

Srinivas Nandana, Ph.D.

PERSONAL

Citizenship: Indian
Status in USA: Permanent Resident
Office address: Department of Cell Biology and Biochemistry
Texas Tech University Health Sciences Center
3601 4th Street Lubbock, TX 79430-6540
Los Angeles, CA, 90048
Office phone: 806-743-4101
Cell: 615-430-5283
Office Fax: 806-743-2990
e-mail: Srinivas.Nandana@ttuhsc.edu

EDUCATION AND TRAINING

Post-Doctoral Training

Institution and Location: Cedars-Sinai Medical Center, Los Angeles, CA
Mentor: Leland W.K. Chung, Ph.D.
Field of Study: Cross-talk between prostate cancer cells and tumor-associated bone microenvironment
Years: 2010-2014

Degree: Ph.D.
Institution and Location: Vanderbilt University School of Medicine, Nashville, TN
Mentor: Robert J. Matusik, Ph.D.
Field of Study: Cancer Biology
Dissertation Title: Mouse models of prostate cancer progression and bone metastasis
Years: 2002-2010

Degree: M.Sc.
Institution and Location: Barkatullah University, Bhopal, India
Field of Study: Biotechnology
Years: 1999 – 2001

Degree: B.Sc.
Institution and Location: Andhra University, Visakhapatnam, India
Field of Study: Biochemistry, Botany, Biotechnology
Years: 1996 - 1999

POSITIONS AND EMPLOYMENT

2018- Present: Tenure Track Assistant Professor, Dept. of Cell Biology and Biochemistry, TTUHSC, Lubbock
2014-2018: Project Scientist-Instructor, Cedars-Sinai Medical Center, Los Angeles, CA
2010-2014: Postdoctoral Scientist, Cedars-Sinai Medical Center, Los Angeles, CA
2002-2010: Graduate Student, Vanderbilt University School of Medicine, Nashville, TN
2001-2002: Biology Instructor, T.S.R and T.B.K. College, Andhra University, India
2000-2001: Research Trainee, National Institute of Immunology, New Delhi, India

AWARDS AND HONORS

- 2019: Cover Photo, *Cancers*
2007: AACR Travel Award to attend the *Edward A. Smuckler Memorial Pathobiology of Cancer Workshop*
2006: Travel Award, Society for Basic Urologic Research
2002: Fellowship, Interdisciplinary Graduate Program (IGP) in Biomedical Sciences, Vanderbilt University
2000: Dissertation Research Scholarship, Barkatullah University

FUNDED PEER-REVIEWED RESEARCH GRANTS

- X81XWH-16-1-0174 Nandana (PI) 09/30/16-09/30/19
Idea Development Award (New Investigator), DoD-PCRP
Title: A novel Immune-Intact Mouse Model of Prostate Cancer Bone Metastasis: Mechanisms of Chemotaxis and Bone Colonization.
Goal: To determine RANKL/RANK and CXCL12/CXCR4 signaling convergence in prostate cancer bone metastasis in the context of immune-intact mice.
\$437,500
- X81XWH-12-1-0042 Nandana (PI) 09/30/12-09/30/14
Postdoctoral Fellowship Award, DoD-PCRP
Title: The role of TBX2 in mediating the RANKL pathway in prostate tumor progression and bone metastasis
Goal: To study the mechanisms by which TBX2 plays a role in prostate cancer bone metastasis and bone remodeling.
\$124,200
- W81XWH-07-1-0155 Nandana (PI) 11/30/06-11/30/09
Predoctoral Fellowship Award, DoD-PCRP
Title: Investigating the role of TBX2 in the inhibition of senescence in prostate cancer.
Goal: To study the role of TBX2 in androgen regulation and prostate cancer progression.
\$97,149

Grant Proposals in submission

- 2019- DoD-PCRP Idea Expansion Award proposal
2019-CPRIT (Cancer Prevention and Research Institute of Texas) High Impact High Risk grant proposal

