



Geoffrey Sonn

Assistant Professor of Urology and, by courtesy, of Radiology at the Stanford University Medical Center

 Curriculum Vitae available Online

CLINICAL OFFICES

- **Uro-Oncology Clinic**

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Bio

BIO

Geoffrey Sonn, MD is a board certified urologist who specializes in treating patients with prostate, kidney, and testicular cancer. He has a particular interest in cancer imaging, MRI-Ultrasound fusion targeted prostate biopsy, prostate cancer focal therapy, and robotic surgery for prostate and kidney cancer. He is the principal investigator of the first clinical trial in Northern California to use MRI-guided focused ultrasound to treat prostate cancer. The goal of this trial is to treat prostate cancer with fewer side effects than surgery or radiation.

Dr. Sonn was born in Washington State and lived there until leaving for college at Georgetown in Washington DC. After graduating magna cum laude at Georgetown he returned to the West Coast for medical school at UCLA. Following medical school, Dr. Sonn completed a 6-year urology residency at Stanford where he developed particular interests in the clinical care of patients with urologic cancers and research in cancer imaging. He then spent two years at UCLA as a urologic oncology fellow where he devoted all his time to gaining additional skills and experience in clinical care and research in urologic malignancies. Since finishing his fellowship, Dr. Sonn has been at Stanford as an assistant professor in urology where he applies the skills he gained in residency and fellowship to provide high-quality clinical care to patients with urologic cancers. Dr. Sonn also continues to work to develop new methods to better diagnose and treat urologic cancers through research.

CLINICAL FOCUS

- Cancer > Urologic Oncology
- Prostate Cancer
- Kidney Cancer
- Ablation Techniques
- Biopsy
- Testicular Cancer
- Urology
- Robotics

ACADEMIC APPOINTMENTS

- Assistant Professor - Med Center Line, Urology
- Assistant Professor - Med Center Line (By courtesy), Radiology - Rad/Molecular Imaging Program at Stanford
- Member, Bio-X
- Member, Stanford Cancer Institute

HONORS AND AWARDS

- First Place in Prostate Cancer Detection & Screening Poster Session, American Urological Association (2013)
- Research Award for Fluorescent Imaged Guided Surgery in Prostate Cancer, Longmire Surgical Society at UCLA (2013)
- First Place in Localized Kidney Cancer Poster Session, American Urological Association (2010)
- Third Place Resident Essay Contest in Clinical Research, American Urological Association (2009)
- CaPSURE Scholars Program, UCSF Department of Urology (2008)
- First Place Resident essay contest, Western Section AUA (2008)
- Richard K. Lo Resident Publication Award, Stanford Urology (2010)
- Mahoney Medal (Outstanding pre med with a liberal arts major), Georgetown University (2001)

PROFESSIONAL EDUCATION

- Fellowship: UCLA David Geffen School Of Medicine Registrar (2013) CA
- Medical Education: UCLA General Surgery Residency (2005) CA
- Board Certification: Urology, American Board of Urology (2015)
- Residency: Stanford University School of Medicine (2007) CA
- Residency: Stanford Hospital and Clinics (2011) CA

LINKS

- My Lab Website: <https://med.stanford.edu/ucil.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My primary interest is in improving prostate cancer diagnosis and treatment through MRI and image-targeted prostate biopsy. In collaboration with radiologists at Stanford, we are working to define the optimal role of MRI in prostate cancer. We hope to improve cancer imaging to the point that some men with elevated PSA may safely avoid prostate biopsy. For those who need biopsy, we are evaluating novel MRI-US fusion targeted biopsy, a technique that greatly improves upon the conventional biopsy method. More accurate prostate biopsy enables better decision making about treatment options such as deciding between active surveillance and surgery.

Moving beyond biopsy, I am interested in the use of imaging to select patients who are candidates for prostate cancer focal therapy. Focal therapy involves ablation of prostate cancers under image guidance without destruction or removal of the normal areas of the prostate and with less damage to important surrounding structures that are important for erectile function and urinary continence.

I am also interested in developing novel molecular imaging techniques such as near infrared fluorescence imaging to improve surgery for prostate and kidney cancer.

