**IN THIS ISSUE****Report from the Chair****Albert (Ab) Kirwan**

For 2018 I am pleased to report that NCAD was successful in fulfilling its mission to promote the development and application of noise control and acoustics principles, to encourage the interchange of ideas through technical meetings and publications, and to acknowledge exceptional engineering achievement within the field. NCAD had a busy year in 2018 by sponsoring two major events; the 47th International Congress and Exposition on Noise Control Engineering (INTERNOISE 2018) and organizing a technical track on Acoustics, Vibration, and Phononics at the annual ASME International Mechanical Engineering Congress and Exposition (IMECE). Many thanks to Dr. Brent Paul for tirelessly coordinating the Internoise and ASME organizations and to Dr. Mostafa Nouh for organizing NCAD's track at IMECE.

For the INTERNOISE 2018 conference in Chicago during August, our very own Dr. Charlie Zheng from the NCAD leadership group, and University of Kansas, provided the well-received NCAD tutorial "Time-Domain Simulation of Multi-physics Sound Propagation in Complex Media and Environment". In addition to the tutorial twenty eight papers for the Internoise conference were submitted through the NCAD web portal and were peer-reviewed by NCAD volunteers in a timely manner to support the conference.

At the IMECE 2018 conference in November, Dr. Roger Ohayon Professor, Emeritus at the Conservatoire National des Arts et Metiers (CNAM) and Chairman of the Structural Mechanics and Coupled Systems Laboratory received the 2018 Rayleigh Lecture Award. He gave a fantastic seminar on "Computational Vibroacoustics in Low and Medium Frequency Bands". His seminar provided a review of techniques for computational predicting the dynamic behavior of complex coupled systems including reduced order modeling for the specific frequency domains of interest and the attenuation of vibration and noise using smart materials such as piezoelectric and magnetorheological devices. Another highlight of the IMECE conference was NCAD sponsored track wide plenary. We were fortunate to have Dr Amr Baz, the Minta Martin Professor of Mechanical Engineering at the University of Maryland and director of the Smart Materials Structures Research Center give the track plenary. Dr Baz's talk on "Active Acoustic Metamaterials" described a class of active acoustic metamaterials (AAMM) that consisted of an array of acoustic cavities separated by piezoelectric boundaries and arranged to form acoustic waveguides. The flexible piezoelectric boundaries are controlled to generate desirable acoustic properties. Both the Rayleigh lecture and track plenary were well attended. Many thanks to Dr. Mahmoud Hussein and Mostafa Nouh of the Phononics Technical committee for organizing the plenary speaker and Sue Sung for arranging the Rayleigh lecturer.

The NCAD student paper competition was also held at IMECE 2018. The purpose of the student paper competition is to encourage student researchers in noise control and acoustics and to favorably introduce NCAD and ASME to incoming acoustic professionals. This year we had a vigorous competition with eleven quality entries. Of the papers entered, three winning papers were selected based on the quality of the written paper and all winning authors had to present at the IMECE conference. The winners were: 1st Place, Mr. Daming Chen from the University of Maryland in Baltimore USA, 2nd place, Mr. Matthew Jones from the South Dakota School of Mines and Technology USA and 3rd place, Fatima Alhammedi from the Khalifa University of Science and Technology in Abu Dhabi UAE. Winners were announced at the NCAD wine and cheese reception and received a monetary award from NCAD as well as ASME award certificates. Congratulations to these brilliant students and a big thank you to all the

student authors for submitting entries. They are very welcome to return to future ASME conferences, particularly to activities organized by NCAD. We wish that they become future leaders in their careers as well as in NCAD. I would like to personally thank Mostafa Nouh for his hard work in improving and organizing the student paper competition as well as all those who served as judges.

