

**LOKESH JOSHI, PhD**

Director, Center for Glycosciences and Technology, The Biodesign Institute  
Associate Professor, Harrington Department of Bioengineering  
Adjunct Professor, School of Life Sciences and Department of Chemistry/Biochemistry  
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**A. EDUCATION**

**University of Bath**, Bath, UK. 1994  
Department of Biology and Biochemistry  
Division of Microbial Pathology  
Doctor of Philosophy

**University of Rajasthan**, Jaipur, India. 1989  
Department of Zoology, Master of Science

**University of Rajasthan**, Jaipur, India 1987  
Biology and Chemistry, Bachelor of Science

**B. ACADEMIC EXPERIENCE**

**Director** July 2005-Present

- **Center for Glycosciences and Technology, The Biodesign Institute at ASU**
- Interdisciplinary approach to study the roles of carbohydrates in relation to biology, medicine, chemistry and engineering, for example:
  - Understanding the roles played by sugars on biopharmaceutical molecules, metabolic pathways, cells and in diseases.
  - Development of platform technologies for biochemical and cellular engineering to produce human therapeutic molecules and novel biomaterials.
  - GlycoSignatures and GlycoSensors for biomedical, agricultural and environmental applications.

**Acting Director** Feb 2005-June 2005

**Center for Protein and Peptide Therapeutics, The Biodesign Institute at ASU**

- Discovery and development of engineered recombinant and synthetic proteins and peptides as therapeutic molecules.

**Associate Professor** 2003-Present

**Harrington Department of Bioengineering, Arizona State University**

- Biochemical Pathway Engineering.
- Post-Translational Modifications and Recombinant Therapeutics.
- Plant Biotechnology and Biomedicine Discovery.

**Adjunct Professor** 2004-Present  
**School of Life Sciences, Arizona State University**  
**Department of Chemistry and Biochemistry, Arizona State University**

**Research Assistant Professor** 2000-2003  
**Department of Plant Biology, Arizona State University**

- Protein Post-Translational Modifications.
- Plant Bioengineering for human therapeutic proteins.

**Research Associate Scientist** 1997-2000  
**Boyce Thompson Institute, Cornell University, Ithaca NY**

- Effects of simulated microgravity and other growth/environmental conditions on glycosylation pathways and recombinant protein production in animal cells.
- Discovered mammalian-like complex N-glycosylation processes in insect tissue culture cells.

**Visiting Scientist** March/April 1998  
**Oxford Glycobiology Institute, Department of Biochemistry, Oxford University, UK**

- Carbohydrate structure analysis of insect cell derived glycoproteins.

**Post-Doctoral Fellow** 1994-1997  
**Department of Entomology and Boyce Thompson Institute, Cornell University, Ithaca NY**

- Novel methods of identifying disease-related genes in pathogenic fungi to understand the mechanisms of pathogenesis.
- Bioengineered fungal strains with altered pathogenicity.
- Biochemical characterization of proteolytic enzymes involved in fungal pathogenesis.

### **C. INDUSTRIAL EXPERIENCE**

#### **Co-Founder**

**Arizona Engineered Therapeutics (AzERx):** 2003

- I was one of the three co-founders of this ASU spin-out biotechnology company focused on developing synthetic peptide-based therapeutics. AzERx was acquired by a publicly traded biotechnology company, Orthologic Inc. in 2006.

### **D. PRINCIPAL AREAS OF TEACHING**

I teach (or have taught) undergraduate- and graduate-level courses to students in the following disciplines: Molecular and Cellular Biology, Molecular Biosciences and Biotechnology, and Biomedical Engineering. I have also been involved with educational outreach activities and have given public lectures to general audiences and K-12 students on biotechnology and biomedicine research.

