

**IN THIS ISSUE**

**Report from the Chair**

**Liang-Wu Cai**

The year 2012 has been a record-setting year for the Noise Control and Acoustics Division in many respects. In this year, for the first time ever, we held two major conferences. In August, we joined the Institute of Noise Control Engineering (INCE-USA) to hold the InterNoise12 Conference in the heart of New York City's Time Square (our previous engagement with INCE-USA was in 2008.). In November, we ran a successful track at ASME's annual International Mechanical Engineering Congress and Exposition (IMECE). At both conference, a record number of abstracts were received; and a record number of papers were presented at these conferences; and the general attendance are also record-setting. With the great successes of these conferences, we are in debt of many dedicated volunteers that made these possible. Special thanks go to Brent Paul who single-handedly managed all the NCAD papers in InterNoise12 through the use of a gigantic spreadsheet. Special thanks also go to Kristin Cody, of Bechtel Machine Propulsion Corporation, who helped me run the track and chair sessions at the IMECE.



Kristin has been active in the NCAD for many years and in July 2012, she has joined the NCAD's Executive Committee. In the meantime, Jeffery Vipperman, of the University of Pittsburg, has completed his term in the Executive Committee. Jeff's efforts will be greatly missed.

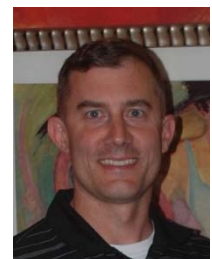
In 2013, we will join the IMECE again to sponsor a track on Vibration, Acoustics and Wave Propagation. Noah Schiller, of NASA Langley, will be leading the organization effort.

The success of the Division is the result of tireless efforts by many dedicated volunteers. As we are looking into the new year, I encourage all our members to help to keep the Division alive and well by volunteering some of your time. There are a number of ways that you can help, and it's important to note that you can help without a long-term commitment and without a large commitment of your time. We welcome you to submit papers to the conference under our sponsored tracks and to attend the sessions at the conferences. We are always in need of people who can review papers submitted to our sessions; to do so, simply send an email to any technical chair or any Executive Committee member. We hold our technical and general committee meetings during the conferences; please come and join us, all are welcome. It's a great way to interface with others who share the same interests as you.

**Report from Internoise 2012**

**Brent Paul**

The NCAD technical conference for this past year was Internoise 2012. Every three to four years the NCAD conference rotates from ASME's IMECE to another acoustic associated conference. This year we joined with INCE (Institute of Noise Control and Engineering) for Internoise 2012. The conference was held at the Marriott Marquis hotel in New York City on August 19 – 22. There were joint sessions with SAE (Society of Automotive Engineers) as well and the conference was very well attended.

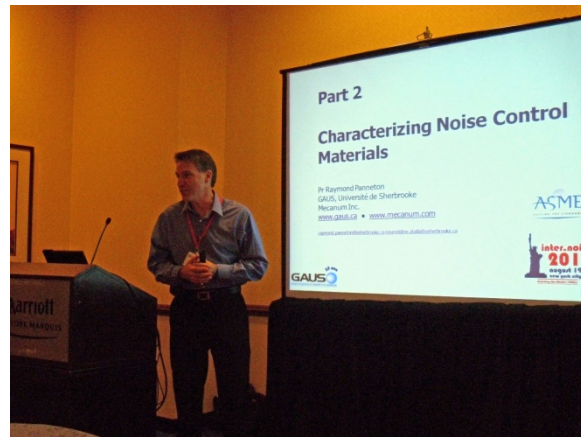


The focus of the conference was on "Quieting the World's Cities" but a large variety of topics in all areas related to acoustics and vibration were presented. There were almost 120

technical tracks with a total of 1370 papers. While NCAD joined with Internoise for the conference all papers associated with NCAD underwent a peer review process, resulting in a total of 71 papers for NCAD. Although this was outside NCAD's normal IMECE attendance there were a significant number of authors who selected NCAD affiliated papers that did not have a prior allegiance with NCAD, which can be directly attributed to the higher prestige associated with a peer reviewed paper. NCAD will continue to offer peer reviewed papers at all conferences it attends.

