



Curriculum Vitae

Professor (Dr.) Mohammad Mahfuzul Haque

Former Head of the Department

Department of Biotechnology

Jamia Millia Islamia

New Delhi

Dr. Mohammad Mahfuzul Haque

Professor

Department of Biotechnology

Jamia Millia Islamia

Maulana Mohammad Ali Jauhar Marg

Jamia Nagar, New Delhi - 110025

Phone: 011-26981717 Ext: 3426

email: mhaque@jmi.ac.in

haquemahfuz@gmail.com

Education, Training & Fellowship

2003	Ph.D., Biophysical Chemistry (Biosciences), JMI, New Delhi (thesis submitted in 2002)
1995	M.Sc. Biosciences, JMI, New Delhi (First division with distinction First position in University, Gold medalist)
1993	B.Sc. Biosciences, JMI, New Delhi (First division with distinction, third position in University)
2004-2006	Postdoctoral Research Fellow, Department of Immunology, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, USA
2002-2004	PostPhD research, Enzyme Kinetics Lab, JMI
Dec 1994& Jun 1996	JRF+NET (CSIR-UGC)
1995	GATE 95
1995-1997	Junior Research Fellow (CSIR- UGC), Department of Biosciences, JMI
1997-2000	Senior Research Fellow (CSIR- UGC), Department of Biosciences, JMI

Professional Appointments

2017-present:	Professor, Department of Biotechnology, JMI, New Delhi
2014- 2017:	Faculty of Molecular Medicine, Lerner College of Medicine, Case Western Reserve University, Cleveland, Ohio, USA.
2012-2017:	Staff Project Scientist, Department of Pathobiology, Cleveland Clinic, Cleveland, OH, USA
2006-2012:	Staff, Department of Pathobiology, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, USA
2001-2004:	Lecturer (Guest Faculty), Department of Biosciences, JMI, New Delhi
1997-1998:	Lecturer (adhoc), Department of Biosciences, JMI, New Delhi
1996-1998:	Visiting Faculty (honorary), F/o Pharmacy, Jamia Hamdard, New Delhi.
2004-2017:	Part of three RO1 and 2PPG grants funded by National Institutes of Health (NIH), USA

Administrative responsibilities at the University level

Sep 2017-2020	Head, Department of Biotechnology, JMI, New Delhi
2019-present	Member of Court (Anjuman), Jamia Millia Islamia, New Delhi
Sep 2017-2020	Chairman, Board of studies, Department of Biotechnology, JMI, New Delhi
Sep 2017-2020	Chairman, DRC, Department of Biotechnology, JMI, New Delhi
Oct 2020-present	Member, BOS, Department of Mathematics, JMI, New Delhi
Jan 2021-present	External Member, Board of Studies, Department of Biochemistry, School of Chemical & Life Sciences, Jamia Hamdard, New Delhi

Jan 2018-present	Member, BOS, Department of Biosciences, JMI, New Delhi
Oct 2017-present	VC nominee, CRC, Centre for Physiotherapy and rehabilitation sciences, JMI
May 2018-present	External Member, BOS, Department of Biotechnology, BBAU Central University, Lucknow, UP.
2018-present	Member, DRC, Faculty of Pharmacy, Hamdard University, New Delhi
2017-2020	Superintendent of Semester Examinations of Department of Biotechnology
June 2019	Centre Superintendent, Ramanujan Block, Entrance Tests of JMI,
May 2018	Observer for Entrance Test(s), JMI, Centre Patna, Bihar
July 2019	Observer for Entrance Test(s), JMI, Centre Trivandrum, Kerala.
July 2019	Observer for Entrance Test(s), JMI, Centre RK Puram, New Delhi.
July 2018-present	Member/Expert at Centre for Coaching and Career Planning (RCA), JMI for UPSC and other competitive examinations.
2019-present	Member, Animal House Facility, JMI, New Delhi

Area of Research

- Understanding How Structure Controls Electron Transfer and Regulates Catalytic activity in Nitric Oxide Synthases (NOSs), Cytochrome P450 Reductase (CPR), Methionine Synthase Reductase (MSR) and related enzymes.
- To develop novel strategies to tailor and correct NO production in cardiovascular and other diseases.
- Understanding role of NO in Asthma and Pulmonary Hypertension.
- Investigating the mechanisms that control electron transfer between enzyme redox centers in Redox enzymes.
- Investigating the mechanisms of electron transfer and Catalysis in Biomedically important flavoproteins and their role in human diseases.
- Development and evaluation of lipid nanocarrier for Nitric Oxide Synthase delivery.