PUBLICATIONS

1. Tharp D., **Nandana S***. How Prostate Cancer Cells Use Strategy Instead of Brute Force to Achieve Metastasis. *Cancers* 2019, 11(12). (* denotes corresponding authorship) (*Cover Page Story*)
2. Chu C.Y., Chung L.W.K, Gururajan M., Hsieh C.L., Josson S., **Nandana S.**, Sung S.Y., Wang R., Wu J.B., Zhou H.E. Regulatory Signaling Network in the tumor microenvironment of prostate cancer bone and visceral organ metastases and the development of novel therapeutics. *Asian Journal of Urology*, 2019 Jan;6 (1): 65-81.
3. **Nandana S.*#**, Tripathi M. #, Duan P., Chu C.Y., Mishra R., Liu C., Jin R., Yamashita H., Zayzafoon M., Bhowmick N.A., Zhou H.E., Matusik R.J. and Chung L.W.K.# Bone metastasis of prostate cancer can be therapeutically targeted at the TBX2-WNT signaling axis. *Cancer Research*, 2017; Mar 15; 77(6):1331-1344 (#contributed equally, * denotes co-corresponding authorship).

4. Tripathi M.[#], **Nandana S.**[#], Billet S., Cavassani K., Chung L.W.K., Posadas E.M., Bhowmick N.A. Modulation of cabozantinib efficacy by the prostate tumor microenvironment. *Oncotarget*, Oct 20; 8(50): 87891–87902 ([#] denotes equal contribution)
5. Gururajan M., Cavassani K.A., Sievert M., Duan P., Lichterman J., Huang J.M., Smith B., You S., **Nandana S.**, Chu G.C., Mink S., Josson S., Liu C., Morello M., Jones L.W., Kim J., Freeman M.R., Bhowmick N., Zhau H.E., Chung L.W., Posadas E.M. SRC family kinase FYN promotes the neuroendocrine phenotype and visceral metastasis in advanced prostate cancer. *Oncotarget*, 2015 Nov 26, Vol 6, No 42: 44072-83
6. Josson S., Gururajan M., Hu P., Shao C., Chu G.Y., Zhau H.E., Liu C., Lao K., Lu C.L., Lu Y.T., Lichterman J., **Nandana S.**, Li Q., Rogatko A., Berel D., Posadas E.M., Fazli L., Sareen D., Chung L.W. miR-409-3p/5p promotes tumorigenesis, epithelial-to-mesenchymal transition, and bone metastasis of prostate cancer. *Clinical Cancer Res*, 2014 Sep 1; 20(17): 4636-46
7. **Nandana S.** and Chung L.W.K. Prostate Cancer Progression and Metastasis: Current and Potential Therapeutic Pathways & Mouse Models in Pre-Clinical Research. *American Journal of Clinical and Experimental Urology*, 2014 Jul 12; 2(2): 92-101
8. **Nandana S.**, Ellwood-Yen K., Sawyers C.L., Wills M.L., Weidow B., Case T.C., Vasioukhin V., and Matusik R.J. Hepsin co-operates with myc in the progression of adenocarcinoma in a prostate cancer mouse model. *Prostate*, 2010 May, 70(6):591-600
9. Degraff D.J., Yu X., Sun Q., Mirosevich J., Jin R.J., Wang Y., Gupta A., **Nandana S.**, Case T., Paul M., Huang H.Y., Shapiro E., Logan S., Suzuki K., Orgebin-Crist M.C., Matusik R.J. The role of Foxa proteins in the regulation of androgen receptor activity, Chapter 18, 587-615, 2009 *Androgen Action in Prostate Cancer*, Tindall D.J. and Mohler J.
10. Yi Y., **Nandana S.**, Case T.C., Nelson C., Radmilovic T., Matusik R.J., Tsuchiya K.D. Candidate metastasis suppressor genes uncovered by array comparative genomic hybridization in a mouse allograft model of Prostate Cancer. *Molecular Cytogenetics*, 2009 Sep, 2:18
11. Tripathi M., **Nandana S.**, Yamashita H., Kirchhofer D. and Quaranta V. Laminin-332 is a substrate for hepsin, a protease associated with prostate cancer progression. *Journal of Biological Chemistry*, 2008 Nov, 283 (45):30576-84
12. Matusik R.J., Jin R.J., Sun Q., Wang Y., Yu X., Gupta A., **Nandana S.**, Case T.C., Paul M., Mirosevich J., Oottamasathien S., Thomas J. Prostate epithelial cell fate. *Differentiation*, 2008 Jul, 76:(6) 682-98
13. Levititin F., Weiss M., Hahn Y., Stern O., Papke R.L., Matusik R.J., **Nandana S.**, Ziv R, Pichinuk E., Salame S., Bera T, Vincent J, Lee B., Pastan I, and Wreschner D.H. PATE Gene Clusters Code for Multiple, Secreted TFP/Ly-6/uPAR Proteins that are expressed in reproductive and neuron-rich tissues and possess neuromodulatory activity. *Journal of Biological Chemistry*. 2008 Jun, 283(24):16928-16939
14. Kenchappa P., Yadav A., Singh G., **Nandana S.**, Banerjee K. Rescue of TNF alpha inhibited neuronal cells by IGF-1 involves Akt and c-Jun N-terminal kinases. *Journal of Neuroscience Research*. Mar 2004, 76(4) 466-474