Beyond the breadth of papers that were presented at the conference NCAD also sponsored a workshop (coordinated by Sue Sung) and the Rayleigh Lecture. The NCAD workshop, "Noise Control Materials: Characterization and Modeling", was given by Professors Nourredine Atalla and Raymond Panneton. Professor Atalla provided insight to the modeling of noise control materials while Professor Panneton's portion of the lecture was on the characterization of noise control materials. The topic of the Rayleigh Lecture was jet noise and was given by Dr. Philip Morris from the Pennsylvania State University. More information on the Rayleigh Lecture can be found below. Both the workshop and Rayleigh Lecture can be found at the NCAD Resource webpage, <http://divisions.asme.org/ncad/Resources.cfm>.

As with all NCAD conferences, the success of the conference is directly related to the efforts put forth by the volunteers. This conference was no different with a significant effort put forth by the Executive and Technical Committees as well as all of the peer reviewers. This followed through with helping to chair the sessions at the conference. I would like to thank those volunteers and look forward to working with them in future conferences. We also are always looking for volunteers to become more active in NCAD, including peer reviews and chairing sessions. If interested, please contact any of the coordinators for next year's IMECE 2013 or myself.



*NCAD Workshop on noise control materials. On the left is Professor Atalla and the right is Professor Panneton.*



Brent Paul (L) with Rayleigh Lecturer Philip Morris (R).



NCAD Executive Committee. From left to right: Bob Tomko, Kristin Cody, Brent Paul, Liang-Wu Cai, Noah Schiller.

### Rayleigh Lecture

The Rayleigh Lecture is presented at the annual NCAD technical conference to a top researcher who has had a distinguished career in the science and applications of acoustics and noise control. During Internoise 2012 the annual NCAD Rayleigh Lecture was given by Dr. Philip Morris from the Pennsylvania State University. The lecture was entitled "Jet Noise Prediction: A Historical Perspective and Future Directions". Dr. Morris is the Boeing/A.D. Welliver Professor of Aerospace Engineering at The Pennsylvania State University. In addition he has served as an editor on several international journals for acoustics and fluid dynamics. The lecture started with a historical of Lord Rayleigh and then discussed the nature of the jet noise problem. Different prediction methods were presented, ranging from acoustic analogies to computational approaches. Then methods for reducing the noise produced by jets were given, followed with future directions for jet noise. The lecture was well attended by both members of NCAD as well the general Internoise attendees.

This lecture on jet noise is available on the NCAD resource website (<http://divisions.asme.org/NCAD/Resources.cfm>). There the reader can also find past Rayleigh Lectures as well as other tutorials that have been sponsored by NCAD.

### Per Bruel Gold Medal Recipient, Theodore M. Farabee

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.



Theodore M. Farabee, Ph.D., is recognized for significant accomplishments in fluid mechanics, aero-hydrodynamics, complex propulsor flow interactions, and structure-elastic interactions. A chief scientist in the Signatures Department of the Naval Surface Warfare Center, Carderock Division (NSWCCD) in West Bethesda, Md., Dr. Farabee is the U.S. Navy's senior research scientist/technical consultant (ST) for radiated flow noise signature control. In this position, he is responsible for the conduct of broad-based, multidisciplinary research, integrating all aspects of acoustic signatures and related mitigation technologies for application to ships and submarines.

Prior to his appointment to the ST position in 2009, Dr. Farabee served as a senior scientist in the Acoustic Signature Technology Division of the Ship Signatures Department at NSWCCD, where he provided technical oversight and scientific direction to a wide range of ship silencing programs including design and build initiatives for both the SEAWOLF and VIRGINIA class submarines. He was the U.S. program manager for a multiyear joint research program with the Royal Netherlands Navy, has served as the head of the Hydroacoustics and Propulsion Development Branch of the Acoustic Signature Technology Division, and was detailed to the Office of Naval Research on a half-time basis for two years to foster and integrate research efforts in the area of hydroacoustics.

An ASME Fellow, Dr. Farabee is currently associate editor of the *Journal of Vibrations and Acoustics*. He was chair of the Noise Control and Acoustics Division (1998-99, 2007-08), and served on the division's Executive Committee (1994-99, 2007-09) and as chair of the Flow Induced Noise and Vibration Technical Committee (1989-96). He also served on the Environmental and Transportation Technical Group Operating Board (1998-2002). He presented the Rayleigh Lecture, "Acoustics From External Flow-Structure Interactions," at the 2010 International Mechanical Engineering Congress and Exposition.

