

Vantage 2023: A Report on the Acoustical Society Foundation Fund

James H. Miller



This is the fourth annual “Vantage” report. In it, we provide Acoustical Society of America (ASA) members with an overall view of where the Acoustical Society Foundation Fund (hereinafter referred to as the Fund) has been and where it is headed (to learn more about the Foundation Fund, see bit.ly/3QpuHzq). Past Vantage reports from 2020, 2021, and 2022 and other reports about the Foundation Fund are available at bit.ly/ATC-Foundation. Like last year’s report, this report features three graduate students and one postdoctoral fellow who have benefited from the generosity of our donors.

The Acoustical Society Foundation Fund Board

The Fund Board is made up of dedicated, hard-working ASA member volunteers including Freddie Bell-Berti, David Feit, Ron Freiheit, John Hildebrand, Ben Markham, Ed Okorn, Scott Pfeiffer, ASA Treasurer Judy R. Dubno (ex officio), and me as the Board chair. The Board makes recommendations to the ASA Executive Council about the levels of the awards, prizes, fellowships, and scholarships supported by the Fund (see Miller, 2022, **Table 1**, or bit.ly/ATC-Foundation for a list).

Financial Performance in 2022

Contributions in 2022 to the Fund from members and friends of the ASA totaled \$208,345, an increase of 273% over 2021. This increase included \$35,270 in individual donations to the new ASA Fund to Promote Inclusive Acoustics. This Fund is intended to support the inclusion and advancement of individuals from those groups that have been underrepresented in acoustics and the ASA. Specifically, the new Fund will support activities to advance underrepresented minorities that are developed by several other ASA

groups including the ASA Committee to Improve Racial Diversity and Inclusivity (CIRDI; e.g., Summer Undergraduate Research or Internship Experience in Acoustics [SURIEA]); the ASA Committee on Women in Acoustics (e.g., Young Investigator Travel Grants); and by other diversity-related programs developed by ASA administrative and technical committees.

Other significant components of the increase in donations to the Fund are \$5,665 in individual donations to the James E. West Minority Fellowship, a gift of \$40,000 to the Frank and Virginia Winker Memorial Scholarship for Graduate Study in Acoustics, and \$6,307 in individual donations to the Student Transportation Fund.

Fund Expenditures in 2022 in Support of the ASA

In 2022, the Fund was very active in supporting the many programs of the Society. The total amount of the awards, prizes, fellowships, and scholarships (see Miller, 2022, **Table 1**, for a list) supported by the Fund was \$215,789, an increase of 10% compared with 2021. You can find details of the programs at bit.ly/3we52wg. After reviewing these programs, think about any for which you or your students or postdoctoral fellows might apply or where you might like to donate.

The support for travel to ASA meetings by students through the Student Transportation Fund is one of the most important programs of the Fund and one of those with the greatest need. The Foundation Fund awarded \$23,821 to students for travel to the spring 2022 meeting in Denver, Colorado, and the fall 2022 meeting in Nashville, Tennessee, which was only about 25% of the funds requested.

Recent Recipients of ASA Scholarships and Fellowships

Four recent recipients of scholarships and fellowships supported by the ASA Foundation Fund were kind enough to send me descriptions of their work and how their awards have benefited their research.



Scott J. Schoen is a postdoctoral fellow at the Massachusetts General Hospital Institute of Health Professions, Boston. He is a recipient of the 2022 Frederick V. Hunt Postdoctoral Research Fellowship in Acoustics.

“My research is concerned with improving ultrasound imaging techniques vital for the identification of chronic liver disease. Specifically, patients with obesity are at an elevated risk for disease progression but present challenging imaging geometries because the ultrasound waves are distorted and the resulting images degraded. Methods to correct this aberration are typically computationally intensive, a problem only compounded for volumetric imaging. During my fellowship time, I am working to develop fast, spectral correction schemes and adapt them to novel array geometries (row-column arrays) to abdominal ultrasound to address some of these computational problems. Together with machine-learning approaches for property estimation, these techniques will allow a complete pipeline for improving ultrasound images for those most at risk. The Hunt Fellowship has been instrumental in furnishing the time to pursue this basic research, which I am humbled to pursue in part at Hunt’s institution.”



Jonathan M. Broyles is a graduate student at The Pennsylvania State University, State College. He is a recipient of the 2022 Frank and Virginia Winker Memorial Scholarship for Graduate Study in Acoustics.