Research Projects (ongoing)

As Principal Investigator

1. DST-SERB-CRG: 54 Lakhs (2019-2022)
2. ICMR EMR grant: ~48 Lakhs (2020-2023)

As Co-Principal Investigator

1. SPARC- MHRD: 57 lakhs (2019-2021)
2. ICMR EMR grant: ~40 Lakhs (2020-2023)

Publications in Peer Reviewed Journals (Selected)

ARTICLES published in Journals of repute (like PNAS USA, Redox Biology, JBC, Biochem J, Brit J Pharmacology, FEBS J, BBRC, Biochemistry, J Inorg Biochem, FRBM etc).

- Specific O-GlcNAc modification at Ser-615 modulates eNOS function. (2020)
Redox Biology. Sep;36:101625. ***I.F. ~10.0***
- Unbiased Proteomics Identifies Plasminogen Activator inhibitor-1 as a Negative Regulator of Endothelial Nitric Oxide Synthase. (2020)
Proc Natl Acad Sci U S A. (PNAS) Apr 28;117(17):9497-9507. ***I.F. ~10.0***
- Tyrosine Nitration on Calmodulin Enhances Calcium-Dependent Association and Activation of Nitric-Oxide Synthase. (2020)
J. Biol. Chem. Feb 21;295(8):2203-2211. ***I.F. ~4.3***

- Effect of Nerolidol on Cyclophosphamide-Induced Bone Marrow and Hematologic Toxicity in Swiss Albino Mice. (2020) *Experimental Hematology*, Volume 82, February 2020, Pages 24-32. *I.F.* ~2.9
- Nerolidol protects the liver against cyclophosphamide-induced hepatic inflammation, apoptosis, and fibrosis via modulation of Nrf2, NF- κ B p65, and caspase-3 signaling molecules in Swiss albino mice. (2020) *BioFactors*. 1–11. *I.F.* ~4.8
- Heat shock protein 90 regulates soluble guanylyl cyclase maturation by a dual mechanism. (2019) *J. Biol. Chem.* Aug 30;294(35):12880-12891. *I.F.* ~4.3
- Nitric oxide synthase enzymology in the 20 years after the Nobel Prize. (2019) *Br J Pharmacol.* Jan;176(2):177-188. *Special Invited review for special edition on NOS enzymes edited by Nobel Laureate Louis J. Ignarro.* *I.F.* ~7.8
- Glyceraldehyde-3-phosphate dehydrogenase is a chaperone that allocates labile heme in cells. (2018) *J. Biol. Chem.* Sep 14;293:14557-68. *I.F.* ~4.3
- A cross-domain charge interaction governs the activity of NO synthase. (2018) *J. Biol. Chem.* Mar 23;293:4545-54. *I.F.* ~4.3
- Endothelial nitric oxide synthase oxygenase on lipid nanodiscs: A nano-assembly reflecting native-like function of eNOS. (2017) *Biochem Biophys Res Commun.* Dec 2;493(4):1438-1442. *I.F.* ~3.0
- Restricting the Conformational Freedom of the Neuronal Nitric Oxide Synthase Flavoprotein Domain Reveals Impact on Electron Transfer and Catalysis. (2017) *J. Biol. Chem.* 292: 6753-6764. *I.F.* ~4.3
- Phosphorylation Controls Endothelial Nitric-oxide Synthase by Regulating Its Conformational Dynamics. (2016) *J. Biol. Chem.* 291:23047-57. *I.F.* ~4.3
- Engineering nitric oxide synthase chimeras to function as NO dioxygenases. (2016) *J. Inorg Biochem.*, 158: 122-30. *I.F.* ~3.3
- Tetrahydrobiopterin redox cycling in nitric oxide synthase: evidence supports a through-heme electron delivery. (2016) *FEBS Journal*, 283(24):4491-4501. *I.F.* ~4.4
- Mutants of Cytochrome P450 Reductase Lacking Either Gly-141 or Gly-143 Destabilize Its FMN Semiquinone. (2016) *J. Biol. Chem.* 291(28):14639-61. *I.F.* ~4.3
- Phosphorylation inactivation of endothelial nitric oxide synthesis in pulmonary arterial hypertension. (2016) *Am J Physiol Lung Cell Mol Physiol.* Jun 1;310(11):L1199-205. *I.F.* ~4.41
- Single-molecule spectroscopy reveals how calmodulin activates NO synthase by controlling its conformational fluctuation dynamics. (2015) *Proc Natl Acad Sci U S A. (PNAS)*, 112(38):11835-40. *I.F.* ~10.0
- Heat Shock Protein 90 Associates with the Per-Arnt-Sim Domain of Heme-free Soluble Guanylate Cyclase: Implications for Enzyme Maturation. (2015) *J. Biol. Chem.*, 290(35):21615-28. *I.F.* ~4.3
- Dissecting structural and electronic effects in inducible nitric oxide synthase. (2015) *Biochemical Journal*, 467: 153-165. *I.F.* ~4.1
- Distinct Conformational Behaviors of Four Mammalian Dual-Flavin Reductases (Cytochrome P450 Reductase, Methionine Synthase Reductase, Neuronal Nitric Oxide Synthase, Endothelial Nitric Oxide Synthase) Determine their Unique Catalytic Profiles. (2014) *FEBS Journal*, 281: 5325-40. *I.F.* ~4.4
- Thermodynamic Characterization of Five Key Kinetic Parameters that Define Neuronal Nitric Oxide Synthase Catalysis. (2013) *FEBS Journal*, 280: 4439-53. *I.F.* ~4.4
- Mechanism of Inducible Nitric-Oxide Synthase Dimerization Inhibition by Novel Pyrimidine Imidazoles. (2013) *J. Biol. Chem.*, 288: 19685-97. *I.F.* ~4.3
- Charge Pairing Interactions Control the Conformational Setpoint and Motions of the FMN Domain in Neuronal Nitric Oxide Synthase. (2013)