His honors include a Bronze Medal (2010) from the National Defense Industry Association's Undersea Warfare Division, ASNE's Solberg Award (2005), the NSWC's Rear Admiral David Taylor Gold Medal for Scientific Research (2000) and NSWCCD's Employee of the Year (scientist/engineer category) award (1993).

Farabee earned his bachelor's degree in ocean engineering at Florida Atlantic University in 1973. He earned his master's in engineering and his Ph.D. in mechanical engineering at The Catholic University of America, Washington, D.C., in 1976 and 1986, respectively.

Upon receiving note of his nomination Dr. Farabee noted that, "I am greatly honored to receive the Per Bruel Gold Medal, particularly since it represents recognition by members of the Noise Control and Acoustics Division of ASME."

### **Student Paper Award**

Every year, NCAD sponsors a Student Paper Competition at its annual technical conference. A three person committee, chaired by a member of the Executive Committee, reads each paper and attends the presentations. The 2012 NCAD conference of choice was Internoise 2012. The 2012 Best Student Paper winner was Adrian Harwood from the University of Manchester, who is advised by Professor Dupere. The paper is entitled "Numerical Evaluation of the Compact Green's function for the Solution of Acoustic Flows" (IN12-00785). NCAD would like to congratulate Adrian, who received a \$1000 award for his paper and presentation.

### **Report from the ASME IMECE 2012 Meeting**

**Liang-Wu Cai**

This past year's annual IMECE was held in the Hilton of America in Houston, on November 11-17, 2011. In many aspects the Congress was a record-setting one: it received over 3500 abstracts, and over 2000 final accepted papers. The extra large, as things in Texas are always extra large, George Brown Convention Center plus the Hiltons of America provides enough room to accommodate all the attendees from all over the world.



NCAD also set a couple of new records on the technical track it sponsored: Track 13, Vibration, Acoustics, and Wave Propagation. Over 200 abstracts were received in early February. To the end, over 90 papers and posters were presented at the Congress. Both numbers have

set the new records for the Division for IMECE. In addition, the overall attendance at NCAD's sessions is also likely record-setting. In the final day of the Congress, the Congress's General Conference Chair Aaron Knobloch attended one of our technical sessions and was impressed by the standing-room only attendance.

The topics covered by the NCAD sessions included: active and passive noise control; phononic crystals and acoustic metamaterials; aero-hydro acoustics and flow-induced vibration; vibration and acoustics measurement techniques and facilities; numerical methods in vibration and acoustics; structural vibrations; vibro-acoustic energy harvesting; vibro-acoustic characterization, monitoring and damage detection; and acoustic and elastic wave propagation. Dr Vincent Laude of FEMTO-ST, France, was invited to give a keynote talk on phononic crystals. As the NCAD has a major conference held jointly with INCE at InterNoise'12, the usual NCAD Tutorial and the Rayleigh Lecture were not at the IMECE. They will return to IMECE in 2013.

The success of NCAD at IMECE 2012 was only due to the countless volunteers who donated their time to organize sessions, to review papers, to ensure that schedules were met, and to run the sessions at the conference. I would like to offer my sincere thanks to these volunteers for their invaluable efforts. We welcome volunteers for future conferences and, if you are willing to help coordinate sessions or review papers, please contact any of the coordinators for the upcoming IMECE 2013.

#### Future NCAD Meetings

Noah Schiller

#### 2013, ASME IMECE, 15-21 November 2013, San Diego, CA

The Noise Control and Acoustics Division will be sponsoring a track on Vibration, Acoustics & Wave Propagation at IMECE2013 in San Diego, California. This track is intended to bring together engineers and researchers from industry, government laboratories, and universities to discuss recent contributions of both basic and applied research. Specific topics of interest include, but are not limited to:

- Acoustic and Elastic Wave Propagation
- Active Noise and Vibration Control using Smart Materials
- Fan, Pump, and Rotating Machinery Noise
- Flow Induced Noise and Vibration
- General Noise and Vibration Control
- General Structural Acoustics and Vibration
- Motor Vehicle Acoustics and Noise Control
- Numerical Methods in Vibration and Acoustics
- Phononic Crystals and Acoustic Metamaterials
- Sound Propagation in the Atmosphere
- Vibration and Acoustic Measurement Techniques and Facilities
- Vibro-Acoustic Characterization, Monitoring, and Damage Detection
- Vibro-Acoustic Optimization

Studies may be experimental, theoretical, or numerical in nature and industrial experiences related to these areas are of particular interest. Authors are invited to contribute manuscripts, extended abstracts, abstracts, or posters.