CLINICAL TRIALS

- A Pilot Study of 68Ga PSMA 11 PET/MRI and 68Ga RM2 PET/MRI for Biopsy Guidance in Patients With Suspected Prostate Cancer, Recruiting

- Focal MR-Guided Focused Ultrasound Treatment of Localized Low-Intermediate Risk Prostate Cancer: Feasibility Study, Recruiting
- 68Ga-PSMA PET/CT or PET/MRI in Evaluating Patients With Recurrent Prostate Cancer, Not Recruiting
- A Pilot Trial Using BR55 Ultrasound Contrast Agent in the Assessment of Prostate Cancer, Not Recruiting
- Focal MR-Guided Focused Ultrasound Treatment of Localized Intermediate Risk Prostate Lesions, Not Recruiting
- Photoacoustic Imaging (PAI) of the Prostate: A Clinical Feasibility Study, Not Recruiting

Teaching

STANFORD ADVISEES

Postdoctoral Research Mentor

Indrani Bhattacharya

Publications

PUBLICATIONS

- **Point Shear Wave Elastography Using Machine Learning to Differentiate Renal Cell Carcinoma and Angiomyolipoma.** *Ultrasound in medicine & biology*
Sagreiya, H., Akhbardeh, A., Li, D., Sigrist, R., Chung, B. I., Sonn, G. A., Tian, L., Rubin, D. L., Willmann, J. K.
2019
- **How Often is the Dynamic Contrast Enhanced Score Needed in PI-RADS Version 2?** *Current problems in diagnostic radiology*
Roh, A. T., Fan, R. E., Sonn, G. A., Vasanaawala, S. S., Ghanouni, P., Loening, A. M.
2019
- **Multimodality Hyperpolarized C-13 MRS/PET/Multiparametric MR Imaging for Detection and Image-Guided Biopsy of Prostate Cancer: First Experience in a Canine Prostate Cancer Model.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*
Bachawal, S. V., Park, J. M., Valluru, K. S., Loft, M. D., Felt, S. A., Vilches-Moure, J. G., Saenz, Y. F., Daniel, B., Iagaru, A., Sonn, G., Cheng, Z., Spielman, D. M., Willmann, et al
2019
- **Applying the PRECISION approach in biopsy naïve and previously negative prostate biopsy patients.** *Urologic oncology*
Wang, N. N., Teslovich, N. C., Fan, R. E., Ghanouni, P., Leppert, J. T., Brooks, J. D., Ahmadi, S., Sonn, G. A.
2019
- **Teaching Urologists "How to Read Multi-Parametric Prostate MRIs Using PIRADSV2": Results of an iBook Pilot Study.** *Urology*
Wang, N. N., Fan, R. E., Ghanouni, P., Sonn, G. A.
2019
- **Diagnostic Accuracy of Multiparametric Magnetic Resonance Imaging and Fusion Guided Targeted Biopsy Evaluated by Transperineal Template Saturation Prostate Biopsy for the Detection and Characterization of Prostate Cancer EDITORIAL COMMENT** *JOURNAL OF UROLOGY*
Wang, N. N., Sonn, G. A.
2018; 200 (2): 318
- **Gallium 68 PSMA-11 PET/MR Imaging in Patients with Intermediate- or High-Risk Prostate Cancer.** *Radiology*
Park, S. Y., Zacharias, C., Harrison, C., Fan, R. E., Kunder, C., Hatami, N., Giesel, F., Ghanouni, P., Daniel, B., Loening, A. M., Sonn, G. A., Iagaru, A.
2018: 172232
- **Editorial Comment.** *The Journal of urology*
Wang, N. N., Sonn, G. A.
2018
- **The Research Implications of PSA Registry Errors: Data from the Veterans Health Administration.** *The Journal of urology*
Guo, D. P., Thomas, I., Mittakanti, H. R., Shelton, J. B., Makarov, D. V., Skolarus, T. A., Cooperberg, M. R., Sonn, G. A., Chung, B. I., Brooks, J. D., Leppert, J. T.
2018
- **The impact of computed high b-value images on the diagnostic accuracy of DWI for prostate cancer: A receiver operating characteristics analysis.** *Scientific reports*

