
BIOGRAPHICAL SKETCH

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| NAME LEONARD S. MARKS, M.D. | POSITION TITLE | | |
| eRA COMMONS USER NAME L MARKS2 | PROFESSOR OF UROLOGY | | |
| EDUCATION/TRAINING | | | |
| INSTITUTION AND LOCATION | DEGREE | YEAR(s) | FIELD OF STUDY |
| Tulane University, New Orleans, LA | BA | 1965 | Psychology |
| University of Texas Medical Branch, Galveston, TX | MD | 1969 | Medicine |
| University of Texas Medical Branch, Galveston, TX | MA | 1969 | Physiology |

A. Personal Statement

The project is a multi-disciplinary, long-term investigation into the possibility that prostate cancer can be re-defined, if the disease can be imaged within the organ of origin. Of all the major cancers, prostate cancer is the only one that cannot be imaged when still organ-confined. Recent technological advances now offer a realistic promise of imaging cancer within the prostate.

As P.I., my background in clinical research and years of direct patient care; my experience of practicing urology through the prostate revolution of the 1990s; the rich volume of patient material, clinical expertise, and administrative support available, especially through the Prostate SPORE at UCLA; and my longstanding collaborative nature all combine to make the project feasible. A few years ago, while engaged in a busy practice, I had the privilege of founding and managing a non-profit organization, which independently performed clinical research in urology. Using my patient material for education, and by capturing the enthusiasm of helpful collaborators from across the U.S., and by good management, numerous clinical trials were formulated and completed, leading to publications in J.A.M.A. and other journals. Years before that, I formulated and completed the first randomized clinical trial ever performed within the UCLA Department of Surgery. Those same skills are now helping to enable the current project, which has been greatly facilitated by several of my original team members, who came to be involved at the university. Moreover, as a long-term counterpart of the imaging project, an IRB-approved Active Surveillance program---distinguished by an emphasis on prostate imaging---was established under my impetus and is now enrolling daily; the Active Surveillance program will serve as a great source of patient material for the current studies. Further, collaborations have been established via visitations between our team and the major prostate imaging centers, notably the Barentsz group in Nijmegen, NL and the Fenster group in Canada. And we have gained access to key technology both onsite, via a dedicated PhD candidate from the BioMedical Engineering School, and by close liaisons with industry.

Increasing tumor volume (and associated de-differentiation) is considered the single most important factor in determining risk of localized prostate cancer. Thus, the project aims to validate tracking of biopsy location and fusing multi-modal MRI images with real-time transrectal ultrasound. Prostate cancer may be localizable within the organ and sequentially followed when that course is appropriate. The prostate revolution, which began several decades ago, may still be in its infancy.

A. Post-Doctoral Education

1969-1970 Intern in Surgery, UCLA/Harbor General Hospital; Torrance, California
1972-1973 Resident in Surgery, UCLA/Harbor General Hospital; Torrance, California
1973-1974 Post-Doctoral Research Fellow (Renovascular Hypertension), Department of Surgery, University of California, Los Angeles, California
1974-1978 Resident in Urology, University of California, Los Angeles, California

B. Positions and Honors

1965 Bachelor of Arts with Honors, Tulane University
1969 Alpha Omega Alpha (AOA), University of Texas Medical Branch
1976 Clinical Research Prize, Grayson Carroll, Essay Contest, American Urological Association: "Angiotensin Blockade in Renovascular Hypertension: A Controlled, Prospective Study"
1976 Resident's Research Prize, Los Angeles Urological Society: "Angiotensin Blockade in the Rapid Detection of Renovascular Hypertension"
1993-1995 American Foundation for Urologic Disease (AFUD) Research Scholar -"Normalization of Serum PSA levels in Men with Benign Prostatic Hyperplasia: Role of Prostatic Epithelial Quantification"
2000-2001 CapCURE Research Award - "Biomarker Expression in Benign and Malignant Prostate Tissues of Native Japanese and Japanese- American Men"
2000-present Associate Member, Early Detection Research Network, Division of Cancer Prevention, National Cancer Institute. "Free PSA Molecular Forms (BPSA & proPSA): BIOMARKER ROLE." In collaboration with Brady Urological Institute of Johns Hopkins University.

C. Experience and Employment

Texas State Medical Licensure, 1969
Military Service, 1970-72 (LCDR, U.S. Public Health Service)
California State Medical Licensure, 1972
Diplomate, American Board of Urology, Year of Election 1980
Founding Director, Urological Sciences Research Foundation, A California Non-profit Organization, Los Angeles, California (1992-2009).
Associate Editor, Urology (The Gold Journal), 1998- present
Website Director, Urological Sciences Research Foundation, <http://www.usrf.org>, 1996- 2009.
Professor, Department of Urology, University of California, Los Angeles, CA, 2005-present

