

ROBERT BRADFORD NEWMAN NEWSLETTER 2013

S T U D E N T A W A R D F U N D

11 NEWMAN MEDALS AWARDED IN 2013

In 2013, 11 students were awarded Newman Medals. The medalists, their schools, advisors and research theses or senior projects follow:

Jacob Adelgren

Faculty Advisor: David T. Bradley
Vassar College

“Effect of boundary diffusers in a reverberation chamber: Preliminary investigation”

David Arce

Faculty Advisor: Jeffrey Staats
Roger Williams University

“Acoustical Analysis of the Roger Williams Performing Arts Center”

Aireen Batungbakal

Faculty Advisor: Douglas Noble
University of Southern California

“The acoustic performance of double-skin facades: A design support tool for architects.”

Adam T. Buck

Faculty Advisors: Lily Wang and Siu-Kit Lau
University of Nebraska-Lincoln

“Measurements of the just noticeable difference for reverberation time using a transformed up-down adaptive method”

Robert Burrell

Faculty Advisor: Stephen Dance
London South Bank University
“Acoustic privacy in offices”

Robert Connick

Faculty Advisor: Ning Xiang
Rensselaer Polytechnic Institute

“Characterization of normal-incident sound transmission-loss of nanomaterial aerogels”

Kathryn S. Hom

Faculty Advisor: Robert Coffeen
University of Kansas

“The effect of two different rooms on acoustical and perceptual measures of SATB choir sound”

Mizuki Inoue

Faculty Advisor: Yasushi Shimizu
Tokyo Institute of Technology

“Scene of Tone” (Student Design Competition)

Gabriel Messinger

Faculty Advisor: Erica Ryherd
Georgia Institute of Technology

“Relating hospital acoustics to staff performance and perception”

Katrin Vikner Sjoblom

Faculty Advisor: Mendel Kleiner
Chalmers University of Technology

“Scattered” (Student Design Competition)

Shane Sugrue

Faculty Advisor: Stephen Dance
London South Bank University

“Sing and Space: A comparative study of choral singers and perception of auditorium acoustics in three venue types”

SPOTLIGHT ON FUND ADVISOR MICHELLE VIGEANT



Michelle Vigeant earned her Bachelor of Science in Mechanical Engineering in 2003 from the University of Alberta in Canada, and her Ph.D. in Architectural Engineering at the University of Nebraska-Lincoln under the advisement of Dr. Lily Wang. Michelle's interest in architectural acoustics began in high school when she was inspired by the construction of a new concert hall in her hometown designed by Artec. She first conducted research in acoustics as an undergraduate with Dr. Ken Fyfe and had an internship with the Alberta government's acoustics group supervised by Mr. Kelly Kruger.

Michelle was incredibly fortunate to have had the opportunity to study under Lily Wang, who is currently a co-chair of the Newman Fund. For her graduate studies, Michelle studied different methods of mod-

eling source directivity to improve auralizations of concert halls and was awarded a Newman Medal in 2006. Michelle has said: “Lily was and continues to be an amazing mentor, who both encouraged me and provided support to attend many Acoustical Society of America and international acoustics meetings”.

Upon graduation in 2008, Michelle joined the University of Hartford as an assistant professor in the Mechanical Engineering Department, where she was closely mentored by Dr. Bob Celmer. Bob provided her with excellent guidance in terms of teaching and advising, and in particular working on consulting-type projects with the students. During her time at Hartford, she had the opportunity to work with many talented students in the acoustics program, a number of whom received Newman Medals for their research projects.

With a desire to pursue more research, Michelle moved to The Pennsylvania State University in 2012 where she is an assistant professor with a joint appointment in the Graduate Program in Acoustics and the Architectural Engineering Department. Her newest mentor and advocate in the field of acoustics is Dr. Vic Sparrow. Vic has been tremendously supportive in terms of both her teaching and research efforts at Penn State. Michelle has recently formed the Sound Perception and Room Acoustics Laboratory (SPRAL) and has the great pleasure of advising four outstanding graduate students.

Michelle's research interests are in the areas of architectural acoustics and noise. She is currently studying the contributing factors to the perception of overall acoustic quality of a space supported by a National Science Foundation CAREER Award. In particular, she is working to define a new quantity to predict the subjective impression of listener envelopment (LEV), the sense of being immersed in the sound, which has been shown to correlate with overall preference. In addition, she is starting to investigate the emotional response to room acoustics stimuli using functional magnetic resonance imaging (fMRI). In the area of noise, she is studying the effects of early evening and late-night aircraft noise on children's learning.

