Academic Qualifications :

2007 B.Sc. (Hons.) in Life Sciences, National University of Singapore, Singapore
2013 Ph.D. in Biological Sciences, National University of Singapore, Singapore

Present Academic Position :

02/18 - present Research Scientist, Stanford University, CA, USA

Previous Academic Positions :

02/18-present Research Scientist, Stanford University, CA, USA
05/15- 02/18 Associate Research Scientist, Single Cell Genomics, The Jackson, CT, USA
02/13 -02/15 Postdoctoral Fellow, Genome Institute of Singapore, A*STAR, Singapore

Other Previous Work Experiences:

10/07 - 01/13 Research Officer, Genome Institute of Singapore, A*STAR, Singapore

Research Interest & Expertise :

- *Heterogeneity in cancer* - Molecular and transcriptional basis of cell type heterogeneity in cancer progression and resistance to certain chemotherapeutic drugs.

- *Circulating tumor cells (CTCs) and metastasis* - utilization of CTC-derived PDX models, single-cell RNA-sequencing and exome sequencing to understand mechanism behind metastatic progression of cancers (SCLC).

- *Role of signaling pathways in tissue homeostasis, injury and regeneration* - using lineage tracing models, injury and single-cell RNA-sequencing to elucidate the role of Hedgehog pathway in various adult tissues such as gastrointestinal and salivary glands.

- *Tissue heterogeneity and tumor microenvironment* - using single-cell RNA-sequencing and imaging mass cytometry (IMC) to develop single-cell atlas of human kidney and renal cell carcinoma to understand the cellular basis for tumor microenvironment.

- *Role of developmental transcription factors in intervertebral disc development and degeneration* - using knock-in and knock-out mouse lines of *Pax1* and *Pax9* TFs to elucidate their molecular roles in embryonic IVD development and disc degenerative disease.

Five most representative publications in recent 5 years (ORCID: 0000-0001-8488-2335) :

1. Nichane M, Javed A, **Sivakamasundari V**, Ganesan M, Ang LT, Kraus P, Lufkin T, Loh KM, Lim B. Isolation and 3D expansion of multipotent Sox9+ mouse lung progenitors. Nat Methods. (2017),doi: 10.1038/nmeth.4498. PMID: 29106405.

2. Lawlor N, George J, Bolisetty M, Kursawe R, Sun L, **Sivakamasundari V**, Kycia I, Robson P, Stitzel ML. (2016) Single cell transcriptomes identify human islet cell signatures and reveal cell-type-specific expression changes in type 2 diabetes. Genome Res. 2017 Feb;27(2):208-222.

3. Schlitzer A, **Sivakamasundari V*, Chen J***, Sumatoh HR, Schreuder J, Lum J, Malleret B, Zhang S, Larbi A, Zolezzi F, Renia L, Poidinger M, Naik S, Newell EW, Robson P, Ginhoux F.Identification of cDC1- and cDC2-committed DC progenitors reveals early lineage priming at the common DC progenitor stage in the bone marrow. Nat Immunol. 2015;16(7):718-28.

4. **V Sivakamasundari***, Mohan Bolisetty*, Santhosh Sivajothi*, Shannon Bessonett, Diane Ruan, and Paul Robson.Comprehensive Cell Type Specific Transcriptomics of the Human Kidney. * Equal contribution. doi: https://doi.org/10.1101/238063. (pre-print)

5. **Sivakamasundari V**, Kraus P, Sun W, Hu X, Lim SL, Prabhakar S, Lufkin T. A developmental transcriptomic analysis of Pax1 and Pax9 in embryonic intervertebral disc development. Biol Open. 2017 Feb 15;6(2):187-199.

Publications beyond 5 years :

**Equal contribution*

1. **V Sivakamasundari,** P Kraus, T Lufkin. Regulatory Functions of Pax1 and Pax9 in Mammalian Cells. 2018, DOI: 10.5772/intechopen.71920. Book Chapter.

2. P Kraus, **V Sivakamasundari**, V Olsen, V Villeneuve, A Hinds, T Lufkin. Klhl14 Antisense RNA is a Target of Key Skeletogenic Transcription Factors in the Developing Intervertebral Disc.Spine: August 6, 2018 - Volume Publish Ahead of Print - Issue - doi: 10.1097/BRS.0000000000002827

3. Wenqing Jean Lee, Sumantra Chatterjee, Sook Peng Yap, Siew Lan Lim, Xing Xing, Petra Kraus, Wenjie Sun, Xiaoming Hu, **V. Sivakamasundari**, Hsiao Yun Chan, Prasanna R. Kolatkar, Shyam Prabhakar, and Thomas Lufkin. 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 (2017), PMID: 28630873.

4. Chatterjee S, Kraus P, **Sivakamasundari V**, Yap SP, Kumar V, Prabhakar S, Lufkin T. Genome wide binding (ChIP-Seq) of murine Bapx1 and Sox9 proteins in vivo and in vitro. Genome Data. 2016;10:51-3.