INVITED TALKS AND PRESENTATIONS

- 2019: TSR and TBK College, Andhra University, Dec 16th 2019, Visakhapatnam, India
 2019: AACR Annual Meeting Apr 2nd 2019, Atlanta
 2019: TTUHSC, Garrison Institute of Aging Seminar Series, Lubbock
 2018: TTUHSC, Dept. of Cell Biology and Biochemistry, Lubbock
 2018: University of North Carolina, Dept. of Biological Sciences, Charlotte

2018: University of Nebraska Medical Center, Dept. of Biochem. & Mol Biol., Omaha
2017: University of Nebraska Medical Center, College of Dentistry, Lincoln
2017: Webinar, Prostate Cancer Foundation
2017: Cancer Metabolism Focus Group, Cedars-Sinai Medical Center
2014: Gathering for Postdoctoral Science (GPS), Cedars-Sinai Medical Center
2014: Program Project Grant (P01) Meeting, Cedars-Sinai Medical Center
2009: Fred Hutchinson Cancer Research Center, Seattle
2009: Cedars-Sinai Medical Center, Los Angeles
2009: Kimmel Cancer Center, Thomas Jefferson University, Philadelphia
2009: Science Hour, Dept. of Cancer Biology, Vanderbilt University

ABSTRACTS PRESENTED IN CONFERENCES / WORKSHOPS

1. **Nandana S**, Gururajan M, Shiao S, Chu C and Chung L. Dissecting the role of B cells in Prostate Cancer Bone Metastasis. Society of Basic Urologic Research (SBUR) Annual Meeting 2019; Nov 7-10, 2019; New Orleans, LA.
2. **Nandana S**, Gururajan M, Tripathi M, Chu C, Zhau H, Shiao S, Chung L. A novel syngeneic mouse model of Prostate Cancer Bone Metastasis: Mechanisms of chemotaxis and bone colonization. American Association of Cancer Research (AACR) Annual Meeting 2019; March 29- April 3, 2019; Atlanta, GA (Selected for Podium Presentation).
3. Tripathi M, **Nandana S**, Huang J, Kato M, Mishra R, Chung L, Xin L, Bhowmick N. Signaling crosstalk within prostate tumor microenvironment mediates castrate resistant disease progression. American Association of Cancer Research (AACR) Annual Meeting 2019; March 29- April 3, 2019; Atlanta, GA
4. **Nandana S**, Tripathi M, P Duan, G Chu, HE Zhau, RJ Matusik, Chung LWK. Blocking endogenous TBX2 abrogates prostate cancer bone metastasis through WNT signaling. *Cancer Research* 76 (14 Supplement), 4131-4131. *AACR 107th Annual Meeting 2016*; April 16-20, 2016; New Orleans, LA.
5. Tripathi M., **Nandana S.**, Billet S. Posadas E.M., Chung LW.K. Microenvironment mediates the efficacy of cabozantinib in prostate cancer. *Annual Research Day*, Cedars-Sinai Medical Center, Feb 2016, Los Angeles, CA.
6. Tripathi M., **Nandana S.**, Huang J., Kato M., Chung L.W.K., Xin L., Bhowmick N.A. Reciprocal prostate cancer signaling with its microenvironment mediates castrate resistant disease progression. *AACR Special Conference – The function of Tumor Microenvironment in Cancer Progression*, Jan 2016, San Diego, CA
7. **Nandana S.**, Tripathi M., Duan P., Chu C., Mishra R., Liu C., Jin R., Yamashita H., Zayzafoon M., Bhowmick N.A., Zhau H.E., Matusik R.J. and Chung L.W.K. TBX2-WNT signaling axis – a new therapeutic target for prostate cancer bone metastasis. *The Stem Cell Niche and Cancer Microenvironment Symposium*, Cedars-Sinai Medical Center, Nov 2015, Los Angeles, CA
8. Tripathi M., **Nandana S.**, Billet S., Posadas E.M., Chung L.W.K. Microenvironment mediates the efficacy of cabozantinib in prostate cancer. *The Stem Cell Niche and Cancer Microenvironment Symposium*, Cedars-Sinai Medical Center, Nov 2015, Los Angeles, CA
9. **Nandana S.**, Tripathi M., Chu C., Bhowmick N.A., Matusik R.J. and Chung L.W.K. Blocking endogenous TBX2 expression in PC3 prostate cancer cells abrogates bone metastasis in a xenograft mouse model. *AACR Special Conference on Tumor Invasion and Metastasis*, Jan 2013, San Diego, CA
10. **Nandana S.**, Tripathi M., Chu C., Matusik R.J. and Chung L.W.K. Blocking TBX2 abrogates bone metastasis in a xenograft mouse model of prostate cancer. *Fourth Annual Cancer Institute Research Poster Presentation*, Cedars-Sinai Medical Center, June 2012, Los Angeles, CA