Our primary membership and division finances remain stable. NCAD continues to provide for recognitions and awards. For 2019, we will be participating in the IMECE conference in Salt Lake City Utah during November 11-14 by once again organizing the technical track “Acoustics, Vibration, and Phononics”. We are currently soliciting papers for some 13 topics in this track, so please get your abstracts in by Feb 25, 2019. Traditional NCAD conferences activities such as the Rayleigh lecture, NCAD Track plenary, student paper competition and wine and cheese reception will all be organized at IMECE 2019. We are excited that the 2019 Rayleigh Lecturer will be Dr. Earl Dowell from Duke University. Mostafa Nouh will be the NCAD technical track organizer with Albert (Ab) Kirwan and Haijun Liu serving track co-organizers. More information on the 2019 conference is provided later on in this newsletter. Additionally for 2019 NCAD will be investigating the addition of a new award; best journal paper, details to be announced as they are worked out.

As always, there have been some changes in the NCAD leadership group during this past year. Dr. Charlie Zheng has completed his rotation through the leadership group in June of 2018. On behalf of NCAD, I would like to thank Dr. Charlie Zheng for his many years of service to the division. Charlie has been a great leader and role model for NCAD members and we hope to have his continued support for years to come. As a result of Dr. Zheng’s departure, NCAD conducted an open search for a new leadership member by announcing the opening to the ASME NCAD list server and other venues. Prof Haijun Liu from Temple University in Philadelphia, PA was selected to join the leadership group. Prof Liu has been participating in NCAD activities for several years, particularly in reviewing papers and organizing technical sessions at the IMECE conferences. Welcome Prof Liu! We are also fortunate that Brent Paul has agreed to continue as the NCAD web page administrator and newsletter editor. You are reading his handi-work at this very moment. Thank you again Brent!

Finally, as the division chair, I would also like to thank all of the volunteers that help make NCAD successful. I wish you all a happy and prosperous 2019! If you have any questions and suggestion, or would like to be more involved in division activities, please feel free to email us at NCAD@asme.org.

Report from ASME IMECE 2018

Weidong Zhu

The 2018 ASME International Mechanical Engineering Congress and Exposition (IMECE) was held in Pittsburgh, PA from November 9 to 15. The Noise Control and Acoustic Division (NCAD) track was again Track 1 titled “Acoustics, Vibration, and Phononics”. The technical track is intended to bring together engineers and researchers from industry, universities, and government laboratories to discuss recent contributions. It is proposed to analyze, from predictive computational point of view—finite element discretization and specially appropriate various reduced order models—the dynamic behavior of complex coupled systems and their adaptive intelligent treatment of interfaces for vibration and noise reduction of interior fluid-structure interactions problems, such as liquid/gas-structure, in low and medium frequency domains.

This track included eight major topics with sixteen technical sessions, each session with four or five talks distributed throughout Monday and Tuesday of the conference week. A total of 73 accepted abstracts in Track 1 that included 27 technical papers and 46 technical presentations. The major topics and a breakdown of the number of talks in each topic are provided below:

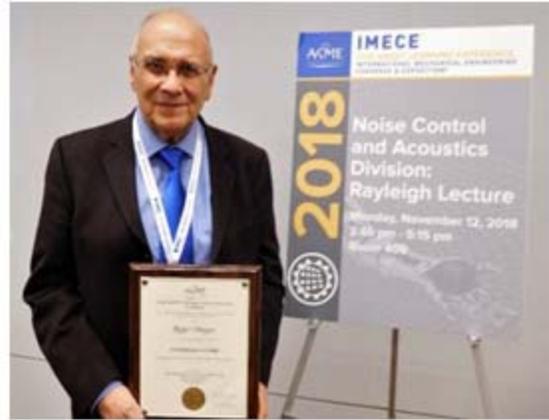
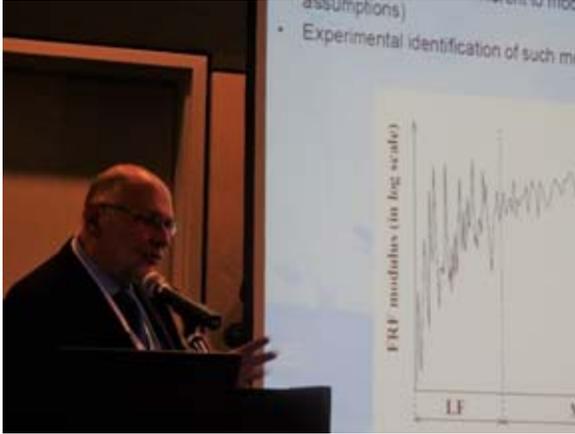
- Phononic Crystals and Metamaterials. Seven sessions with three conference papers and 29 technical presentations.