Key dates for this conference are as follows:

- February 7, 2013: Abstract submission deadline
- March 4, 2013: Notification of abstract acceptance
- April 15, 2013: Full draft paper deadline



- June 10, 2013: Presentation ONLY deadline

Additional information regarding IMECE2013 is available at the conference website: <http://www.asmeconferences.org/Congress2013/>.

The division will continue to sponsor a "Best Student Paper Award" at IMECE2013. The winner will receive an acknowledgement certificate and a monetary award. To be eligible for participation in this competition, the primary author must be a student and must present at the conference. Advisors must send an e-mail to Noah Schiller ([noah.h.schiller@nasa.gov](mailto:noah.h.schiller@nasa.gov)) for their students to be eligible.

The division will also continue its tradition of honoring a distinguished researcher in the area of noise control and acoustics with the prestigious Rayleigh Lecture. In addition, a special tutorial session will be held to provide an in-depth examination of a topic of interest to NCAD members. This year's tutorial will be given by Dr. Michael Jonson on Unsteady Dynamometry.

#### **2014, ASME IMECE, TBD**

The location and dates for IMECE 2014 have not been released yet.

#### **2015, INTER-NOISE 2015, TBD**

Once again, NCAD plans to join with INCE (Institute of Noise Control Engineering) in 2015. The location and time have not been established yet.

The division continues to look for other opportunities to participate in joint conferences (e.g. Internoise/NCAD in 2012). If you have any suggestions please contact a member of the Executive Committee.

### **News and Notes from NCAD Members**

**Brent Paul**

#### **Dan Mote Nominated to be Next National Academy of Engineering President**

One of the founding members of NCAD, Dan Mote, has been nominated by the National Academy of Engineering (NAE) for the NAE presidency. NAE members will vote in March 2013 to elect a new NAE president to a six-year term beginning July 1. If elected, Mote will succeed Charles M. Vest, whose term ends June 30, 2013.

From 1998 to 2010, Mote served as UMD president and Glenn L. Martin Institute Professor of Engineering. Under his leadership, UMD research funding increased by more than 150 percent and the university greatly expanded partnerships with corporate and federal laboratories. Mote also negotiated establishment of the University of Maryland-China Research Park, connecting Maryland and Chinese companies for joint ventures. Stressing the importance of closing the achievement gap, Mote helped UMD achieve the fourth highest graduation rate for underrepresented minorities in 2007 among public research universities. He has testified before Congress and been featured in the news media on issues ranging from education funding models to visa barriers for international students to deemed export control issues.

Internationally recognized for his research on the dynamics of gyroscopic systems, including high-speed translating and rotating systems, and the biomechanics of snow skiing, Mote has authored or co-authored more than 300 publications, holds patents in the United States, Norway, Finland, and Sweden, and has mentored 58 Ph.D. students.

Mote received his B.S., M.S., and Ph.D. in mechanical engineering from the University of California, Berkeley, where he served on the faculty for 31 years and held positions as chair of the department of mechanical engineering, president of the UC Berkeley Foundation, and vice chancellor.

He has received three honorary doctorates and the Berkeley Citation, an award from the university similar to an honorary doctorate.

### **Rishi Raj Publishes Book**

Professor Rishi S. Raj, an American Society for Engineering Education Distinguished Fellow, has published a book on *Thermo-Fluid Systems Analysis and Design*. This book was published by Gicorporation in September 2012.

### **Marehalli Prasad to Deliver Keynote Lecture**

Dr. Marehalli G. Prasad (Fellow of ASME, ASA), Professor of Mechanical Engineering and Director of Noise and Vibration Control Laboratory at Stevens Institute of Technology will be delivering a keynote lecture on " Is Acoustics and Noise Control important in the Design of Buildings " at the International Conference on Advances in Building Sciences held at Indian Institute of Technology, Madras, India during February 13 - 16, 2013. The lecture will emphasize the essential roles that acoustics and noise control play in successful design and construction of buildings for various purposes. The conference details can be found at: <http://www.btcpm2013.iitm.ac.in/>

### **Rick Marboe Begins Term as ASME Vice President in Knowledge & Communities Sector**

Dr. Rick Marboe began a three year term as ASME Vice President of Programs & Activities in the Knowledge & Communities sector. Rick previously served as chair of the Flow-Induced Vibration and Noise (1995-2000) and Turbomachinery Noise (2000-2001) technical committees as well member of the executive committee (2000-2005) and NCAD Chair (2002-2004). Rick then served as IMECE group representative (2005-2007) and Technical Group Leader (2007-2009) for the Environment and Transportation Group and served on the Technical Communities Operating Board as vice-chair (2007-2009). Rick invites anyone interested in serving on other ASME boards to contact him to learn more about available opportunities.