**E. HONORS**

1. Discovering Excellence Award - Arizona Technology Enterprise (AzTE). 2006
2. Annual Recognition Awards at Boyce Thompson Institute, Cornell University. 1994-1998
3. Council of Vice Chancellors and Principals (CVCP) award. University of Bath, UK. 1991
4. British Council's Foreign and Commonwealth Office Award. 1990
5. Gold Medal, MSc University of Rajasthan. 1989

**F.SCIENTIFIC AND PROFESSIONAL SOCIETY MEMBERSHIPS**

1. American Chemical Society
2. The Society for Glycobiology
3. American Association for the Advancement of Science
4. American Society for Mass Spectrometry

**G. PUBLICATIONS****I. REFEREED ARCHIVAL JOURNAL PAPERS**

1. Z. Dai, A.-N. Kawde, Y. Xiang, J.T. La Belle, J.Q. Gerlach, V.P. Bhavanandan, L. **Joshi\***, J. Wang\*. 2006. Nanoparticle-Based Bioelectronic Sensing of Glycan-Lectin Interactions. *J Am Chem Soc.* 128: 10018-10019. \* Corresponding authors
2. Tangkuaram, T., J.Q. Gerlach, Y. Xiang, A.-N. Kawde, Z. Dai, V.P. Bhavanandan, J.T. La Belle, W. Veerasai, L. **Joshi\***, J. Wang\*. 2006. Sensitive and Rapid Electrochemical Bioassay of Glycosidase Activity. *The Analyst.* 131: 889-891. \* Corresponding authors
3. Bogani F, McConnell E, **Joshi L**, Chang Y, Ghirlanda G. 2006. A Designed Glycoprotein Analogue of Gc-MAF Exhibits Native-like Phagocytic Activity. *J Am Chem Soc.* 128(22):7142-3.
4. Flynn CR, Brophy CM, Furnish EJ, Komalavilas P, Tessier D, Thresher J, **Joshi L**. 2005. Transduction of phosphorylated heat shock-related protein 20, HSP20, prevents vasospasm of human umbilical artery smooth muscle. *J Appl Physiol.* 98(5):1836-45.
5. Tran, N., Baral, C., Nagaraj, V.J. and **Joshi, L**. 2005. Knowledge-based framework for hypothesis formation in cellular biochemical networks. *Bioinformatics.* 21 (Suppl 2):ii213-ii219.
6. Lopes LB, Brophy CM, Furnish E, Flynn CR, Sparks O, Komalavilas P, **Joshi L**, Panitch A, Bentley MV. 2005. Comparative study of the skin penetration of protein transduction domains and a conjugated peptide. *Pharm Res.* 22(5):750-7.
7. Dreiza CM, Brophy CM, Komalavilas P, Furnish EJ, **Joshi L**, Pallero MA, Murphy-Ullrich JE, von Rechenberg M, Ho YS, Richardson B, Xu N, Zhen Y, Peltier JM, Panitch A. 2005. Transducible heat shock protein 20 (HSP20) phosphopeptide alters cytoskeletal dynamics. *FASEB J.* 19(2):261-3.
8. Fletcher SP, Geyer BC, Smith A, Evron T, **Joshi L**, Soreq H, Mor TS. 2004. Tissue distribution of cholinesterases and anticholinesterases in native and transgenic tomato plants. *Plant Mol Biol.*; 55(1):33-43.

