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ABSTRACT

As an imaging modality, ultrasound imaging is poised for growth due to its cost, availability, portability, and lack of ionizing radiation. Ultrasound-sensitive gas microbubbles (termed ultrasound contrast agents) can also be used to greatly improve ultrasound’s ability to detect and quantify blood flow in a variety of clinical scenarios. These agents are unique in that their vibration and destruction can be controlled by the ultrasound wave, thereby generating localized bioeffects and a myriad of opportunities for targeted drug delivery. This talk will focus on recent advances from our group in both diagnostic and therapeutic contrast-enhanced ultrasound. Highlighted work will range from early preclinical work to larger, multi-center trials and cover a wide variety of topics including interventional oncology procedure monitoring, noninvasive pressure estimation, radiotherapy sensitization, localized drug delivery, and lymphatic imaging.