### **Passing of Dr. Murray Strasberg**

Murray Strasberg, 95, an acoustical physicist whose specialties included the noise created by propellers of Navy submarines and surface ships, died Aug. 28 of prostate cancer at his home in Washington.

About the time of the U.S. entry into World War II, Dr. Strasberg joined the staff at the David Taylor Model Basin of what would become the Naval Surface Warfare Center, Carderock Division. For more than two decades beginning in the 1960s, Dr. Strasberg's work and research were focused on correcting a flaw in the propellers of the recently launched USS Nautilus submarine: that its propellers were giving off an acoustical signal that could be detected miles away. He wrote a classified paper describing this effort in 1999.

He retired from the naval center in 1974 but continued to work and do research for 37 more years, until shortly before his death. He was a visiting professor in the acoustics program at Catholic University. Murray Strasberg was a New York City native and a 1938 graduate of City College of New York. In 1948, while still working for the Navy, he received a master's degree in physics at Catholic University. He received a doctorate in physics from Catholic in 1956. He served in London from 1958 to 1960 as a scientific liaison officer with the Office of Naval Research, and he was also a Fulbright professor in Denmark. Dr. Strasberg was a former president and editor of the technical journal of the Acoustical Society of America. Survivors include his wife of 68 years, the author Daoma Winston of Washington.

### **Henry Scarton Will Lead ASME's ETG**

Henry Scarton has been selected to lead the Environmental and Transportation Group (ETG), effective July 2013. The ETG is a Technical group that oversees five different divisions, including NCAD. Professor Scarton is an associate professor of Mechanical, Aerospace, and Nuclear Engineering at Rensselaer Polytechnic Institute. In addition to his work supporting NCAD Henry was made an ASME Fellow in 2009.

### **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 ([bpaul@alionscience.com](mailto:bpaul@alionscience.com)) 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. In 2008 NCAD had a joint session with INCE (Institute of Noise Control Engineering) and more recently NCAD attended Internoise 2012. 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 November 2012 528 ASME members list NCAD as their primary division, 441 members list NCAD as their secondary division. NCAD is part of ASME's Environment and Transportation Group. Our website is: <http://divisions.asme.org/NCAD>. 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 currently has three members whom are Associate Editors for ASME's Journal of Vibration and Acoustics. Please see <http://journaltool.asme.org/Content/JournalDescriptions.cfm?journalId=18&Journal=VIB> for more information. They all encourage authors of well reviewed ASME NCAD conference papers to submit their work to the journal. We 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 Liang-Wu ([cai@ksu.edu](mailto:cai@ksu.edu)) or other editors if you'd like to pursue submitting your work to the journal.

## **Technical Committees**

### Active and Passive Noise Control Committee

*Chair: Hugo Camargo, gku4@cdc.gov*

The primary goal of the committee is to increase and disseminate theoretical and practical methodologies aimed at reducing noise. All aspects of the noise control process are of interest, from noise source identification to final installation and placement procedures of treatments. The topics of focus for the committee are active, passive, and hybrid approaches to controlling and abating unwanted sound.

#### *Accomplishments from 2012:*

Although most of the focus was on Inter-Noise 2012, the division maintained presence at IMECE 2012 in Houston, Texas on November 9-15. The Active and Passive Noise Control Technical Committee sponsored two sessions: One on Active and Passive Noise Control, and one on Vibration Control with a total of eight papers from various countries around the world.

#### *Planned Activities for 2013:*

The Active and Passive Noise Control Technical Committee has proposed several sessions for IMECE 2013, including:

- Passive noise and vibration control
- Active vibration control for complex structural systems
- Applications of active noise and vibration control
- Aircraft interior noise: modeling and methodologies
- Application of noise controls in the mining industry

Dr. Camargo is an associate research fellow in the Hearing Loss Prevention Branch at the National Institute for Occupational Safety and Health in Pittsburgh where he is involved in noise control research on mining equipment. He received a BS in mechanical engineering from the Michigan Technological University, and a MS, and PhD in mechanical engineering from Virginia Tech. His research interests include noise source identification, noise control, and phased array technology.