- Ning, P., Shi, D., Sonn, G. A., Vasawala, S. S., Loening, A. M., Ghanouni, P., Obara, P., Shin, L. K., Fan, R. E., Hargreaves, B. A., Daniel, B. L.
2018; 8 (1): 3409
- **EDITORIAL COMMENTS *JOURNAL OF UROLOGY***
Sonn, G.
2018; 199 (1): 104-5
 - **Performance of multiparametric MRI appears better when measured in patients who undergo radical prostatectomy. *Research and reports in urology***
Wang, N. N., Fan, R. E., Leppert, J. T., Ghanouni, P., Kunder, C. A., Brooks, J. D., Chung, B. I., Sonn, G. A.
2018; 10: 233-35
 - **Performance of multiparametric MRI appears better when measured in patients who undergo radical prostatectomy *RESEARCH AND REPORTS IN UROLOGY***
Wang, N. N., Fan, R. E., Leppert, J. T., Ghanouni, P., Kunder, C. A., Brooks, J. D., Chung, B., Sonn, G. A.
2018; 10: 233-35
 - **Reduction of Muscle Contractions during Irreversible Electroporation Therapy Using High-Frequency Bursts of Alternating Polarity Pulses: A Laboratory Investigation in an ExVivo Swine Model. *Journal of vascular and interventional radiology : JVIR***
Sano, M. B., Fan, R. E., Cheng, K., Saenz, Y., Sonn, G. A., Hwang, G. L., Xing, L.
2018; 29 (6): 893
 - **Ga-68 PSMA 11 PET/MRI in Patients with Newly Diagnosed Intermediate and High-Risk Prostate Cancers**
Zacharias, C., Harrison, C., Ghanouni, P., Sonn, G., Iagaru, A.
SOC NUCLEAR MEDICINE INC.2017
 - **Diagnosis of prostate cancer by desorption electrospray ionization mass spectrometric imaging of small metabolites and lipids *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA***
Banerjee, S., Zare, R. N., Tibshirani, R. J., Kunder, C. A., Nolley, R., Fan, R., Brooks, J. D., Sonn, G. A.
2017; 114 (13): 3334-3339
 - **Commentary regarding a recent collaborative consensus statement addressing prostate MRI and MRI-targeted biopsy in patients with a prior negative prostate biopsy *ABDOMINAL RADIOLOGY***
Verma, S., Rosenkrantz, A. B., Choyke, P., Eberhardt, S. C., Eggener, S. E., Gaitonde, K., Haider, M. A., Margolis, D. J., Marks, L. S., Pinto, P., Sonn, G. A., Taneja, S. S.
2017; 42 (2): 346-49
 - **Contemporary Use of Partial Nephrectomy: Are Older Patients With Impaired Kidney Function Being Left Behind? *UROLOGY***
Leppert, J. T., Mittakanti, H. R., Thomas, I., Lamberts, R. W., Sonn, G. A., Chung, B. I., Skinner, E. C., Wagner, T. H., Chertow, G. M., Brooks, J. D.
2017; 100: 65-71
 - **Incident CKD after Radical or Partial Nephrectomy. *Journal of the American Society of Nephrology : JASN***
Leppert, J. T., Lamberts, R. W., Thomas, I. C., Chung, B. I., Sonn, G. A., Skinner, E. C., Wagner, T. H., Chertow, G. M., Brooks, J. D.
2017
 - **Prostate Magnetic Resonance Imaging Interpretation Varies Substantially Across Radiologists. *European urology focus***
Sonn, G. A., Fan, R. E., Ghanouni, P., Wang, N. N., Brooks, J. D., Loening, A. M., Daniel, B. L., To'o, K. J., Thong, A. E., Leppert, J. T.
2017
 - **Contemporary Use of Partial Nephrectomy: Are Older Patients With Impaired Kidney Function Being Left Behind? *Urology***
Leppert, J. T., Mittakanti, H. R., Thomas, I., Lamberts, R. W., Sonn, G. A., Chung, B. I., Skinner, E. C., Wagner, T. H., Chertow, G. M., Brooks, J. D.
2016
 - **Production of Spherical Ablations Using Nonthermal Irreversible Electroporation: A Laboratory Investigation Using a Single Electrode and Grounding Pad. *Journal of vascular and interventional radiology***
Sano, M. B., Fan, R. E., Hwang, G. L., Sonn, G. A., Xing, L.
2016; 27 (9): 1432-1440 e3
 - **Prostate Magnetic Resonance Imaging and Magnetic Resonance Imaging Targeted Biopsy in Patients with a Prior Negative Biopsy: A Consensus Statement by AUA and SAR. *journal of urology***
Rosenkrantz, A. B., Verma, S., Choyke, P., Eberhardt, S. C., Eggener, S. E., Gaitonde, K., Haider, M. A., Margolis, D. J., Marks, L. S., Pinto, P., Sonn, G. A., Taneja, S. S.

