

## 189th Meeting Joint with the Acoustical Society of Japan Planned Special Sessions

Session Title	Cosponsors	Descriptive Sentence
<b>ACOUSTICAL OCEANOGRAPHY</b>		
Acoustical Remote Sensing of the Arctic From Centimeter to Basin Scales and Implications for Climate Change Organized by: Elizabeth Weidner, John Colosi	UW	A session focusing on passive and active acoustical remote sensing of physical, biological, and chemical processes in the Arctic relevant to climate change.
Observing the Ocean Acoustically Organized by: Kay Gemba, David Dall'Osto	UW	Active and passive acoustic methods for making local, long range, and basin scale measurements will be discussed.
<b>ANIMAL BIOACOUSTICS</b>		
Active Sensing by Echolocation in Bats Organized by: Shizuko Hirju, Cynthia Moss		Research presentations on the neurobiology and behavior of sound production and hearing in echolocating bats.
Baleen Whale Acoustics Organized by: Marc Lammers, Nozomi Kobayashi, Susan Parls, Adam Pack, Thomas Akamatsu	AO	Advances in understanding of how mysticete cetaceans use, receive and interact with sound.
Deep Sea Soundscapes, Current Understanding and Monitoring Methods Organized by: Satoko Kimura, Lauren Freeman,	AO	This session will cover observations of deep sea soundscapes and ambient noise. According to the proposed mining code by International Seabed Authority, deep sea sound monitoring is required both for vertical profile and long-term bottom monitoring. Introducing currently available data sets and autonomous recording methodologies will be useful. We will consider biology in deep ocean waters both as potential sound sources and as sound scatterers.
Pinniped Acoustics Organized by: Héloïse Frouin-Mouy, Daisuke Mizuguchi, Colleen Reichmuth	AO	This special session on pinniped acoustics will highlight recent advancements in understanding the vocal behavior, communication, and acoustic ecology of pinnipeds, including phocids, otariids, and walruses. Researchers will discuss technologies and methods for studying pinniped acoustic presence and behavior, sound production, hearing abilities, and the effects of environmental noise on these species.
Sound Categorization and Acoustic Repertoire Description in Animal Communication Research Organized by: Julie Oswald, Laura May-Collado, Vincent Janik, Tadamichi Morisaka		This special session will explore new developments and results in the categorization of animal sounds and the description and comparison of acoustic repertoires across species.
Special Session in Honor of Paul Nachtigall Organized by: Tomonari Akamatsu, Laura Kloepper, Aran Mooney, Aude Pacini, Marc Lammers, Brian Branstetter	PP	Dr. Paul Nachtigall has made significant contributions to the field of underwater bioacoustics over many years. His groundbreaking research on the auditory physiology of cetaceans paved the way for future generations to explore fundamental hearing studies and assess the impacts of underwater anthropogenic noise on marine mammals. Through his leadership and extensive network, he fostered numerous international collaborations and mentored young students who have since become leading scientists in marine mammal research. This special session in his honor provides an opportunity to celebrate his achievements and discuss future directions in the field.

ARCHITECTURAL ACOUSTICS		
Acoustics for Children and Pupils and Sound Design for an Inclusive Society Organized by: David Manley, Lily Wang, Ayako Matsuo, Hayato Sato, Ellen Peng	PP	Focus on developments in Standards, research, and design for young learners, those with hearing loss, neurodivergent populations, and autism in the built environment.
Advances in Absorption Measurement and Design Organized by: Daniel Robinson, Jim DeGrandis, Toshiki Hanyu, Tetsuya Sakuma		This session aims at covering the latest developments in laboratory and in situ measurements of absorptive materials and absorption design of spaces. Topics of interest include (but are not limited to): considerations for (3D) spaced object absorbers, low frequency characterization, limitations of normal incidence and diffuse methods, as well as updates from standards committees and guidelines.
Airborne and Impact Sound Insulation Organized by: Benjamin Shafer, Michael Raley, Susumu Hirakawa, Atsuo Hiramitsu	SA	A compendium of both current and historical research and testing methodology related to airborne and impact sound transmission in buildings.