### Structural Acoustics Committee

*Chair: Shung H. Sung, shsung@aol.com*

The Technical Committee on Structural Acoustics (TCSA) represents the technical areas related to the interaction between acoustics and structures, including structural effects such as vibration on noise generation, mechanical properties, topological surface shapes, thermal or optical performance caused by sound and noise, as well as propagation of sound in enclosed air volumes, exterior air media, porous media, or solid media.

#### *Accomplishments in 2012:*

In August 2012, the NCAD participated jointly with INCE and SAE to host a successful Internoise 2012 Conference in New York City, New York. The NCAD TCSA co-sponsored with the INCE Technical Committee five technical sessions with papers submitted to NCAD and reviewed by the TCSA members. The Technical Sessions at Internoise 2012 were: (1) Acoustic Wave Propagation in Porous Media, (2) Phononic Crystals and Acoustic Metamaterials/Nano Materials, (3) Innovative Lightweight Materials for Noise Control and Abatements, (4) Numerical Methods in Vibrations and Acoustics, and (5) General Structural Acoustics and Vibrations. An excellent Tutorial workshop on "Noise Control Materials:

Characterization and Modeling” was also presented by Prof. Nouredine Atalla and Prof. Raymond Panneton from University of Sherbrooke in Canada.

In November 2012, the NCAD-TCSA sponsored seven Technical Track Symposia on Vibration, Acoustics & Wave Propagation at the ASME IMECE 2012 Conference in Houston, Texas. The Symposia Topics were: (1) General Structural Acoustics and Vibration (5 sessions), (2) Symposium on Phononic Crystals and Acoustic Metamaterials (5 sessions), (3) Numerical Methods in Vibration and Acoustics (3 sessions), (4) Acoustic and Elastic Wave Propagation (2 sessions), (5) Nonlinear Vibration (1 session), (6) Vibroacoustics-Based Energy Harvesting (1 session), and (7) Vibro-Acoustic Characterization, Monitoring and Damage Detection (2 sessions). The Symposia attracted a significant number of papers were submitted, carefully reviewed by the TCSA members, and presented.

#### *Planned Activities for 2013:*

For the ASME IMECE2013 Conference in San Diego, California, November 15-21, NCAD-TCSA plans to sponsor five Symposia on the technical topics: (a) Acoustic and Elastic Wave Propagation, (b) General Structural Acoustics and Vibration, (c) Numerical Methods in Vibration and Acoustic, (d) Phononic Crystals and Acoustic Metamaterials, (e) Vibro-Acoustic Characterization, Monitoring and Damage Detection, and (f) Vibro-Acoustic Optimization.

The TCSA welcomes ASME members and colleagues to contribute papers to these Symposia to make 2013 another year of success for the NCAD. Besides the traditional topics sponsored by the TCSA in the past years, the newly added topics listed above will also attract multi-disciplinary technical papers to the Symposia.

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.



#### Aero/Hydro Acoustics Committee

*Chair: Charlie Zheng, [zcheng@ku.edu](mailto:zcheng@ku.edu)*

The goal of the Technical Committee on Aero/Hydro Acoustics is to increase the understanding of mechanisms related to both sound and vibrations that are produced, and propagated, in air, water, or both (e.g. multi-phase flows). This covers a wide range of sources and applications that are of interest to the academic community as well as industry. Specific interests include source mechanisms, flow over internal and external features, turbomachinery noise, flow tones and fluid instabilities, measurement and analysis techniques, fluid-structure interaction, and mitigation methods. Computational, analytical, and experimental methods are all welcome.

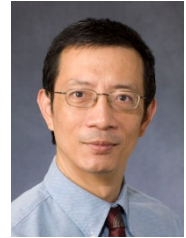
#### *Accomplishments from 2012:*

The Technical Committee on Aero/Hydro Acoustics had a good presence at the IMECE. The committee sponsored four symposia with a total of approximately fifteen papers presented.

