

## Kunde Ramamoorthy Govindarajan

### Associate Director

Computational Sciences,  
The Jackson Laboratory,  
Farmington, CT  
Phone: +1-860-837-2094  
Email: govind.kunde@jax.org

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### Professional Summary

15+ years of multi-faceted, cross-functional experience in managing and analyzing data generated by diverse high-throughput genomic technologies. Hands on and leadership experience in genomics, big data management, analysis pipelines, interpretation and application development in academic/government and commercial settings.

### Work / Research Experiences

- Jul '16 - present      **Associate Director**, Computational Sciences,  
The Jackson Laboratory for Genomic Medicine, Farmington, CT
- Jun '13 – Jul '16      **Bioinformatics Group Lead, Institutional Informatics -  
Genomic Technologies R&D**  
Joint Genome Institute, Lawrence Berkeley National Laboratory,  
California, USA.
- Sep '11 – May '13      **Senior Bioinformatics Analyst/Lead Programmer**,  
Children Nutrition Research Centre, Baylor College of Medicine,  
Houston, Texas, USA.
- Mar '11 – Aug '11      **Bioinformatics Manager**,  
Temasek Life Sciences Laboratory Limited, Singapore.
- July '09 – Dec '10      **Principal Associate Scientist**,  
Lilly Singapore Centre for Drug Discovery Pte Ltd, Eli Lilly & Co,  
Singapore.
- July '08 – June '09      **Staff Scientist**,  
Lilly Singapore Centre for Drug Discovery Pte Ltd, Eli Lilly & Co,  
Singapore.
- Apr '03 – June '08      **Senior Bioinformatic Specialist/Team Lead**,  
Scientific Computing, Genome Institute of Singapore.
- May '02 – Mar '03      **Research Assistant**,  
Genome Institute of Singapore.
- July '00 – Apr '02      **Research Scholar**,  
Bioinformatics Centre, Bio-chemistry Department,  
Faculty of Medicine, NUS, Singapore.

### Editorial Tasks

- Reviewer: "Nature Science Reports", "Bioinformatics", "Bioinformation", "Journal of Proteomics and Bioinformatics".
- Program Committee & Reviewer: International Conference on Bioinformatics (InCoB) 2014.

## **Educational Qualifications**

2005-2007	Graduate Diploma (Software Engineering) Institute of System Science, National University of Singapore, Singapore
2000-2002	M.Sc. (Bioinformatics) National University of Singapore, Singapore
1995-1997	M.Sc. (Biochemistry) Bharathidasan University, India

## **Key conference and workshops attended**

- Big Data Boot camp – AMP Camp 6, November 2015 - UC Berkeley, Berkeley, USA.
- Invited talk at Genomics in Action, November 2015 – University of Oregon, Eugene, Oregon, USA.
- Invited talk at 10<sup>th</sup> Annual DOE Joint Genome Institute Genomics of Energy & Environment Meeting, March 2015 – Walnut Creek, California, USA.
- Invited talk at 9<sup>th</sup> Annual DOE Joint Genome Institute Genomics of Energy & Environment Meeting, March 2014 – Walnut Creek, California, USA.
- NIH-Roadmap Epigenomics Program Investigators Meeting, May 2012 – Bethesda, Washington DC, USA.
- Invited talk at 3<sup>rd</sup> Epigenome Informatics Workshop, March 2012 – Baylor College of Medicine, Houston, Texas, USA.
- Microarray Data Normalization, May 2004 – Harvard Medical School, Boston, USA.
- Bioconductor Tutorial, June 2003 – Intelligent Systems for Molecular Biology (ISMB), Australia.
- International Conference on Bioinformatics (INCOB), 2002-Bangkok, Thailand.

## **Publications**

1. Arjunan, P., A. El-Awady, R.o. Dannebaum, **G. Kunde-Ramamoorthy**, and C.w. Cutler. (2016) High-Throughput Sequencing Reveals Key Genes and Immune Homeostatic Pathways Activated in Myeloid Dendritic Cells by Porphyromonas Gingivalis 381 and Its Fimbrial Mutants. *Molecular Oral Microbiology* 31, 78–93.
2. Evans, Joseph, Emily Crisovan, Kerrie Barry, Chris Daum, Jerry Jenkins, **Govindarajan Kunde-Ramamoorthy**, Aruna Nandety, et al. (2015). Diversity and Population Structure of Northern Switchgrass as Revealed through Exome Capture Sequencing. *The Plant Journal* 84, 800–815.
3. **Kunde-Ramamoorthy, G.**, Coarfa, C., Laritsky, E., Kessler, N.J., Harris, R.A., Xu, M., Chen, R., Shen, L., Milosavljevic, A., and Waterland, R.A. (2014). Comparison and quantitative verification of mapping algorithms for whole-genome bisulfite sequencing. *Nucl. Acids Res.* gkt1325.

