

Ultrasound is currently the most rapidly growing imaging method, both in clinical applications and technology. Growing use, coupled with the need for accreditation of ultrasound practices, has created a need for active participation of medical physicists in support of clinical ultrasound departments. ACR and AIUM ultrasound accreditation programs have defined an important role for the Medical Physicist in quality assurance and the monitoring the performance of ultrasound imaging equipment. In addition to this task, the Medical Physicist must be prepared to interact closely with clinicians and sonographers in the application of new technology and in the interpretation and understanding of imaging artifacts.

In order to meet these needs of today's sophisticated ultrasound applications and technology, Medical Physicists require a solid understanding of basic acoustics, Doppler principles and applications, and ultrasound bioeffects, as well as newly introduced ultrasound methods including harmonic imaging, and the use of ultrasound contrast agents.

In this presentation, common problems confronting the clinician and sonographer will be presented and the role of the Medical Physicist in addressing these problems will be emphasized. Basic concepts and approaches useful for communicating these concepts to clinicians will be emphasized.