### *Planned Activities for 2013:*

In 2013, the Aero/Hydro Acoustic technical committee is sponsoring five sessions at the IMECE, including Flow Induced Vibration, Flow Noise (pipes/surfaces), Vibration and Acoustic Measurement Techniques and Facilities; Fan, Pump, and Rotating Machinery Noise; and Sound Propagation in the Atmosphere. Session organizers include Brent Paul, Charlie Zheng, Mike Jonson, and Bob Tomko.

Dr. Zhongquan (Charlie) Zheng is currently Professor in Aerospace Engineering Department at University of Kansas, Fellow of ASME, and Associate Fellow of AIAA. He received his B.S. and M.S. degrees from Department of Engineering Mechanics at Shanghai Jiao Tong University in 1984 and 1987 respectively, and his Ph.D. degree in 1993 from Department of Mechanical Engineering and Mechanics, Old Dominion University. He has been a member of numerous TCs in ASME and AIAA, Chair of Computational Fluid Dynamics TC in ASME, and is Associate Editor of Journal of Fluids Engineering.



If you'd 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.

### **Executive Committee Members**

The activities of the division are directed by an Executive Committee, which establishes the Division's policy and goals. The Executive Committee is supported by other committees as needed. The committee members for 2012 – 2013 are:

#### **Liang-Wu Cai, Kansas State University, Chair**

Dr. Liang-Wu Cai is currently an Associate Professor in the Department of Mechanical and Nuclear Engineering at Kansas State University. He received his Sc.D. degree from MIT in 1998. His research interests include applied mechanics, mechanics of composite materials, mechanical vibration, acoustics, ultrasonic nondestructive evaluation, sonic crystals, and acoustic metamaterials.

#### **Robert Tomko, Bechtel Bettis, Inc., Vice-Chair**

Bob Tomko is a graduate of the University of Pittsburgh with a degree in Mechanical Engineering. He is employed at the Bechtel Marine Propulsion Corporation (BMPC) Bettis Laboratory in West Mifflin, PA, which is a suburb of Pittsburgh. Bettis Laboratory 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 by Bettis for over 30 years. He began his career at Bettis designing and performing tests. He then moved to the noise technology organization as an engineer and became a manager in noise and vibration control in 1989. He continued to manage noise and vibration control for 20 years, and now leads the noise, shock, and vibration organizations at the laboratory.

#### **Brent Paul, Alion Science and Technology, Secretary/Treasurer**

Brent Paul is a Principal Engineer in the Hydrodynamics and Hydroacoustic Signatures group at Alion Science and Technology. He received his B.S. and M.S. degrees in Aerospace Engineering from Penn State University in 1994 and 1996. He is currently pursuing a doctorate in Acoustics, also from Penn State. He has over fifteen years of experience in the analysis of hydroacoustic and hydrodynamic phenomenon. From 1997 to 2004 he worked in the Hydroacoustics group at Electric Boat Corporation

and has been with Alion Science and Technology since then. 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.

**Noah Schiller, NASA Langley Research Center, Program Chair**

Dr. Noah H. Schiller is a research engineer in the Structural Acoustics Branch at NASA Langley Research Center where he is involved in aircraft noise research. He graduated from Virginia Tech with a BS and MS in mechanical engineering in 2002 and 2003. He then received a fellowship from the National Institute of Aerospace, which allowed him to continue graduate study at Virginia Tech while residing with the Structural Acoustics Branch at NASA Langley. He graduated with a PhD in mechanical engineering in 2007. Dr. Schiller has authored or co-authored 17 papers and filed for 2 patents. His research interests include active noise and vibration control, vibroacoustic modeling, and more recently phononic crystals and acoustic metamaterials.

**Kristin Cody, Bechtel Bettis, Inc., Member**

Dr. Kristin Cody is a Principal Engineer for the Bechtel Marine Propulsion Corporation, which operates the Bettis and Knolls Atomic Power Laboratories for the Department of Energy. She received her B.S. in Mechanical Engineering from Purdue University, M.S. in M.E. from Rensselaer Polytechnic Institute, and Ph.D. in Acoustics from Penn State University. Her research interests include flow-induced noise and vibration and structural-acoustic interactions.

**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:

[http://www.asme.org/Governance/Honors/SocietyAwards/Per\\_Bruel\\_Gold\\_Medal\\_Noise.cfm](http://www.asme.org/Governance/Honors/SocietyAwards/Per_Bruel_Gold_Medal_Noise.cfm).