4. Li, G., Kohorst, J.J., Zhang, W., Laritsky, E., **Kunde-Ramamoorthy, G.**, Baker, M.S., Fiorotto, M.L., and Waterland, R.A. (2013a). Early Postnatal Nutrition Determines Adult Physical Activity and Energy Expenditure in Female Mice. *Diabetes* 62, 2773–2783.
5. Li, G., Zhang, W., Baker, M.S., Laritsky, E., Mattan-Hung, N., Yu, D., **Kunde-Ramamoorthy, G.**, Simerly, R.B., Chen, R., Shen, L., et al. (2013b). Major Epigenetic Development Distinguishing Neuronal and Non-Neuronal Cells Occurs Postnatally in the Murine Hypothalamus. *Hum. Mol. Genet.* ddt548.
6. Tan, T.W., Xie, C., Silva, M.D., Lim, K.S., Patro, C.P.K., Lim, S.J., **Govindarajan, K.R.**, Tong, J.C., Choo, K.H., Ranganathan, S., et al. (2013). Simple re-instantiation of small databases using cloud computing. *BMC Genomics* 14, S13.
7. Yu, D.-H., Ware, C., Waterland, R.A., Zhang, J., Chen, M.-H., Gadkari, M., **Kunde-Ramamoorthy, G.**, Nosavanh, L.M., and Shen, L. (2013). Developmentally Programmed 3' CpG Island Methylation Confers Tissue- and Cell-Type-Specific Transcriptional Activation. *Mol. Cell. Biol.* 33, 1845–1858.
8. Lam, Siew Hong, Serene G P Lee, Chin Y Lin, Jane S Thomsen, Pan Y Fu, Karuturi R K Murthy, Haixia Li, **Govindarajan Kunde Ramamoorthy**, et al. Molecular Conservation of Estrogen-response Associated with Cell Cycle Regulation, Hormonal Carcinogenesis and Cancer in Zebrafish and Human Cancer Cell Lines. *BMC Medical Genomics* 2011 (4) : 41.
9. Daniel Ming Ming Tay\*, **Kunde Ramamoorthy Govindarajan\***, Asif M Khan, Terenze Yao Rui Ong, Hanif M Samad, Wei Wei Soh, Minyan Tong, Fan Zhang, Tin Wee Tan. T3SEdb: data warehousing of virulence effectors secreted by the bacterial Type III Secretion System. *BMC Bioinformatics* 2010, 11(Suppl 7):S4 (\* authors equally contributed)
10. Adaikkalam Vellaichamy, Chin-Yo Lin, Thin Thin Aye, **Govindarajan R. Kunde**, Alexey I. Nesvizhskii, Edison T. Liu, Siu Kwan Sze. A chloroform-Assisted Protein Isolation Method Followed by Capillary NanoLC-MS Identify Estrogen-Regulated Proteins from MCF7 Cells. *Journal of Proteomics and Bioinformatics.* 2010 Jul;3(7):212-220.
11. Zhang J, Liu X, Datta A, **Govindarajan K**, Tam WL, Han J, George J, Wong C, Ramnarayanan K, Phua TY, Leong WY, Chan YS, Palanisamy N, Liu ET, Karuturi KM, Lim B, Miller LD. RCP is a human breast cancer-promoting gene with Ras-activating function. *J Clin Invest.* 2009 Aug;119(8):2171-83.
12. Chen X, Xu H, Yuan P, Fang F, Huss M, Vega VB, Wong E, Orlov YL, Zhang W, Jiang J, Loh YH, Yeo HC, Yeo ZX, Narang V, **Govindarajan KR**, Leong B, Shahab A, Ruan Y, Bourque G, Sung WK, Clarke ND, Wei CL, Ng HH. Integration of external signaling pathways with the core transcriptional network in embryonic stem cells. *Cell.* 2008 Jun 13;133(6):1106-17.
13. Hegde A, Qiu NC, Qiu X, Ho SH, Tay KQ, George J, Ng FS, **Govindarajan KR**, Gong Z, Mathavan S, Jiang YJ. Genomewide Expression Analysis in Zebrafish mind bomb Alleles with Pancreas Defects of Different Severity Identifies Putative Notch Responsive Genes. *PLoS ONE.* 2008 Jan 23;3(1):e1479.
14. Xu J, Srinivas BP, Tay SY, Mak A, Yu X, Lee SG, Yang H, **Govindarajan KR**, Leong B, Bourque G, Mathavan S, Roy S. Genomewide expression profiling in the zebrafish embryo identifies target genes regulated by Hedgehog signaling during vertebrate development. *Genetics.* 2006 Oct;174(2):735-52.
15. Lam SH, Wu YL, Vega VB, Miller LD, Spitsbergen J, Tong Y, Zhan H, **Govindarajan KR**, Lee S, Mathavan S, Murthy KR, Buhler DR, Liu ET, Gong Z. Conservation of gene expression signatures between zebrafish and human liver tumors and tumor progression. *Nat Biotechnol.* 2006 Jan;24(1):73-5.
16. Mathavan S, Lee SG, Mak A, Miller LD, Murthy KR, **Govindarajan KR**, Tong Y, Wu YL, Lam SH, Yang H, Ruan Y, Korzh V, Gong Z, Liu ET, Lufkin T. Transcriptome analysis of zebrafish embryogenesis using microarrays. *PLoS Genet.* 2005 Aug;1 (2):260-76.

