

ACOUSTICAL OCEANOGRAPHY		
Title	Cosponsor(s)	Descriptive Sentences
Acoustic Sensing of Bio-Physical Interactions in the Water Column and Seafloor Organizers: Wu-June Lee, Elizabeth Weidner, Anthony Lyons		Active acoustic systems provide unique capabilities for synoptically observing interconnected physical and biological processes in the water column and seafloor that are otherwise challenging to study. This session aims to highlight recent advances in acoustical oceanography to measure, analyze, interpret, and model complex marine ecological phenomena. Joint with AB. Panel Discussion at end.
Acoustical Oceanography Using Ocean Observatory Systems Organizers: Shima Abadi, Felix Schwock, Andone Lavery	SP	Research approaches that utilize ocean observatory systems such as cabled systems, coastal mooring arrays, and mobile platforms. Topics include, but are not limited to, ocean observatory infrastructure, passive or active acoustic monitoring, detection and classification of sound sources, ambient noise analysis, geophysical/environmental monitoring.
New Data Sources and Processing Techniques in Fisheries Acoustics: Revolutionary or Incremental Progress? Organizers: Christopher Bassett, Orest Diachok Alex De Robertis	SP, ASACOS, CA, EA	In the last decade, there has been a substantial increase in the data available from active acoustic instruments using new platforms (e.g., autonomous vehicles/moorings/commercial vessels), commercially available broadband echosounders, and post-processing methodologies (e.g., machine learning, automated processing). This session will focus on a key challenge: how to use these new data streams to improve understanding of the distribution, abundance, and behavior of marine organisms.
Upper Ocean and Mixed Layer Acoustics Organizers: John Colosi, Andone Lavery	UW	Delving into upper ocean biological, chemical, atmospheric and physical oceanographic processes and their implications for the acoustics forward and inverse problems.
ANIMAL BIOACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Applications of Bioacoustics in Killer Whale Conservation Organizers: Tina Yack, Marla Holt	AO, UW, SP	This session will cover all areas of killer whale acoustics that have conservation applications. Topics may include hearing, sound production, use of sound, and detection, localization, species and ectotype classification and soundscape characterization during acoustic monitoring, and effects of noise.
Classifying and Quantifying Natural Soundscapes Organizer: Michael Stocker	ASACOS	The term "Soundscape" was coined in 1969 by city planner Michael Southworth, and popularized by composer and acoustic ecologist R. Murray Schafer in the mid 1970's. But even after almost 50 years, the term remains a philosophical conceit which has resisted classifiers or quantification metrics. This session will provide opportunities to map out the idea with a more concise vocabulary, and with an ear towards developing a more replicable understanding of the term.
ARCHITECTURAL ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
AIA CEU Presenters Course Training Session Organizers: K. Anthony Hoover, Bennett Brooks, Kenneth Good		Architects must continue their education by taking courses to maintain certification. TCAA offers a 1 hour Continuing Education Unit course in the much coveted area of Health & Safety. This AIA accredited course is available for qualified TCAA Members. To qualify, presenters must be a Member of ASA, a Member of TCAA and must have completed this training session. The session length will be 2 hours, with no contributed papers
Current State-of-the-Art and Future Paradigms in Acoustic Measurement and Testing Organizers: Ronald Sauro, Jim Degrandis, Chiara Scrosati	ASACOS, EA, SP	Measurement methods for acoustic material performance evaluation are under constant research and improvement. The development of more accurate assessments, and the creation of standards, is the never-ending search for data that can better inform our predictions, calculations, simulations, auralizations, and also improve our designs. These are some of the current developments, struggles, and future goals of these methods.
International Year of Sound Potpourri Organizers: Michael Vorländer, Mark Hamilton, Keeta Jones	CA, ED, PA, NS, ASACOS, EA, PP	Presentations from various activities around the world related to the International Year of Sound
Recording and Production Spaces Organizers: Ronald Eligator	ASACOS, SP	Designing and achieving acoustic quality in small rooms for audio recording and production
Restaurant Acoustics Organizers: Wade Bray, Brigitte Schulte-Fortkamp	ASACOS	This session centers upon acoustics as the central necessity and driver in a much wider Soundscape/sensescape harmony of restaurant architecture, sociology, owner and architect information, creativity, science and technology
Rethinking Acoustic Design After COVID-19 Organizers: Fernando Elizondo, Adam Bettcher, Walter Montano	NS	Pandemics cause deaths and induce social, technological and scientific changes. The global crisis over COVID-19 is generating changes in the way we do acoustic design. In this Technical Session, we will be discussing aspects such as: Materials and viruses, people spacing inside buildings and outdoors, implications on using new HVAC system with viruses filter, problems of mass transportation, face-to-face vs online activities, Acoustics vs audio, among others.
BIOMEDICAL ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Acoustics for Kidney Stone Management Organizers: Michael Bailey, Adam Maxwell		Talks in this session will outline current uses of ultrasound for the diagnosis and treatment of urinary stones
Biomedical Acoustics in Ophthalmology Organizers: Jonathan Mamou, Xiaoming Zhang		Talks in this session will present novel imaging and elastography techniques for ophthalmologic applications
BIOMEDICAL ACOUSTICS continued		