- General Noise and Vibration Control. One session with five conference papers.
- Computational Acoustics. One session with two conference papers and two technical presentations.
- Structural-Acoustic System Identification. One session with three conference papers and two technical presentations.
- Flow-Induced Acoustics and Human Perception of Noise. One session with three conference papers and two technical presentations.
- Vibration and Acoustic Measurements, Signal Processing, and Test Facilities. Three sessions with 9 conference papers and three technical presentations.
- Congress-wide Symposium on NDE & SHM: Acoustic and vibration methods in structural health monitoring and nondestructive testing. One session with one conference paper and three technical presentations.
- Congress-wide Symposium on NDE & SHM: Ultrasonic waves for material characterization and damage assessment. One session with one conference paper and four technical presentations.
- In addition to the technical sessions, the Rayleigh Lecture on Monday afternoon and plenary lecture on Tuesday morning, and various committee meetings and social events as listed below.
- Rayleigh Lecture: “Computational Vibroacoustics in Low and Medium Frequency Bands”, Roger Ohayon, Conservatoire National des Arts et Metiers, Structural Mechanics and Coupled Systems Laboratory.
- Track 1 Plenary Lecture: “Active Acoustic Metamaterials”, Amr Baz, University of Maryland, College Park.
- NCAD Executive and General Committee Meetings at the Somerset East room.
- NCAD Sponsored Wine and Cheese Reception at the Somerset East room.

Rayleigh Lecture: Computational Vibroacoustics in Low and Medium Frequency Bands

We had the privilege and honor to invite world renowned structural-acoustics researcher and professor Dr. Roger Ohayon from CNAM (Conservatoire National des Arts et Metiers) in France as NCAD Rayleigh lecture at 2018 IMECE in Pittsburgh, Pa. The title of the lecture is “Computational Vibroacoustics in low and medium frequency band”. Professor Ohayon gave in-depth overview of structural acoustic computation methods in frequency band, model reduction and many practical examples. The Rayleigh lecture was well received with about 80 participants.

In his talk, Dr. Ohayon concluded that the frequency domain of interest is quite important for the computational analysis in order to avoid a large number of degrees of freedom, which led to prohibitive computer times. The low-frequency regime is characterized by a low modal density for structural-acoustics systems in which a frequency-independent modeling of structural damping is, in most cases, satisfactory. The medium frequency range is characterized by a frequency-dependent damping in the structure as well as in fluid. Attenuation of vibrations and noise using smart materials such as piezoelectric and magnetorheological devices is considered. He concluded his talk outlining some new promising directions in those aspects.



Professor Ohayon gives the Rayleigh Lecture talk.



Ab Kirwan (L) and Sue Sung (R) present Professor Ohayon with the Rayleigh Lecture plaque.

Track 1 Plenary Lecture: Active Acoustic Metamaterials

Recent breakthroughs that a class of active acoustic metamaterials (AAMMs) is developed with desirable controlled distributions of effective dynamic properties or intensity of wave propagation. The proposed AAMM consists of an array of acoustic cavities separated by piezoelectric boundaries and arranged to form acoustic waveguides. The flexible piezoelectric boundaries are controlled to generate desirable acoustic properties or wave energy distribution along the wave guide in an attempt to develop acoustic cloaks or non-reciprocal diodes.

Dr. Baz's seminar analyzed robust control strategies to achieve desirable closed-loop control characteristics of this class of acoustic metamaterials while rejecting the effect of external wave pressure disturbances. He also discussed time response characteristics of AAMMs and presented them for various parameters of robust controllers in order to demonstrate merits of proposed controllers. Dr. Baz concluded his talk discussing how these concepts could find potential applications ranging from exterior and interior acoustic cloaks to non-reciprocal switching acoustic metamaterials.



