FROM THE EDITOR

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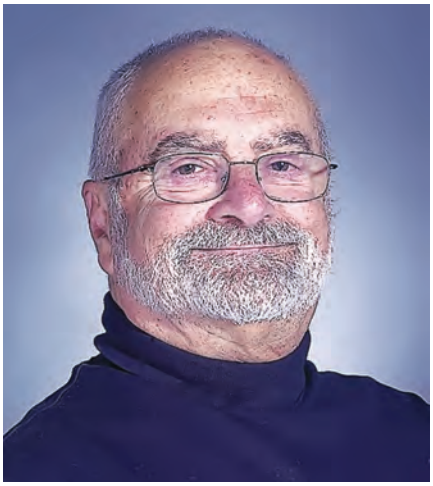

We are very pleased to present this issue of *Acoustics Today* on remote sensing of animals using acoustics. We are deeply grateful to our Guest Editor, Jen Miksis-Olds and her authors. As she said to me when she submitted the excellent papers for editing, we both learned a lot from reading them. You will as well.

See you in Kansas City.

Dick Stern

FROM THE GUEST EDITOR

Jen Miksis-Olds

It is an exciting time to be involved in the field of animal bioacoustics. It wasn't that long ago that early passive acoustic recordings were made with a single sensor deployed on land, from boats, or through holes drilled in the ice. These recording systems had to be constantly monitored due to the limited storage medium and capacity of tape recorders, lack of ruggedized equipment to withstand harsh climates and weather, and the need to make hand-written notes of the animals observed in the area during the recordings. This meant that a person loaded up with a bulky recording system had to sit vigilantly for hours watching and listening from a seat in a boat, on a pier, under a tree, in a cave, or next to an ice hole, four hours on end. It was the pioneering work of dedicated researchers, often under extreme working conditions, that initially documented species-specific vocalizations and laid the foundation for autonomous passive acoustic monitoring during times when traditional acoustic surveys were not feasible.

The original use of sonar was a military application used to navigate and locate targets larger than an automobile. The target would appear as a "blip" on a screen to announce its presence, and the sonar technician had to use all ancillary information available to determine whether the target was friend or foe. Who would have imagined that that every recreational boater would outfit their vessel with an echosounder to aid in navigation and fish-finding, and that scientists would be using combinations of transducers to sense and classify microscopic organisms or provide acoustic target images with the resolution of a video camera?

Advances in technology have changed the manner in which bioacoustic research is now conducted. Passive acoustic sensor packages can be smaller than your hand and

deployed on platforms ranging from autonomous underwater vehicles to the animals themselves. Storage capacity and progress in battery technology now support the remote recording of acoustic data with wide bandwidths over the duration of a year and in multiple element arrays. When I entered the field almost 15 years ago the Holy Grail of passive acoustics was obtaining reliable density estimates from animal recordings, and the Holy Grail of active acoustics was the reliable automated classification of targets down to the species level. Based on the amazing research that has focused on the remote sensing of animals over the past few years, the Holy Grail may be in sight.