9. Tessier DJ, Komalavilas P, Liu B, Kent CK, Thresher JS, Dreiza CM, Panitch A, **Joshi L**, Furnish E, Stone W, Fowl R, Brophy CM. 2004. Transduction of peptide analogs of the small heat shock-related protein HSP20 inhibits intimal hyperplasia. *J Vasc Surg.* 40(1):106-14.
10. McConnell EJ, McLemore EC, Talac R, **Joshi L**, Nelson H. 2004. Depletion of activated Vbeta8+ T cells disrupts bispecific antibody directed antitumor immunity. *J Surg Res.*;122(1):103-12.
11. McLemore EC, Tessier DJ, Flynn CR, Furnish EJ, Komalavilas P, Thresher JS, **Joshi L**, Stone WM, Fowl RJ, Brophy CM. 2004. Transducible recombinant small heat shock-related protein, HSP20, inhibits vasospasm and platelet aggregation. *Surgery.* 136(3):573-8.
12. Shah, MM, Fujiyama, K, Flynn, CR and **Joshi, L**. 2003. Presence of sialylated endogenous glycoconjugates in plant cells. *Nature Biotechnology.* 21(12):1470-1471.
13. Tessier D, Komalavilas P, Panitch A, **Joshi L**, Brophy CM. 2003. The small heat shock protein (HSP) 20 is dynamically associated with the actin cross-linking protein actinin. *J Surg Res.* 111(1):152-7.
14. Flynn, CR, Komalavilas, P, Tessier, D, Thresher, J, Niederkofler, EE, Parmiter, C, Nelson, RW, Panitch, A, **Joshi, L**, Brophy, CM. 2003. Transduction of Biologically-Active Motifs of the Small Heat Shock-related Protein, HSP20, Leads to Relaxation of Vascular Smooth Muscle. *Faseb J Express.* 17(10):1358-60.
15. **Joshi, L**, Van Eck, JM, Mayo, K, Di Silvestro, R, Blake (Nieto), ME, Ganapathi, T, Haridas, V, Gutterman, JU, and Arntzen, CJ. 2002. Metabolomics of plant saponins; Bioprospecting triterpene glycoside diversity with respect to mammalian cell targets. *OMICS: Journal of Integrative Biology.* 6(3), 235-245.
16. **Joshi, L**, Shuler, MJ and Wood, HA. 2001. Production of a sialylated N-linked glycoprotein in insect cells. *Biotechnology Progress.* 17, 822-827.
17. Kalidas, C, **Joshi, L** and Batt, C. 2001. Characterization of glycosylated variants of beta-lactoglobulin expressed in *Pichia pastoris*. *Protein Engineering.* 14(3), 201-7.
18. **Joshi, L**, Davis, TR, Mattu, TS, Rudd, PM, Dwek, RA, Shuler, ML, and Wood, HA. 2000. The influence of baculovirus – host cell interaction on glycosylation of a recombinant protein. *Biotechnology Progress.* 16, 650-656.
19. **Joshi, L** and St. Leger, RJ. 1999. Cloning, functional expression and substrate specificity of carboxypeptidase. A secreted by the pathogenic fungus *Metarhizium anisopliae*. *Journal of Biological Chemistry.* 274 (14), 9803-9811.
20. St. Leger, R.J., **Joshi, L**. and Roberts, D.W. 1998. Ambient pH is a major determinant in the expression of cuticle degrading enzymes and hydrophobin by *Metarhizium anisopliae*. *Applied and Environmental Microbiology.* 64 (2), 709-713.
21. **Joshi, L**, St. Leger, RJ and Roberts, DW. 1997. Isolation of a cDNA encoding a novel subtilisin-like protease (Pr1B) from the entomopathogenic fungus, *Metarhizium anisopliae* using differential display-RT-PCR. *Gene.* 197, 1-8.
22. St. Leger, RJ, **Joshi, L** and Roberts, DW. 1998. Adaptation of proteases and carbohydrates of saprophytic, phytopathogenic and entomopathogenic fungi to the requirements of their ecological niches. *Microbiology.* 143, 1983-92.