Service to the profession is something that is also important to Michelle. She was one of the co-organizers, along with Bill Dohn, Tim Foulkes and Carl Rosenberg, of the Concert Hall Research Group (CHRG)

SPOTLIGHT (CONTINUED)

Summer Institute held in Santa Fe, NM in July 2010. For the Newman Fund's 25th anniversary she co-chaired a special session with Bill Cavanaugh at the spring ASA meeting in Seattle, WA in 2011. Michelle is also a member of a number of ASA committees including the technical committees on architectural acoustics and noise, Women in Acoustics, and the Committee on International Research and Education.

2013 STUDENT DESIGN COMPETITION

The 2013 Student Design Competition was judged in June at the 165th ASA Meeting in Montreal. A distinguished panel of acoustical consultants, architects and educators evaluated each entry.

Participation in the competition requires an enormous effort, and each of the entries demonstrated an extraordinarily high quality of student work and understanding of acoustic design. Each of the participants is congratulated on a job well done.

FIRST HONORS

(*\$1250 Wenger Prize*)

**Isak Naslund, Hjalmar Kaudem,
Xianjuan Wong**

Chalmers University of Technology
Göteborg, Sweden

COMMENDATIONS

(*Four \$700 Wenger Prizes*)

Andrew Schmidt, Ted Pitney, Jeff Carter

Rensselaer Polytechnic Institute
Troy, New York, USA

Mizuki Inoue, Kaoru Watanabe, Kayoko Imaida

Tokyo Institute of Technology
Tokyo, Japan

Shota Ishizuka, Arata Onoshima, Chiemi Wakabayashi

Tokyo Institute of Technology
Tokyo, Japan

Yoshihiro Miura, Koichi Toida, Tomoya Yoshimitsu

Meiji University
Tokyo, Japan

2014 STUDENT DESIGN COMPETITION AT ASA IN PROVIDENCE, RI

The 167th ASA meeting in Providence, RI (May 5-9, 2014) will host the annual Student Design Competition. The design problem involves a secondary school/high school Fine Arts building with diverse programming, and is described in greater detail in the program for the meeting, and on the Newman Fund website (newmanfund.org).

Through the continuing generosity of the Wenger Foundation, there will again be one First Honors Wenger Prize of \$1250,

and four Commendation Wenger Prizes of \$700 each, awarded to outstanding student design team posters, selected by a jury of distinguished professionals.

Please contact Norm Philipp at Pittsburg State University (nphilipp@pittstate.edu) for further information and details of the Student Design Competition program.

2013 ROBERT BRADFORD NEWMAN STUDENT AWARD FUND CONCERT

The annual 2013 Newman Award Fund concert took place in May at the home of Parker Hirtle in Lexington, Massachusetts.

The topic was *The Physics of the Blues*. Professor J. Murray Gibson of Northeastern University spoke about blues harmony styles and related them to the physics of sound. Afterwards, pianist Bill Duffy performed blues and jazz.

During the evening, guests enjoyed the architecture of Parker's prairie-style home (which he designed) and Parker's beautiful wood sculptures.

GUEST EDITORIAL ON WOMEN IN ARCHITECTURAL ACOUSTICS by Alicia Larsen



With recent publications such as Sheryl Sandberg's *Lean In*, the success of professional women has been a topic of conversation in the news and at home. We've come a long way in the last few generations. However, it's no secret that women continue to struggle in the professional environment compared to their male counterparts, despite equivalent education and preparation; a 2012 McKinsey study (summarized in last September's Harvard Business Review) suggests that women have difficulty advancing professionally: over 50% of entry-level employees are female, but only 19% of executives are female. These troubling statistics are a reminder that the workforce

continues to be unequal, particularly at upper professional levels.

Previous generations have made great strides in overcoming overt gender-bias and stereotypes, and so we look to other explanations for women's continued struggle for workplace equality. One explanation attributes the struggle to women having greater familial responsibility, and therefore, having greater difficulty achieving "work-life balance". Recent research, however, suggests that other factors, such as frustration with the workplace, play just as great a role as work-life balance, if not more.

A study quoted in last September's Harvard Business Review showed that 60% of the high-achieving women in the study worked well past the birth of their second child, suggesting that the reasons for leaving included more than just work-life balance. Moreover, 90% of the women in the study left because of workplace problems, citing frustration and long hours. Work-life balance is an important issue to address, and benefits both genders as men take on more responsibilities at home; however, work-life balance only addresses part of the problem. If we want to advance women in Architectural Acoustics, we first need to understand the current situation, and then we need to understand how to get to the next step.