- Biochemical Journal*, 450:607-17. **I.F. ~4.1**
- Control of electron transfer and catalysis in neuronal NOS by a Hinge connecting its FMN and FAD-NADPH domains. (2012) **J. Biol. Chem.**, 287: 30105-16. **I.F. ~4.3**
 - Arg375 tunes tetrahydrobiopterin functions and modulates catalysis by inducible nitric oxide synthase. (2012) **J. Inorg Biochem.**, 108: 203-15. **I.F. ~3.3**
 - A kinetic model linking protein conformational motions, interflavin electron transfer and electron flux through a dual-flavin enzyme-simulating the reductase activity of the endothelial and neuronal nitric oxide synthase flavoprotein. (2011) **FEBS Journal**, 278: 4055-69. **I.F. ~4.4**
 - Meso-heme-substitution reveals how heme electronic properties can influence the kinetic and catalytic parameters of neuronal NO synthase. (2011) **Biochemical Journal**, 433:163-174. **I.F. ~4.1**
 - A Bridging Interaction allows Calmodulin to Activate NO Synthase through a Bi-Modal Mechanism. (2010) **J. Biol. Chem.**, 285: 25941-9. **I.F. ~4.3**
 - Nitric oxide blocks cellular heme insertion into a broad range of heme proteins. (2010) **Free Radical Biology & Medicine (FRBM)**, 48:1548-58. **I.F. ~6.2**
 - Lys⁸⁴² in neuronal nitric-oxide synthase enables the autoinhibitory insert to antagonize calmodulin binding, increase FMN shielding, and suppress interflavin electron transfer. (2010) **J. Biol. Chem.**, 285: 3064-3075. **I.F. ~4.3**
 - Neutralizing a Surface Charge on the FMN Subdomain Increases the Activity of Neuronal Nitric-oxide Synthase by Enhancing the Oxygen Reactivity of the Enzyme Heme-Nitric Oxide Complex. (2009) **J. Biol. Chem.**, 284: 19237-19247. **I.F. ~4.3**
 - Structural and Mechanistic Aspects of Flavoproteins: Electron transfer through the nitric oxide synthase flavoprotein domain. *Review Article*, (2009) **FEBS Journal**, 276: 3959-3974. **I.F. ~4.4**
 - Pre-steady state kinetics of ATP hydrolysis by Na,K-ATPase. (2009) **Cell Biochemistry and Function**, 27: 135-41. **I.F. ~2.7**
 - Stabilization and characterization of a heme-oxy reaction intermediate in inducible nitric oxide synthase. (2008) **J. Biol. Chem.**, 283: 33498-34507. **I.F. ~4.3**
 - A connecting hinge represses the activity of endothelial nitric oxide synthase. (2007) **Proc Natl Acad Sci U S A. (PNAS)**, 104: 9254-9259. **I.F. ~10.0**
 - Glucose regulation of pre-steady state kinetics of ATP hydrolysis by Na,K-ATPase. (2007) **Acta Biochim Biophys**, 39: 583-590. **I.F. ~2.9**
 - Reductase domain of Drosophila melanogaster nitric-oxide synthase: redox transformations, regulation, and similarity to mammalian homologues. (2007) **Biochemistry, USA**, 46: 11865-11873. **I.F. ~2.9**
 - Surface Charge Interactions of the FMN Module Govern Catalysis by Nitric-oxide Synthase. (2006) **J. Biol. Chem.**, 281: 36819- 6827. **I.F. ~4.3**

