Vishal Sarsani

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EDUCATION

PhD, Statistics **2018-present**

University of Massachusetts Amherst, Department of Mathematics and Statistics

- Regression Modelling Statistical Methods, Data analysis
- Mathematical Statistics Statistical Computing
- Applied Bayesian Statistical modeling Advanced Algorithms

MS, Bioinformatics, GPA :3.63/4 **2013-2015**

Indiana University School of Informatics and Computing,

- Machine Learning in Bioinformatics Programming for Life Sciences
- Algorithms for Bioinformatics Computational Systems biology

Thesis: A study on secondary metabolite gene clusters and the interspecies bacterial interactions in the human microbiome

PROFESSIONAL EXPERIENCE

Applicational Computational Scientist **03/2015- 07/2018**

The Jackson Laboratory, Bar Harbor, Maine

- Build a Classifier/model to identify SNV and CNV markers and detect Tandem duplication type in TNBC samples
- Development and maintenance of automated pipelines/tools and frameworks to analyze large scale sequencing data produced internally
- Support the Maintenance and analysis Operations of Clinical Bioinformatics group
- Characterization of Collaborative Cross (CC) mouse strains by Whole genome sequencing and analysis of 69 CC Strains
- Revisiting the mouse reference genome: single molecule sequencing of C57BL/6J Eve, Assembly and genomic structural analysis to supplement existing mouse reference genome
- Genome assembly and gene expression analysis in the American black bear to study kidney hibernation pattern difference between fall and spring bears

UNIVERSITY RESEARCH/TEACHING EXPERIENCE

Teaching Assistant, Statistics 09/2018-present **09/2018-present**

University of Massachusetts Amherst, Department of Mathematics and Statistics

- Directed weekly discussion sections for undergraduate students
- Held weekly office hours to tutor students
- Prepare weekly lesson plan and facilitate grading

Research Assistant, Statistics 09/2018-present
University of Massachusetts Amherst, Department of Mathematics and Statistics

- Developing Bayesian statistical methods for the analysis of genomic data and comparative genomics

Bioinformatics Research assistant and data analysis
Indiana University School of Informatics and Computing

- Involved in Various Microbiome data analysis studies at IU school of Medicine
- Analyzed 16S microbiome data of children with infectious diseases (RV) and studied bacterial pathogens interactions
- Developed a pipeline for mining of microbial metabolites in whole genome sequence data of human microbiome
- Achieved published results from microRNA expression and statistical analysis in cirrhosis patients (microarray)

Teaching Assistant, Calculus-3 and Biostatistics 09/2017-03/2018
College of Atlantic, Bar Harbor, Maine

- Offering homework help and solutions to the students

SCHOLARSHIPS/ACHIEVEMENTS

- Winner of NVidia TK1 CUDA contest (https://developer.nvidia.com/tk1-vision-challenge
- Mathematics Fellowship, *Department of Mathematics and Statistics, UMass Amherst*

SKILLS

Programming: Python, R and C++
Stats: Mathematica, MATLAB, Statistical inference and data modelling, Latex
Computer and Networking: High performance and Cloud Computing (GCE and AWS)
Bioinformatics: GATK suite, Bioconductor, Mothur, QUIIME

PUBLICATIONS/ARTICLES

Community-acquired rhinovirus infection is associated with changes in the airway microbiome
*KM Kloepfer, **VK Sarsani**, V Poroyko, WM Lee, TE Pappas, T Kang, ...*
Journal of Allergy and Clinical Immunology 140 (1), 312-315. e8

Mo1202 Esophageal Microbiome in Healthy Children and Eosinophilic Esophagitis: A Prospective Study
*KR Parashette, **V kumar Sarsani**, E Toh, EC Hon, SC Janga, D Nelson, ...*
Gastroenterology 148 (4), S-637-S-638

Genomes of the mouse collaborative cross
*A Srivastava, AP Morgan, ML Najarian, **VK Sarsani,** JS Sigmon, ...*
Genetics 206 (2), 537-556

Newborn Upper Airway Microbiome Differs from Maternal Airway Microbiome
*KM Kloepfer, **VK Sarsani**, D Nelson, SC Janga, SD Davis*
D44. FIRST LINE OF DEFENSE: AIRWAY RESPONSE TO INFECTIONS AND IRRITANTS

The Use of Biosynthetic Controls as Performance Standards for NGS Assays of Somatic Tumors: A Multi-Laboratory Study
*SJ Deharvengt, FB de Abreu, JD Peterson, R Daber, G Ananda, **V Sarsani**, ...*
JOURNAL OF MOLECULAR DIAGNOSTICS 18 (6), 1031-1032

Differential Expression of MicroRNA in Non-tumoral Liver Tissue of Patients with Non-alcoholic Steatohepatitis Cirrhosis and Hepatocellular Cancer
*R Vuppalanchi, T Liang**, V Sarasani**, S Janga, J Kota, N Chalasani*
AMERICAN JOURNAL OF GASTROENTEROLOGY 109, S182-S183

Differential Expression of miRNAs in Nontumor Liver Tissue of Patients with Hepatocellular Cancer Caused by Nonalcoholic Steatohepatitis Cirrhosis
T Liang, NP Chalasani, KE Williams, **V Sarasani**, SC Janga, ...
Clinical Gastroenterology and Hepatology 15 (3), 465-467

Whole-genome sequence of Sungri/96 vaccine strain of peste des petits ruminant's virus
*M Siddappa, RK Gandham, **V Sarsani**, BP Mishra, B Mishra, CG Joshi, ...*
Genome announcements 2 (1), e00056-14

Relationship between differential hepatic microRNA expression and decreased hepatic cytochrome P450 3A activity in cirrhosis
*Raj Vuppalanchi, Tiebing Liang, Chirayu Pankaj Goswami, Rohit Nalamasu, Lang Li, David Jones, Rongrong Wei, Wanqing Liu, **Vishal Sarasani**, Sarath Chandra Janga, Naga Chalasani*

Comprehensive genomic analysis demonstrates concordance of PDX models and patient tumor cohorts
*XY Woo, V Yadav, A Simons, A Srivastava, G Ananda, **VK Sarsani**, R Liu, ...*
Cancer Research 77 (13 Supplement), 3842-3842

Genome assembly and gene expression in the American black bear provides new insights into the renal response to hibernation (Submitted*)
Anuj Srivastava, Vishal Kumar Sarsani, Susan M. Sheehan, Rita L. Seger, Mary E. Barter, Charlotte Lindqvist, Lawrence C. Brody, James C. Mullikin, Ron Korstanje

A hypermorphic Nfkbid allele represents an Idd7 locus gene contributing to impaired thymic deletion of autoreactive diabetogenic CD8+ T-cells in NOD mice
Maximiliano Presa, Jeremy J Racine, Jennifer R Dwyer, Deanna Lamont, Jeremy J Ratiu, Vishal Kumar Sarsani, Yi-Guang Chen, Aron Geurts, Ingo Schmitz, Timothy Stearns, Jennifer Allocco, Harold D Chapman, David V Serreze
The Journal of Immunology

MEMBERSHIPS

- American Statistical Association (ASA)
- MDI Toast Masters Club