Varuni Prabhakar

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Education

Barnard College, Columbia University, New York (2002-2006)
Anticipated majors: Biology and Mathematics.

Kendriya Vidyalaya Hebbal, Bangalore, India (2001-2002)
All India Senior School Central Examination (AISSCE 2002) in Biology, Chemistry, English, Mathematics and Physics

Work Experience

Summer Student, June – August 2005. Dr. Detlef Weigel, Max Planck Institute for Developmental Biology, Tübingen, Germany.

- Projects: Investigating HAP genes identified in the PERIANTHIA (PAN) transcription factor pathway and ARABIDOPSIS RESPONSE REGULATORs (ARRs) involved in flower development in *A. thaliana*.
- Made and transformed overexpression constructs of HAP transcription factors into plants.
- Created transgenic plant lines with artificial miRNAs under different promoters to target ARR7 and ARR15.

Research Assistant, January 2004 – Present. Prof. Kristen Shepard, Department of Biological Sciences, Barnard College, Columbia University USA.

- Project: Studying polymorpism in CLAVATA (CLV) genes involved in shoot meristem growth in *Arabidopsis thaliana*, across ecotypes.
- Sequenced CLV2 genes from different ecotypes and analysed polymorphisms in CLV2 and CLV3 using Phred, Phrap and Consed.
- Maintained various CLV2 plasmid construct stocks from different *A. thaliana* acessions and *A. lyrata.*

Teaching Assistant, January 2004 – Present. Barnard Calculus Help Room, Department of Mathematics, Barnard College, Columbia University, New York, USA.

- Tutor in the Help room on campus where students can get help with maths problem sets and concepts.

Summer Student, May – July 2004. Dr. Julie Ahringer, Wellcome Trust/Cancer Research UK Gurdon Institute, University of Cambridge, UK.

- Project: studying co-localization of the PAR proteins which establishs and maintain cell polarity in early *Caenorhabditis elegans* embryos.
- Created plasmid constructs with Florescent Protein tags (GFP, YFP, CFP).
- Constructs used to create worm lines that express FP tagged proteins.

Research Assistant, September 2002 – May 2004 and January 2005 – May 2005. Prof. Brian Morton, Department of Biological Sciences, Barnard College, Columbia University, New York, USA.

- Project: GARP (Genome Analysis and Research Package), a Java based software package to visualize and analyze sequenced genome data available in GenBank files, with a focus on Chloroplast genomes.
- Programed the visualization engine to make a schematic "to scale" diagram of the genome showing the positions of various genes on the chromosomes.
- Adapted the visualization engine to include a graphing function for sliding window nucleotide percentage.
- Programmed software to use Monte Carlo method and Markov processes to analyze mutation matrices.

Summer Student, June – August 2003. Dr. Mitradas Panickar, National Center For Biological Sciences, Bangalore, India.

- Worked on making plasmid construct to deliver bacterial cells with expressed genes into nerve cells.

Presentations at Scientific Conferences

"Molecular Population Genetics of the *Arabidopsis* CLAVATA Genes."
- Karin Isaacson, Dana Greenfield, Varuni Prabhakar, Jaime Wesker, Kristen Shepard
New York Area Plant Molecular Biology Meeting 2005. Brooklyn College of CUNY, Brooklyn, NY.

Honors and Awards

Margaret Kenny Jensen Prize for excellence in Mathematics 2004. Barnard College, Columbia University.
Deans List 2003 – 2004. Barnard College, Columbia University.

Computer skills

- Installing, managing and working with Windows and Linux. Comfortable with Macs.
- Extensively used sequence alignment and analysis software (Phred, Phrap, Bioalign, Consed and GAP3)
- Programming in Java and C.

Relevant Courses

Fall 05	Topology; Microbiology (with lab).
Spring 05	Modern Algebra (II); Partial Differential Equations; Accelerated Physics (II); Plant Physiology; Senior Seminar in Mathematics.
Fall 04	Modern Algebra (I); Ordinary Differential Equations; Accelerated Physics (I); Molecular Biology; Plant Evolution.
Spring 04	Introduction to Modern Analysis (II); Complex Variables; Evolution; Organic Chemistry (with lab).
Fall 03	Introduction to Modern Analysis (I); Genetics (with lab); Research Design and Analysis; General Chemistry (with lab).
Spring 03	Honors Math IV; Introduction to Statistics; Molecular and Cell Biology (with lab).
Fall 02	Honors Math III; Introduction to Programming in C; Physiology, Ecology and Evolution (with lab).

References

1. Prof. B. Morton
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2. Prof. J. S. Poindexter
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3. Prof. K. Shepard
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