Title	Cosponsor(s)	Descriptive Sentences
Biomedical Acoustics Modeling Workshop Organizer: Vera Khokhlova, Petr Yuldashev	PA	In this workshop, an overview of the "HIFU beam" software, usage guidelines, and typical examples of simulating nonlinear focused ultrasound beams will be overviewed followed by individual projects.
Cavitation Nuclei: Bubbles, Droplets, and More Organizers: Michaelann Tartis, Stuart Ibsen	EA, PA	This session will focus on ultrasound activation of acoustically sensitive particles and other cavitation nuclei and the resulting effects this has on the surrounding environment including biological cells and tissues.
Education Session to Explore the History of Cavitation Bioeffects and How Lessons Learned are Shaping the Future of Cavitation in Medical Ultrasound Organizers: Juliana Simon, Hong Chen	PA	A session featuring some of the pioneers in cavitation to present historical perspectives and future predictions.
Session Postponed New Developments in Lung Ultrasound Organizers: Libertario Demi, Marie Muller	SP	Design, testing and clinical application of ultrasound approaches for the diagnosis and monitoring of lung condition. Theoretical, experimental and clinical contributions will be accepted.
Nonlinear Acoustic Propagation: Theory, Simulations, Experiment, and Applications Organizers: Vera Khokhlova, Mark Hamilton	SP, EA	Recent advances in theoretical and experimental research on nonlinear propagation effects in aeroacoustics, biomedical acoustics, nondestructive testing, geophysics, and other applications.
Novel Ultrasound Imaging Approaches for Muscle Characterization Organizers: Siddhartha Sikdar, Kang Kim	SA, PA, UW, EA, SP	Novel ultrasound imaging technologies will be introduced as non-invasive, comprehensive imaging tool for assessing structural, compositional, mechanical, and functional characteristics of muscles. Their innovative applications on important clinical issues as well as for further understanding of underlying mechanisms associated with functional and pathological changes of different types of muscles will be discussed.
Ultrasound for Brain Stimulation Organizers: Qifa Zhou, Costas Arvanitis	SP	New focus ultrasound technology, stimulation technology, and mechanisms, an emerging application of ultrasound.

COMPUTATIONAL ACOUSTICS

Title	Cosponsor(s)	Descriptive Sentences
Computational Aeroacoustics Organizers: Z. Charlie Zeng, S. Hales Swift	PA, MU, NS	Computational methods for jet flow and other aeroacoustical problems.
Showcases of High Performance Computing in Acoustics Organizers: Kuangcheng Wu, Shung (Sue) Sung, Ralph T. Muehleisen	UW, AO, SP, SA, MU, AA, PA, BA, PP, AB, EA	Recently high performance computing has been extensively used to accelerate engineering design. Studies that highlight the benefits of utilizing high performance computing across all acoustic fields, such as in analyzing big data, performing numerical analyses, or supporting machine/deep learning are welcome

COMPUTATIONAL ACOUSTICS continued

Title	Cosponsor(s)	Descriptive Sentences
Validation and Verification (V&V) for Acoustics and Vibrations Simulations Organizers: Shen Martinelli, Andrew Wixom	SP	V&V is a vital component of computational modeling and simulation in acoustics and vibrations. Topics in this session will include all aspects of V&V for acoustics and vibrations with applications from all disciplines: validation and/or verification of new codes or algorithms, benchmark problems, sampling, model error and sensitivity analysis, design of experiments, uncertainty quantification (UQ).

