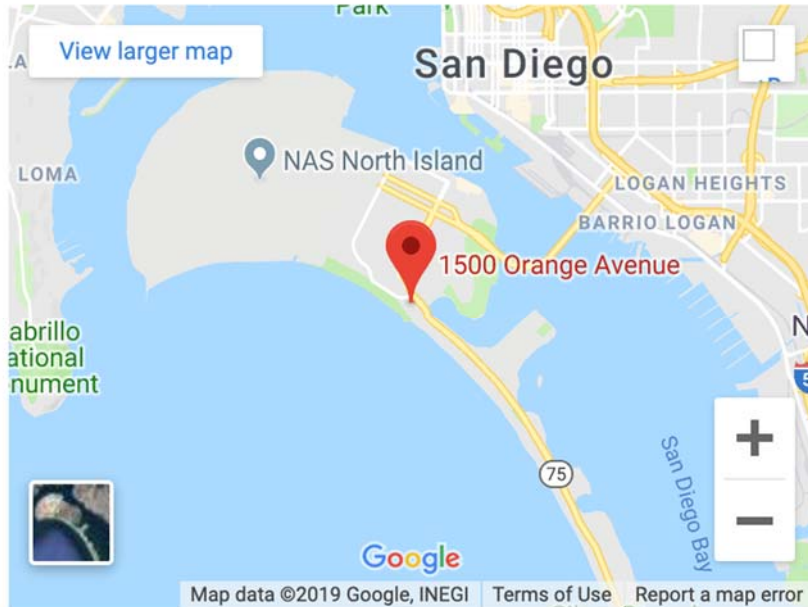
From San Diego International Airport/Lindbergh Field

- Exit the airport by turning left onto North Harbor Drive.
- Travel approximately 1.4 miles, and then turn left onto West Grape Street.
- Travel approximately 1/2 mile, and look for the Interstate 5 South on-ramp, accessible from the far-right lane.
- Merge onto Interstate 5 freeway, traveling south.
- Travel approximately three miles (through Downtown San Diego) until you see the California 75 – Coronado Bay Bridge exit, accessible from the far-right lane
- Merge onto California 75 Coronado Bay Bridge. (No toll is required.)
- After driving over Coronado Bay Bridge, stay to the left on Third Street. Travel approximately 0.10 mile on Third Street, and turn left onto Orange Avenue. Follow Orange Avenue approximately two miles to the Hotel del Coronado.
- The resort main entrance is just past R. H. Dana Place to the right.
- If you are staying at Beach Village at The Del, turn right on R.H. Dana Place and the entrance is on the left.

## PARKING

- Overnight Guests – \$37 for self-parking and \$47 for valet services.
- Day Guest Self-Parking – Validated for the first 3 hours with \$50 minimum purchase. Thereafter (or without minimum purchase), \$30 for the first 2 hours and \$10 for each additional hour (maximum \$70).

Day Visitor Valet Parking – Reduced rate of \$15 for the first 3 hours with \$50 minimum purchase. Thereafter (or without a minimum purchase), \$40 for the first 2 hours and \$10 for each additional hour (maximum \$80).



Map credit: Google

## HOTEL RESERVATION INFORMATION



Hotel Del. (photo credit: Hotel Del)

A block of guest rooms at discounted rates has been reserved for meeting participants at the Hotel del Coronado. **Early reservations are strongly recommended.** Special ASA meeting rates are not guaranteed after **Friday, 8 November 2019 at 11:59 PST**

**Hotel del Coronado**  
**1500 Orange Avenue, Coronado, CA 92118**

### HOTEL POLICIES

- Check in time: 4:00 p.m./Check out time: 12:00 noon
- To ensure individual reservations, a one night's guarantee (including taxes and fees) using a major credit card with expiration date, check, or money order is required.
- Cancellation of an individual reservation must be made 7 days in advance of the arrival date. Failure to notify the hotel will result in a charge of one night's room rate, plus applicable taxes and fees.
- A credit card must be presented at check in. Guests addresses and e-mail addresses are also required.
- Reservations in ASA group: Complimentary Wi-Fi in guest rooms.