How have women fared so far in the field of Architectural Acoustics? Being a full-time consultant, I didn't have time to launch an in-depth study (something's got to give in favor of *my* work-life balance); however, I can speak to the Newman Fund, an indicator of how many women are pursuing and excelling in education in Architectural Acoustics, and from my own experience as a woman in the field. I am glad to report that approximately 42% of Newman Fund Medalists since 1996 have been female, in contrast to only 20% in the ten years before 1996 (the Newman Fund started awarding medals in 1986).

Has this academic success translated to success in the workplace? I think so - or at least it's starting to. A number of women have become business owners and tenured professors; however, when compared to the number of male leaders in field, it is clear that there is still room for women to advance. The influx of prepared, educated women in our field (as reflected by the Newman Medalist statistics) poises us to achieve greater equality. Acentech's Architectural Acoustics and Mechanical Noise Control Department is currently 25% female. This seems disappointing until you consider only those age 40 and under: I am pleased to report that 50% of Acentech's younger employees in this group are female (myself included). "Gender equality is beneficial to our company because it benefits our staff and our clients" says Acentech's Architectural Acoustics and Mechanical Noise Control Director, Ben Markham. "As consultants, we are tasked with bringing our experience, training, and perspective to bear when advising our clients; that perspective is richer when it comes from a diverse consultant team. Similarly, the professional development of our staff and the decisions we make as a company benefit when the makeup of the group is heterogeneous".

While it is heartening to know that the gender scale is starting to find balance, we must recognize that we are at an important turning point. The next step is to ensure not only that women are equally prepared and employed in our field, but also that women advance. This is where gender bias (promulgated by both men and women) has the opportunity to come into play, creating the frustrations that can eventually contribute to women leaving the workforce (or the field).

So, what can we do to make sure that we are encouraging the professional development of females in Architectural Acoustics? While Sheryl Sandberg's *Lean In* offers insights on a personal level, the September *Harvard Business Review* article "Spotlight on Women in Leadership" offers solutions on an organizational level. HBR suggests three steps to moving towards gender equality, which I term: (1) build awareness, (2) foster learning-based discussion, and (3) focus on purpose.

The first step is to build awareness of "Second Generation Gender-Bias." Second generation gender-bias is a dark horse, as it is not a reflection of intent, but rather a reflection of a culture that we've all inherited. By building awareness of gender-bias, we can recognize it and take steps to counteract it. For instance, we can start to think about how assignments are allocated (are we giving the prime assignments to some staff more than others?), and to think about what behaviors are we encouraging (do we encourage leadership and initiative in some staff members but discourage it with others?). Unconscious behavior like this can not only undermine the skills of female employees, but can also increase frustration and damage relationships.

The second step is to provide learning-based environments, such as leadership programs and/or support groups where employees can discuss issues such as gender-bias in a safe environment. Safe environments such as this allow the individual and the organization to better understand the issues that they are facing and how individuals are affected by these issues.

The third step is to encourage women's professional development by focusing on the purpose of the job at hand rather than focusing on gender issues. This may sound contradictory to the first two steps, but it's not. While it is important to build awareness and foster discussions about gender issues, these issues do not provide motivation to succeed. Motivation to succeed is provided by your job's purpose – an employee's motivation to get into this field to begin with. The purpose could include anything from creating wonderful venues for listening to music, to specifying the sound isolation necessary for a resident to get a good night's sleep. Focusing on the purpose of these tasks encourages all employees' development by encouraging them to take initiative.

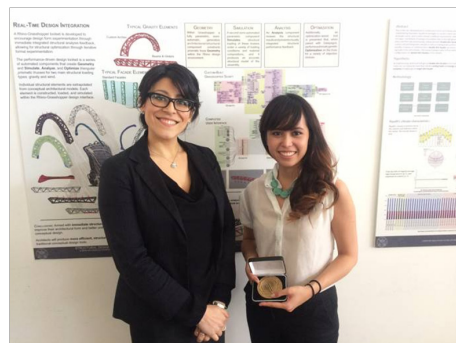
One thing to keep in mind is that modifying gender-roles is actually modifying a culture – a culture that belongs to both men and women. Such great changes require generations to take hold. We are on the right track, now let's make sure we don't lose ground and we keep moving forward.