Binaural and Spatial Organized by: Bennett Brooks, K. Anthony Hoover, Makoto Otani, Shuichi Sakamoto	PP	This session intends to cover the latest research and developments in binaural and spatial acoustics technology, with special interest in integration/relation to architectural acoustics. Topics of interest include, but are not limited to: fundamental studies in binaural hearing/technology, spatial auditory perception, and sound field reproduction techniques.
Recent Trends and Perspectives on the Use and Characterization of Acoustic Materials Organized by: Mélanie Nolan, Ning Xiang, Naohisa Inoue, Satoshi Sugie		This session aims at covering the latest developments in the prediction, characterization and design of acoustic surfaces and constructions. Topics of interest include (but are not limited to): characterization of acoustic materials; prediction and modeling of absorption, diffusion and transmission properties; wall impedance characterization; development of new materials with advanced acoustical performances; use of material parameters in room acoustics simulations.
BIOMEDICAL ACOUSTICS		
Data Driven Focused Ultrasound Organized by: Costas Arvanitis, Shin Yoshizawa		The session will cover topics related to the application of data science in FUS treatment planning, monitoring, prediction, and assessment. Both thermal ablation and cavitation mediated treatments (drug delivery, histotripsy, BBB opening, etc.) will be discussed. Data driven methods for characterization and control acoustic cavitation are encouraged.
High Frequency Ultrasound Organized by: Keith Wear, Yoshifumi Saijo	PA	This special session covers applications of ultrasound at frequencies above 10 MHz, including (but not limited to) transducer design, transducer characterization, acoustic microscopy, imaging, shear wave elastography, ophthalmology, dermatology, animal studies, and therapy.
In-vivo Applications of Quantitative Ultrasound Organized by: Jonathan Mamou, Tadashi Yamaguchi		In this session novel advances in quantitative ultrasound methods applied in vivo in humans or animals will be presented.
Issues with Tissues: In-situ Tissue Property Measurements for Therapeutic Ultrasound Procedures Organized by: Michael Gray, Tatiana Khokhlova, Shin Yoshizawa	PA	In situ tissue characterization measurements are finding increasing use in therapeutic ultrasound planning (aberration correction, input energy specification) and monitoring (tissue condition assessment, quantitative cavitation monitoring). This session will highlight recent advances in collection, analysis, and application of a broad range of relevant quantities including speed of sound, attenuation, coefficient of nonlinearity, elasticity, and inertial cavitation threshold.
Lung Ultrasound Organized by: Libertario Demi, Marie Tabaru		Topics of interest include simulation studies, lung mimicking phantoms' design, fabrication and testing, novel lung ultrasound data acquisition and analysis techniques, computer-aided lung ultrasound image processing, characterization and classification, quantitative lung ultrasound, lung ultrasound automation and robotics, educational protocols, methodological aspects and clinical trials, therapeutic and bio-effects in lung ultrasound, guidelines, pre-clinical studies, pediatric and neonatal lung ultrasound, interventional lung ultrasound, diaphragm ultrasound, bedside clinical applications, and clinical studies

Sound Propagation in Inhomogeneous Media Organized by: Pierre Belanger, Guillaume Haiat, Mami Matsukawa	PA	The understanding of the interaction between an acoustic wave and a complex medium is an important problem in various applications such as non destructive evaluation or biomedical ultrasound. This session will focus on experimental issues as well as on modeling and simulation works, including the development of inversion procedures.
Ultrasound Brain and Super-Resolution Imaging Organized by: Chengzhi Shi, Fabian Kiessling, Norio Tagawa	PA	This session includes the discussion of ultrasound super-resolution imaging techniques and imaging of brain.
US Blood Flow Imaging/Quantification Organized by: Michel Versluis, Chris de Korte, Yoshifumi Saijo, Hideyuki Hasegawa		This session will cover the multiscale range from microvascular perfusion to large vessel flows with ultrasound and photoacoustics as main technologies using the enablers: ultrafast imaging, contrast agents, (physics-informed) deep learning, and computational fluid dynamics.