Left to Right: Dr. Hussein, Dr. Nouh, Plenary Speaker Dr. Baz, Dr. Kirwan, Dr. Sung

NCAD Tutorial:

Dr. Charlie Zheng (2017 NCAD chair), professor at Kansas State University gave the NCAD tutorial on “Time-Domain Simulation of Multi-Physics Sound Propagation in Complex Media and Environments”. The talk provides fundamental understanding on Time-Domain simulation of aero acoustics propagation including effects of buildings, obstacles and various environments.



Left to right: 2016 NCAD Chair Dr. Kristin Cody; 2017 NCAD Chair Dr. Charlie Zheng; 2018 NCAD Chair Dr. Shung H. (Sue) Sung; Current NCAD Chair Dr. Ab Kirwan

For your information, the current and past Rayleigh Lectures, Plenary talks, and NCAD Tutorial lectures are available at:

https://community.asme.org/noise_control_acoustics_division/m/default.aspx

NCAD General and Technical Committee Meetings at Somerset East

The General and Technical Committee meetings focused on the annual rotation of executive committee member roles and preliminary planning for the 2019 ASME IMECE conference. The 2019 IMECE conference will be held in Salt Lake City, Utah (November 8-14).



2018 IMECE General Committee Meeting participants.

NCAD Sponsored Wine and Cheese Reception at Somerset East

The NCAD sponsored a wine and cheese reception at Somerset East on the 2nd floor of the Westin Hotel on Tuesday evening after the technical sessions. It was well attended and a great opportunity to meet new colleagues or reacquaint yourself with old friends. The student paper competition winners were also announced there.

Student Paper Award:

For 2018 we had enough submittals to award honors for the top three papers. At the Wine and Cheese reception Daming Chen was awarded first place (Operational Modal Analysis and Damage Identification of Structures Undergoing Random Vibration Using a Continuously Scanning Laser Doppler Vibrometer System). Second place was given to Matthew Jones (Use of Ultrasonic and Audio Signals to Monitor Temperature in Stratospheric Balloons) and third place to Fatima Alhammadi (Capturing BW Zone in an Intact Rotor System).



Student award winners. From left to right: Ab Kirwan, Mostafa Nouh, Daming Chen (1st), Matthew Jones (2nd), and Fatima Alhammadi (3rd).

Per Bruel Gold Medal

Brent Paul

Per Bruel Gold Medal Recipient, Sean Wu

The Per Bruel Gold Medal for Noise Control and Acoustics was established in 1987 in honor of Dr. Per Bruel, who pioneered the development of sophisticated noise and vibration measuring and processing equipment. The medal recognizes eminent achievement and extraordinary merit in the field of noise control and acoustics, including useful applications of the principles of noise control and acoustics to the art and science of mechanical engineering.



ASME cites Wu for “significant contributions to applications of acoustical theory to noise control and development of computational models to predict sound radiation from finite flexible structures.” A renowned educator and entrepreneur, Wu has been a faculty member at Wayne State since 1988 and is a fellow in the Acoustical Society of America and the American Society of Mechanical Engineers. Wu developed technology that led to the creation of the startup SenSound, which offers software, systems and services for noise source identification and noise-related quality control testing in a large number of products used in daily life, such as automobiles, consumer appliances and industrial machinery.

IMECE 2019

NCAD is excited to be sponsoring its annual technical track on Acoustics, Vibration, and Phononics at IMECE 2019 in Salt Lake City, UT, USA. This year's conference takes place from November 8th to the 14th with the technical tracks and exhibition running from November 10th to the 13th.