17. **Kunde Ramamoorthy Govindarajan**, Pandajasarama Kanguane, Tan Tin Wee and Shoba Ranganathan (2003). MPID: MHC-Peptide Interaction Database provides structural information and characterization of peptide bound to class I and class II major histocompatibility complex (MHC). *Bioinformatics* **2**: 309-310.
18. Ranganathan, S., **Govindarajan, K.R.**, Kanguane, P., Tan Tin Wee (2001). MHC-Peptide Interaction Database. *Nucleic Acid Res.* (Online: <http://www3.oup.co.uk/database/107>).

### Poster Presentations

1. Shengqiang Shu, **Govindarajan Kunde Ramamoorthy**, Chris Daum, Chew Yee Ngan, Chia-Lin Wei, Jennifer Chiniqy, Rita Kuo, Kerrie W Barry et al. Arabidopsis thaliana Iso-Seq and Gene Annotation. Plant & Animal Genome XXIV, January 2016 – San Diego, California, USA.
2. Paul Grabowski, Joseph Evans, Chris Daum, **Kunde Ramamoorthy Govindarajan**, Shweta Deshpande, Kerrie W. Barry et al. Detecting Genetic Associations with Phenology in Switchgrass Using Exome-Capture. Plant & Animal Genome XXIII, January 2015 – San Diego, California, USA.
3. **Kunde Ramamoorthy Govindarajan**, Coarfa Cristi, Harris R Allan, Milosavljevic A and Waterland RA: Comparison of Mapping Algorithms for Whole Genome Bisulfite Sequencing. NIH-Roadmap Epigenomics Program Investigators Meeting, May 2012 – Bethesda, Washington DC, USA.
4. **Kunde Ramamoorthy Govindarajan**, Pandjassarama Kanguane, Tan Tin Wee and Shoba Ranganathan (2002).MPID: MHC-peptide interaction database provides structural information and characterization of peptide bound to Class I and Class II major histocompatibility complex (MHC).International Conference on Bioinformatics 2002, 6-8 Feb 2002, Bangkok.
5. **Kunde Ramamoorthy Govindarajan**, Pandjassarama Kanguane, Tan Tin Wee and Shoba Ranganathan (2001). MPID: Structural Database on MHC-Peptide Interaction. Biomedical Asia 2001, 19-21 Sep 2001. Singapore.
6. **Kunde Ramamoorthy Govindarajan**, Sanjay Swarup, Tan Tin Wee and Shoba Ranganathan (2001). Substrate docking studies based on the Orchid Isocitrate Lyase homology model. International conference on fundamental sciences: Biological and chemical Sciences, 21-24 May 2001. National University of Singapore.