### RESERVATION PROCEDURES

#### Online Reservations

Reservations can be made directly online at the website listed below. You must enter the ASA group code to obtain the special rates:

<https://book.passkey.com/e/49847714>

#### Telephone Reservations

Online reservations are recommended. When making reservations by phone you must mention that you are with the Acoustical Society of America group to obtain the special ASA room rates:

800-468-3533 Toll-free (Non-toll free: 619-435-6611)

## **ROOM RATES**

\$259 Single/Double

Mandatory Portage charge: \$5.25 at check-in and \$5.25 at check out for each room occupant

Taxes and Fees:

10% (federal, state, local)

0.56% CA assessment fee and 1% Coronado Tourism Improvement District charge

A limited number of rooms are available at the government rate

The Resort Charge has been waived for this meeting

Rates available 3 days before and 3 days after meeting based on availability

**Reservation cut-off date: 8 November 2019 at 11:59 PST**

<b>GENERAL INFORMATION</b>
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### **ROOM SHARING**

ASA will compile a list of those who wish to share a hotel room and its cost. To be listed, send your name, telephone number, e-mail address, gender, smoker or nonsmoker preference, not later than 28 October 2019 to the Acoustical Society of America, by e-mail, [asa@acousticalsociety.org](mailto:asa@acousticalsociety.org). The responsibility for completing any arrangements for room sharing rests solely with the participating individuals.

### **COMMITTEE MEETINGS**

Meetings of Administrative, Technical and Standards Committees, including Working Groups, will be announced in the meeting program if requests are received not later than 8 July 2019. Requests for meeting space, special luncheons, etc., should be made as early as possible to: Jolene Ehl, [jehl@acousticalsociety.org](mailto:jehl@acousticalsociety.org). Reservations will not be taken by phone. Requesters should note that space is limited, and that late requests can be filled only on a space-available basis.

### **SPECIAL ACCESSIBILIITY**

Meeting attendees who have special accessibility requirements, should indicate their needs by informing ASA at [asa@acousticalsociety.org](mailto:asa@acousticalsociety.org) not less than 30 days in advance of the meeting. Please provide a cell phone number, e-mail address, and detailed information so that we may contact you directly.

### **ACCOMPANYING PERSONS PROGRAM**

Accompanying Persons and other visitors are welcome at the San Diego meeting. The registration fee for accompanying persons is USD \$150 for preregistration by 28 October 2019 and USD \$200 thereafter, including on-site registration at the meeting. There will be a hospitality room in the hotel for participants.

There will be a chance of ice skating: <https://hoteldel.com/events/skating/>

Remember this is coldest month in San Diego!

### **WEATHER**

San Diego experiences near perfect weather year-round. Average temperatures in December are highs of 66° F (19° C) and lows of 49° F (9° C). Chance of precipitation is about 2%.

There are 6 days of rain. That would mean  $6/30=20\%$ . Though some these days will just be a shower.  
<https://www.currentresults.com/Weather/California/Places/san-diego-weather-in-december.php>

## REGISTRATION INFORMATION

The registration desk at the meeting will open on Monday morning, 2 December. Register online at <http://AcousticalSociety.org> or use the printed registration form on page 23. **If your preregistration is not received by 28 October 2019 you must register on-site.**

Registration fees in USD are follows:

<u>Category</u>	<u>Preregistration by 28 October 2019</u>	<u>Onsite Registration</u>
ASA Members	\$560	\$660
ASA/ Members One-Day Attendance <sup>(1)</sup>	\$280	\$380
Nonmembers	\$710	\$810
Nonmembers One-Day Attendance <sup>(1)</sup>	\$355	\$455
Nonmember Invited Speakers One-Day Attendance <sup>(1)</sup>	\$0	\$0
Nonmember Invited Speakers—Full Week	\$355	\$355
ASA Early Career Associate or ASA Full Members (Members within 3 years of their most recent degree— proof of date of degree required)	\$280	\$380
ASA Student Members (must show current Student ID) <sup>(2)</sup>	\$100	\$150
Nonmember Students (must show current Student ID) <sup>(2)</sup>	\$200	\$250
Undergraduate Students (must show current Student ID) <sup>(2)</sup>	\$25	\$25
ASA Emeritus Members <sup>(3)</sup> (Must hold Emeritus status in advance of the meeting)	\$150	\$200
Accompanying Persons <sup>(4)</sup> (Registrants <b>who will not</b> participate in the technical sessions)	\$150	\$200

**Nonmembers** who register for the full meeting week and simultaneously apply for Associate Membership in the ASA are entitled to USD\$50 discount off their dues payment for 2020. Invited speakers who are members of the Acoustical Society of America are expected to pay the registration fee, but **nonmember invited speakers** may register for one-day only without charge. A nonmember invited speaker who pays the full-week registration fee, will be given one free year of membership upon completion of an application form.

**Note: A USD \$25 fee will be charged for cancellations after 28 October 2019.**

### **Registration Policies:**

1. **One-day registration:** For participants who attend the meeting for one day only. If you will be at the meeting for more than one day either presenting a paper and/or attending sessions, you must register and pay the full registration fee.
2. **Students:** All students must show a current (issued in 2019) student id card or verification of student status from the university attended on university letterhead in order to be eligible for student fees. If proof of student status is not available, the full registration fee must be paid.
3. **Emeritus Members:** Only ASA members who hold emeritus status prior to the meeting are eligible for this rate. It is not possible to transfer to emeritus status at the meeting.
4. **Accompanying Persons:** These are attendees who will participate only in the Accompanying Persons Program. Acoustics professionals, who participate in the technical program, i.e., present papers, attend sessions, and/or listed as coauthors on abstracts are not eligible for this registration rate.

\_\_\_\_\_  
Last Name (Surname)

\_\_\_\_\_  
First Name

\_\_\_\_\_  
Middle Initial

\_\_\_\_\_  
Name as it should appear on your badge

\_\_\_\_\_  
Company/Organization (will be printed on badge)

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City

\_\_\_\_\_  
State or Province

\_\_\_\_\_  
Zip/Postal Code

\_\_\_\_\_  
Country

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
E-mail Address

\_\_\_\_\_  
Name of Accompanying Guest (for badge)

Mail form with payment to:  
Acoustical Society of America  
1305 Walt Whitman Rd., Suite 300  
Melville, NY 11747-4300  
FAX (payment by credit card only): 631-923-2875

**If your registration is not received at the ASA headquarters by 4 November 2019 you must register on-site. Preregistrations received after 4 November will not be processed.**

	up to 28 Oct.	Onsite	
ASA Members	\$560	\$660	\$ _____
ASA Members One-Day Circle Day: M T W T F	\$280	\$380	\$ _____
Nonmembers	\$710	\$810	\$ _____
Nonmembers One-Day Circle Day: M T W T F	\$355	\$455	\$ _____
Nonmember Invited Speakers	\$0	\$0	\$ _____
(One-Day Only) Circle Day: M T W T F			
Nonmember Invited Speakers	\$355	\$355	\$ _____
(More than One-Day) (includes 1 year membership in ASA upon completion of an application)			
ASA Early Career Associate (ASA members within 3 years of their most recent degrees—proof of date of degree required)	\$280	\$380	\$ _____
ASA Student Members (attach current student ID)	\$100	\$150	\$ _____
Nonmember Students (attach current student ID)	\$200	\$250	\$ _____
Undergraduate Students (attach current student ID)	\$25	\$25	\$ _____
ASA Emeritus (ASA pre-approved)	\$150	\$200	\$ _____
Accompanying Persons (Registrants who will not attend or participate in technical sessions)	\$150	\$200	\$ _____
<b>OPTIONS</b>			
Jet Noise Workshop	\$0	\$0	\$ _____
Workshop Lunch Regular	\$25	\$25	\$ _____
Workshop Lunch Student/Early Career	\$10	\$10	\$ _____
Ultrasound Modeling Workshop	\$0	\$0	\$ _____
Tutorial: Regular	\$15	\$25	\$ _____
Tutorial: Student	\$7	\$12	\$ _____
Short Course: Regular	\$250	\$300	\$ _____
Short Course: Student	\$125	\$125	\$ _____
Women in Acoustics Luncheon Students	\$15	\$15	
Nonstudents	\$25	\$30	\$ _____
Society Luncheon and Lecture	\$30	\$30	\$ _____