EDUCATION IN ACOUSTICS

Title	Cosponsor(s)	Descriptive Sentences
Hands-on Demonstrations Organizers: Keeta Jones, Daniel Russell	Women in Acoustics	Hands-on Demonstrations for High School and/or Middle School students
Listen Up and Get Involved! Organizers: Keeta Jones, Tracianne Neilsen, Daniel Russell	Women in Acoustics	Hands-on Demonstrations and activities for local Girl Scouts
Preview of Next JASA Special Issue on Education in Acoustics Organizers: Daniel Russell, Preston Wilson		This is an invitation only session. Invited speakers will be selected from authors who have submitted manuscripts for the upcoming JASA special issue on Education in Acoustics and will present a preview of their papers.
Returning to Teaching Acoustics In-Person in the Post-COVID Era Organizers: Daniel Russell, Andrew Morrison		This session focuses on approaches to in-person instruction and teaching of acoustics (for both lecture and laboratory classes) with a specific emphasis on adjustments you have made, or are making, in your teaching style, course content, use of technology, and student engagement for an in-person acoustics classes after a year of teaching online during the COVID-19 pandemic.

ENGINEERING ACOUSTICS

Title	Cosponsor(s)	Descriptive Sentences
Acoustics and Human-Machine Interface Organizers: Gary Elko	SP	ASR (Automatic Speech Recognition) for smart devices and acoustic front-end design to improve ASR accuracy of distant talkers in real rooms.
Additive Manufacturing and Electro-Acoustic Transduction Organizers: Michael Haberman, Thomas Blanford	PA, SA	Experimental and theoretical research on the topic of additive manufacturing as applied to electro-acoustic transduction materials and devices.

INTERDISCIPLINARY

Title	Cosponsor(s)	Descriptive Sentences
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Introduction to Technical Committees Organizers: Mallory Morgan, Kieren McCord	Student Council	Experts affiliated with each of the ASA's 14 Technical Committees/Technical Specialty Group will delivery short talks to summarize the research interests, hot topics, and any unique or interesting aspects of their TCs.
MUSICAL ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Acoustics of Brass Instruments Organizers: Thomas Moore, Vasileios Chatzioannou		Analyses of physical phenomena that take place during brass instrument performance. Computational and experimental studies, quality assessment and modeling of player-instrument interaction.
Making Music During a Pandemic Organizers: Thomas Moore		This session will focus on the challenges presented to musicians during the pandemic and the effects and efficacy of their responses to them. Investigations associated with any aspect of performance during the pandemic are invited, including such topics as viral transport, mask efficiency, and the acoustic effects of interventions.
Nonlinearities in Musical Acoustics Organizers: Nicholas Giordano, Vasileios Chatzioannou	PA	Experimental studies, theories, and numerical models that address the effects of nonlinearities for specific instruments.
NOISE		
Title	Cosponsor(s)	Descriptive Sentences
Building Systems Noise and Vibration Control: Beyond ASHRAE Chapter 49 Organizers: Brandon Cudequest, Joseph Keefe	AA, SA, EA	Unique approaches for estimating, controlling, and solving building systems noise and vibration issues. Topics may include noise prediction software and their limitations, newer equipment typologies: such as fan wall and variable refrigerant flow, or unexpected perceptual responses to mechanical noise, tones, and vibration.
Honoring the Life and Legacy of Tony F. W. Embleton Organizers: Bennett Brooks, Nicholas Sylvestre-Williams	PA, ASACOS	Dr. Embleton was an eminent researcher in acoustics, and a pioneer in the field of sound propagation, an advocate for the importance of standardization, and a strong supporter of the ASA, serving as Standards Director and President. This Session honors his life and legacy.
Session Cancelled ISO Standardization on Soundscapes / Standardization in Soundscape: Application and Development Organizers: Brigitte Schulte-Fortkamp, Andre Fiebig	AA, ASACOS	Introduction of the ISO Standard on Soundscapes and papers on standardization in soundscape, application and development
Jet Noise Organizers: Kent Gee, Alan Wall	PA, ASACOS, SA, SP	Fundamental and applied studies of generation, propagation, and reception of jet noise from aircraft and launch vehicles, as well as associated impacts.
NOISE continued		
Title	Cosponsor(s)	Descriptive Sentences
Sound Walks Organizers: Bennett Brooks, David Woolworth	ASACOS, AA, ED, PP	Soundwalks as seen by administrators and end users: standards, methods/techniques, interpretations, observations, perceptions, and analysis. The session will be followed by a local sound walk.
Special Noise Issues in Modern Construction Organizers: Bonnie Schnitta, Nicholas Sylvestre-Williams	AA, ASACOS, SA	The emphasis on construction efficiency often leads toward lighter weight structures, which presents challenges in maintaining the desired acoustical environment within. This session will discuss these trends in construction, how they affect building acoustics and noise, and how these challenges may be, or have been addressed.
Session Cancelled Wind Turbine Noise Organizers: David Michaud, Mark Bastasch, Norm Broner	PA, ASACOS, EA	Papers on wind turbine noise and the social impacts of noise from wind energy developments.
PHYSICAL ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Acoustofluidics Organizers: Max Denis, Kedar Chitale, Charles Thompson, Mark Meacham	BA, EA, SA	Topics related to interaction of acoustics and fluidics
Impact of Logan Hargrove on Physical Acoustics Organizers: Preston Wilson, Ralph Muehleisen, Veerle Keppens	SA, SP	Logan Hargrove's impact on physical acoustics, as an ONR program manager sponsoring research on the topics of nonlinear acoustics, resonant ultrasound spectroscopy, thermoacoustics, among others and his thirty-year-plus legacy of support for the Physical Acoustics Summer School.
Infrasound Organizers: Roger Waxler, Philip Blom	SP, ASACOS, CA, EA	On the generation, propagation and detection of atmospheric infrasound, and applications to geophysics, meteorological monitoring, and security.
Session in Honor of David T. Blackstock Organizers: Mark Hamilton, Thomas Muir	BA	Celebration of the life of David Blackstock, his contributions to physical acoustics and biomedical acoustics, especially in nonlinear acoustics, to education in acoustics, his service in the ASA and the international acoustics community, and his lasting impact as a kind and humble mentor to young and established acousticians alike.
Wind Noise Organizers: Gregory Lyons, W. C. Kirkpatrick Alberts II, Richard Raspet	EA, NS, SA, ASACOS	Recent advances pertaining to the physical principles of wind noise and methods for its reduction in acoustical measurements.
PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences

Acoustics Outreach to Student Scientists in Clinical and Physiological Research Organizers: Kelly Whiteford, Anahita Mehta	ED, SC, BA	Increase ASA attendance from students whose work relates to both clinical and physiology research, with priority given to students who have never attended ASA.
Auditory Perception of Stationary and Moving Sounds Organizers: Michaela Warnecke, Cynthia Moss	AB	Characterizing how stationary and moving sounds are localized, identified, and impacted by environmental acoustics.
Challenges and Opportunities in Technology for Remote and Virtual Testing Organizers: Anna Diedesch, Axel Ahrens	SC	This session will explore the ways virtual, augmented, and mixed-reality approaches can be used to study novel perceptual questions, including approaches to testing in real or simulated environments outside the lab, or remote testing when in-lab testing is not feasible.
Machine Learning Approaches to Understanding Auditory Processing and Perception Organizers: Sarah Verhulst, Josh McDermott	CA, SP, AB SC	How novel computational methods can provide insights to how (impaired) auditory processing, perception and stream segregation.
Open Source Audio Processing Platform – Hackathon Challenge Presentations Organizer: Odie Clavier		This session will include presentations from participants to the Hackathon introduced at the Open Source Audio Processing Platform – Live Workshop at the 2021 Acoustics In Focus conference. Presenters will report on the projects they proposed to pursue using the Tympan Open Source Audio Processing and Hearing Aid Platform (www.tympan.org).
Top-Down Influences on Auditory Processing Organizers: Bonnie Lau, Andy Dykstra	SC	In complex acoustic environments, what we hear is not always a direct reflection of physical sound sources. Behavioral context, including the goals of the listener and the demands placed on them, can have a large impact on how certain acoustic stimuli are processed by the ascending auditory pathway. The range of such effects, which can extend even down to the level of the cochlea, in both normal and abnormal auditory processing will be explored.
SIGNAL PROCESSING IN ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Signal Processing for Non-Specialists Organizers: Eric Dieckman, Zoi-Heleni Michalpopoulou	PA, UW, BA, NS, AA	Presenters will give a broad overview of common signal processing techniques used across various acoustic disciplines.
Signal Processing Methods for Source Classification and Localization in Real Acoustic Environments Organizers: Kay Gemba, Ning Xiang	PA, BA, NS, AB	Applied or theoretical research in source classification, characterization, and localization, including practical applications, acknowledging the presence of uncertainty and noise. Examples include, but not limited to through-the-sensor noise processing to increase environmental awareness, robustness studies against mismatch, model-based data processing, and insightful analysis of observations.
Time Reversal Acoustics Organizers: Brian Anderson, T. J. Ulrich	PA, SA, BA, UW, EA	Research utilizing time reversal techniques for source localization, damage detection, communication, materials characterization, and other applications.
SPEECH COMMUNICATION		
Title	Cosponsor(s)	Descriptive Sentences
Development of Sensory-Motor Connections for Speech Organizers: Patricia Kuhl, T. C. Zhao, Matthew Massapallo	PP	This special session will integrate recent research from the behavioral and neurological literatures on the development of sensorimotor integration in speech processing.
Speech and Machines Organizers: Richard Wright, Gina-Anne Levow	PP, ASACOS, SP	Recent years have seen remarkable advancements in speech technology with the application of novel approaches. In addition to technological improvements, language coverage has increased dramatically. In this session we will bring together experts from industry and academia to present their latest research and innovations.