23. St. Leger, RJ, **Joshi, L**, Bidochka, MJ and Roberts, DW. 1996. Construction of an improved mycoinsecticide overexpressing a toxic protease. *Proc. Natl. Acad. Sci. (USA)*. 93, 6349-6354.
24. St. Leger, RJ, **Joshi, L**, Bidochka, MJ, Rizzo, NW and Roberts, DW. 1996. Characterization and ultrastructural localization of chitinases from *Metarhizium anisopliae*, *M. flavoviride*, and *Beauveria bassiana* during fungal invasion of host (*Manduca sexta*) cuticle. *Applied and Environmental Microbiology*. 62 (3), 907-912.
25. St. Leger, RJ, **Joshi, L**, Bidochka, MJ, Rizzo, NW and Roberts, DW. 1996. Biochemical characterization and ultrastructural localization of two extracellular trypsins produced by *Metarhizium anisopliae* in infected insect cuticles. *Applied and Environmental Microbiology*. 62(4),1257-64.
26. Bidochka, MJ, St. Leger, RJ, **Joshi, L** and Roberts, Donald W. 1995. A novel inner cell wall protein (cwp1) from conidia of the entomopathogenic fungus *Beauveria bassiana*. *Microbiology*. 141, 1075-1080.
27. **Joshi, L**, St. Leger, RJ and Bidochka, MJ. 1995. Cloning of a cuticle-degrading protease from the entomopathogenic fungus, *Beauveria bassiana*. *FEMS Microbiology Letters*. 125, 211-218.
28. St. Leger, RJ, **Joshi, L**, Bidochka, MJ and Roberts, DW. 1995. Protein synthesis in *Metarhizium anisopliae* growing on host cuticle. *Mycological-Research*. 99 (9), 1034-40.
29. St-Leger, RJ, Shimizu, S, **Joshi, L**, Bidochka, MJ and Roberts DW. 1995. Co-transformation of *Metarhizium anisopliae* by electroporation or using the gene gun to produce stable GUS transformants. *FEMS Microbiology Letters*. 131 (3) 289-294.
30. St-Leger, RJ, **Joshi, L**, Bidochka, MJ, and Roberts DW. 1995. Multiple aminopeptidases produced by *Metarhizium anisopliae*. *Journal of Invertebrate Pathology*. 65 (3) 313-314.

## II. INVITED REVIEW ARTICLES AND BOOK EDITING

1. **Joshi, L. Topical Editor** of Transgenic Crops and Human Health section of the Encyclopedia of Plant and Crop Science. Marcel Dekker, Inc. NY. 2003-2004
2. **Lokesh Joshi** and Sergei Svarovsky. Novel GlycoMimetics for Imaging and Therapeutic Applications. *Mini-Reviews in Medicinal Chemistry*. Bentham Science Publishers Ltd. To be published in 2007.
3. **Lokesh Joshi**. Recombinant Protein Engineering. *Floriculture, Ornamental and Plant Biotechnology: advances and topical issues (1<sup>st</sup> Edition)*. Published by Global Science Books, UK. To be published in 2007.
4. Michelle Kilcoyne and **Lokesh Joshi**. Carbohydrates in cardiovascular and hematological therapeutics. *Cardiovascular & Hematological Agents in Medicinal Chemistry*. Bentham Science Publishers Ltd. To be published in 2007.
5. **Joshi, L.** and Lopez, L.C. 2005. Bioprospecting in plants for engineered proteins. *Current Opinion in Plant Biology* 8:1-4.
6. **Joshi, L.**, Shah, M., Flynn, C.R., and Panitch, A. 2004. Plant produced recombinant therapeutics. In "Transgenic Crops and Human Health", *Encyclopedia of Plant & Crop Science*, (Ed. Goodman R.). Marcel Dekker, Inc. NY. 1-4.

7. **Joshi, L.**, Shah, M., Flynn, C.R., and Panitch, A. 2003. Post-Translational modifications and their roles in plant-produced recombinant therapeutics. In “*Transgenic Crops and Human Health*”, *Encyclopedia of Plant & Crop Science*, (Ed. Goodman R.). Marcel Dekker, Inc. NY. 969-972.
8. St. Leger, R.J. and **Joshi, L.** 1997. Molecular methods for studying entomopathogenic fungi. In “*Practical guides to New Methods in Modern Biology - Manual of Techniques in Insect Pathology*” (Ed. L.A. Lacey). Academic Press. 367-394.
9. **Joshi, L.** and Brophy, C.M. Practical Proteomics. 2002. *Vascular Web Basic Science*.  
[http://www.vascularweb.org/CONTRIBUTION\\_PAGES/Research/Basic\\_Articles/Proteomics\\_Joshi.html](http://www.vascularweb.org/CONTRIBUTION_PAGES/Research/Basic_Articles/Proteomics_Joshi.html)  
[http://www.vascularweb.org/CONTRIBUTION\\_PAGES/Research/Basic\\_Articles/Index.html](http://www.vascularweb.org/CONTRIBUTION_PAGES/Research/Basic_Articles/Index.html)

