Stanford

Sivakamasundari V

Instructor, Institute for Stem Cell Biology and Regenerative Medicine

NIH Biosketch available Online Curriculum Vitae available Online

Bio

BIO

My research interests are focused on understanding the molecular basis of early development and stem cells, as it is often aberrations in stem cells or signaling mechanisms between tissues that lead to diseased states, including tumor development and cancer progression. Knowledge of stem cells and development is also critical to develop appropriate cell-based therapies for various diseases or injuries. My prior and current works take advantage of both traditional techniques (gene targeting, lineage tracing) and state-of-the-art technologies (Single cell RNA sequencing, Chromatin Immunoprecipitation (ChIP-seq), Imaging Mass Cytometry) to elucidate fundamental molecular mechanisms underlying signaling in tissue biology.

ACADEMIC APPOINTMENTS

- Instructor, Institute for Stem Cell Biology and Regenerative Medicine

HONORS AND AWARDS

- Scientific Staff Development Award, A*STAR: PhD scholarship, Agency for Science, Technology and Research (A*STAR) (2010-2013)

PROFESSIONAL EDUCATION

- PhD, National University of Singapore , Biological Sciences (2013)
- BSc (Hons), National University of Singapore , Life Sciences (2007)

Publications

PUBLICATIONS

- **Isolation and 3D expansion of multipotent Sox9+ mouse lung progenitors.** *Nature methods*
  Nichane, M., Javed, A., Sivakamasundari, V., Ganesan, M., Ang, L. T., Kraus, P., Lufkin, T., Loh, K. M., Lim, B.
  2017; 14 (12): 1205-1212
- **Comprehensive Cell Type Specific Transcriptomics of the Human Kidney** *bioRxiv*
  V, S., Bolisetty, M., Sivajothi, S., Bessonett, S., Ruan, D., Robson, P.
  2017
- **Identification of cDC1- and cDC2-committed DC progenitors reveals early lineage priming at the common DC progenitor stage in the bone marrow.** *Nature immunology*
  Schlitzer, A., Sivakamasundari, V., Chen, J., Sumatoh, H. R., Schreuder, J., Lum, J., Malleret, B., Zhang, S., Larbi, A., Zolezzi, F., Renia, L., Poidinger, M., Naik, et al
  2015; 16 (7): 718-28
- **Klhl14 Antisense RNA is a Target of Key Skeletogenic Transcription Factors in the Developing Intervertebral Disc.** *Spine*
  Kraus, P., Sivakamasundari, V., Olsen, V., Villeneuve, V., Hinds, A., Lufkin, T.