D. Invited Lectureships (selected)

1. "Prostate Cancer, 2010: Imaging to Evaluate and Manage Disease Risk," Radiological Society of North America, Chicago, IL, November, 2009.
2. "Testosterone and the Prostate: Effects of Deprivation and Supplementation," Endocrine Forum, Annual Meeting of American Urological Association, Anaheim, CA 2007.
3. "The Interactive Journal: Multimedia will Change Medical Publishing," Annual Conference of National Library of Medicine/Ass'n of American Publishers, Washington, D.C., February, 2007.
4. "Dihydrotestosterone (DHT), The Other Androgen. History and Clinical Relevance Today," Urology Grand Rounds Presentation, Johns Hopkins University, Baltimore, MD, February, 2006.
5. "Molecular Diagnosis of Prostate Cancer," House Cancer Caucus, U.S. House of Representatives, Sam Rayburn Office Building, Washington, D.C., November, 2005.
6. "5 alpha reductase inhibition: history and clinical importance." Annual Meeting, Canadian Urological Association, Ottawa, Canada, July, 2005.
7. "PCA3 Urine Test: Specificity and Improved Prostate Cell Recovery," L.S. Marks, A.W. Partin, S. Brentano, et al. GORDON RESEARCH CONFERENCE, New Frontiers in Cancer Detection and Diagnosis, Buellton, CA, Jan., 2005.

E. Selected peer-reviewed publications (from 98 total)

1. **Marks LS.** Words of Wisdom. Endogenous Sex Hormones and Prostate Cancer: A Collaborative Analysis of 18 prospective Studies. *Eur. Urol.* 55:750-1, 2009.
2. **Marks LS,** Mostaghel EA, Nelson PS. Prostate tissue androgens: history and current clinical relevance. *Urology.* 72:247-54. 2008.
3. Deras IL, Aubin SM, Blase A, Day JR, Koo S, Partin AW, Ellis WJ, **Marks LS,** Fradet Y, Rittenhouse H, Groskopf J. PCA3: a molecular urine assay for predicting prostate biopsy outcome. *J Urol.* 2008 179(4):1587-92. 2008.
4. **Marks LS,** Fradet Y, Deras IL, Blase A, Mathis J, Aubin SMJ, Cancio AT, Desaulniers M, Ellis WJ, Rittenhouse HG, Groskopf J. PCA3 molecular urine assay for prostate cancer in men undergoing repeat biopsy. *Urology* 69: 532-535, 2007.
5. **Marks LS,** Mazer N, Hess D, Dorey F, Epstein J, Veltri R, Makarov D, Partin A, Bostwick D, Macairan M, Mostaghel E, Nelson P. Effect of Testosterone Replacement Therapy on Prostate Tissue in Men With Late-Onset Hypogonadism: A Randomized Controlled Trial. *J.A.M.A.* 296:2351-61, 2006;
6. **Marks LS,** Roehrborn CG, Andriole GL. Prevention of benign prostatic hyperplasia disease. *J Urol.* 176:1299-306, 2006.
7. **Marks LS,** Andriole GL, Fitzpatrick JM, Schulman CC, Roehrborn CG. Interpretation of Serum Prostate Specific Antigen Levels in Men Receiving 5 alpha-Reductase Inhibitors: A Review and Clinical Recommendations. *J. Urol.* 176:868-74, 2006.
8. **Marks LS,** Hess DL, Dorey FJ, Macairan ML. Prostatic tissue testosterone and dihydrotestosterone in African-American and white men. *J. Urol.* 68:337-41, 2006
9. **Marks LS,** Kojima M, DeMarzo A, et al. Prostate cancer in native Japanese and Japanese-American men: Effects of dietary differences on prostatic tissue, *Urology* 64:765-711, 2004
10. Roehrborn CG, **Marks LS,** Fenter TC, et al. Efficacy and safety of dutasteride in the four-year treatment of prostatic hyperplasia. *Urology* 63:709-15, 2004.
11. **Marks LS.** Luteinizing hormone-releasing hormone agonists in the treatment of men with prostate cancer: timing, alternatives, and the 1- year implant. *Urology* 62 (Suppl 1):36-42, 2003.
12. **Marks LS,** Roehrborn CG, Gittelman M, Kim D, Forrest J, Jacobs S. First dose efficacy of alfuzosin once daily in men with symptomatic benign prostatic hyperplasia. *Urology* 62:888-93, 2003.
13. **Marks LS,** Hess DL, Dorey FJ, Luz Macairan M, Cruz Santos PB, Tyler VE. Tissue effects of saw palmetto and finasteride: use of biopsy cores for in situ quantification of prostatic androgens. *Urology* 57: 999-1005, 2001.
14. **Marks LS,** Maxwell MH, Kaufman JJ. Renin, sodium, and vasodepressor response to saralasin in renovascular and essential hypertension. *Ann. Int. Med.* 87: 176-82, 1977.
15. **Marks LS** and Kolmen SN. Tween 20 shock in dogs and related fibrinogen changes. *American Journal of Physiology* 220: 218-21, 1971.

F. Prior Grant Support (national competitive awards)

1. American Foundation for Urologic Disease Research Awards, 1993 & 1994
"Normalization of Serum PSA levels in Men with Benign Prostatic Hyperplasia: Role of Prostatic Epithelial Quantification"
2. CapCURE (Prostate Cancer Foundation) Research Award, 2000
"Biomarker Expression in Benign and Malignant Prostate Tissues of Native Japanese and Japanese-American Men"
3. Associate Member, 2000 – 2002
Early Detection Research Network, Division of Cancer Prevention, National Cancer Institute. "Free PSA Molecular Forms (BPSA & proPSA): BIOMARKER ROLE." In collaboration with the Brady Urological Institute of Johns Hopkins University.