Abstracts in Peer Reviewed Journals (Selected)

- Charge pairing and phosphorylation regulate the conformational equilibrium and switching rates in neuronal and endothelial NO synthase flavoprotein domains. **Nitric Oxide**. Vol. 42, Pg 107.
- Pick a ska or reggae beat? Rates of conformational switching in multi-domain flavoproteins and their relationship to electron flux through the enzymes. **FASEB J.** 28:768.8.

- Conformational Changes of Neuronal Nitric-oxide synthase Reductase Are Essential for Electron Transfer. *Nitric Oxide*. Vol. 42, Pg 119.
- Probing the mechanism of tetrahydrobiopterin radical reduction within NO synthases. *Nitric Oxide*. Vol. 42, Pg 138-139.
- Catalytic properties of nitric oxide synthase chimeras. *Nitric Oxide*. Vol. 42, Pg 150-151.
- Preferential binding of heat shock protein 90 to heme-free soluble guanylate cyclase enables maturation. *Nitric Oxide*. Vol. 42, Pg 125.
- Endothelial nitric oxide synthase (eNOS) on lipid nanodiscs: Toward a soluble assembly reflecting native-like function of eNOS. *Nitric Oxide*. Vol. 42, Pg 114-115.
- Green Tea Polyphenols Decrease Enzyme Activities of Nitric Oxide Synthase. *FASEB J.* 27:790.14.
- Control of Electron Transfer and Catalysis in Neuronal NOS by A Hinge Connecting the FMN and FNR Domains. *FASEB J.* 26:573.7.
- Mechanism of Nitric Oxide Synthase Dimerization Inhibition by Novel Pyrimidine Imidazoles. *Nitric Oxide*, Volume 27, Pages S34–S35.
- Surface Residue Glu⁷⁶² of the FMN Subdomain Impacts Ferrous Heme-NO reactivity in Neuronal Nitric Oxide Synthase. *FASEB J.* 23:890.2.
- Chimeras of Nitric Oxide Synthase Engineered to Have Distinct Kinetic Parameters and Product Profiles. *FASEB J.* 23:890.8.
- Stabilization of Reaction Intermediates in the Catalytic Cycle of Nitric Oxide Synthases. *FASEB J.* 23:890.1.
- A Proline Residue in eNOS Hinge Region Restricts Inter-Subunit Electron Transfer. *FASEB J.* 20:A473.
- Charge interactions at the interface of electron transport modules govern catalysis by neuronal nitric-oxide synthase. *Nitric Oxide*, Vol. 14, Issue 4, June 2006, Page 76.