2019; 44 (5): E260-E268

- **Regulatory Functions of Pax1 and Pax9 in Mammalian Cells** *Gene Expression and Regulation in Mammalian Cells-Transcription Toward the Establishment of Novel Therapeutics*
  V, S., Kraus, P., Lufkin, T.
  InTechOpen.2018; 1: 181–207
- **An Integrative Developmental Genomics and Systems Biology Approach to Identify an In Vivo Sox Trio-Mediated Gene Regulatory Network in Murine Embryos.** *BioMed research international*
  Lee, W. J., Chatterjee, S., Yap, S. P., Lim, S. L., Xing, X., Kraus, P., Sun, W., Hu, X., Sivakamasundari, V., Chan, H. Y., Kolatkar, P. R., Prabhakar, S., Lufkin, et al
  2017; 2017: 8932583
- **A developmental transcriptomic analysis of Pax1 and Pax9 in embryonic intervertebral disc development.** *Biology open*
  Sivakamasundari, V., Kraus, P., Sun, W., Hu, X., Lim, S. L., Prabhakar, S., Lufkin, T.
  2017; 6 (2): 187-199
- **Single-cell transcriptomes identify human islet cell signatures and reveal cell-type-specific expression changes in type 2 diabetes.** *Genome research*
  Lawlor, N., George, J., Bolisetty, M., Kursawe, R., Sun, L., Sivakamasundari, V., Kycia, I., Robson, P., Stitzel, M. L.
  2017; 27 (2): 208-222
- **Genome wide binding (ChIP-Seq) of murine Bapx1 and Sox9 proteins in vivo and in vitro.** *Genomics data*
  Chatterjee, S., Kraus, P., Sivakamasundari, V., Yap, S. P., Kumar, V., Prabhakar, S., Lufkin, T.
  2016; 10: 51-3
- **Gene expression profiles of Bapx1 expressing FACS sorted cells from wildtype and Bapx1-EGFP null mouse embryos.** *Genomics data*
  Chatterjee, S., Sivakamasundari, V., Kraus, P., Yap, S. P., Kumar, V., Prabhakar, S., Lufkin, T.
  2015; 5: 103-105
- **In vivo genome-wide analysis of multiple tissues identifies gene regulatory networks, novel functions and downstream regulatory genes for Bapx1 and its co-regulation with Sox9 in the mammalian vertebral column.** *BMC genomics*
  Chatterjee, S., Sivakamasundari, V., Yap, S. P., Kraus, P., Kumar, V., Xing, X., Lim, S. L., Sng, J., Prabhakar, S., Lufkin, T.
  2014; 15: 1072
- **Pleiotropic functions for transcription factor zscan10.** *PloS one*
  Kraus, P., V, S., Yu, H. B., Xing, X., Lim, S. L., Adler, T., Pimentel, J. A., Becker, L., Bohla, A., Garrett, L., Hans, W., Hölter, S. M., Janas, et al
  2014; 9 (8): e104568
- **Generating mouse lines for lineage tracing and knockout studies.** *Methods in molecular biology (Clifton, N.J.)*
  Kraus, P., Sivakamasundari, V., Xing, X., Lufkin, T.
  2014; 1194: 37-62
- **A conditional mouse line for lineage tracing of Sox9 loss-of-function cells using enhanced green fluorescent protein.** *Biotechnology letters*
  Chatterjee, S., Kraus, P., Sivakamasundari, V., Xing, X., Yap, S. P., Jie, S., Lufkin, T.
  2013; 35 (12): 1991-6
- **Stemming the Degeneration: IVD Stem Cells and Stem Cell Regenerative Therapy for Degenerative Disc Disease.** *Advances in stem cells*
  Sivakamasundari, V., Lufkin, T.
  2013; 2013
- **Pax1(EGFP): new wildtype and mutant EGFP mouse lines for molecular and fate mapping studies.** *Genesis (New York, N.Y. : 2000)*
  Sivakamasundari, V., Kraus, P., Jie, S., Lufkin, T.
  2013; 51 (6): 420-9
- **Making sense of Dlx1 antisense RNA.** *Developmental biology*
  Kraus, P., Sivakamasundari, V., Lim, S. L., Xing, X., Lipovich, L., Lufkin, T.
  2013; 376 (2): 224-35
- **Mouse strain specific gene expression differences for illumina microarray expression profiling in embryos.** *BMC research notes*
  Kraus, P., Xing, X., Lim, S. L., Fun, M. E., Sivakamasundari, V., Yap, S. P., Lee, H., Karuturi, R. K., Lufkin, T.

2012; 5: 232

- **Bridging the Gap: Understanding Embryonic Intervertebral Disc Development.** *Cell & developmental biology*
  Sivakamasundari, V., Lufkin, T.
  2012; 1 (2)
- **New Bapx1(Cre-EGFP) mouse lines for lineage tracing and conditional knockout studies.** *Genesis (New York, N.Y. : 2000)*
  Sivakamasundari, V., Chan, H. Y., Yap, S. P., Xing, X., Kraus, P., Lufkin, T.
  2012; 50 (4): 375-83
- **Making no bones about it: Transcription factors in vertebrate skeletogenesis and disease.** *Trends in developmental biology*
  Chatterjee, S., Sivakamasundari, V., Lee, W. J., Chan, H. Y., Lufkin, T.
  2012; 6: 45-52
- **Comparison of IRES and F2A-based locus-specific multicistronic expression in stable mouse lines.** *PloS one*
  Chan, H. Y., V, S., Xing, X., Kraus, P., Yap, S. P., Ng, P., Lim, S. L., Lufkin, T.
  2011; 6 (12): e28885
- **Nuclear accumulation of an uncapped RNA produced by Drosha cleavage of a transcript encoding miR-10b and HOXD4.** *PloS one*
  Phua, S. L., Sivakamasundari, V., Shao, Y., Cai, X., Zhang, L. F., Lufkin, T., Featherstone, M.
  2011; 6 (10): e25689
- **Generation of mice with a novel conditional null allele of the Sox9 gene.** *Biotechnology letters*
  Yap, S. P., Xing, X., Kraus, P., Sivakamasundari, V., Chan, H. Y., Lufkin, T.
  2011; 33 (8): 1551-8