PARUL SHARMA

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Education

INDRAPRASTH INSTITUTE OF INFORMATION TECHNOLOGY CGPA: 8.0
M.Tech (Computational Biology)
2015 - Present

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY CGPA: 7.8
B.Tech (Biotechnology)
2011 – 2015

QUEEN MARY'S SCHOOL , DELHI Percentage: 86.6
CBSE
2010 – 2011

QUEEN MARY'S SCHOOL , DELHI Percentage: 88.4
CBSE
2008 – 2009

Skills

Expertise Area	Bioinformatics, Molecular Biology, Microbiology, Data science
Programming Language	Python, R, MATLAB, linux-shellscripting
Tools and Technologies	Various bioinformatics tools- BAM, SAM, VCFtools, Mutalyzer, Annovar. Photoshop,
Technical Electives	Stochastic Simulations in Systems Biology and Biophysics, Systems and Synthetic biology, Data Science for Genomics, Introduction to mathematical biology, Molecular mechanics and biophysics, Statistical Computation

Internship

CGMCP (Center For Genetic Manipulation Of Crop Plants) (Research) (Jun,14 –Aug,14)
Guide: Dr. Yaspal Singh Sodhi Team Size:2

Analysis of different *Brassica* species and varieties for Erucic acid and Glucosinolate contents by Gas chromatography (GC), Near infra-red spectroscopy (NIRS) and High performance liquid chromatography (HPLC).

Rajiv Gandhi Cancer Hospital And Research Center (Industrial) (Dec,13 –Jan,14)
One month training in pathological departments including biochemistry, microbiology, hematology involving various pathological tests.

Projects

Pharmacogenomic analysis of Qatar population (May,16 – Aug,16)
Guide: Dr. Vinod Scaria Team Size-1
The genetic basis of differences in drug response has been an emerging field of study. Exploring the population level differences of pharmacogenetic variants could provide insights into ethnic differences in drug response, which in-turn would be extremely useful for formulating country-level policies on drug dosage, genetic testing and reporting of adverse drug effects. The advent of next generation sequencing in the recent years have significantly accelerated the understanding of genetic variability at an individual level, and in many cases at the population level too. The availability of exome/genome data in the public domain make it possible to mine the data and generate population-scale assessments for genetic traits. Several reports have emphasized the utility and validity of using whole exome sequence data to profile pharmacogenetic variants at an individual level. A number of studies have characterized the distinct genetic architecture of the Arab population. In the past decade, several studies have evaluated the allele and genotype frequencies for specific candidate genetic variations. The aim of this study is to analyse the Arab population, as a whole, with respect to its genetic variability.

An online tool for reporting of incidental findings in sequencing data (Aug,16 – Jan,17)
Guide: Dr. Vinod Scaria Team Size-2
The tool checks if a sequencing data has variants falling on any of the ACMG provided minimum list of 59 genes from a manually curated database. It then provides useful gene-disease annotations of the matched variants categorised into pathogenic, likely pathogenic and uncertain significance, in a comprehensive report format. The user can select the variants he/she wants to print in the report from the list of matched variants.

To study the effect of Bacteriocin-like-inhibitory substances on bacterial biofilms. (Aug,14 – May,15)
Team Size-3
Guide: Dr. Reema Gabrani
Bacterial biofilms are causative agents to many harmful diseases and their resistance to most antibiotics further increases threat. Bacteriocins are small antimicrobial peptides that act against the biofilms and thus can be used as potential therapeutics in curing biofilm related diseases. In the experiment, a novel bacteriocin was isolated from Bacillus subtilis and its effect was measured on various biofilm forming bacterial strains.

Bioremediation of inorganic pollutants by microorganisms (Aug,13 – Dec,13)
Guide: Dr. Nidhi Gupta Team Size-3
Different methodologies for tackling inorganic pollutants, such as arsenic, can be employed but the most efficient of them all is the use of genetically engineered bacteria as it bypasses nearly all limitations of physical and chemical methods as well as is a step-up from the use of microorganisms alone.

Role of Prebiotics, Probiotics, Synbiotics and gut microbiota in obesity (Jan,13 – May,13)
Team Size-3
Guide: Dr. Neeraj Wadhwa
Gut microbiota modulate host energy homeostasis and adiposity through different mechanisms, e.g., energy harvest from the diet, LPS-induced chronic inflammation,

modulation of tissue fatty acid composition, and gut-derived peptide secretion and hence effect of the onset of diseases like obesity.

Positions of Responsibility

- Volunteer for Administration Department and Cultural Committee and delegate at the International Conference on "**Life Sciences, Informatics, Food and Environment**" (IC LIFE 2014). (2014)
- Organized various events on behalf of the cultural Committee for the yearly fest, impressions.

Awards and Achievements

- **Publications**:

"Microbial removal of arsenic: Mechanisms and Applications", *Asian Journal of Multidisciplinary Studies*, Volume 2, Issue 12, 2014.

"Escherichia coli biofilm: development and therapeutic strategies", *Journal of Applied Microbiology.* Manuscript ID: JAM-2015-2609.R1, 2016 PMID: 26811181.

"Landscape of warfarin and clopidogrel pharmacogenetic variants in Qatari population from whole exome datasets", *Pharmacogenomics.* 2016 PMID: 27767380

"An online tool for reporting of incidental findings in sequencing data" –Publication awaited

- Poster presentation at Research Showcase'2017 organized by IIIT-Delhi (2017). Poster title: Pharmacogenetic Variant Analysis In Arab Populations From Exome Data.
- Poster presentation at the national conference on "Recent Advances in Biological Sciences" organized by SYSCON (Society of young scientists) AIIMS (2014). Poster title: Antimicrobial peptides as potential therapeutics against bacteria.
- Successfully completed the "Rio+20 United Nations Conference On Sustainable Development India Program" (2013).
- Successfully completed online course on "Virology" from UNIVERSITY OF COLUMBIA. (November 2013)
- Successfully completed online course on "Introduction to Biology" from MASSACHUSETTS INTSTITUTE OF TECHNOLOGY. (December 2013)

Interests and Hobbies

- Reading
- Writing
- Sketching

Declaration: The above information is correct to the best of my knowledge.
Parul Sharma
Date: May, 15, 2017.