2016

- **Prostate Cancer Early Detection, Version 2.2016** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Carroll, P. R., Parsons, J. K., Andriole, G., Bahnson, R. R., Castle, E. P., Catalona, W. J., Dahl, D. M., Davis, J. W., Epstein, J. I., Etzioni, R. B., Farrington, T., Hemstreet, G. P., Kawachi, et al
2016; 14 (5): 509-519
- **NCCN Guidelines Insights: Prostate Cancer Early Detection, Version 2.2016.** *Journal of the National Comprehensive Cancer Network*
Carroll, P. R., Parsons, J. K., Andriole, G., Bahnson, R. R., Castle, E. P., Catalona, W. J., Dahl, D. M., Davis, J. W., Epstein, J. I., Etzioni, R. B., Farrington, T., Hemstreet, G. P., Kawachi, et al
2016; 14 (5): 509-519
- **PROSTATE CANCER YIELD IN MRI LESIONS VARIES ACROSS RADIOLOGISTS**
Sonn, G., Fan, R., Li, S., Ghanouni, P., Loening, A., Daniel, B., To'o, K., Gill, H., Chung, B., Brooks, J.
ELSEVIER SCIENCE INC.2016: E42
- **Accuracy of Prostate-Specific Antigen Values in Prostate Cancer Registries.** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Mittakanti, H. R., Thomas, I. C., Shelton, J. B., Makarov, D. V., Skolarus, T. A., Cooperberg, M. R., Chung, B. I., Sonn, G. A., Brooks, J. D., Leppert, J. T.
2016
- **Prostate Cancer Early Detection, Version 2.2015 Clinical Practice Guidelines in Oncology** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Carroll, P. R., Parsons, J. K., Andriole, G., Bahnson, R. R., Barocas, D. A., Castle, E. P., Catalona, W. J., Dahl, D. M., Davis, J. W., Epstein, J. I., Etzioni, R. B., Farrington, T., Hemstreet, et al
2015; 13 (12): 1534-1561
- **Gleason 6 Prostate Cancer: Translating Biology into Population Health** *JOURNAL OF UROLOGY*
Eggerer, S. E., Badani, K., Barocas, D. A., Barrisford, G. W., Cheng, J., Chin, A. I., Corcoran, A., Epstein, J. I., George, A. K., Gupta, G. N., Hayn, M. H., Kauffman, E. C., Lane, et al
2015; 194 (3): 626-634
- **Magnetic Resonance Imaging-Ultrasound Fusion Biopsy for Prediction of Final Prostate Pathology** *JOURNAL OF UROLOGY*
Le, J. D., Stephenson, S., Brugger, M., Lu, D. Y., Lieu, P., Sonn, G. A., Natarajan, S., Dorey, F. J., Huang, J., Margolis, D. J., Reiter, R. E., Marks, L. S.
2014; 192 (5): 1367-1373
- **Magnetic resonance imaging-ultrasound fusion biopsy for prediction of final prostate pathology.** *journal of urology*
Le, J. D., Stephenson, S., Brugger, M., Lu, D. Y., Lieu, P., Sonn, G. A., Natarajan, S., Dorey, F. J., Huang, J., Margolis, D. J., Reiter, R. E., Marks, L. S.
2014; 192 (5): 1367-1373
- **Initial experience with electronic tracking of specific tumor sites in men undergoing active surveillance of prostate cancer** *UROLOGIC ONCOLOGY-SEMINARS AND ORIGINAL INVESTIGATIONS*
Sonn, G. A., Filson, C. P., Chang, E., Natarajan, S., Margolis, D. J., Macairan, M., Lieu, P., Huang, J., Dorey, F. J., Reiter, R. E., Marks, L. S.
2014; 32 (7): 952-957
- **Initial experience with electronic tracking of specific tumor sites in men undergoing active surveillance of prostate cancer.** *Urologic oncology*
Sonn, G. A., Filson, C. P., Chang, E., Natarajan, S., Margolis, D. J., Macairan, M., Lieu, P., Huang, J., Dorey, F. J., Reiter, R. E., Marks, L. S.
2014; 32 (7): 952-957
- **Target detection: magnetic resonance imaging-ultrasound fusion-guided prostate biopsy.** *Urologic oncology*
Sonn, G. A., Margolis, D. J., Marks, L. S.
2014; 32 (6): 903-911
- **Target detection: Magnetic resonance imaging-ultrasound fusion-guided prostate biopsy** *UROLOGIC ONCOLOGY-SEMINARS AND ORIGINAL INVESTIGATIONS*
Sonn, G. A., Margolis, D. J., Marks, L. S.
2014; 32 (6): 903-911
- **The role of magnetic resonance imaging in delineating clinically significant prostate cancer.** *Urology*
Chamie, K., Sonn, G. A., Finley, D. S., Tan, N., Margolis, D. J., Raman, S. S., Natarajan, S., Huang, J., Reiter, R. E.
2014; 83 (2): 369-75