The Acoustics, Vibration, and Phononics technical track is intended to bring together engineers and researchers from industry, universities, and government laboratories to discuss recent contributions of both basic and applied research. Specific topics of interest include, but are not limited to:

- Phononic Crystals and Metamaterials
- Passive, Semi-Active, and Active Noise Control
- Computational Acoustics
- Structural-Acoustic System Identification
- Noise, Vibration and Harshness in Automotive Systems
- Vibration and Acoustic Measurements, Signal Processing, and Facilities
- Aero-Acoustics and Sound Propagation
- Flow-Induced Noise and Vibration
- Turbomachinery Noise
- Human Perception of Acoustics
- In-situ Sound Measurement
- Congress-Wide Symposia on NDE & SHM (NDE-Computational Nondestructive Evaluation, SHM-Structural Health Monitoring)

Studies may be experimental, theoretical, or numerical in nature. Industrial experiences related to these areas are of particular interest. Authors are invited to contribute manuscripts, extended abstracts, abstracts, presentations or posters. Key dates for the IMECE 2019 conference are as follows:

- February 25, 2019: Deadline for submission of abstracts
- March 18, 2019: Notification of abstract acceptance
- April 29, 2019: Deadline for submission of full-length draft paper for review
- June 24 2019: Notification of full length draft paper acceptance/rejection
- July 8, 2019: Deadline for revised paper submission
- July 22, 2019: Presentation only abstract submission
- July 29, 2019: Notification of revised paper acceptance/rejection
- August 5, 2019: Submission of final paper and presenting author registration deadline

Additional information regarding IMECE 2019 is available at the conference website:

<https://www.asme.org/events/imece>

NCAD will continue to sponsor a "Best Student Paper Award" at IMECE 2019. The top 3 winners will receive an acknowledgement certificate and a monetary award. To be eligible for participation in this competition, the primary author must be a student, the entry must be a reviewed full conference paper, and the student must present the technical paper at the conference. Advisors must send an email to Dr. Haijun Liu (liuhj@temple.edu) no later than Aug. 31st, 2019 for their students to enter the contest.

Xu Wang promoted to Professor

After his last promotion to Associate Professor in 2013, Xu Wang has been successfully promoted to a full professor in School of Engineering, RMIT University, Australia from 1 January 2019 based on his excellent performance in research, teaching and leadership assessed by the university academic board panel and external assessors.

Hussein receives ASME Fellow

Dr. Mahmoud Hussein is a newly elected ASME Fellow. Hussein was recognized for his research on wave propagation in phononic materials/structures and nonlinear wave theory, as well as his leadership in the emerging field of phononics. Congratulations!

Submissions

NCAD would like to include news and information that would be of general interest to its members. This can include awards, promotions, workshops, etc. Please send that information to Brent Paul (ncad@asme.org) so it may be included in the next newsletter.

NCAD Information**Noise Control and Acoustic Division**

Founded in 1979, and established as a Division in 1981, The Noise Control and Acoustics Division meets yearly, usually at the ASME IMECE. In recent years there has been an effort to meet at conferences outside of IMECE. Starting in 2008 when NCAD had a joint session with INCE (Institute of Noise Control Engineering) and most recently NCAD attended INTERNOISE 2018. Our division works in noise and vibration control, using computational techniques, analytical methods, and measurements to study complex aero-acoustic, hydro-acoustic, and structural-acoustic systems. The application of active and passive control systems is of consideration as well. Our symposia usually include sessions on flow-induced vibration and sound, structural acoustics, phonic structures, and active control.

As of this January 426 (previously, 436) ASME members list NCAD as their primary division, 428 (previously, 472) members list NCAD as their secondary division. ASME Community website is: https://community.asme.org/noise_control_acoustics_division/default.aspx. The website includes past newsletters, along with selected Rayleigh lecture and tutorial presentations from past conferences.

NCAD also has a Facebook page: <https://www.facebook.com/pages/NCAD-Noise-Control-and-Acoustics-Division/211722612197712>. We will update this page with news and notes throughout the year. Please "Like" the page to follow our updates.

ASME Journal of Vibration and Acoustics

NCAD maintains three members whom are Associate Editors for the *ASME Journal of Vibration and Acoustics*. Please see <http://journaltool.asme.org/Content/JournalDescriptions.cfm?journalId=18&Journal=VIB> for more information. NCAD encourages authors of well-reviewed ASME NCAD conference papers to submit their work to the journal. The editors will work with you to minimize review times by using, as much as possible, the reviewers of the conference papers. Final papers are usually published in the journal about six months after acceptance. Please contact Prof. Mahmoud Hussein (mih@colorado.edu) or other editors if you would like to pursue submitting your work to the journal.