Alicia Larsen is an acoustical consultant at Acentech and the editor of this year's Newman Fund Newsletter. She would like to extend special thanks to her colleagues for their input

on this article. Share your comments on this article by finding Acentech on Facebook or Twitter. Also, feel free to reach out to Alicia directly: alarsen@acentech.com.

FORMER USC NEWMAN MEDALIST MENTORS NEWEST USC NEWMAN MEDALIST

The Newman Medal tradition is passed from one generation to the next.



Elizabeth "Lizzie" Valmont (left in picture) received the Newman Medal in Acoustics almost a decade ago. She completed her Masters thesis on "Variable Reverberation in Performance Spaces: Passive and Active Acoustics Systems." After graduating from the University of Southern California, she worked in the acoustics profession for several years and eventually returned to USC as both an instructor in acoustics and a student in the Ph.D. program. Lizzie is now an acoustical engineer at Arup in Los Angeles.

Recently, **Aileen Batungbakal** (right in picture) completed her Masters thesis at USC and also carried out an acoustics research project. Lizzie Valmont served as the thesis advisor and mentor. Aileen investigated "The Performance of Double-Skin Facades" and she created a design support tool for architects. Aileen won the Newman Medal at USC in 2013 for this work.

Aileen's study shows the value in measuring sound in the urban environment and calculating the reduction in sound level using data for window systems. Her work increased the designers' awareness of noise and led them to reconsider the design of building envelope and the site environment. Aileen's medal was presented to her in July.

FUND ADVISOR BOB COFFEEN WINS NSCA LIFETIME ACHIEVEMENT AWARD

On February 5, 2014 The National Systems Contractors Association (NSCA) announced **Bob Coffeen** as the association's annual Per Haugen Lifetime Achievement Award winner. Coffeen was recognized on Saturday, March 1, 2014, during NSCA's 16th annual Business & Leadership Conference in Dallas.

"We're honored to pay tribute to someone who continues to move the industry forward," says NSCA Executive Director

Chuck Wilson. "Bob has committed his professional life to combining architecture and audio technology. He serves as a great example to many new leaders within our industry. I had the great fortune of learning most of what I know about audio systems from him."

Bob Coffeen currently serves as a lecturer and adjunct associate professor of architecture at the University of Kansas School of Architecture, Design, and Planning. Previously, he served as an engineering officer for the U.S. Army before going to work for Burns & McDonnell in Kansas City. From there, he founded an acoustics consulting firm in Kansas. He began teaching in 1992 after owning and operating the firm for more than 35 years.

Coffeen adds the Per Haugen Lifetime Achievement Award to his ever-growing list of industry accomplishments. He has also received NSCA's University Educator of the Year Award three times and the 2011 Acoustical Society of America's Rossing Prize in Acoustics Education.

His research has included significant topics such as the effect of fabric roofs on stadium acoustical systems as well as using small amounts of audio delay to reduce comb filtering between loudspeakers within the same room.

While serving as a mentor to several University of Kansas School of Architecture, Design, and Planning scholars, Coffeen has encouraged several students to pursue work in the acoustics and AV fields.

This article has been reproduced from the NSCA website.

A TRIBUTE TO CHRISTOPHER JAFFE

Christopher Jaffe, born in Brooklyn NY, passed away on May 23, 2013 following a 55 year career in architectural acoustics. He designed more than 250 performance halls, many of which used innovative design concepts such as tunable stage shells, "electronic architecture" acoustic enhancement systems, and non-traditional plan forms to provide a surround hall experience. Chris was also a staunch and active member of the Newman Fund Advisory Committee for many years.

Chris graduated from Rensselaer Polytechnic Institute (RPI) in 1949 with a BS degree in Chemical Engineering. Afterwards he enrolled in Columbia University and received an MA degree in Dramatic Arts in 1950. In 1980 RPI awarded him an honorary doctorate.

Chris' interests in acoustics began when he was asked by Russian-born conductor Boris Goldovsky to apply his background in science, engineering, music, and theater to design a demountable stage enclosure, or "shell," for symphony orchestras. In 1958, he founded Stagecraft Corporation, where he designed lightweight demountable stage shells for symphony orchestras throughout the country. Jaffe's designs were "tunable" and able to balance different orchestral sections and add reverberation to audience areas.