Meetings/Conferences/Session Chair (Selected)

- Keynote speaker “International Webinar on Challenges and Opportunities to Promote Research and Innovation in Indian State Universities”, June 20, 2020 at *BN Mandal University, Madhepura, Bihar*.
- Co-organizer of *JTA Multidisciplinary International Conference* organized by Jamia Teachers' Association, JMI (Feb 16-18, 2020).
- Role of Phosphorylation in eNOS on Nitric Oxide Synthesis, Uncoupling and Reactive Oxygen Species (ROS) Generation, *Biophysika -2019, National Seminar on Biophysics*, JMI (Oct 04, 2019).
- Evaluation of anti-inflammatory activity of hydroethanolic extract of Unani herbs: Darchini, Khulanjan and Asgand in Vitro, The International Conference on Fundamentals of Unani Medicine The Basis for Complete Health, *Department of Kulliyat, Faculty of Unani Medicine, AK Tibbiya College, AMU, Aligarh* (Dec 3-4, 2019).
- Chaired a session, *National Conference on Recent Advances in Biological Sciences*, JMI (March 05, 2020).
- Chaired a session in *JTA Multidisciplinary International Conference* organized by Jamia Teachers' Association, JMI (Feb 16-18, 2020).
- Chaired a session in *Biophysika -2019, National Seminar on Biophysics*, JMI (Oct 04, 2019).
- Cytotoxic effect of a combination of Unani herbs: Darchini, Khulanjan and Asgand, National Seminar on A Journey through: *An update on evidence-based medical practices*

in Unani Medicine, Jamia Hamdard, New Delhi (April 22-23, 2019).

- Chaired a scientific session in *National Conference on Complex system in Interdisciplinary Sciences*. JMI, New Delhi, March 11-12, 2019.
- Chaired a scientific session in *Symposium on Biophysics (Biophysica)*, Nov. 20, 2018
- Workshop at NCERT, New Delhi for *drafting XI-XIIth Biotechnology Syllabi, Books and Lab courses manuals*.
- Chaired a scientific session in *86th Conference of Society of Biological Chemists*. New Delhi, 16-19 November 2017.
- Chaired a scientific session in *National Conference on Protein Structure and Dynamics in Health and Agriculture*. New Delhi, November 3-4, 2017.
- Presented research work- Title: Relationships between FMN Domain Conformational Freedom and Electron Flux through the Reductase Domain of Neuronal NO Synthase. *Nitric Oxide Gordon Research Conference, Ventura, CA, USA, 2017*.
- Invited talk- Department of Chemistry, *Cleveland State University, OH, USA*
- Engineering Nitric Oxide Synthase Chimeras to Function as NO Dioxygenases. *International Nitric Oxide Meeting, Sendai, Japan, 2016*.
- Dissecting structural versus electronic control of heme-based catalysis in NO synthase. *5th Georgian Bay International Conference on Bioinorganic Chemistry (CaNBIC-5), 19th – 23rd May, 2015, Parry Sound, Ontario, Canada*.
- Heme Porphyrin in NO synthase acts like a wire to deliver an electron at a specific step during catalysis. *PacificChem 2015, December 15-20, Honolulu, Hawaii, USA*
- Exploring the Nitric Oxide Dioxygenase activity of heme-thiolate enzymes. *PacificChem 2015, December 15-20, Honolulu, Hawaii, USA*
- Nitric Oxide Synthase Chimeras Demonstrates Distinct Catalytic Activity. *5th Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, May 19-May 23, 2015*.
- Structural and functional characterization of endothelial nitric oxide synthase oxygenase domain (eNOSoxy) on lipid nanodiscs. *Global Biotechnology Congress, July 22-25, 2015, Boston, MA, USA*.
- The Activity of Recombinant Endothelial Nitric Oxide Synthase Oxygenase Domain on Human Apo AI Derived Discoidal Lipid Particles. *American Association of Clinical Chemistry Annual Meeting, July 26-30, 2015, Atlanta, GA, USA*.
- Conformational Changes of Neuronal Nitric-oxide synthase Reductase that are Needed for Electron Transfer. *35th Midwest Enzyme Chemistry Conference, Sept 2015, Chicago, IL, USA*.
- Preferential binding of heat shock protein 90 to heme-free soluble guanylate cyclase enables maturation. *7th International Conference on the Hsp90 Chaperone Machine. October 15-19, 2014, Seeon, Bavaria, Germany*.
- Protein conformational equilibrium setpoint and switching rates in four mammalian di-flavin reductases: surprising differences exist and help determine their individual catalytic activities". *IUBMB Symposium, 18th International Symposium on Flavins and Flavoproteins. July 27-August 1, 2014, Phetchaburi, Thailand*.
- Charge pairing and phosphorylation regulate the conformational equilibrium and switching rates in neuronal and endothelial NO synthase flavoprotein domains". *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA*.
- Probing the mechanism of tetrahydrobiopterin radical reduction within NO Synthases. *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA*.