- **Targeted Prostate Biopsy to Select Men for Active Surveillance: Do the Epstein Criteria Still Apply?** *The Journal of urology*
Hu, J. C., Chang, E., Natarajan, S., Margolis, D. J., Macairan, M., Lieu, P., Huang, J., Sonn, G., Dorey, F. J., Marks, L. S.
2014
- **Deletions of chromosomes 3p and 14q molecularly subclassify clear cell renal cell carcinoma** *CANCER*
Kroeger, N., Klatte, T., Chamie, K., Rao, P. N., Birkhaeuser, F. D., Sonn, G. A., Riss, J., Kabbinavar, F. F., Belldgrun, A. S., Pantuck, A. J.
2013; 119 (8): 1547-1554
- **Targeted Biopsy in the Detection of Prostate Cancer Using an Office Based Magnetic Resonance Ultrasound Fusion Device** *JOURNAL OF UROLOGY*
Sonn, G. A., Natarajan, S., Margolis, D. J., Macairan, M., Lieu, P., Huang, J., Dorey, F. J., Marks, L. S.
2013; 189 (1): 86-91
- **Differing Perceptions of Quality of Life in Patients With Prostate Cancer and Their Doctors** *JOURNAL OF UROLOGY*
Sonn, G. A., Sadetsky, N., Presti, J. C., Litwin, M. S.
2013; 189 (1): S59-S65
- **Gain of chromosome 8q is associated with metastases and poor survival of patients with clear cell renal cell carcinoma.** *Cancer*
Klatte, T., Kroeger, N., Rampersaud, E. N., Birkhäuser, F. D., Logan, J. E., Sonn, G., Riss, J., Rao, P. N., Kabbinavar, F. F., Belldgrun, A. S., Pantuck, A. J.
2012; 118 (23): 5777-5782
- **VALUE OF TARGETED BIOPSY IN DETECTING PROSTATE CANCER USING AN OFFICE-BASED MR-US FUSION DEVICE** *Annual Meeting of the American-Urological-Association (AUA)*
Sonn, G. A., Natarajan, S., Margolis, D., Macairan, M., Lieu, P., Huang, J., Dorey, F. J., Marks, L. S.
ELSEVIER SCIENCE INC.2012: E829–E829
- **Systemic therapy for metastatic renal cell carcinoma: a review and update.** *Reviews in urology*
Logan, J. E., Rampersaud, E. N., Sonn, G. A., Chamie, K., Belldgrun, A. S., Pantuck, A. J., Slamon, D. J., Kabbinavar, F. F.
2012; 14 (3-4): 65-78
- **Dynamic Real-time Microscopy of the Urinary Tract Using Confocal Laser Endomicroscopy** *UROLOGY*
Wu, K., Liu, J., Adams, W., Sonn, G. A., Mach, K. E., Pan, Y., Beck, A. H., Jensen, K. C., Liao, J. C.
2011; 78 (1): 225-231
- **Electrochemical immunosensor detection of urinary lactoferrin in clinical samples for urinary tract infection diagnosis** *BIOSENSORS & BIOELECTRONICS*
Pan, Y., Sonn, G. A., Sin, M. L., Mach, K. E., Shih, M., Gau, V., Wong, P. K., Liao, J. C.
2010; 26 (2): 649-654
- **DYNAMIC REAL TIME MICROSCOPY OF THE URINARY TRACT: AN IMAGING ATLAS BASED ON CONFOCAL LASER ENDOMICROSCOPY**
Adams, W., Wu, K., Sonn, G., Jensen, K., Liao, J. C.
MARY ANN LIEBERT INC.2010: A278–A278
- **IS SURVEILLANCE FOR STAGE I SEMINOMA TRULY A LOW RISK OPTION?: ESTIMATING IMAGING RELATED RADIATION EXPOSURE AND THE RISK OF SECONDARY MALIGNANCY**
Tarin, T., Sonn, G., Shinghal, R.
ELSEVIER SCIENCE INC.2010: E325–E326
- **Differing Perceptions of Quality of Life in Patients With Prostate Cancer and Their Doctors** *JOURNAL OF UROLOGY*
Sonn, G. A., Sadetsky, N., Presti, J. C., Litwin, M. S.
2009; 182 (5): 2296-2302
- **Optical Biopsy of Human Bladder Neoplasia With In Vivo Confocal Laser Endomicroscopy** *JOURNAL OF UROLOGY*
Sonn, G. A., Jones, S. E., Tarin, T. V., Du, C. B., Mach, K. E., Jensen, K. C., Liao, J. C.
2009; 182 (4): 1299-1305
- **OPTICAL BIOPSY OF HUMAN BLADDER NEOPLASIA WITH IN VIVO CONFOCAL LASER ENDOMICROSCOPY** *104th Annual Meeting of the American-Urological-Association*
Sonn, G. A., Jones, S., Mach, K. E., Du, C. B., Jensen, K., Liao, J. C.
ELSEVIER SCIENCE INC.2009: 414–15