NCAD Per Bruel Award

The *PER BRUEL GOLD MEDAL FOR NOISE CONTROL AND ACOUSTICS* was established in honor of Dr. Per Bruel, who pioneered the development of sophisticated noise and vibration measuring and processing equipment. The medal recognizes eminent achievement and extraordinary merit in the field of noise control and acoustics, including useful applications of the principles of noise control and acoustics to the art and science of mechanical engineering.

Anyone wishing to nominate deserving engineers for the Per Bruel award is welcome to do so by submitting the form at:

<https://www.asme.org/about-asme/get-involved/honors-awards/achievement-awards/per-bruel-gold-medal-for-noise-control-and>

Previous winners can also be found at that website.

NCAD Leadership

Technical Committees

NCAD has three technical committees to help shape the Track we sponsor for conferences. We rely on the technical committees for planning individual sessions at a conference as well as the peer review process for conference papers. If you would like to become involved with any of these committees, including helping to plan future meetings, please contact the Technical chair that best suits your interest.

Phononic Crystals and Metamaterials Committee

Chair: Mahmoud I. Hussein, mih@colorado.edu

The Technical Committee on Phononic Crystals and Metamaterials (TCPCM) represents the technical areas related to the growing field of phononics. Phononic crystals and acoustic/elastic/phononic metamaterials are composite/non-uniform materials within which periodic, or generally spatially dependent, elastic or acoustic or thermal properties are engineered to achieve exceptional control primarily via wave-based mechanisms.

Accomplishments in 2018:

In November 2018, the NCAD-TCPCM sponsored a topic/symposium within the NCAD-sponsored Vibration, Acoustics & Wave Propagation track at the ASME IMECE 2018 Conference which took place in Pittsburgh, Pennsylvania from November 9-15, 2018. This topic/symposium, titled Phononic Crystals and Metamaterials, was in its 14th year. It included 29 technical presentations and 3 conference papers distributed among 7 sessions. This represented a continuation of success of the topic, which is now considered one of the most established topics in the entire conference. Professor Amr Baz from the University of Maryland gave a combined Phononic Crystals and Metamaterials Plenary Lecture and NCAD Tutorial titled, "Active Acoustic Metamaterials."

Dr. Hussein also a recently elected ASME Fellow. Dr. Mahmoud I. Hussein has made fundamental contributions to the field of phononics and nonlinear wave propagation. Among his research accomplishments is the discovery of paradigm-shifting concepts, including resonant phonon motion in nanoscale thermal transport and controlled passive interactions between elastic phonons and instabilities in laminar fluid flow. He has also played a major role in the establishment of a scientific community for phononics through the creation of the biennial Phononics conference series and a dedicated scientific society—the International Phononics Society. At ASME, he has been organizing the largest conference-based symposium on phononic crystals and metamaterials for over 14 years."



NCAD's combined Phononic Crystals and Metamaterials Plenary/Tutorial at IMECE 2018



Mahmoud Hussein receiving ASME Fellow Certificate. Left to Right: Ab Kirwan, Sue Sung, Mahmoud Hussein, Mostafa Nouh.

Structural Acoustics and Noise Control Committee

Chair: Yongfeng Xu, xu2yf@uc.edu

The Technical Committee on Structural Acoustics and Noise Control represents technical areas related to mechanical wave propagations in structures and interactions between mechanical waves and surrounding media, such as air and water, to radiate noise. It also serves to increase the understanding on noise generation mechanisms and to broaden noise control applications for various industries,

including but not limited to automotive, off - highway vehicle, aircraft, mining and consumer electronics industries.

Accomplishments for 2018:

In November 2018, the Structural Acoustics and Noise Control Committee sponsored three technical topics at the IMECE2018 conference in Pittsburgh, Pennsylvania. The topics included: (1) General Noise and Vibration Control (1 session), (2) Computational Acoustics (1 session) and (3) Structural-Acoustic System Identification (1 session). Each session included four or five technical talks and presentations. There were a total of 14 technical presentations at the Structural Acoustics and Noise Control Committee sponsored sessions with 8 submitted full technical papers that were included in the conference proceedings. All papers were peer-reviewed by the Structural Acoustics and Noise Control Committee members, colleagues and peer authors.