5. Kraus P; **Sivakamasundari V**; Xing X, Lufkin T. Generating Mouse Lines for Lineage Tracing and Knockout Studies. Methods in Molecular Biology. 01/2014; 1194:37-62. (*protocol article*)

6. Chatterjee S, Kraus P, **Sivakamasundari V**, Xing X, Yap SP, Jie S, Lufkin T. A conditional mouse line for lineage tracing of Sox9 loss-of-function cells using enhanced green fluorescent protein. Biotechnol Lett. 2013;35(12):1991-6.

7. Chatterjee S, Kraus P, **Sivakamasundari V**, Yap SP, Kumar V, Prabhakar S, Lufkin T. Genome wide binding (ChIP-Seq) of murine Bapx1 and Sox9 proteins in vivo and in vitro. Genome Data. 2016;10:51-3.

8. Chatterjee S, **Sivakamasundari V**, Kraus P, Yap SP, Kumar V, Prabhakar S, Lufkin T. Gene expression profiles of Bapx1 expressing FACS sorted cells from wildtype and Bapx1-EGFP null mouse embryos. Genome Data. 2015; Sep;5:103-105.

9. Chatterjee S, **Sivakamasundari V**, Yap SP, Kraus P, Kumar V, Xing X, Lim SL, Sng J, Prabhakar S, Lufkin T. 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. 2014 Dec 5;15:1072.

10. Kraus P, **V S**, Yu HB, Xing X, Lim SL, Adler T, Pimentel JA, Becker L, Bohla A, Garrett L, Hans W, Hölter SM, Janas E, Moreth K, Prehn C, Puk O, Rathkolb B, Rozman J, Adamski J, Bekeredjian R, Busch DH, Graw J, Klingenspor M, Klopstock T, Neff F, Ollert M, Stoeger T, Yildrim AÖ, Eickelberg O, Wolf E, Wurst W, Fuchs H, Gailus-Durner V, de Angelis MH, Lufkin T, Stanton LW. Role of Transcription factor Zscan10 in the control of progenitor cell subpopulations. PLoS ONE. 2014; 9(8): e104568.

11. Kraus P, **Sivakamasundari V**, Lim SL, Xing X, Lipovich L, Lufkin T. Making sense of Dlx1 antisense RNA. Dev Biol. 2013;15;376(2):224-35.

12. Chatterjee S, **Sivakamasundari V**, Lee WJ, Chan HY, Lufkin T. Making no bones about it: Transcription factors in vertebrate skeletogenesis and disease. Trends in Developmental Biology. 2012; 6:45-52. (*review article*)

13. **Sivakamasundari V**, Kraus P, Jie S and Lufkin T. Pax1EGFP: New wildtype and mutant EGFP mouse lines for molecular and fate mapping studies. Genesis. 2013; 51(6):420-9

14. **Sivakamasundari V**, Lufkin T. Stemming the degeneration: IVD Stem Cells and Stem Cell Therapy for Degenerative Disc Disease. Adv Stem Cells. 2013; pii: 724547. (*review article*)

15. **Sivakamasundari V**, Lufkin T. Bridging the Gap: Understanding Embryonic Intervertebral Disc Development. Cell Dev Biol. 2012; 1(2). pii: 103. (*review article*)

16. Kraus P, Xing X, Lim SL, Fun ME, **Sivakamasundari V**, Yap SP, Lee H, Karuturi RK, Lufkin T. Mouse strain specific gene expression differences for Illumina microarray expression profiling in embryos. BMC Res Notes. 2012; 14;5(1):232.

17. Yap SP, Xing X, Kraus P, **Sivakamasundari V**, Chan HY, Lufkin T. Generation of mice with a novel conditional null allele of the Sox9 gene. Biotechnol Lett. 2011; 33(8):1551-8

18. Phua SL, **Sivakamasundari V**, Shao Y, Cai X, Zhang LF, Lufkin T, Featherstone M. Nuclear accumulation of an uncapped RNA produced by Drosha cleavage of a transcript encoding miR-10b and HOXD4. PLoS One.2011; 6(10):e25689.

19. **Chan HY*, V Sivakamasundari***, Xing X, Kraus P, Yap SP, Ng P, Lim SL, Lufkin T. Comparison of IRES and F2A-based locus-specific multi-cistronic expression in stable mouse lines. PLoS One. 2011;6(12):e28885.

20. **Sivakamasundari V***, **Chan HY***, Yap SP, Xing X, Kraus P, Lufkin T. New Bapx1 (Cre-EGFP) mouse lines for lineage tracing and conditional knockout studies. Genesis. 2012; 50(4):375-83.

Fellowships and Honors :

Scientific Staff Development Award, A*STAR: PhD scholarship

Professional Memberships :

2013-14	Member, Stem Cell Society (Singapore)
2014-15, 2019	Member, International Society for Stem Cell Research (ISSCR)
2016-18	Member, American Association for Cancer Research (AACR)