JAFFE TRIBUTE (CONTINUED)

In 1967 he founded Jaffe Acoustics, and through that firm and its successors he applied techniques learned at Stagecraft to the design of symphonic music pavilions, concert halls, and opera houses. Among the more notable halls for which he served as a consultant include: Sala Nezahualcoyotl in Mexico City, Zankel Hall at Carnegie Hall, Concert Halls at the Tokyo International Forum, Bass Performance Hall in Fort Worth, TX and renovations of the Kennedy Center Concert Hall in Washington, DC, severance Hall in Cleveland, OH, and Hollywood Bowl in Los Angeles, CA and numerous other spaces. In 2009 he joined the *Studio A* group within Acentech as a supervisory acoustic consultant.

Chris taught acoustics at the Juilliard Conservatory of Music, City University of New York, and at RPI, where he helped establish the MS program in Architectural Acoustics. His honors include the Ellis Island Medal, the American Institute of Architect's Award for Collaborative Achievement, recipient of the Wallace Clement Sabine Medal of the Acoustical Society of America in 2011, "(for innovative acoustical solutions in performance hall design and for architectural acoustics education)", and election to the RPI Hall of Fame. He was elected to Fellowship in the Acoustical Society of America, Audio Engineering Society, and Institute of Acoustics (United Kingdom).

In 2010 WW Norton published his book, *The Acoustics of Performance Halls: Spaces for Music from Carnegie Hall to the Hollywood Bowl*.

The acoustical consulting community has lost one of its pioneering leaders; those fortunate enough to work with Chris have lost a friend, true collaborator, and mentor.

This article has been reproduced from the NCAC website.

THE ADVISORY COMMITTEE IS PLEASED TO WELCOME TWO NEW MEMBERS: BUTKO AND PHILIPP

Daniel Butko – AIA, NCARB, LEED AP, ASA

Daniel is a registered architect and an Assistant Professor in The University of Oklahoma College of Architecture responsible for instructing 125+/- students annually within design studios, materials, sustainable technology courses, and architectural acoustics electives. Daniel's passion for architecture is evident in his meticulous attention to details, constant drive to improve the health, safety, and welfare of occupants, and never ceasing desire to learn more about the role of acoustics in architectural design. His professional career spans over 22 years in all phases of design, client management, consultant collaboration, and construction

administration within small and large firms including Populous, Inc. (formerly HOK S+V+E) and JE Dunn Construction in Kansas City. He attended The University of Florida for both undergraduate and graduate architecture programs and studied architectural acoustics under Professor Gary Siebein. Daniel's experience in both practice and academics has resulted in numerous awards, publications, and research grant funding focused on materials, sustainability, and acoustics. Notable awards include the 2012 EPA P3 Award (sustainability in design and construction), the 2005 Robert Bradford Newman Medal, and the 1993 Walt Disney Dreamers and Doers Award recognizing creativity and constancy. Daniel also contributes to research and project development at Russ Berger Design Group in Addison, Texas.

Norman Philipp, P.E. – ASA, AIA, AGC, ASEE, PMI

Norman is a licensed professional engineer, acoustician for Geiler & Associates, LLC (Kansas City office), and an Assistant Professor in the School of Construction in the College of Technology at Pittsburg State University (Pittsburg, KS). Norm's passion for advancing acoustics, sustainability and BIM adoption in the AEC industry is evident in his attention to details, innovative approach to design, and never ceasing desire to continue learning and growing in his roles as an educator, acoustician, engineer and designer. His professional career spans over 12 years in all phases of design, client management, consultant collaboration, and construction administration within small and large firms including Sparling (formerly Michael R. Yantis Associates, Inc.) and Geiler & Associates, LLC. in Kansas City. He attended The University of Kansas for undergraduate degrees in architecture and architectural engineering in addition to a master of arts in architecture program, all under Professor Robert Coffeen. Additionally he attended The University of Nebraska graduate program in architectural engineering under Dr. Lily Wang. While attending the University of Nebraska and University of Kansas as a graduate student, Norm served as the TCAA student representative to the ASA Student Council. Norm's experience in both practice and academics has resulted in numerous awards, certifications, publications, and appointments in architecture, engineering and construction professional societies/organizations. He is a certified instructor and the administrator for the AIA Continuing Education Unit on Architectural Acoustics, co-chair of the TCAA Student Design Competition with Dave Woolworth and Andy Miller, and coordinator for the TC Noise Young Presenter Award. In 2004, Norm received a Newman Medal for the design and construction of a dodecahedral omni-directional loudspeaker, improving testing and research capabilities for the University of Kansas acoustics program.

ROBERT BRADFORD NEWMAN STUDENT AWARD FUND

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* Past Newman Medalists

SPONSORS:

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The Fund encourages donations during the year. Tax deductible donations can be made to:

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