

SOUMYAROOP BHATTACHARYA

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- SUMMARY:**
- Pursuing Doctorate of Philosophy (Ph.D.) in Biomedical Informatics
 - Visa Status: F1
 - Specific Area : Gene Expression, DNA Microarray, Data Analysis
 - Served as President, Graduate Student Association of UMASS Lowell
 - Awarded 'Best Student Research' at 2nd Annual UMASS Bioinformatics Conference
 - Hands on experience of RT-PCR and DNA Sequencing
 - Devised an Algorithm for detection of differentially expressed genes from microarrays
 - Proficient in C++ Programing
 - Coded a Software for Software to analyse the effect of Bootstrap on Confidence Level of Gene Expression Data
 - Many research presentations and awards

PROFESSIONAL EXPERIENCE:

- Graduate Student Research Assistant(2002- Present) University of Pittsburgh
Study of DNA Microarrays for Cancer
- Teaching Assistant (2001- 2002) University of Massachusetts Lowell
Develop & implement lessons for Life Sciences Lab. Courses
- Graduate Laboratory Assistant (2000- 2001) University of Massachusetts Lowell
Maintenance of Center for Bioinformatics and Computational Biology (Biology node) UMASS Lowell
- Research Assistant (1999-2000) Banaras Hindu University India
Setting up of a Plant Pathology Research Laboratory
- Programming Assistant (1997-1999) Aptech Computers Limited India
Designing software packages for Office Automation and Railway Reservation
- Summer Trainee (1998) National Institute of Tea Management, India
Study of Cultivation Procedures and Quality Control in Tea Production

EDUCATION:

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|---|-----------------|
| Doctorate of Philosophy | 2002- Till Date |
| University of Pittsburgh, PA | |
| Master of Science in Biological Sciences (Biotechnology Option) | 2000-2002 |
| University of Massachusetts Lowell, MA | GPA = 3.62/4.0 |
| Bachelor of Science (Agriculture) | 1996-2000 |
| Banaras Hindu University, Varanasi, India | GPA = 8.21/10.0 |

RESEARCH EXPERIENCE:

- Identification of Cancer Biomarkers using DNA Microarrays
- Simulation and Empirical comparisons of methods for obtaining Differentially Expressed genes
- Algorithm for analysis of Gene Expression Data from cDNA Micro arrays
- Software to analyze the Effect of Bootstrap on Confidence Level of Gene Expression Data
- Analysis of Gene Expression Data from cDNA Micro arrays
- Biochemical characterization of leaf tip necrosis (ltn) gene – a marker of resistance in wheat
- Study of Inter-specific Hybridization of Mung bean and Urd bean.
- Studies on 'Proteases' from the Latex of *Ervatamia coronaria*
- Study on fertiliser potential of VAM in *Chrysanthemum*
- Study on effect of mineral solutions on fruit quality in Banana

PRACTICAL TRAINING

Gene Expression Analysis and Real Time PCR Training Workshop at Center of Biotechnology Research, University of Florida, Gainesville

DNA Sequencing and PCR Workshop at Laboratory for Molecular Systematics and Evolutionary Genomics, University of Massachusetts, Lowell

Radiation Safety Training Certificate, Radiation Safety Office, University of Massachusetts, Lowell

COMPUTER SKILLS:

Software: Gene Expression Data Analysis: Cluster, Treeview, GeneSpring, MicroArraySuite (MAS)
Phylogenetics & Sequence Alignment: Phylip, PAUP, MEGA, Clustal X, Clustal W.

Language: C, C++, UNIX, FOXPRO, and ORACLE.

RELATED COURSE WORK:

Bioinformatics, Recombinant DNA Technology, Biochemistry, Immunology, Biopharmaceutical GMP and Licensing, Cell and Microbe Cultivation, Cell and Tissue Culture, Genetics, Plant Breeding, Plant Biochemistry, Cytogenetics, Plant Physiology, Experimental Design and Agro-forestry, Statistics

RELATED LABWORK:

Electrophoretic analysis of prepared restriction digests on mini gels. Preparation of partial restriction digests.