<b>COMPUTATIONAL ACOUSTICS</b>		
Neural Network-Based Signal Enhancement and Recognition Organized by: Wu-Jung Lee, Dr. Yoshiaki Bando, Jason Summers	SC	This session explores innovative approaches to signal enhancement and recognition, with preference to neural networks and other machine learning techniques.
Theoretical and Numerical Simulation Organized by: Laura Brill, Okuzono Takeshi, Masahiro Toyoda, Cheol-Ho Jeong, Kuangcheng Wu	AA	Approaches for numerically and theoretically simulating sound for architectural acoustics.
Transient-Acoustic Computational Methods Organized by: Sue Sung, D. Keith Wilson, Shoichi Koyama	SA	Techniques for simulation of short duration (transient) or time-varying signals including impulse responses that may not be accurately modeled with steady-state solutions. Some approaches are Finite Difference Time Domain and Finite Element/Boundary Element methods at low frequencies and SEA, wavelet, and ray tracing at higher frequencies. Issues that may be discussed include causal modeling, stability in the time domain, time domain formulations of impedance boundary conditions, and dissipative processes such as viscosity and thermal conduction.
<b>EDUCATION IN ACOUSTICS</b>		
Acoustic Demonstration Session Organized by: Takayuki Arai, Kim Riegel		The ASJ/ASA are pleased to present an Acoustics Demonstration Extravaganza - a showcase of demonstrations to excite your enthusiasm about the the more exciting aspects of sound and vibration. this session will consist of several short demonstrations covering a wide variety of acoustics and vibration topics.
Acoustics Programs Around the World – Part 2: Research Programs at Universities Organized by: Likun Zhang, Adrian KC Lee, Joao Luis Ealo Cuello, Daniel Russell, Andy Chung		This session will highlight university programs (at the baccalaureate and/or graduate level) with a significant focus on research on Acoustics topics involving faculty and students in those university programs. Talks in this session should focus on the research projects and programs in Acoustics that are part of degree programs for undergraduate and/or graduate students. If possible, a specific focus on any unique or cultural aspects of Acoustics research conducted by students in those programs and grad programs. This session will align with the International Liaison Committee's efforts in 'Excellence in Acoustics Around the World.
Citizen Science and Community Partnerships – Getting the Public Involved Organized by: Kim Riegel, Kazuhiko Kawahara		One method for teaching and educating the broader public in acoustics is to get them involved in the science either through citizen science projects or building community partnerships. This session will focus on examples of projects that engage the public in authentic experiences that connect them to acoustics.

Impacts and Concerns and Uses for AI Tools in Acoustics Education Organized by: Andrea Calilhanna, Kimberly Riegel	CA	As AI tools are being used more commonly in and out of the classroom, the benefits and concerns of using these tools for education are becoming a larger issue. This session will focus on how to effectively utilize AI tools, strategies to prevent misuse of AI and highlight issues surrounding AI and education.
Student Award Competition - Classic Acoustics Papers Organized by: Bhisham Sharma, Julianna Simon	Archives & History	A presentation summary and the impact of a classic acoustic paper in student paper competition format.
<b>MUSICAL ACOUSTICS</b>		
Music Data Science Organized by: Masanobu Miura, Jonas Braasch, Divyamaan Sahoo		Session involves a data science theme concerning music, such as an analysis of massive sheet music, recorded played music.
Performance Practice Organized by: Masanobu Miura, Gary Scavone	MU	focuses on measuring and analyzing musical performance to clarify the skillfulness and mechanism of musician performance.
Physics of Wind Instruments Organized by: Nick Giordano, Katherine Saenger		This session covers various acoustical aspects of wind instruments.
Vocal Multi-Phonics Organized by: Ingo Titze	SC	Session deals with the voice production of more than one distinct note at a time.
<b>NOISE</b>		
Experiences Measuring the Effect of Head-Worn Devices on Sound Localization, Including the Use of ASA/ANSI S3.71-2019 Organized by: Brian Fowler, Eric Thompson		This session invites papers discussing practical experiences and methodologies related to measuring the impact of head-worn devices (e.g., hearing protection, or headphones) on sound localization. Topics may include experimental design, insights gained from real-world testing and analysis, and specific experience with implementing the methods described in ANSI/ASA S3.71-2019.