### **III. NATIONAL AND INTERNATIONAL CONFERENCE PROCEEDINGS REVIEWED PAPERS, ABSTRACTS, AND PRESENTATIONS**

1. Shah, M. M., Fujiyama, K., Flynn, C. R. and **Joshi, L.** (2003). N- and O- linked glycosylation of endogenous proteins in *Arabidopsis thaliana*. *American society of Plant biologists (2003): abstract 1047*.
2. Samuel Fletcher, Mrinalini Muralidharan, Brian Geyer, **Lokesh Joshi**, Hermona Soreq, Tsafir Mor. (2003). Transgenic plants expressing human acetylcholinesterase: what they may do for us and what we may do for them. *American society of Plant biologists (2003): abstract 2170*.
3. Shah, M., Fujiyama, K., Flynn, C. R. and **Joshi, L.** (2003). Novel glycan structures on the endogenous glycoconjugates of higher plants. *Annual meeting of the Glycobiology Society. Glycobiology (2003) 12: abstract 189*.
4. Fujiyama, K., **Joshi, L.** Mammalian-like O-glycan motifs on plant glycoproteins. (2003). *Annual meeting of the Glycobiology Society. Glycobiology (2003) 12: Abstract 171*.
5. C. R. Flynn, E. Furnish, P. Komalavilas, D. Tessier, J. Thresher, **L. Joshi**, C. M. Brophy. (2003). Applied Vascular Proteomics: Recombinantly-Derived HSP20 Analogs Lead to Relaxation of Vascular Smooth Muscle and Inhibition of Platelet Aggregation. *American Society for cell biology. Abstract 248*.
6. Luciana B. Lopes, Charles, R. Flynn, M. Vitoria L. B. Bentley, Alyssa Panitch, **Lokesh Joshi**, Colleen M. Brophy. (2004). Skin Penetration of a FITC Labeled Protein Transduction Domain (F-PTD) with Monoolein as a Chemical Penetration Enhancer. *Annual meeting and exposition of the controlled release society*.
7. **Lokesh Joshi**, Miti Shah, Sasha Daskalova, Vinay J. Nagaraj, Chitra Prasanna, Jared Gerlach, Amy-Grace Smith, Marta Waddell, Charles R. Flynn and Linda C. Lopez. (2004). Plant Sialobiology. *Annual meeting of the Glycobiology Society. Glycobiology (2004) 14: abstract 23*.