Shotgun cloning of lambda Eco/Bam fragments into Puc19, Southern blotting and Hybridization, PCR amplification of genomic DNA for VNTR studies

Transfection of neuroblastoma cells and generation of stable transfectant subclones. Immunocytochemistry.

Passage of cells by trypsinization and seeding of cultures. Influence of serum and coated surfaces on cell division rate.

MicroELISA Assay; Haemagglutination reaction studies; DEAE-Affinity Gel column analysis, Preparation and analysis of Hybridomas

Planning and Designing a Fed-Batch Fermenter for Industrial production

Validation of a CEQ 2000 DNA Sequencer

HONOURS AND ACHIEVEMENTS:

- Best Student Research Presentation, 2nd Annual 2nd Annual UMASS Bioinformatics Conference, University of Massachusetts Lowell, May 2 – 3, 2002

- Graduate Research Grant Award 2002, University of Massachusetts Lowell 2001-2002

- Third Prize, Fifth National Youth Parliament Competition, Ministry of Parliamentary Affairs, Government of India, 1992-93

- Merit Certificate, National Talent Search Examination (NTSE). National Council for Educational Research and Training (NCERT), Government of India, 1992

- All India 32nd rank, National Level Science Talent Search Examination (NLSTSE), United Council for Educational Research Advances in Learning, Thiruvananthapuram, India

EXTRA CURRICULAR ACTIVITIES

- President, Graduate Student Association (GSA), University of Massachusetts Lowell (2001-2002)

- President, UMASS Lowell Graduate Student Bioinformatics Club (2000-2001, 2002-2003)

- Member, International Society of Computational Biology (ISCB)

- Member, PDA Committee, UMASS Lowell Graduate Student Association, (2000-2001)

- Editor, Newsletter of UMASS Lowell Graduate Student Bioinformatics Club, *BIOCOB News* (2000-2002)

- Secretary, Bengali Association, Banaras Hindu University, Varanasi, India, (1999-2000)

- Convenor, GODHULI'97 Annual Cultural Night, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India, 1997

PUBLICATIONS

Lyons-Weiler, J, Patel, S., and **Bhattacharya, S.** (*In Press*) *A Classification-Based Machine learning Approach for the Analysis of Genome-Wide Expression Data*

Lyons-Weiler, J, Patel, S., and **Bhattacharya, S.** (*In Review*) *Panoramic Views of Methods for the Analysis of Global Gene Expression Patterns*

Bhattacharya, S., Patel, S. and Lyons-Weiler, J. (*In Review*) *Melanoma Biomarkers Revealed by Microarray Data Analysis*

INVITED TALKS

“An Empirical Comparison of Algorithms used for detecting Differentially Expressed Genes: Cancer Datasets” at 2nd Annual UMASS Bioinformatics Conference, University of Massachusetts Lowell, May 2nd 2002

POSTER PRESENTATIONS

“An Empirical Comparison of Algorithms used for detecting Differentially Expressed Genes in Cancer Datasets” at 10th Intelligent Systems for Molecular Biology (ISMB) 2002, Edmonton, Canada

“Differentially Expressed Genes: Key to Cancer Prognosis “ at 5th Annual Research Symposium, University of Massachusetts Lowell, April 25th 2002

“An Empirical Comparison of Methods for Detecting Differentially Expressed Genes that Distinguish between types of Lymphoma” at 5th Annual Student Research Symposium, UMASS Lowell, April 2002

“Non-Parametric Bootstrap: A Technique for Confidence level estimation of classification of Large Scale Gene expression Data “ at Microarray Data Analysis Symposium at Harvard University, May 12th 2001

“Non-Parametric Bootstrap: A Technique for Confidence level estimation of classification of Large Scale Gene expression Data “ at 1st Annual UMASS Intercampus Bioinformatics Conference, University of Massachusetts Boston, May 1st 2001

“ Application of Non-Parametric Bootstrap Technique to asses the classification of Large Scale Gene expression Data Analysis “ at 4th Annual Research Symposium, University of Massachusetts Lowell, April 26th 2001