Field Testing Stories and Lessons Learned Organized by: Shane Lympany, Kent Gee, James Stephenson		It's story time! Presenters will recount (true) stories of acoustic field tests, from the amusing to the zany and everything else in between, and then share what they learned from the experience. Prepare to laugh, cry, and learn something about acoustic field testing.
Hearing Protector Fit Testing: Advances in Testing Methods Organized by: Hillary Gallagher, Douglas Brungart	PP, ASACOS	Fit testing of hearing protectors is growing in interest and in need to improve hearing conservation practices. This session will explore fit testing methods, limitations, verification techniques, implementation, and more.
Jet and Other Aeroacoustic Noise Organized by: Masashito Akamine, Kent Gee		The session scope includes generation, propagation, reception, and reduction of noise from jets, rockets, and other aeroacoustic sources.
Machinery Noise and Vibration Organized by: Takumi Asakura, Brandon Cudequest	CA, SA	This session invites papers on work related to noise and vibration due to machinery of any type.
Measurement and Prediction of Transportation Noise Organized by: Shinichi Sakamoto, James Phillips	CA	This session invites papers on the topic of measurement and prediction of all types of transportation noise.
Psychoacoustics, Sound Quality, and Their Applications, Including in Noise Control Engineering Organized by: S. Hales Swift, Katsuya Yamauchi	PP	Recent developments or applications of psychoacoustics, sound quality design, and noise control engineering with human perception as an emphasis.
Sonic Boom Organized by: Victor W. Sparrow, Alexandra Loubeau, Yoshikazu Makino, Yusuke Naka	PA	Papers on all aspects of sonic boom noise are welcome, including modeling, measurement, human response, community testing, data processing and analysis, standards, and regulations.

Soundscapes and Community Noise Organized by: Brigitte Schulte-Fortkamp, Takashi Morihara		Recent research in methodology, intervention, non-auditory factors, annoyance, health, activity disturbance, well-being, and culture related to soundscape and community responses.
<b>PHYSICAL ACOUSTICS</b>		
Acoustical Measurements and Sensors for Challenging Environments Organized by: Cristian Pantea, Akira Nagakubo	EA, SA	Measurements and sensor development in diverse industrial and nonindustrial settings under difficult and challenging conditions, such as high pressure, high temperature, corrosives, radiation, and more.
Acoustics in Multiphysics Measurements: Modeling and Applications Organized by: Luz Sotelo, Andrea Arguelles		This session welcomes contributions on the integration of acoustics within multiphysics frameworks, including theoretical, experimental, and computational advancements. Emphasis is made on acoustics coupled with other physical domains, such as thermal, mechanical, or electromagnetic, to enhance the fundamental understanding of a complex problem or system.
Acoustics of Fire: Modeling, Measurements, and Ecological Effects Organized by: Shane Lympny, Kara Yedinak, Nathan Murray	AB, CA	This session welcomes all submissions on the acoustics of fire, including measurements of the sounds produced by fire across the frequency spectrum, modeling the acoustic emissions of fire, understanding the sound-generating mechanisms of diffusion flames, and studies on the ecological impacts of fire acoustics.
Optical Technologies for Acoustics and Vibration I: Measurement Methods and Applications Organized by: Carl R. Hart, Kenji Ishikawa, Samuel A. Verburg	SP	Optical techniques for the sensing or excitation of acoustics, vibration, and elastodynamics. Sensing modalities include, but are not restricted to, audio extraction from natural images, interferometry, schlieren, shadowgraphy, photoacoustics, particle image velocimetry, holography, and dynamic photoelasticity. Excitation methods include, but are not restricted to, laser-induced breakdown, optical thermoelastic excitation, and radiation pressure of light.
Quantum Phononics: Physics and Engineering of Phonons in Quantum Materials and Systems Organized by: Matthew Eichenfield, Todd Andrews		Dynamics, interactions, and applications of phonons in systems with photons, superconductors, solid-state artificial atoms (color centers), topological materials, and reduced dimensionality.
