

BIOENGINEERING

PRESENTS

Image-guided focal laser ablation of prostate cancer

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2101 ENGINEERING V



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ABSTRACT:

Men with localized prostate cancer face a dilemma when presented with treatment options: (1) Either undergo yearly biopsies, which carry a risk of progression and the anxiety of living with cancer, or (2) elect radical surgery or radiation, both associated with a high risk of poor quality of life outcomes (incontinence and impotence). Targeted therapy, via focal laser ablation (FLA) has the potential to offer a definitive treatment while avoiding the morbidity associated with radical intervention. FLA is performed by heating a prostate tumor to above 60°C with an interstitially placed laser fiber, producing a region of coagulation necrosis. In this talk, I will describe our group's developments that enable focal treatment possible, including improved cancer detection, image guidance, and real-time feedback. I will also describe our efforts in translating FLA to a procedure that can be performed in a physician's office.

BIOGRAPHY:

Dr. Shyam Natarajan is an Adjunct Assistant Professor in the Department of Urology at UCLA and is a member of the Center for Advanced Surgical and Interventional Technology (CASIT). He received his B.S. in Computer Engineering from UC Santa Barbara in 2007, and Ph.D. in Biomedical Engineering from UCLA in 2012. Dr. Natarajan's primary research interests are in image-guided interventions and data-driven assessment of urological diseases. His work on multi-modal image fusion has helped establish the standard of care for prostate cancer diagnosis at UCLA, used on over 2000 patients.