STRUCTURAL ACOUSTICS AND VIBRATION		
Title	Cosponsor(s)	Descriptive Sentences
Acoustic Metamaterials Organizers: Christina Naify, Alexey Titovich, Bogdan Popa, Nate Gelb	EA, PA	Contributions on theoretical and computational analysis of new metamaterial structures, experimental validation, and characterization of prototype unit cells or bulk materials, and demonstrations of the uses for acoustic metamaterials.
Additive Manufacturing and Acoustics Organizers: Christina Naify, Katie Matlack, Michael Haberman	EA, MU, PA	Highlights recent advancements that integrate additive manufacturing with acoustic and elastic wave propagation, including (but not limited to) new acoustic materials, devices, and characterization techniques. This session accompanies the recent JASA SI on "Additive manufacturing and acoustics".
Experimental Methods for Material Characterization in Structural Acoustics and Vibration Organizers: Ben Beck, Stephanie Konarski, Colby Cushing, Kyle Spratt	EA, PA, SP	Measurement methods for the acoustic response of materials, such as stiffness, damping, and wave speed, through direct measurements, inversion techniques, or uncertainty estimates, for both homogeneous materials, including polymers, metals, etc., and heterogeneous media, including acoustic metamaterials, composites, granular media, bio-materials, etc.
Historical Development of Fuzzy Structures Concepts Organizers: Jerry Ginsberg, David Feit, Kuangcheng Wu	EA	A modern perspective examination of the topic of fuzzy structures in structural acoustics and vibration reaching its apex in popularity from the 1980's into the 1990's.
Novel Methods for Energy Dissipation in Structures Organizers: Benjamin Shafer, Micah Shepherd	EA, PA	Considers experimental, numerical, and analytical examination of all manner of novel energy dissipation techniques in structural acoustics and vibration.
Novel Techniques for Nondestructive Evaluation in Structural Acoustics and Vibration Organizers: Brian Anderson, Tyler J. Flynn	EA, PA, CA, SP	Progress in developing experimental and numerical techniques to improve the detection, localization, and characterization of defects or any changes to the material and/or geometric properties in various media (e.g., metal or composite structures, consolidated / unconsolidated granular media, biological systems).
STRUCTURAL ACOUSTICS AND VIBRATION continued		

Title	Cosponsor(s)	Descriptive Sentences
Perspectives from Senior Researchers in Structural Acoustics and Vibration Organizers: Jason Smoker, Benjamin Shafer	ED, NS	Experiences, lessons learned, best practices, etc. presented by senior researchers in the field of structural acoustics and vibration.
Transit-Related Vibration Organizers: James Phillips, Benjamin Shafer, James Nelson	ASACOS	Papers on the generation, propagation, assessment and control of vibration associated with transportation sources of vibration (e.g. rail, roadway, etc.).
UNDERWATER ACOUSTICS		
Title	Cosponsor(s)	Descriptive Sentences
Acoustics of Underwater Explosions Organizers: Peter Dahl, N. Ross Chapman	AO, SP, AB, SA	Explores the acoustics of underwater explosions with topical issues to include but not limited to: scaled-range theory, cavitation associated with sea surface reflection, study of seabed reflection processes and uses of explosive sources in geoacoustics.
Waveguide Invariant Theory and its Applications Organizers: Heechun Song, Altan Turgut, Julien Bonnel	SP, PA, AO, CA	All aspects related to the waveguide invariant theory and practical applications of the theory in ocean acoustics, including source localization, time reversal focusing, geo-acoustic inversion, and reverberation.