Sensing Vector Acoustic Fields Organized by: William Alberts, Gregory Lyons,	SP, AO, UW	This session explores the sensors, physics, and signal processing associated with acoustically sensing airborne or underwater vector fields.
Ultrasound spectroscopy for Materials Analytics Organized by: Raphael Hermann, Christopher Kube, Hirotugu Ogi	SA	The session will focus on the use of ultrasound spectroscopy as a method for characterizing the elastic and anelastic responses of materials and their processing. Contributions are welcome on applications, modeling, software development, and the combination of resonant ultrasound, pulse echo, and related ultrasonic methods, with complementary techniques.
Waves in Spatiotemporally Varying Media Organized by: Michael R. Haberman, Dirk-Jan van Manen, Benjamin M. Goldsberry	EA, SA	Wave propagation in materials with properties that vary in time and space. Theoretical and experimental contributions investigating bulk and guided waves in such materials, as well as contributions that examine reflection, transmission, and scattering behavior from boundaries with time-varying or spatiotemporally varying impedance.
<b>PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS</b>		
Auditory and Language Development: From Physiology to Behavior Organized by: Bonnie Lau, Ellen Peng, Yasuyo Minagawa	AA, SC	Showcase physiological and behavioral work surrounding the typical and atypical developmental course of children's auditory and language skills.
Auditory Plasticity Across the Lifespan Organized by: Ross Williamson, Aravind Parthasarathy, Barbara Shinn-Cunningham, Hirokazu Takahashi		This symposium will focus on systems neuroscience studies, spanning multiple animal models, brain regions, and physiological tools, that describe auditory plasticity mechanisms across the lifespan.

<p>Relating Spectrotemporal Modulation to Clinical Speech Tests: Physiology, Modeling, and Perception</p> <p>Organized by: Michael Heinz, Josh Bernstein, Hari Bharadwaj, Shigeto Furukawa</p>	SC	<p>This session explores pre-clinical evidence from human, animal, and mathematical/computational models, regarding the relationship between spectrotemporal modulation sensitivity and speech perception performance, particularly as it relates to potential clinical tests.</p>
<b>SIGNAL PROCESSING IN ACOUSTICS</b>		
<p>Detection, Classification and Localization of Acoustic Scenes and Events</p> <p>Organized by: Nobutaka Ono, Abner Barros</p>		To be submitted
<p>Optical Technologies for Acoustics and Vibration II: Theory and Signal Processing</p> <p>Organized by: Efren Fernandez-Grande, Yasuhiro Oikawa</p>	PA, UW, SA	<p>Optical technology has been extensively used for sensing sound, vibration, and various acoustical phenomena. Using acousto-optic effects, it is possible to measure sound fields noninvasively, without direct physical contact. With the development of optical theory, new instrumentation, advanced signal processing and machine learning techniques, optical technologies are quickly growing in the field of acoustics. In this session, we will explore the application of optical theory in acoustics, new reconstruction methods and the role of advanced signal processing in the field, including machine learning.</p>
<p>Signal Processing and Machine Learning for Acoustic Arrays</p> <p>Organized by: Jingfei Liu, Sipei Zhao, Jiaxin Zhong</p>	AO, CA	<p>Showcase the latest advancements and explore the synergistic potential between rule-based signal processing and modern data-driven machine learning techniques. This session will focus on both the acoustic field manipulation and acoustic information processing using acoustic array systems, including, but not limited to, sound field reconstruction, sound zone control, active noise control, acoustic beamforming, sound source localization, audio and speech enhancement, sound field modeling, and beyond.</p>
<p>Source Separation</p> <p>Organized by: Nobutaka Ono, Yangfan Liu</p>		To be submitted
<b>SPEECH COMMUNICATION</b>		
<p>Degraded Speech Perception and its Modeling</p> <p>Organized by: Kazuo Ueda, Daniel Fogherty</p>	PP	<p>The session focuses on perceptual characteristics, robustness, and its modeling for speech signal distortions in time and frequency.</p>