- **Fibred Confocal Microscopy of Bladder Tumors: An ex Vivo Study** *JOURNAL OF ENDOUROLOGY*
Sonn, G. A., Mach, K. E., Jensen, K., Hsiung, P., Jones, S., Contag, C. H., Wang, T. D., Liao, J. C.
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- **Estimating the Risk of Cancer Associated With Imaging Related Radiation During Surveillance for Stage I Testicular Cancer Using Computerized Tomography** *JOURNAL OF UROLOGY*
Tarin, T. V., Sonn, G., Shinghal, R.
2009; 181 (2): 627-632
- **Management of Wilms tumor: current standard of care** *NATURE CLINICAL PRACTICE UROLOGY*
Sonn, G., Shortliffe, L. M.
2008; 5 (10): 551-560
- **Spirituality influences health related quality of life in men with prostate cancer** *PSYCHO-ONCOLOGY*
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2006; 15 (2): 121-131
- **Impact of diet on prostate cancer: a review** *PROSTATE CANCER AND PROSTATIC DISEASES*
Sonn, G. A., Aronson, W., Litwin, M. S.
2005; 8 (4): 304-310
- **Ethnic variation in health-related quality of life among low-income men with prostate cancer** *ETHNICITY & DISEASE*
Krupski, T. L., Sonn, G., Kwan, L., Maliski, S., Fink, A., Litwin, M. S.
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