

## Krupa Navalkar

### Education

- **Biological Design, PhD** program at Arizona State University (Fall 2008 – on going) [GPA: 3.75]
- **Professional Science Masters in Computational Biosciences** at Arizona State University (2006 – 2008) [GPA: 3.55]
- **Post Graduate Diploma in Medical Laboratory Technology (P.G.D.M.L.T.)** Maharashtra State Board of Technical Education, India. (2003 – 2005)
- **Bachelor of Science in Microbiology (B.Sc)** University of Mumbai – Maharashtra, India. (2000 – 2003)
- **“Dean’s Honor List” at Arizona State University**, Tempe, Arizona. – Fall 2006, Spring 2007, Fall 2007

### Awards Received

- **“Graduate Research Assistantship”** from the Department of Mathematics & Statistics, School of Life Sciences (SOLS) & The Biodesign Institute-Center for Innovation in Medicine at Arizona State University.
- **“Employee of the Month”** Award for April 2006 – Wockhardt Hospital- Associate Hospital of Harvard Medical International, Mumbai, India, now part of the Fortis group of hospitals.
- **“Best Student in Science Faculty”** Award for the Academic Year 1999 – 2000. - Dnyanasadhana Jr. College – India.

### Programming Qualifications

- **Diploma in Software Technology & Systems Management from National Institute of Information Technology (NIIT)**, Thane, Maharashtra, India. (2000 - 2004)
- **Honors Diploma in Web Centric Computing from NIIT** India. (2002 - 2004)

### Platforms

WINDOWS NT Server 4.0, ME, XP, Vista, Red Hat Linux, Slackware Linux, Ubuntu Linux.

### Software skills

Programming & Scripting: C++ & CGI, C#, JAVA, Perl, MATLAB, ASP.NET

Technologies: Visual Basic 6.0, Visual C++, Visual Basic.NET, Microsoft SQL Server 7.0

Mathematics & Statistical software: SPSS, SAS, Minitab, Matlab.

## Work Experience

### I. Graduate Research Associate (15<sup>th</sup> August, 2008 – 24<sup>th</sup> September, 2010)

Department: Biodesign Institute - Arizona State University.

References: Dr. Phillip Stafford, E-mail: [Phillip.Stafford@asu.edu](mailto:Phillip.Stafford@asu.edu) Phone: 480-727-0795 Room: Biodesign B wing BDB-215.

Dr. Mitchell Magee, E-mail: [Mitch.Magee@asu.edu](mailto:Mitch.Magee@asu.edu) Phone: 480-727-0857 Room: Biodesign A wing AL1-30S.

Project Title: I.) Coccidioidomycosis (Valley Fever) Immunosignaturing using peptide microarray platform.

II.) DTRA-Optimizing & testing a pathogen proteome peptide microarray platform: Designing peptide candidates to be tested on the microarray, testing feasibility of the system, understanding cross-reactivity between closely related biothreat agents.

#### Nature of Work:

- a. Printing (contact) custom peptide microarrays, platform optimization.
- b. Processing patient serum samples, image analysis & analyzing microarray data using GeneSpring, SPSS, MS Excel 2007.
- c. Bioinformatic epitope mapping for Coccidioides, Influenza and NIAID Category A, B & C Priority Biothreat agents.
- d. Designing protocols & processing Agilent custom microsatellite microarrays and performing CGH analysis.

**Lab Rotations during the 1<sup>st</sup> year of the program:** Dr. Brenda Hogue (CIDV), Dr. Douglas Lake (SOLS)-ASU

**II. Student Worker (Research)** (15<sup>th</sup> May, 2007 – 15<sup>th</sup> August, 2007 and 14<sup>th</sup> January, 2008 – 10<sup>th</sup> August, 2008)

Department: School of Life Sciences – Arizona State University, Life Science E-Wing, Room: 535, PO Box 874501, Tempe, Arizona 85287-4501.

Reference: Dr. Scott Bingham, E-mail: [scottbingham@asu.edu](mailto:scottbingham@asu.edu) Phone: 480-965-8520

Project Title: Studying the photosynthetic apparatus and gene expression changes under different growth conditions using Microarray Technology (Organism: *Chlamydomonas reinhardtii*)

Nature of Work: [http://math.asu.edu/~cbs/projects/2008\\_report\\_navalkar\\_krupa.pdf](http://math.asu.edu/~cbs/projects/2008_report_navalkar_krupa.pdf)

- a. Extracting total RNA and analyzing its quality on the Agilent Bioanalyzer using their program 2100 Expert and gels.
- b. aRNA Amplification using Ambion Protocol and Slide Hybridization using Stanford Chlamy Microarrays.
- c. Image Analysis of Microarray slides (at time points 30 min, 60 min, 90 min) using GenePix and GeneSpring software. Arriving at results and conclusions specially to target Photosynthesis related changes under different growth conditions at three time points.
- d. Troubleshooting Hardware and Software issues in the research lab.