- Catalytic properties of Nitric Oxide Synthase Chimeras. *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA.*
- Endothelial Nitric Oxide Synthase (eNOS) on lipid nanodisc: Towards a soluble assembly reflecting native-like function of eNOS. *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA.*
- Preferential binding of Heat shock protein 90 to heme free soluble guanylate cyclase enables maturation. *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA.*
- Conformational Changes of Neuronal Nitric-oxide synthase Reductase Are Essential for Electron Transfer. *8th International Nitric Oxide Conference & 6th International Nitrite/Nitrate Conference. June 16-20, 2014, Cleveland, Ohio, USA.*
- Pick a ska or reggae beat? Rates of conformational switching in multi-domain flavoproteins and their relationship to electron flux through the enzymes. *ASBMB, Experimental Biology Meeting, 2014 (April 26-30), San Diego, CA, USA.*
- Pick a ska or reggae beat? Rates of conformational switching in multi-domain flavoproteins and their relationship to electron flux through the enzymes. *Cleveland Clinic, Ohio, USA, 2014.*
- Green Tea Polyphenols Decrease Enzyme Activities of Nitric Oxide Synthase. *ASBMB, Experimental Biology Meeting, 2013 (April 20-24), Boston, Massachusetts, USA.*
- Green Tea Polyphenols Decrease Enzyme Activities of Nitric Oxide Synthase.”
- *Cleveland Clinic, Ohio, USA, 2013.*
- Control of Electron Transfer and Catalysis in Neuronal NOS by A Hinge Connecting the FMN and FNR Domains. *ASBMB, Experimental Biology Meeting, 2012 (April 21-25), San Diego, CA, USA.*
- Mechanism of Nitric Oxide Synthase Dimerization Inhibition by Novel Pyrimidin Imidazoles. *Seventh International Conference: Biology, Chemistry and Therapeutic Applications of Nitric Oxide, 2012 (July 22-26) Edinburgh, Scotland.*
- Distinct Calmodulin Affinity and Interaction Plays a Key Role in the Differential Catalytic Activity of Nitric-Oxide Synthase Isoforms I, II, and III. *Gordon Research Conference on Biomolecular Interactions & Methods, 2012 (January 15 - 20) Galveston, Texas, USA.*
- Nitric oxide blocks cellular heme insertion into a broad range of heme proteins. *Cleveland Clinic, Ohio, USA, 2010.*
- Characterization of a heme-oxy reaction intermediate formed during N-hydroxy-L-arginine oxidation by inducible NO synthase. *Cleveland Clinic, Ohio, USA, 2010.*
- Modeling the Effect of Flavin Mononucleotide Conformational Equilibrium on Electron Flux through the Endothelial and Neuronal Nitric Oxide Synthase Reductase Domains. *John Hopkins University, Baltimore, 2009.*
- Charge on the FMN Subdomain Limits Neuronal Nitric Oxide Synthase Activity by Controlling the Oxygen Reactivity of the Enzyme Heme-Nitric oxide Complex. *Cleveland Clinic, Ohio, USA, 2009.*
- Surface Residue Glu⁷⁶² of the FMN Subdomain Impacts Ferrous Heme-NO Reactivity in Neuronal NO Synthase. *ASBMB, Experimental Biology Meeting, 2009 (April 18-22), New Orleans, LA, USA.*
- Chimeras of Nitric Oxide Synthase Engineered to Have Distinct Kinetic Parameters and Product Profiles. *ASBMB, Experimental Biology Meeting, 2009 (April 18-22), New Orleans, LA, USA.*

