

## Career Summary

Accomplished Biomedical Research professional with work experience and degrees in both Chemical Engineering and Neuroscience brings the unique capabilities of engineering problem solving and mathematical techniques to solve vexing problems in biomedical research. Has written scientific papers, clinical protocols, prepared an IRB protocol and aided in writing grants. Brings together a scientific and engineering background with strong communications experience uniquely positioned to be a significant contributor in biomedical research.

## Qualifications

Knowledge of Biochemistry, Molecular Biology and Neuroscience. Excellent Chemical Engineering fundamentals and an ability to use mathematical techniques for data analysis.

- Experience with tissue culture, including rat primary glial and sheep lung type II cell cultures; Western blot; Image analysis using densitometry; Immuno-histochemistry; Flow cytometry; EMSA; ELISA; In Situ Hybridization and other laboratory techniques.
- Excellent planning, problem solving and communications skills.

## Education

**PhD in Neuroscience/Neuropharmacology**, Albany Medical College, Albany New York. 2013.

Thesis: Engineering fusion intrabodies as potential Parkinson's disease therapeutics

**MS in inter-disciplinary Neuroscience program**, UC Medical Center, University of Cincinnati, Cincinnati, Ohio.

Thesis: Activation of microglial cells by plaques from Alzheimer's disease patients using tissue section approach. Interests included mathematical modeling of neurotransmitter transport.

**MS Chemical Engineering**, University of California at San Diego. (GPA = 3.8/4)

Coursework included Thermodynamics, Micro-Electronics Fabrication, Chemical Reactor Engineering and Plasma and Solid state Physics.

**Bachelors of Chemical Engineering**. Dept. of Chemical Technology, Bombay University, Mumbai, India.

Course work emphasized the basic principles of Chemical Reactor Design, Engineering and Optimization.

## Academic Awards

- Graduate Assistantship, Neuroscience Program, Albany Medical College. Sept 2008- Mar 2013
- Graduate Assistantship, Neuroscience Program, University of Cincinnati. Sept 1992- Sept 1998
- Research Assistantship, Dept of Applied Mechanics and Engineering Sciences, UCSD. Jan 1984- June 1986
- National merit scholarship (India). 1979
- Bombay Electric Supply and Transport Company Merit scholarship. 1975-1979
- Numerous merit scholarships.

## Professional Experience

National Center for Adaptive Neurotechnologies, Albany, NY July 2014 to present

### **Visiting scientist**

- Performing research in the area of brain computer interface and chronic pain

BIOMEDTEXT INC., New Albany, OH Dec 2006-Aug 2008

### **Consultant**

- Researched background material for Parkinson's disease models for evaluation of remedies.

CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER, Cincinnati, OH July 2001- Nov 2006

**Research Assistant III**, (Nov 2001 to Nov 2006)

- Planned and performed laboratory experiments in the department of Pulmonary Biology, supervised a college student. Helped in writing grant proposals and authored two scientific papers.

**Volunteer**, Pulmonary Biology Laboratory, (July 2001 - Oct. 2001)

UNIVERSITY OF CINCINNATI, Cincinnati, OH Sept 1992 - Sept 1998  
**Graduate Assistant**, Neuroscience program,

- Conducted research in Alzheimer's disease and involvement of microglia in amyloid plaques.

UNIVERSITY OF CINCINNATI MEDICAL CENTER, Cincinnati, OH March 1995 - May 1995  
**Teaching assistant volunteer** in the laboratory for Neuroscience course for medical students.

ENVIRONMENTAL QUALITY MANAGEMENT, INC., Forest Park, OH Feb 1991 - June 1992  
**Consultant**

- Performed assessments of Air Quality and Emissions for clients under SARA title 313.

TURBO ENERGY SYSTEMS INC., Tempe, AZ Feb 1988 - Feb 1990  
**Consultant**

- Performed studies for ceramics applications in small gas turbines. Analyzed material failures and recommended improvements for high temperature refractory applications.

UNIVERSITY OF CALIFORNIA, Dept of Applied Mechanics/Engineering, La Jolla, CA Jan 1984 - June 1986  
**Research Assistant**,

- Designed and set up an apparatus to obtain fuel pyrolysis data.

ASSOCIATED CEMENT COMPANIES, Mumbai, India April 1980 to April 1983  
**Junior Research Officer**,

- Developed manufacturing processes for Alumina and Platinum-based Catalyst as well as Alumina, Zircon, and Mullite-based refractory components.