**III. Graduate Research Assistant** (20<sup>th</sup> August, 2007 – 31<sup>st</sup> December, 2007)

Departments: School of Life Sciences – Arizona State University, Translational Genomics (TGen), Mayo Clinic – Collaborative Research Building, Scottsdale, AZ.

Reference: Dr. Jeffrey Touchman, E-mail: [Jeffrey.Touchman@asu.edu](mailto:Jeffrey.Touchman@asu.edu) Phone: 602-343-8803

Contact Address: Arizona State University, School of Life Sciences, Life Science E-Wing, Room 511, Tempe, Arizona 85287.

Project Title: Studying the role of Kibra gene in Human Lung and Breast Cancer and Memory Loss by gathering data about DNase-I Hypersensitive sites within the same using Quantitative PCR and Microarray Technology.

Nature of Work: [http://math.asu.edu/~cbs/projects/2008\\_report\\_navalkar\\_krupa2.pdf](http://math.asu.edu/~cbs/projects/2008_report_navalkar_krupa2.pdf)

- a. Designing the Quantitative PCR approach to study DNase-I Hypersensitive sites within the Kibra gene in Humans, Data Analysis using  $2^{-\Delta\Delta Ct}$  Method, Results and Conclusions.
- b. Designing the Tiling DNA Microarray approach to study DNase-I Hypersensitive sites within the Kibra gene in Humans and designing the Data Analysis approach.

**IV. Research Assistant – Computing Support** (15<sup>th</sup> August, 2006 – 15<sup>th</sup> May, 2007) plus, Summer Session as Student Worker (15<sup>th</sup> May, 2007 – 15<sup>th</sup> August, 2007)

Department: Department of Mathematics and Statistics – Arizona State University.

Reference: Ms. Renate Mittelmann E-mail: [renate@asu.edu](mailto:renate@asu.edu) Phone: 480-965-0096

Contact Address: Arizona State University, Department of Mathematics and Statistics, Gold Water Center, Room - 638, P.O. Box 871804, Tempe, AZ 85287-1804.

Nature of Work:

- a. Troubleshooting Hardware and Software issues and Providing I.T. Training to Faculty within the Department of Mathematics.
- b. Maintaining and Updating the official website for the Computational Biosciences Program and the Department of Mathematics and Statistics at ASU
- c. Maintaining the Lab Facility and Off-Campus Equipment Loan Program for the Computational Biosciences Program at ASU.

## V. Scientific Officer (Department of Laboratory Medicine) (15<sup>th</sup> June, 2004 – 1<sup>st</sup> July, 2006)

Organization: Dept. of Lab Medicine, **Wockhardt Hospital** – Mumbai a **Harvard Medical International** affiliate, now part of the Fortis group of hospitals.

Reference: Dr. S. Narayani, M.D. Pathology – Head of Medical Services, previously Head of department of Lab Medicine.

### Nature of Work:

- a. Complete processing, verifying results in the HIS (Hospital Information System) after clinical correlation with relevant physicians.
- b. Areas of work: Biochemistry, Phlebotomy, Hematology, Microbiology, Serology, Clinical Pathology depending upon staffing patterns.
- c. System administration, working with the IT department of Wipro Technologies upon software related end-user improvement directives based on user feedback and assessment.
- d. Drafting Standard Operating Protocols (SOP) and Automating stock taking for the department of Lab Medicine.
- e. Training Scientific Officers of the department in the area of information technology.
- f. Implementing Quality Improvement Programs (QIPs) such as the Turn-Around-Time (TAT) document which is used track the timely submission of lab test reports for about 300 analytes that were being processed in the laboratory.
- g. Creation of various daily and monthly record formats for documentation of data in the department to be provided for use for certifications such as the JCI (Joint Commission International) and NABL – National Accreditation Board of Laboratories.
- h. Maintaining & analyzing Quality Control data for all analytes using Bio-Rad third party controls for participation in Bio-Rad's Unity Inter-laboratory Program which was an international quality initiative for hospitals and medical laboratories.
- i. Troubleshooting hardware & software issues in the department.

### Special Projects Undertaken at NIIT

#### **1.) Software Developed for Toy Universe Shopping Mall.**

Operating System: Red Hat Linux, Programming Language: Java, Backend Database: MS SQL Server 7.0

#### **2.) Web-Based Application Developed for Diaz Telecommunication Inc.**

Operating System: Windows NT 4.0, Programming Language: C++ & CGI Programming & Scripting.  
Backend Database: MS SQL Server 7.0

#### **3.) Software Developed for Banker's Trust International.**

Operating System: Windows 2000, User Interface Development: Visual Basic 6.0,  
Backend Database: MS SQL Server 7.0

#### **4.) Software Developed for Horizon Airways International.**

Operating System: Windows 2000, User Interface Development: Visual Basic .NET,  
Backend Database: MS SQL Server 2000