8. Miti Shah, Veer P. Bhavanandan and **Lokesh Joshi** (2004). Identification of metabolic precursors of sialic acid biosynthetic pathway in plants. *Annual meeting of the Glycobiology Society. Glycobiology (2004) 14: abstract 261.*
9. Marshall Reaves, Sasha Daskalova and **Lokesh Joshi**. (2004). Cloning, Expression, and Purification of Human N-Acetylneuraminic Acid Phosphate Synthase Gene in *Escherichia coli*. *National Educator's Workshop. Tempe AZ.*
10. James D. Sweeney, **Lokesh Joshi**, Alyssa Panitch and Edward Hall. (2005) A "Bio-Basics" Short Course: Bringing Modern Biology to An Engineering Faculty. *ASEE Annual Conference & Exposition.*
11. Terry Alford, James Sweeney, Joseph Wang, Jitendra Muthuswamy, Kinjal. Bhavsar, Jeffrey La Belle, **Lokesh Joshi**. (2005). Research Cluster in Integrated BioInspired Microsensors. *Fifth Japan-America Frontiers of Engineering Symposium – National Academy of Engineering, Hitachi Global Storage Technologies Research Lab, San Jose, CA*
12. N. Tran, C. Baral, V. J. Nagaraj, **L. Joshi**. (2005) Knowledge-based framework for hypothesis formation in biochemical networks. *In the 4th European Conference on Computational Biology (ECCB 2005, Madrid, Spain).*
13. N. Tran, C. Baral, V. J. Nagaraj, **L. Joshi**. (2005) Knowledge-based integrative framework for hypothesis formation in biochemical networks. *In the 2nd International Workshop on Data Integration in the Life Sciences (DILS 2005, San Diego, CA).*
14. Karen Chow, Vinay Nagaraj and **Lokesh Joshi**. (2006). Localization of A. thaliana sialyltransferases heterologously expressed in CHO cells. *AAAS, Washington DC*
15. Tyler Jorgenson, Miti Shah and **Lokesh Joshi**. (2006). Microgravity induced alterations in cancer and healthy cells. *AAAS, Washington DC*
16. Miti Shah, Andrew Vahabzadeh-Hagh and **Lokesh Joshi**. (2006). Comparative studies on Golgi localization signals of alfa2-3 sialyltransferases in plant and mammalian systems. *American society of plant biology. Boston, MA.*
17. Michelle Kilcoyne, Miti Shah, Jared Gerlach, Amy Smith, Kazuhito Fujiyama, Veer Bhavanandan, Ulf Summers, Catherine Costello and **Lokesh Joshi**. (2006). Mucin-type O-glycosylation and O-GlcNAc found in rice seed storage protein prolamin fraction. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
18. Sasha M Daskalova, Marshall L Reaves, Linda C Lopez, Michelle Kilcoyne, **Lokesh Joshi**. (2006). Expression of Human N-Acetylneuraminic Acid Phosphate Synthase and Bacterial N-Acetylneuraminic Acid Synthase in Tobacco Plants. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
19. Miti Shah, Michelle Kilcoyne, Diane Hagner, Sergei Svarovsky, Ranu Jung, **Lokesh Joshi**. (2006). Global expression analysis of glycoconjugates in rat central nervous system using lectin histochemistry. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*

20. Joseph Wang, Yun Xiang, Zong Dai, Jared Gerlach, Jeffrey La Belle, **Lokesh Joshi**. (2006). Nanoparticle-Based Sensing of Glycan-Lectin Interactions. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
21. Jared Q. Gerlach, Tanin Tangkuaram, Veer P. Bhavanandan, Jeffrey T. La Belle, Joseph Wang, **Lokesh Joshi**. (2006). Sensitive and rapid electrochemical bioassay of glycosidase activity. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
22. Kathryn Boltz, Vinay Nagaraj, Sergei Svarovsky, Douglas Lake, Phillip Stafford, **Lokesh Joshi**. (2006). High throughput technology for the identification and characterization of Glycan Binding Peptides. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
23. Kyle J Foley, Erica Forzani, Nongjian Tao, **Lokesh Joshi**. (2006). Label-free Real-time Detection of Sugars on Lectin-modified High-Resolution Differential (HRD) Surface Plasmon Resonance (SPR) Sensors. *Annual meeting of the Glycobiology Society. (The abstract will be published in the journal Glycobiology - November issue 2006).*
24. Joseph Wang, Zong Dai, Abdel-Nasser Kawde, Yun Xiang, Jeffrey T. La Belle, Jared Gerlach, Veer P. Bhavandan, Sergei Svarovsky and **Lokesh Joshi**. (2006). *Second Annual Meeting of the American Academy of Nanomedicine, The National Academy of Sciences, Washington DC.*
25. Joseph Wang, Zong Dai, Abdel-Nasser Kawde, Yun Xiang, Jeffrey T. La Belle, Jared Gerlach, Veer P. Bhavandan, Sergei Svarovsky and **Lokesh Joshi**\*. (2006). *Glycosciences in Cancer Workshop 2006: Progress and Potential, National Cancer Institute, Frederick, MD.*
26. Federica Bogani, **Lokesh Joshi**, Yung Chang, and Giovanna Ghirlanda. (2006). A Designed glycoprotein analog of Gc-MAF exhibits native-like phagocytic activity. *The 19th Rocky Mountain Regional Meeting of the American Chemical Society.*
27. Sergei Svarovsky and **Lokesh Joshi**. GlycoNanotechnology – imaging, delivery and therapeutic applications. (2006). *62<sup>nd</sup> SouthWest Regional Meeting of the American Chemical Society.*