11. **Nandana S.**, Jin R., Yamashita H., Shao C., Matusik R.J. and Chung LW.K. TBX2, a senescence-related transcription factor mediates its action through BMP2 and RANKL contributing to prostate cancer growth and bone metastasis. *11th International Conference on Cancer-Induced Bone Disease*, Dec 2011, Chicago, IL
12. **Nandana S.**, Matusik R.J. Blocking endogenous TBX2 in PC3 human prostate cancer cells reduces *in vivo* invasion, metastasis and growth in bone microenvironment. *Department of Defense Prostate Cancer IMPACT Meeting*, March 2011, Orlando, Florida
13. Yamashita H., Tripathi M., **Nandana S.**, Ganesan R., Kirchhofer D. and Quaranta V. Laminin-332 is a substrate for hepsin, a protease associated with prostate cancer progression. *Hormones and Cancer*. Volume 2, Issue 1, pp 3-37. *Sixth International Symposium on Hormonal Oncogenesis*, Sheraton Grande Tokyo Bay Hotel, Feb 2011, Tokyo, Japan
14. Tripathi M., **Nandana S.**, Yamashita H., Kirchhofer D. and Quaranta V. Cleavage of Laminin-332 by hepsin and its implications in the progression of prostate cancer. *Vanderbilt-Ingram Cancer Center Retreat*, Student Life Center Vanderbilt University, May 2009, Nashville, TN
15. Yu X.* , **Nandana S.***, Saliganan A., Case T.C., Paul M., Kim H., Fridman R., Bonfil D.R., Cher M. and Matusik R.J. (*contributed equally) The Role of MT1-MMP and PDGF-D in Prostate Cancer Progression. *AACR Special Conference, Advances in Prostate Cancer Research*, Jan 2009, San Diego, CA
16. **Nandana S.** and Matusik R.J. TBX2 mediates osteogenic burden of PC3 human prostate cancer cells in the bone microenvironment. *SBUR Fall Annual Meeting*, Nov 2008, Phoenix, Arizona
17. **Nandana S.**, Chevillet J., Ellwood-Yen K., Sawyers C.L., Wills M.L., Case T.C., Vasioukhin V., and Matusik R.J. Hepsin co-operates with myc in the progression of adenocarcinoma in a Prostate Cancer mouse model. *AACR Edward A. Smuckler Memorial Workshop in Pathobiology of Cancer*, Aug 2007, Snowmass, Colorado
18. **Nandana S.**, Chevillet J., Ellwood-Yen K., Sawyers C.L., Wills M.L., Case T.C., Vasioukhin V., and Matusik R.J. Investigation of the hepsin/myc mouse model in the progression of prostate cancer. *SBUR Fall Annual Meeting*, Nov 2006, Phoenix, Arizona
19. **Nandana S.** and Matusik R.J. Investigation of the role of TBX2 in androgen regulation and prostate cancer progression. *Vanderbilt University Department of Cancer Biology Annual Retreat*, Nov 2005, Lake Barkley State Resort Park, Cadiz, Kentucky