Planned Activities for 2019:

For the ASME IMECE2019 Conference in Salt Lake City, Utah (November 8 - 14), the Structural Acoustics and Noise Control Committee will sponsor six technical topics (1) Passive, Semi-Active, and Active Noise Control, (2) Computational Acoustics, (3) Structural-Acoustic System Identification, (4) Noise, Vibration and Harshness in Automotive Systems, (5) Human Perception of Acoustics, and (6) In-situ Sound Measurement. Specifically, the topics of Passive, Semi-Active, and Active Noise Control, Human Perception of Acoustics, and In-situ Sound Measurement are new for 2019. The Structural Acoustics and Noise Control Committee invites all ASME members and colleagues to contribute papers and presentations to these topics to make IMECE2019 another successful conference.

Yongfeng Xu is currently an Assistant Professor in the Department of Mechanical and Materials Engineering at the University of Cincinnati. He received his B.S. degree in Theoretical and Applied Mechanics from Sun Yat-Sen University in China. He received his M.S. degree and Ph.D. in Mechanical Engineering from the University of Maryland, Baltimore County. His research interests include structural dynamics and vibrations, modal analysis, finite element modeling, structural health monitoring and digital signal processing.



Aero/Hydro Acoustics Committee

Chair: Bob Tomko (tomkorp@yahoo.com)

The Aero/Hydro Acoustics Committee is composed of a group of people who enjoy learning about and sharing information on sound generation and propagation in all fluid media. That encompasses a wide range of technologies. We are interested in how flow generates noise through turbulent excitation, fluid-solid interaction, fluid-acoustic interaction, machinery, and any other mechanism that produces sound. We are also interested in propagation mechanisms through all types of fluids. We sponsor symposia on these subjects, but we welcome suggestions for other topics of interest in this area. Please attend the committee meeting during IMECE 2019 to suggest conference subjects.

Accomplishments from 2018:

It was a busy 2018, as our committee participated in both INTERNOISE 2018 (Sponsored by the Institute of Noise Control Engineers) and ASME IMECE 2019. I was happy to see so many people attend the Technical Committee meetings and volunteer to help with the next IMECE conference. This turnout shows that the committee will continue to grow, which is no surprise since there are so many interesting

topics covered by the Aero/Hydro Acoustics Committee. We continue to see growth and interest in Vibration and Acoustic Measurements, Signal Processing, and Facilities. Flow induced vibration and turbomachinery also continue to be topics of interest in the conferences. We hope to see more participation in sound propagation in the future.

Planned Activities for 2019:

Next year we are back to IMECE, where we are soliciting papers and talks for a wide range of topics. The sessions that are being sponsored by our committee are: Aero-Acoustics and Sound Propagation; Flow-Induced Noise and Vibration; Turbomachinery Noise; and Vibration and Acoustic Measurements, Signal Processing, and Test Facilities. We are soliciting papers and presentations for the all aspects of aero/hydro acoustics, so if you would like to submit a paper that doesn't fit into these specific categories, simply submit it to one of these sessions or to the general noise session and we will find a place for it. We are looking forward to working with the new volunteers for our committee. And if you're willing to review papers for us, drop me an email (tomkorp@yahoo.com) and we will gladly send papers your way.

Bob Tomko is a graduate of the University of Pittsburgh with a degree in Mechanical Engineering. He is employed with the Naval Nuclear Laboratory (NNL), which is operated by Fluor Marine Propulsion (FMP). NNL includes the Bettis and Knolls Atomic Power Laboratories; Bob works at the Bettis Laboratory (near Pittsburgh). NNL has been developing advanced naval nuclear propulsion technology and providing technical support to ensure the safe and reliable operation of our nation's submarine and aircraft carrier fleets. Bob has been employed at NNL for nearly 40 years, more than 35 of those have been spent in noise and vibration. After nearly 30 years in management of noise and vibration organizations at NNL, he has moved to a position as a consultant in that area.