#### **IV. INVITED PRESENTATIONS (NATIONAL AND INTERTATIONAL)**

1. Bioengineered plants for vaccines and therapeutics. International congress of plant physiology. New Delhi, India. January 2003.
2. Protein modifications and engineered therapeutics. University of Massachusetts Medical School. Wooster, MA. May 2003.
3. Recombinant Protein Therapeutics. Royal Holloway College University of London. July 26 2003.
4. Mammalian-like glycan motifs in plants. Sialobiology conference. St. Andrews, Scotland. UK. July 2004.
5. Plant metabolic engineering and protein therapeutics. National Center for Biomedical Engineering Science. National University of Ireland, Galway. Ireland. October 2004.

6. Glycobiology and the Biopharmaceutical Industry. Department of Chemistry, National University of Ireland, Galway, Ireland. October 2004.
7. Plant post-translational modifications and protein engineering. Department of Biochemistry. Cambridge University. October 2004.
8. Plant Sialobiology. US/Japan Glycobiology 2004. Honolulu, Hawaii November 2004.
9. The Sweet Laws of Life. Symposium on "The Laws of Life" held at the Santa Fe Institute. July 2005
10. Biotechnology and the Future of Medicine. American Association of Physicians of Indian Origin (AAPI). Scottsdale Arizona. September 2005.
11. Plant Glycobiology and Plant Engineering. Symposium on Plant Biotechnology - Texas A&M University. March 2006
12. Annual Meeting of German Society for Cell Biology. Frankfurt, Germany. March 14-17 2007

## **H. STUDENT THESES AND DISSERTATIONS SUPERVISED**

### **I. MS and PHD THESES AWARDED**

#### **Joshi-Committee Chair**

1. Srilakshmi Ganta (MS, *Computational Biosciences*; May 2004)
2. Shubhra Gupta (MS, *Computational Biosciences*; May 2004)
3. Inbal Lapid (MS, *Harrington Department of Bioengineering*; May 2006)
4. Miti Shah (PhD, *School of Life Sciences*; December 2005)
5. Olga Ananieva (PhD, *School of Life Sciences*; May 2006) *committee co-chair*

#### **Joshi-Committee Member**

6. Brandon Seal (PhD, *Harrington Department of Bioengineering*; December 2004)
7. Adam Ballinger (MS, *Harrington Department of Bioengineering*; May 2005)
8. Wei Wong (MS, *Harrington Department of Bioengineering*; May 2006)
9. Pallavi Mudumby (MS, *Computational Biosciences*; December 2005)
10. Zhi Li (PhD, *School of Life Sciences*; May 2006)

### **II. CURRENT GRADUATE PROJECTS IN PROGRESS**

#### **Joshi-Committee Chair**

1. Jared Gerlach (PhD candidate, *School of Life Sciences*; expected date of graduation – May 2008)
2. Kinjal Bhavsar (MS candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2008)
3. Aaron Fairchild (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2010)
4. Todd Huffman (PhD candidate, *School of Life Sciences*; Expected date of graduation – May 2010)
5. Kauser Nadim Samli (PhD candidate, *Department of Chemistry/Biochemistry*; Expected date of graduation – May 2010)

6. Sarah Salameh (MS candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2007)
7. Leah Small (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2007) *committee co-chair*

