

From the Editor

Arthur N. Popper



The first article in this issue of *Acoustics Today* (AT) is by Jamilla Balint, Marco Berzborn, Mélanie Nolan, and Michael Vorländer. The authors write about sound absorption in different types of rooms and discuss the issues that make measuring sound absorption under different conditions a very substantial challenge. They also discuss the quite interesting history of measurements of sound absorption, starting when investigators had a person sitting in a room listening to the sound.

In our second article, Ewa Jacewicz, Joshua M. Alexander, and Robert A. Fox consider the range of frequencies needed for human speech. Although we tend to think of human speech as requiring sounds up to perhaps 5 kHz, the authors focus on higher frequencies and demonstrate that they add great value to speech comprehension.

Brain surgery is often difficult and dangerous for the patient. However, a wealth of new techniques are being developed, some of which are noninvasive. In our third article, Meaghan A. O'Reilly discusses one such noninvasive approach, the use of focused ultrasound to do incisionless treatment for certain types of surgery. Meaghan discusses the history of this approach as well as its strengths and weaknesses.

Our fourth article, by Raghu Raghavan and George Hrabovsky, provides another approach to the use of sound for medical treatment. In their article, they discuss using acoustic streaming to move materials in the human circulatory system. In particular, Raghu and George consider a relatively new approach that uses ultrasound to increase the concentration of drugs to a region of the body that might otherwise be hard to reach.

In our fifth article, Aaron N. Rice, Marissa L. Garcia, Laurel B. Symes, and Holger Klinck discuss a relatively new approach to conservation biology, the use of passive sound recordings to assess the environment and the animals. This approach, called Conservation Bioacoustics,

allows long-distance and long-term monitoring of anything from insects to elephants. As a result, Conservation Bioacoustics provides new insights into a myriad of biological and conservation issues. The authors also discuss the history of the field and how it has evolved with the changing technology.

The sixth article by Samuel A. Verburg, Kenji Ishikawa, Efrén Fernández-Grande, and Yasuhiro Oikawa focuses on acousto-optics, which is the interactions between sound and light. In the article, the authors discuss the use of the measurement of acoustic phenomena using light. In essence, light is used to visualize acoustic phenomena that would otherwise be difficult to observe.

Our first “Sound Perspectives” essay is by Jennifer Cooper, who writes as part of our series “Conversation with a Colleague.” Jennifer discusses her work that focuses on research, design, testing, and employment optimization of sonar systems used by the US Navy. Past essays are at bit.ly/ATC-CWC.

One thing we like to do at AT is to share information about ASA publications. Thus, I invited Megan S. Ballard, Kent L. Gee, and Helen Wall Murray to provide an update on the ASA journal *Proceedings of Meetings on Acoustics* (POMA). The goal is to bring members up-to-date on the journal and its many valuable uses for members and the Society. The authors also share the winners of the student paper competitions that the journal has organized.


Steven L. Garrett is well-known to many Acoustical Society of America (ASA) members. He is now retired from Penn State and living in California. One thing Steve wanted to do upon retirement was to continue to employ his physics expertise, but in new and fulfilling ways. To do this, Steve now volunteers as a substitute science teacher in high schools near his home, and he describes his experiences in his essay. Besides telling an interesting story, a goal for the essay is to serve as an inspiration and guide for other ASA members who are starting to think about postretirement activities.

Indeed, if other ASA members have retired and found new and fulfilling ways to use their scholarly expertise, please drop me a note (apopper@umd.edu). If what you have done might be applicable to other ASA retirees, perhaps we can share this in *AT*.

As most ASA members know, the Society is very engaged in outreach, a program that is led by L. Keeta Jones. One exciting outreach activity is the very interesting ASA website ExploreSound.org. As Keeta describes it, ExploreSound.org provides many tools to help teachers in K-12 (and college) teach acoustics. I encourage you to read Keeta's essay and then explore the site. It is a wealth of ideas and activities that might give you some creative ideas for your teaching or perhaps to share with other teachers.

In our final essay, Abbey L. Thomas and Peter F. Assmann discuss the International Science and Engineering Fair winners whose work focused on some aspect of acoustics. The essay features short descriptions of the work done by these very talented high-school students.

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