

## Center for Industrial and Medical Ultrasound – CIMU

Tom Matula: CIMU, the Center for Industrial and Medical Ultrasound, is a group of scientists, engineers, and technicians dedicated to developing technologies that will eventually be used in a clinic for patient use.

Tatiana Khokhlova: This is a basic ultrasound transducer. It produces very high-speed vibrations. If we put plastic in front of it, it's going to melt the plastic.

Mike Bailey: We actually focus the ultrasound down and cook cancers, break kidney stones.

Bryan Cunitz: Ultrasound is completely non-invasive, which means you can do all the localization without ever having to open up the body. You can move stones around without ever having to go inside, which will reduce the risk of infection or any other damage to any other organs.

Tom M.: When a soldier gets wounded, the idea is to stop the bleeding as quickly as possible and medevac him out. Ultrasound generates heat inside the body. We focus the sound waves at a specific site. And it generates heat and it basically cauterizes the wound...

Barbina Dunmire: ...not only saving their life, but save their limbs too if they can control the bleeding.

Tatiana K.: Brain tumor is one, pancreatic cancer, liver tumors are often inoperable. We can focus ultrasound into the human body and cook, so to speak, the tissue at the focus non-invasively. You don't have to cut open the tissue, which is often the reason why the cancer is inoperable.

Tom M.: It's got such promise. The whole idea of a patient going into a hospital and being operated on is fraught with danger, you know. And infections are a huge problem with patients and if we can reduce the amount of infections, we'll dramatically increase survival rates and acoustic waves are ways to do that.

APL, and CIMU in particular, is at the center. We're probably one of the top groups in the world for doing high-intensity focused ultrasound. We're dedicated to generating technologies to help patients in the future.