**Joshi-Committee Member**

8. Venkatakrishna Shanakararaman (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2008)
9. Teresa Murray (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2008)
10. Tiana White (MS candidate, *School of Life Sciences*; Expected date of graduation – December 2006)
11. Kyle Foley (PhD candidate, *Department of Electrical Engineering*, Expected date of graduation – May 2009)
12. John Schneider ((PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2009)
13. Dawn Bryant (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2009)
14. Mallika Mukherjee (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2008)
15. Arati Shridharan (PhD candidate, *Harrington Department of Bioengineering*; Expected date of graduation – May 2008)

**III. Post-Doctoral Fellow Mentoring**

1. Charles R. Flynn, PhD.: Dr. Flynn is now a Research Assistant Professor with the Department of Bioengineering at ASU.
2. Diane Hu, PhD.: Dr. Hu is a staff scientist at Translational Genomics Institute in Phoenix.
3. Sasha Daskalova, PhD.: D. Dr. Daskalova is a Biodesign Researcher Senior at ASU.
4. Elizabeth McConnell, MD: Dr. McConnell has her own clinical practice in Phoenix.
5. Nina Dereska, MD. Dr. Dereska has her clinical practice in Scottsdale.
6. Elizabeth McLemore, MD. Dr. McLemore returned to Mayo Clinic, Scottsdale.
7. Michelle Kilcoyne, PhD. 2004-present
8. Vinay J. Nagaraj, PhD. 2004-present
9. Miti Shah, PhD. 2006-present
10. Kathryn Boltz, PhD. 2006-present

**I. PROFESSIONAL AND SCIENTIFIC SERVICES**

1. **Member** of the National Science Foundation SBIR/STTR review panel for Biomanufacturing and Fermentation. 2006-Present.
2. **Member** of the Asian-American Advisory Council to the Governor of the State of Arizona, Janet Napolitano. Also, **Member** of the educational subcommittee to the Governor's Advisory Council. 2005-Present.

3. **Chair** of the Scientific Examination Board, Central Arizona Region Science and Engineering Fair (CARSEF). A chapter of the International Science and Technology Fair which encourages high-school students to participate in research activities. 2003-Present.
4. **Member** of the delegation from Arizona to **Science Foundation Ireland (SFI)** in May 2006 to study SFI and its impact on Science and Technology in Ireland. Members of the delegation will assist in establishing Science Foundation Arizona.
5. **Organizer of an international symposium** on “Translational Interdisciplinary Glycobiology” at The Biodesign Institute on May 11-12, 2006 to bring together sixteen world leaders in Glycosciences and discuss the current status and the vision of future technologies.
6. **Acting Director** of the Center for Protein and Peptide Therapeutics at The Biodesign Institute from Feb 2005-June 2005.
7. **Director** of the Center for Glycosciences and Technology, The Biodesign Institute at ASU. July 2005-Present.
8. **Member** of the search committee for Senior Program Coordinator at the Intergroup Relations Center at ASU. 2005.
9. **Board Member** of the Asian American Faculty/Staff Association (AAFSA) at ASU
10. **Team-leader** for ASU-FSE Research Cluster in Integrated BioInspired Microsensors (IBIM). 2005-2007.
11. **Member** of the Research Evaluation Committee for Ira. A. Fulton School’s Cluster proposals.
12. **Member** of the Graduate Admission committee. 2006-present
13. **Co-Chair** of the joint Harrington Department of Bioengineering and Computer Science and Engineering faculty search committee in the field of Bioinformatics. 2004.
14. **JOURNAL REFEREE SERVICE:** Biotechnology Progress, Nutrition and Cancer, Planta, Journal of Applied Psychology, Neurochemical Research, and Biotechnology and Bioengineering
15. **PROPOSAL REVIEWER SERVICE:** NSF MCB – Eukaryotic Genetics, US-Israel Binational Science Foundation, NSF BES – Biotechnology, and NSF - OISE – Africa, Near East & South Asia