- Stabilization of Reaction Intermediates in the Catalytic Cycle of NOS. *ASBMB, Experimental Biology Meeting, 2009 (April 18-22), New Orleans, LA, USA.*
- A Proline Residue in Endothelial Nitric Oxide Synthase Hinge Region Restricts Inter-Subunit Electron Transfer. *ASBMB, Experimental Biology Meeting, San Francisco, 2006 (April 01 - 05), CA, USA.*
- Charge Interactions at the Interface of Electron Transport Modules Govern Catalysis by Neuronal NOS. *Fourth International Conference: Biology, Chemistry and Therapeutic Applications of Nitric Oxide, 2006 (June 25 – 29), Monterey, CA, USA.*

International Collaborations

- Cleveland Clinic, Cleveland, Ohio, USA.
- Cleveland State University, Cleveland, Ohio, USA.
- Yale School of Medicine, New Haven, Connecticut, USA.
- Oregon State University, Corvallis, Oregon, USA.
- Kent State University, New Philadelphia, OH, USA.
- Laboratory Oxidative Stress and Detoxification, Institut Frédéric Joliot des Sciences du Vivant - CEA Saclay, France.

Professional recognitions/Awards/Prizes/Certificates

- Certificate of Recognition, Cleveland Clinic, USA.
- Travel Award 2009, American Society of Biochemistry and Molecular Biology (ASBMB) 2009.
- The American Physiology Society (APSselect) scholarship in the *American Journal of Physiology - Lung Cellular and Molecular Physiology*.
- Best Poster Presentation Award 2009, Annual Retreat, Department of Pathobiology, Lerner Research Institute, Cleveland Clinic, Ohio, USA
- Prestigious Innovator Award 2007, given by Cleveland Clinic for the invention of “*Nucleic acids encoding Endothelial Nitric Oxide Synthase variants useful for Gene Therapy*”. This award is given in recognition to the commitment to collaborate with Cleveland Clinic to bring new technology to patients worldwide.
- Senior Research Fellowship (SRF), Council for Scientific and Industrial Research (CSIR), Ministry of Human Resources and Development, Govt. of India.
- Junior Research Fellowship (JRF), Council for Scientific and Industrial Research, University Grants Commission, Govt. of India.
- National Eligibility Test (NET) in Life Sciences, Ministry of Human Resources and Development, Govt. of India.
- Graduate Aptitude Test for Engineering (GATE), 92 percentile, Indian Institute of Technology, Ministry of Science and Technology, Govt. of India.
- Central Merit scholarship, Ministry of Human Resources and Development, Govt. of India, 1993 - 1995.
- National Rural Development Scholarship, Ministry of Human Resources and Development, Govt. of India. From Std. VI to X.

Reviewer: Manuscripts/Grants/Scientific publications

- Biochemistry (USA)

- Journal of Biological Chemistry
- Biochemical Journal
- Cancer Letters (Elsevier)
- Journal of Amino Acids
- Journal of Liver: Disease & Transplantation
- Journal of Pharmacy and Bioallied Sciences
- pLOSOne
- Life Sciences (Elsevier)
- Expert: Grant review committee, Council of Science and Technology, U.P (CSTUP)
- Life Science Research Board (LSRB), DRDO, Min of Defence.

Professional memberships

- American Heart Association Professional member.
- Nitric Oxide Society (International society)
- Life member of Society for Biological Chemists
- Life member of Society for Nitric Oxide and Allied Radicals (SNOAR)

Other Recognitions/Activities

- President, Biotechnology Subject Association, JMI (Sept 2017-Sept 2020)
- Judge North Eastern Ohio Science Fair from 2009-2014
- Judge Graduate Posters and Oral Presentations (2009-2014 and 2016) in College of Science Research Day in Cleveland State University, Cleveland, Ohio, USA.
- Organizing committee member: International Nitric Oxide Conference, 2014, Cleveland, Ohio, USA
- Member of American Red Cross Society.
- Vice president, Biosciences Subject Association (1993-1994), JMI, New Delhi, India.
- Co-organizer of *JTA Multidisciplinary International Conference* organized by Jamia Teachers' Association, JMI (Feb 16-18, 2020).
- Organized several Talks and Invited Lectures by eminent scientists.
- Organized several workshops for students from 2017-2020.
- Member Organizing Committee, Centenary Lecture, Dept of Biotechnology, JMI
- Organized Science Day Celebrations in 2018, 2019.