Aman Pruthi

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GitHub profile - https://github.com/amanpruthi15

EDUCATION

Master of Biology, Texas Tech University, USA
- Thesis: "Genome sequencing, annotation and small RNA study in the moss"
- Major Advisor: Dr. Matthew G. Johnson
- Co Advisor: Dr. Zhixin Xie
- Cumulative GPA from Fall 2019 and Spring 2020 – 4

Bachelor of Science, Biotechnology, Punjab Agricultural University, India
- OCPA – **8.17/10**
- Major Project: "Prediction of stress related proteins in plants"

RESEARCH EXPERIENCE

Graduate research
- First project – "Genome sequencing and annotation of the moss: *Bryum argenteum*"
  - **Skills acquired:**
    - High molecular weight DNA extraction for long-read DNA sequencing
    - Tissue Culture of the mosses
    - Genome Assembly

- Second project – "Studying small RNA biology of non-model organism, *Bryum argenteum* to understand the land plant evolution and their stress coping mechanism."
  - **Skills acquired:**
    - Total RNA extraction
    - Small RNA extraction
    - Small RNA library prep
    - Sequencing of small RNA using Illumina sequencing platform

Undergraduate research
- First project – "Transcriptome analysis of Apple Stem Groove Virus (ASGV) infection in *Malus domestica.*" Under the guidance of Dr. Deepak Singla, PAU
  - **Skills acquired:**
    - FastQC – Trimmomatic operation
    - HISAT2 – Aligning transcripts
    - Cufflinks – Differential gene expression analysis

- Second project – "Development of Machine Learning Based Model for classification of Biotic and Abiotic Stress Tolerance Protein." Under the guidance of Dr. Deepak Singla, PAU
  - **Skills acquired:**
    - Pearl language
    - BLAST
    - CD-HIT – Cluster Database at High Identity with tolerance
    - PfamScan
    - Machine learning using Weka

ACADEMIC SKILLS

Graduate
- Genome assemblers and tools – Abyss, Canu, Unicylcer, GATK (Genome Analysis Toolkit), Jellyfish
- Alignment tools – Burrows Wheeler Alignment (BWA), Bowtie
- Small RNA analysis and tools – Deep sequencing detection, RNA silencing mechanisms, sRNA separation tools such as chromatography, differential precipitation, degradome sequencing, ShortStack analysis for identification and annotation of sRNA loci.
- Python

Undergraduate
- Molecular Biology - DNA isolation, PCR analysis, agarose gel electrophoresis, use of SDS-PAGE, use of molecular markers, Plasmid DNA isolation, Genotyping, Phenotyping
- Bioinformatics - Use of biotechnological and bioinformatics databases and search engines like NCBI, EBI; tools such as BLAST, Clustal X, Clustal W, RasMol, PyMol
- Computer Skills - MS Word, MS Excel, MS PowerPoint
- Microscope – Use of Optical Microscope, Stereo zoom Microscope in chromosome studies, Knowledge of Electron Microscopes such as Scanning Electron Microscope & Tunneling Electron Microscope
- Knowledge of field crops agronomy & tissue culture

TEACHING EXPERIENCE

- Teaching Assistant – BIOL 1403 –Biology I, Fall 2019 for Dr. Michael Dini
  - General techniques in used in biology and their application in modern science

- Teaching Assistant – BIOL 1402 –Biology of Animals, Spring 2020 for instructor Carrie Monje
  - Teaching students how to study a model organism for different character traits using Madagascar Hissing Cockroach

AWARDS

- Merit certificate from Punjab Agricultural University, India
- Study Abroad Competitive Scholarship (SACS), Texas Tech – Fall, 2020

PROFESSIONAL MEMBERSHIPS

- Member of Texas Tech University Association of Biologists (TTUAB)
- Member of West Texas Botanists Society

COMMUNITY SERVICE

- Member of National Service Scheme (NSS), Punjab Agricultural University, India – Providing extension education to farmers and keeping clean surroundings in and around the campus
- Member of Parwaaz NGO, India – Teaching the under privileged children and raising awareness at the grassroot level regarding sexual hygiene and sanitation.