“I am an architectural engineering doctoral candidate at the Pennsylvania State University, with Nathan Brown in the Building Design Group as my advisor. My research interests lie in the intersection of architectural acoustics, structural design, sustainability, and computational design. Specifically, my research on

the acoustic transmission performance of optimized concrete structures provides a unique insight on the design consequences of structural optimization strategies within a building context. Recently, I expanded my studies by investigating how advanced computational techniques can better inform the acoustic design of concert halls and how sustainability-driven building design affects the architectural acoustics in a building. My research emphasizes why acoustic considerations are necessary in early building design regardless of the building application. The financial support from the Winker Scholarship enabled me to expand my research breadth to applying machine-learning techniques in architectural acoustics and explore acoustic-decarbonization building design trade-offs.”



Kashta Dozier-Muhammad is a graduate student at the University of Memphis, Memphis, Tennessee. He is a recipient of the 2022 James E. West Minority Fellowship.

“My research centers on optimizing ‘ultrafast’ acquisition schemes for diagnostic pulse-echo ultrasound imaging. These ultrafast methods achieve imaging frame rates greater than 30 times faster than conventional focused-transmit methods, yet with comparable image quality. Ultrafast sequences are particularly useful in functional and super resolution imaging. I hope that my work in increasing the imaging field of view can further improve the diagnosis of vascular abnormalities. The James E. West Fellowship Award has allowed me to accelerate my education and training toward a doctoral degree in biomedical engineering while continuing to expand my research and explore topics of slow flow and vascular ultrasound imaging in greater depth.”



Hilary Miller is a doctoral candidate at Boston University, Boston, Massachusetts. She is a recipient of the 2022 Raymond H. Stetson Scholarship in Phonetics and Speech Science.

“I am a doctoral candidate in the Department of Speech, Language, and Hearing Sciences at Boston University. My research interests are broadly focused on applying neurocomputational

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models and neuroimaging methods to better understand the neural bases of motor speech disorders. My dissertation research investigates how patients with primary progressive aphasia and progressive apraxia of speech learn new speech sequences. With this information, we can determine the brain regions that support successful learning and if the patients' patterns of brain atrophy are predictive of their learning success. A further arm of this research analyzes the extent to which we can use clinical measures of speech production to predict learning outcomes in this population. The support from the Stetson Scholarship has been critical in enhancing my work on this project and preparing me for an independent research career."

What Would You Like the Foundation Fund to Do?

The Fund does a lot of good in supporting ASA's mission. But we can do more. If you have an idea about where the Fund can make a difference, let's start a conversation. For example,

- Do you feel strongly about acoustics education?
- Do you want to make a difference for early-career acousticians?
- Do you want to support ASA's commitment to increase racial diversity, equity, and inclusivity in acoustics?
- Do you think emerging research in one of our technical areas needs a kick start?
- Are you excited about standards?
- Do you want to recognize a pioneer in acoustics or an outstanding teacher/mentor by creating a fund and naming it in their honor?

Ways to Give

Donors have several options for giving to the Fund. These include the following types of gifts:

- Cash
- Publicly traded securities
- Life insurance
- Bequests
- Pooled income funds
- Charitable trusts
- Charitable annuities

For more information on these giving options, see bit.ly/3wcViCG.

As you can see, the Acoustical Society Foundation Fund is doing important work for the ASA with the generous support of our donors. Please reach out to me at miller@uri.edu if you would like to learn more about how to make a difference in acoustics. I would enjoy hearing your ideas and discussing how they might be implemented.

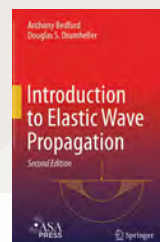
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Book Announcement ASA Press

ASA Press is a meritorious imprint of the Acoustical Society of America in collaboration with Springer International Publishing. All new books that are published with the ASA Press imprint will be announced in *Acoustics Today*. Individuals who have ideas for books should feel free to contact the ASA, asa@acousticalsociety.org, to discuss their ideas.



Introduction to Elastic Wave Propagation

Authors: Anthony Bedford and Douglas S. Drumheller

- Discusses the traditional methods used to analyze steady-state and transient waves in linear elastic materials
- Introduces advanced topics such as the four-pole solution for layered media and waves in nonlinear elastic materials
- Includes many exercises with solutions

Find out more about *Introduction to Elastic Wave Propagation* at bit.ly/ASA-IEWP-book