TEACHING / TRAINING EXPERIENCE

My teaching philosophy can be broadly described in a quote from Confucius: “I hear, I forget; I see, and I remember; I do and I understand.” I believe in the hands-on approach to teaching. My teaching interests go back to the days when I taught Biology to the undergraduate students at my alma mater in India. During my research career in the Chung and Matusik laboratories, I have taught, trained and supervised fellows, graduate students, and research associates in specialized surgical techniques and mentored them in research projects. My trainees include Yi Ting Chen (2011-2013), Dr. Manisha Tripathi (2011-2014), Dr. Sandrine Billet (2011-2012), Dr. Sajni Josson (2010), and Douglas Robinson (2007). In addition, I have been part of the multi-laboratory bi-monthly program project group meetings of the uro-oncology research program at Cedars-Sinai, where collaborative projects are discussed among group members. I believe that teaching is a team sport, and that a crucial element of successful teaching is to excite the enthusiasm of the students. I am committed to teaching by a concept-oriented strategy that enables critical thinking and the application of analytical skills to troubleshoot real-world scientific problems.

2019: Lecture in The Biology of Cancer Course (GBTC 5340)

Masters Student:

2019 Fall: Mosharaf Mahmud-Syed (Part time student pursuing Masters in Biotechnology)

Undergraduate Trainees:

2019 Summer: Darron Tharp (Published an article with us, that was accepted as the Cover Page Story in *Cancers*)

2019 Summer: Natasha Chugh Summer Accelerated Biomedical Research (SABR) Student

PROFESSIONAL SERVICE

2019: Poster Judge for the Annual Student Research Day (Graduate School of Biomedical Sciences, TTUHSC, Lubbock)

2019: Department Faculty Recruitment Committee Member for Kayla Weitlauf Professor.

2019: Applicant Interviewer for M.S. Biotechnology Program

Editorial Board Member and Ad hoc Reviewer

Ad hoc Reviewer

- Oncogene
- Asian Journal of Urology
- Biomolecules (MDPI)
- Cancers (MDPI)

Editorial Board Member

Editorial Board member for the Journal of Pathology and Therapeutics

Faculty Development Activities

2019 Fall: Participated in the Faculty Development Course entitled Academic Socialization

MEMBERSHIPS

- Associate Member, American Association for Cancer Research
- Member, Society for Basic Urologic Research
- Member, Cancer and Bone Society