**TOTAL REMITTANCE (U.S. Dollars)** \$ \_\_\_\_\_

**PAYMENT METHOD**

☐ Check or money order payable to the Acoustical Society of America  
(Note: Checks must be drawn on a U.S. bank in U.S. dollars. Non-U.S.  
bank drafts and wire transfer will not be accepted)

☐ VISA

☐ MasterCard

☐ American Express

Card Number Exp. Date Security Code

Signature

Print name: \_\_\_\_\_



## INSTRUCTIONS FOR SUBMITTING ABSTRACTS ONLINE

Complete instructions for the preparation and submission of abstracts is provided online.

Acknowledgment that your abstract has been received will be sent by e-mail. **Please note that if you do not receive an email message your abstract has not been entered into the database.**

1. Online Abstract Submission site is accessed on the ASA Home Page at <http://AcousticalSociety.org>
2. Click "Submit Abstract for the San Diego meeting" from the main page
3. You must first create an account and set up a username and password if you have not already done that in connection with submission of abstracts for prior ASA meetings.
4. After logging into the submission site, click the "Submission" tab.
5. To begin a new abstract click "Create a New Abstract" in the sidebar located on the left-hand side of the screen.
6. If at any time during the submission process you need technical support click the "Get Help Now" button at the top of the screen.
7. Abstracts are limited to 200 words (approximately 1500 characters).
8. The body of the abstract can be cut and pasted into the submission site. Note that LaTeX coding must be entered using the Special Character palette which appears on the Title/Body Screen.
9. Enter all authors and their affiliations in the order they should appear in the abstract. **Note: Only one affiliation may be included for each author.**
10. Carefully check the proof of your abstract. Make sure all special characters and formatting are displaying properly and that the authors and affiliations are listed in the proper order.
11. When all the required information for your submission is entered, the "Submit Abstract" button will appear at the Proof and Submit stage. Click the "Submit Abstract" button to submit the abstract.
12. Upon submission of your abstract you will receive an e-mail confirmation.
13. To view or edit an existing submission click "View Submissions" in the sidebar located on the left-hand side of the screen.
14. To edit an existing submission you must select "Return to Draft" and then select "Edit." All abstracts that are returned to draft must be resubmitted to be entered into the system. If not, the submission will remain in the Drafts table.

## ASA BEST PAPER AWARDS FOR STUDENTS AND YOUNG PRESENTERS

Several ASA Technical Committees offer Best Paper Awards to students and young presenters who present papers at Society meetings. If you want your paper to be considered for an award, you must indicate this when you submit your abstract. Follow the instructions for the appropriate technical area that appear below.

### ASA BEST STUDENT PAPER AWARDS

**Committees Offering These Awards:** Acoustical Oceanography, Animal Bioacoustics, Architectural Acoustics, Biomedical Acoustics (spring only), Engineering Acoustics, Musical Acoustics, Signal Processing in Acoustics, Speech Communication, Structural Acoustics and Vibration, and Underwater Acoustics

**Award Amounts:** For each of the Technical Committees granting awards, up to two awards will be presented to students presenting papers in sessions organized by the specific Technical Committee: USD \$300 for first prize and USD \$200 for second prize.

