ISHA D MEHTA, PhD

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Summary: Self-motivated, creative and analytical research scientist experienced to work in transferable research. Strong experience in creating, extracting and processing biological databases with a focus on molecular biology, as well as analysis and classification of the same. Proven proficiency in object oriented programming using JAVA, and Python, and data analysis using R programming.

Work Experience

Adjunct Faculty, Texas Woman's University, Denton, TX Jan. 2018 – May 2018

- Provided an open, nurturing, and an inquisitive environment for non-science major students to understand role of life science in their daily life and their areas of expertise that ranged from business to music.
- As the course was not a part of core-curriculum of the students, changes like online exams with critical thinking questions in the framework saved grader, and student times.
- Mentored teaching assistant towards development of his teaching career.

Graduate Research Assistant (PhD), Biology, Texas Woman's University July 2012 – Dec. 2017

- Developed a graph theory based classifier that can classify protein-protein interfaces based on their functions with an accuracy of 73% which is not only comparable to the available state of the art classifiers but has added advantages like:
    - Computationally inexpensive – requires less CPU time and memory
    - Time efficient
    - Vast range of applications including pre-post filter of protein dockers, analyze protein structure changes from Simulation studies
    - Capable to predict functional interface regions in protein monomers
- Technical skills include protein modeling, systems biology, graph theory, network analysis, phylogenetic analysis, PyRosetta, multivariate data analysis, computing in JAVA, and Python, statistical computing in R.
- Other than the primary functions collaborated on different lab projects and contributed to FLIPdb database development and cu ration as and when required.
- Thorough understanding of Proteomics and Genomics data, and various Bioinformatics tools.
- Proficiency to work with Unix/Linux/Mac OS, as well as scripting in Bash.
- Effective oral and written communication of research project at various Professional meetings that bagged various awards and scholarship for the same.

Graduate Teaching Assistant, Texas Woman's University, Denton, TX Sep. 2009 – Dec. 2017

Performed various duties with great adaptability and flexibility as and when required as listed below:
Teaching – Neuro-Anatomy and Physiology *(8 semesters)****, Principles of Biology II*** *(2 semesters)*

- Student performance showed a significant rise with redesigned laboratory instruction methods, that we worked on as a team of expert professionals to increase classroom attentiveness of students.
    - Introduction of new engaging classroom activities including computer based experiments and more hands-on activities.
- Welcoming and nurturing class environment and quick response rates are some other key highlights.

Data Sourcing, Management and Performance Evaluations *(3 semesters)*

- Online data pool for various courses created (approximately 12 courses, and 75 lab sections):
    - Reduced training times for new instructors as well as teaching preparation times for current instructors.
    - The reduced workload increased productivity of instructors to teach more classes in same work hours.

- Periodic evaluations of student and instructor performances, statistical analysis of the same (time series analysis) for evaluations, and provided insights for course improvements whenever needed.

Executive – Drug Stability Studies, Intas Biopharmaceuticals Pvt. Ltd. Oct. 2007 – July 2009

- The drug stability study documents prepared effectively contributed to EU-GMP and Belarus approval for drugs including GCSF, Erythropoetin, Interferon, and a few more.
- Collected, and consolidated the test results for the protein drugs at various time points and other environmental conditions and reported the data for regulatory purposes.
- Analyzed structural integrity of protein drugs using various electrophoresis techniques like SDS-PAGE, Western Blot, etc at various time points after subjecting them to different environmental conditions.
- Acted as focal point for data collector and manager.

Undergraduate Research, R. G. Shah Science College, Microbiology **2004 - 2005**

- Was a part of the team that worked to develop Eco-friendly approach for waste water treatment generated by textile industry under the able guidance of Dr. Bhavisha Joshi and Dr. Anand Bhatt
    - A few bacterial strains were isolated that utilized the harmful textile chemicals present in the sewage for their metabolism, for understanding the molecular basis of their metabolism.
- Others further analyzed these isolates in the lab to develop treatment methods.