Group Leadership Team Members

The activities of the division are directed by the Group Leadership Team, which establishes the Division's policy and goals. The Group Leadership Team is supported by other committees as needed. The committee members for 2018 – 2019 are:

Ab Kirwan, Electric Boat Corporation, Chair

Albert (Ab) Kirwan is a Principal Engineer at Electric Boat in New London, CT. He received his B.S in Aerospace Engineering from Texas A&M University and an M.S in Engineering Mechanics from the University of South Florida. His research interests include noise and vibration control, machinery noise, structural-acoustic modeling methods and prediction of flow induced noise.

Sue Sung, SHS Consulting LLC, Vice-Chair

Dr. Sung received her BS degree in Civil Engineering from National Taiwan University. She received MS and PhD degrees in Aeronautical and Astronautical Engineering from Purdue University. After graduation from Purdue, Sue worked at General Motors Research & Development Center in Warren, Michigan until her retirement in 2008. At GM R&D Center, she conducted research to develop structural-acoustic finite element methods for vehicle noise and vibration design for which received the GM Campell and McCuen Awards for research innovation and product applications. Dr. Sung is an ASME Fellow and has authored numerous technical publications and has written several patents. She is one of the founding

members of ASME NCAD Technical Sub-Committee (Numerical Methods) and is also a member of ASME Design Technical Committee.

Weidong Zhu, University of Maryland, Secretary/Treasurer

Weidong Zhu is a Professor in the Department of Mechanical Engineering at the University of Maryland, Baltimore County, and the founder and director of its Dynamic Systems and Vibrations Laboratory and Laser Vibrometry Laboratory. He received his double major BS degree in Mechanical Engineering and Computational Science from Shanghai Jiao Tong University in 1986, and his MS and PhD degrees in Mechanical Engineering from Arizona State University and the University of California at Berkeley in 1988 and 1994, respectively. He is a recipient of the 2004 National Science Foundation CAREER Award. He has been an ASME Fellow since 2010, was an Associate Editor of the ASME Journal of Vibration and Acoustics from 2007-2014, and is a Subject Editor of the Journal of Sound and Vibration. His research spans the fields of dynamics, vibration, control, applied mechanics, structural health monitoring, and wind energy, and involves analytical development, numerical simulation, experimental validation, and industrial application. He has published over 140 archival journal papers in these areas.

Mostafa Nouh, University at Buffalo (SUNY), Program Chair

Dr. Nouh received his MS and PhD degrees in Mechanical Engineering from the University of Maryland, College Park (UMD). After graduation, he served as a research associate and an adjunct faculty at UMD for two years. He then joined the Mechanical and Aerospace Engineering department at SUNY Buffalo as an assistant professor in 2015. His research interests span the areas of periodic structures and acoustic metamaterials, as well as thermoacoustic energy generation and control.

Haijin Liu, Temple University, Member

Haijin Liu is an Assistant Professor in the Department of Mechanical Engineering at Temple University. He received his Ph.D. in Mechanical Engineering from University of Maryland, College Park in 2012, and B.S. in Mechanical Engineering and M.S. in Material Science from Tsinghua University in 2002 and 2005, respectively. Before joining Temple in 2015, he was a postdoctoral researcher in the Sensor Science Division at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD. With a focus on the fundamental research of sensor science, his research interests include bio-inspired sensing and bio-mechanics, acoustic metamaterials, theoretical and experimental mechanics, shock wave and dynamic pressure measurement, and fiber optic and MEMS sensors.



Brent Paul, Alion Science and Technology, Group Page Administrator

Brent Paul is a Principal Engineer in the Hydrodynamics and Acoustic Section at Alion Science and Technology. Dr. Paul over twenty years of experience in the analysis of hydroacoustic and hydrodynamic phenomenon. He has performed analysis work for all current U.S. Navy submarine classes and commercial surface ship designs. His areas of expertise include the prediction of flow induced noise, acoustic analysis of advanced turbomachinery, vortex shedding, and computational fluid dynamics.