#### **Qualifications:**

To qualify for each of these awards, an author must:

- be enrolled as a student at least half-time (graduates are eligible if the work being presented was performed as a student within one year of the meeting). Note that you do not need to be a member of the ASA to qualify.
- be listed as the first author on the submitted abstract
- present the paper at the meeting

**Special Note for Speech Communication entries:** Choose Poster Only as your preferred presentation type during the abstract submission process to be eligible for the Best Student Poster Award Competition for Speech Communication. If you do not choose 'Poster Only' and your paper is subsequently assigned to an oral presentation, you cannot be considered for the Best Student Poster Award Competition for Speech Communication

**Selection:** The award winners will be selected by a subcommittee of each of the Technical Committees granting awards, based upon the quality of both the content of the paper and its presentation. The awards will be announced either at the meeting of the Technical Committee or after the close of the meeting.

**Application:** All those who wish to participate in the competition for these awards must indicate their intention to enter the competition during the abstract submission process by clicking the entry box on the online submission form.

### PHYSICAL ACOUSTICS BEST STUDENT PAPER AWARD

The ASA Technical Committee for Physical Acoustics (PATC) is offering a Best Paper award for students presenting papers in sessions organized by PATC. The award will be based upon a written paper submitted to Proceedings of Meetings on Acoustics (POMA).

**Award Amounts:** Up to two awards will be presented, USD \$300 for first prize and USD \$200 for second prize.

#### **Qualifications:**

To qualify for the award, an author must:

- be enrolled as a student at least half-time (graduates are eligible if the work was performed as a student within one year of the meeting). Note that you do not need to be a member of the ASA to qualify.
- be listed as the first author on the submitted abstract and POMA manuscript
- submit the POMA manuscript by the competition deadline, which is 14 days before the start of the meeting.

**Selection:** The award winner(s) will be selected by a subcommittee that will judge submitted POMA manuscripts based on technical content, writing quality, and overall excellence. The Best Paper award(s) will be announced at the PATC meeting. Note that the paper judging will take place concurrently with the ordinary editorial review of a POMA submission; each judged paper will be returned with comments and a publication decision.

**Application:** Those who intend to participate in the competition so indicate during the abstract submission process by clicking the entry box on the online submission form. Students will be contacted by the award subcommittee after abstracts have been accepted.

**ASA BEST "OUTSTANDING PAPER BY A YOUNG PRESENTER" AWARDS**

Note that you need not be a student to qualify for this award.

**Committees Offering These Awards:** Noise

**Award Amounts:** Up to three awards of USD \$250 each will be given for outstanding papers presented in sessions organized by the Technical Committee on Noise.

**Qualifications:**

To qualify for an award, the paper author must:

- be under 30 years of age as of 1 January 2019
- be listed as the first author of the paper and actually present the paper

**Selection:** Selection of the award winners will be based on the quality of the presented paper, comprising both the content and its delivery. The award winners will be chosen by a subcommittee of the Technical Committee and will be announced after the close of the meeting.

**Application:** The Award Subcommittee would like to consider papers by all authors who meet the eligibility criteria. Neither membership in the Acoustical Society, nor previous experience in the ASA, is required. Because the committees have no other way to identify eligible authors, however, it is essential that eligible authors indicate their intention to enter the competition during the abstract submission process by clicking the entry box on the online submission form.

**178<sup>TH</sup> Meeting Committee**

Chair .....	Peter Gerstoft
Technical Program Chair .....	Aaron M. Thode
Luncheon Organizer .....	Camille Pagniello
Student Coordinator.....	Ludovic Tenorio-Hallé
Signs.....	Gihoon Bryun
Fun Run .....	Emma Ozanich
JAM Organizer .....	Mike Bianco