### Publications

- **Shubhada N. Joshi**, Aditya N. Joshi, Narendra D. Joshi Sleep-like behavior is a fundamental property of the tripartite synapse submitted to bioRxiv doi: <https://doi.org/10.1101/2020.02.02.917633>
- Butler, D. C., **Shubhada N. Joshi**, Erwin De Genst, Ankit Baghel, Christopher M. Dobson, Anne Messer, Bifunctional anti-non-amyloid component  $\alpha$ -synuclein nanobodies are protective *in situ* Plos One, Nov. 2016. **(Co-first authors)**
- Anne Messer, **Shubhada N. Joshi**, Intrabodies as neuroprotective therapeutics. Journal of the American Society for Experimental NeuroTherapeutics, May 2013
- **Joshi, S. N.**, D. C. Butler, A. Messer, Fusion to highly charged proteasomal retargeting sequence increases soluble cytoplasmic expression and efficacy of diverse anti-synuclein intrabodies, MAbs 4(6), 686-693, 2012
- P. Brunner, **S. Joshi**, S. Briskin, J. R. Wolpaw, H. Bischof, and G. Schalk. Does the 'P300' speller depend on eye gaze? J Neural Eng, 7(5):056013, Oct 2010.
- Boris W. Kramer, **Shubhada N. Joshi**, Timothy J. M. Moss, John P. Newnham, Richard Sindelar, Alan H. Jobe, and Suhas G. Kallapur 'Endotoxin-induced maturation of monocytes in preterm fetal sheep lung', Am J Physiol Lung Cell Mol Physiol 293: L345-L353, 2007
- S. G. Kallapur, C. J. Bachurski, T. D. LeCras, **S. N. Joshi**, M Ikegami and A. H. Jobe 'Vascular changes following intra-amniotic endotoxin in preterm lamb lungs', , Am J Physiol Lung Cell Mol Physiol, 287, L1178-1185, 2004.
- **S. N. Joshi** and K. A. Crutcher, 'Rat microglia exhibit increased density on Alzheimer's plaques *in vitro*', Experimental Neurology 149, 42-50 (1998).

## Abstracts

- **S. N. Joshi**, A. DE Pesters, P. Brunner, J. P. Cleary, J. Fudin, G. Schalk, Neuromodulatory Approach to Management of Chronic Neuropathic Pain, an abstract presented at the 46th annual Neuroscience Society Meeting, November 12-16 2016, San Diego
- **S. N. Joshi**, D. C. Butler and A. Messer Bi-functional fusion nanobodies can reduce intracellular alpha-synuclein, , an abstract presented at the 42nd annual Neuroscience Society Meeting, October 13-17 2012, New Orleans
- P. Brunner, **S. Joshi**, S. Briskin, J.R. Wolpaw, H. Bishcof, G. Schalk ‘Does the P300 Speller Depend on Eye-Gaze?’, , Scientific Poster at the TOBI Workshop 2010, Graz, Austria, February 3-4, 2010.
- S. G. Kallapur, T. D. LeCras, **S. N. Joshi**, A. H. Jobe, M Ikegami and C. J. Bachurski ‘Intra-amniotic endotoxin decreases expression of VEGF and endothelial marker proteins in preterm lamb lungs’, , an abstract presented at the ATS 2003, Seattle 99<sup>th</sup> International Conference.
- **S. N. Joshi**, M. A. Marques and K. A. Crutcher ‘Neonatal rat glial cells produce APOE fragments in culture’, , an abstract presented at the 27<sup>th</sup> annual Neuroscience Society Meeting, October 25-30 1997, New Orleans.
- **S. N. Joshi** and K. A. Crutcher ‘Tissue section culture studies of rat microglia on Alzheimer’s tissue’, an abstract presented at the 26<sup>th</sup> Annual Neuroscience Society Meeting, Nov 16-21, 1996, Washington DC.

## Other Activities

- Published poetry (in three languages) collection, “Ghananeel”; 2015
- Volunteer work at a local Cincinnati FM radio station as a host of an Indian Music program from 1994-2006. Interviewed numerous Indian artists and celebrities for the radio programs.
- Volunteer work at another local Cincinnati FM radio station ‘Worldview’ program discussing and exploring Cincinnati’s connection to the rest of the world, 2006
- President of Triveni, an Indian Cultural Organization in Cincinnati Ohio.
- Volunteer work with school children through the General Electric Elfuns Organization.
- Wrote and published plays, travelogues, and short stories.
- Edited a Children’s magazine, “Nature and Science the fun way,” 2002.
- Directed and acted in numerous theater, radio and TV plays.
- Performed with the ‘Shanti’ (Peace) Choir of Cincinnati, as a singer in combined Eastern and Western choir productions.