<p>Self-Supervised Learning for Speech Technologies and Speech Technologies Utilizing Foundation Models (Pre-Trained Models)</p> <p>Organized by: Kei Hashimoto, Matthew Kelley</p>	CA	<p>This session will focus on self-supervised learning, which is a method of learning features using unlabeled data, and speech technologies utilizing foundation models trained on large-scale data.</p>
<p>The History of Speech Communication Research</p> <p>Organized by: Benjamin Tucker, Takayuki Arai</p>		<p>The current state of speech communication research is the result of past contributions. It is important to review these contributions and explore how they impact our understanding of speech perception and production.</p>
<p>The Mechanical and Numerical Modeling of Speech Production from the Past to the Future</p> <p>Organized by: Tsukasa Yoshinaga, Zhaoyan Zhang, Takayuki Arai</p>		<p>From applications of existing models to the latest brand-new technologies of speech production, including both mechanical models and numerical simulations.</p>
<p>Visualizing Articulation of L1 and L2</p> <p>Organized by: Ai Mizoguchi, Suzy Ahn, Harim Kwon</p>		<p>This session focuses on various approaches to visualizing speech articulation in L1 and L2, examining the relationship between articulation and language use or acquisition.</p>



**STRUCTURAL ACOUSTICS AND VIBRATION**

Acoustic Metamaterials Organized by: Christina Naify, Alexey Titovich, Bogdan Popa, Akiko Sugahara, Shinsuke Nakanishi	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.
Acoustic Polarizability and Low Frequency Scattering Organized by: AJ Lawrence, Nathan Geib	PA	This session is to discuss advances and implementations of scattering or reflection and transmission phenomena in the low-frequency regime, including acoustic polarizability, Willis coupling, and effective medium theory.
Building Vibration Organized by: Ryuta Tomita, James Phillips	AA	The measurement, assessment and prediction of environmental vibrations inside and outside buildings are important. Recent topics such as the sensation of vibration felt by people inside buildings or heard as structure borne sound, the prediction of externally transmitted vibration and the importance of measurements will be discussed.
Data-Driven Models and AI for Acoustic Metamaterials Organized by: Ryuta Tomita, James Phillips	PA	This session will discuss cutting-edge research on metamaterials with advanced functionalities attained through exploiting the entire plethora of special effects, interactions, coupling phenomena, and the application of machine learning and AI techniques. The topics of interest include but are not limited to acoustic diode, cloaking, black holes, superlens, decorated membrane, acoustic force actuation, phononic materials, and devices, as well as applications of various data-driven and AI techniques in metamaterials, including classical machine learning, advanced deep learning, physics informed machine learning, reinforcement learning, uncertainty quantification, and generative AI techniques.
Fluid Flow Induced Vibration and Noise Organized by: Kuangcheng Wu, Robert Koch		Analytical, computational, and/or experimental investigations into the generation of sound and structural vibration with fluid flow related origins. Fluid flows may be steady or unsteady in nature and the resulting response may be structural, acoustic, or a combination of both.
Model Simplification for Optimization Organized by: Andrew Wixom, Benjamin Beck	PA	This special session will investigate all forms of model simplification used to enable optimization of structural acoustic systems (e.g. low order, reduced order, surrogates, substructuring, objective function manipulations, etc.); and, just as important, how confidence in such models may be built or ensured.
<b>UNDERWATER ACOUSTICS</b>		
Marine Sediments and Effects on Low Frequency Sound Propagation Organized by: Peter Dahl, David Dall'Osto	AO	Observations, modeling and inversions of low frequency acoustic signals that interact with marine sediments including but not limited to effects of elastic properties and stratigraphy.
Underwater Acoustic Positioning and Communication Technologies Organized by: Mitsuyasu Deguchi, Tadashi Ebihara, Karim Sabra, Aijun Song	SP	This special session invites presentations that explore innovative approaches, challenges, and advancements in the field of underwater acoustic communication and positioning, and specifically topics covering the latest theories, simulation techniques, and experimental results related to signal processing, system design, and real-world applications.