Education

Ph.D. in Molecular Biology, Texas Woman's University**,** Department of Biology Specialization: Computational Structural Biology	**Dec. 2017** Denton, TX 76204 GPA: 3.8
MS in Microbiology Gujarat University, School of Sciences	2005 – 2007, GPA: 3.22 (ECE) Ahmedabad, India
BS, Major: Microbiology, Minor: Chemistry R. G. Shah Science College, Gujarat University	2002 – 2005, GPA: 3.65 (ECE) Ahmedabad, India

Awards And Scholarships

TWU Chancellor's Student Research Scholar Award, 2017
Biophysical Society – Education Committee Travel Award 2015, 2017
TWU 3 Minute Thesis Competition Scholarship, 2016
TWU Travel Award 2013-17

Academic Services and Professional Affiliations

Member of Biophysical Society, 2013 – Current
Fellow of Honors Society, TWU – 2014-2015
Volunteer and Participant, International Student Association, TWU
Judge, Science Fair – Woodrow Wilson Elementary School, Denton; 2013 - 2014
Volunteer, Expanding your Horizons, 2011 - 2013

- An organization working to educate middle school girls about their careers in STEM

Publications

Sanjana Sudarshan, Sasi Bhushan Kodathala, Amruta C Mahadik, **Isha Mehta**, Brian W Beck; May 15, 2014; Protein-Protein Interface Detection Using the Energy Centrality Relationship (ECR) Characteristic of Proteins; PLoS ONE 9(5); DOI: 10.1371/journal.pone.0097115

Manuscripts In Progress

- **Isha Mehta**, Brian W Beck; Classification of Functional Interfaces of Proteins using Residue Interaction Networks.
- **Isha Mehta**, Brian W Beck; Classification of Functional Interfaces of Proteins using Protein Energy Networks.

Select Research Presentations

* **Mehta Isha**, DiAnna L. Hynds, Beck Brian; **(2017)**; Protein Energy Network Models to characterize Functionally Linked Interfaces of Proteins (FLIPs); At Arts And Science Research Symposium of Texas Woman's University, April 2017, Denton, Texas.

¥ **Mehta Isha,** Beck Brian; **(2017)**; Protein Energy Network Models to characterize Functionally Linked Interfaces of Proteins; At 61st Annual Meeting of the Biophysical Society. 11-15 February 2017. New Orleans, Louisiana.

¥ **Mehta Isha,** Beck Brian; **(2015)**; Prediction of Functionally Linked Interface (FLIP) Regions in Residue Interaction Network (RIN) Models of Protein Structures; At 59th Annual Meeting of the Biophysical Society. 7-11 February 2015. Baltimore, Maryland.

* **Mehta Isha**, Beck Brian; **(2014)**; Residue Interaction Network: An approach to study organizational differences of Functionally Linked Interfaces of Proteins (FLIPs) and Functionally unCorrelated Contacts (FUNCs); At Arts And Science Research Symposium of Texas Woman's University, April 2014, Denton, Texas.

¥ **Mehta Isha,** Beck Brian; **(2014)**; Modeling Proteins as Residue Interaction Networks to understand Structure-Function Relationship; At 58th Annual Meeting of the Biophysical Society. 15-18 February 2014. San Francisco, California.

¥ **Mehta Isha**, Beck Brian; **(2013)**; Residue Interaction Network: An approach to identify Functionally Important Residues for Protein:Protein Interactions; At 57th Annual Meeting of the Biophysical Society. 2-6 February 2013. Philadelphia, Pennsylvania.

¥ **Mehta Isha**, Beck Brian; **(2012)**; Prediction of Functionally Important Residues in Protein: Protein Interactions by Network Analysis; At 17th Annual Sealy Center for Structural Biology Symposium, Apr. 26-27, 2012, Galveston, Texas.

Mehta Isha, Beck Brian; **(2011)**; Using Network Properties to Identify Native Protein:Protein Interactions: Effect of Interaction Radii; At Arts And Science Research Symposium of Texas Woman's University, April 2011, Denton, Texas.

Note: ¥ National / International Conference * Platform Talk