PERSONAL STATEMENT

I am an Assistant Professor in the Department of Pharmaceutical Sciences at Nova Southeastern University, Florida, with nearly 10 years of experience in Molecular Pharmacology, Nutrition and Neuropharmacology, Oncology, Epigenetic. I am also involved in graduate and undergraduate teaching in the areas of Pharmaceutical lab, Molecular Biology Lab, Epigenetics and Pharmacogenomics. My research interests include characterization of molecular and cellular regulation of epigenetic marks under the effect of different metabolic stressor as well as nutrition in neurological and oncogenic disorders.

EDUCATION

Ph.D. (Pharmacology) July 2013 - Northeastern University, Boston, MA
Title: Redox-based Epigenetic Changes - A novel Mechanism for Opioid drug action.
Department of Pharmaceutical Sciences, Northeastern University, Boston, MA.
Research Advisors: Dr. Richard Deth Ph.D.

Masters of Science (MS) Pharmacology 2010
Northeastern University, Boston, MA
Research Project: Role of Food derived Opioid Peptides in Redox and Epigenetics changes on Gut-brain-immune axis.

Bachelor of Science (BS) Pharmacy 2008
APMC College of Pharmacy, Gujarat, India.

TECHNIQUES / SCIENTIFIC KILLS:

IN VIVO PHARMACOLOGY
Developed animal models, in vivo drug screening, Behavioral assays for Neurology and Neurodegenerative disorders. Animal surgeries and injections (i.v, s.c, i.p.), animal dissection and tissue and blood collection, Liver and brain dissections, Liver / brain drug distribution assays, Liver toxicity and biochemical analyses.

MOLECULAR
mRNA isolation, cDNA, qRTPCR, microarrays, Epigenetic techniques, pyrosequencing, microRNA and Taqman probe assays, RNAi based therapeutics, Transfection, In vitro selection techniques, cell culturing and stem cell differentiation.

ANALYTICAL,
HPLC, Triple QQQ LC/MS/MS, MRM Mass Spectrometry, Confocal and Fluorescence microscopy, Western blots, co-immunoprecipitation, ELISA, FACS, immunohistochemistry.

EXTRA SKILLS
Experience in analytical Software like Perl, Graphpad, R software, Data management, Documentation, Report writing, Grant writing.
RESEARCH PROJECTS AT NORTHEASTERN UNIVERSITY (Aug, 2008-present)

➢ Title: Implications of gluten-casein on redox/methylation changes in Autism.
   Type: Research Grant Award.
   This grant focused on characterizing the effects and identifying the mechanism/ provide a rationale for the benefit for gluten-casein dietary intervention in Autism Spectrum disorder.

➢ Title: Autism in Oman
   Type: R001 Subcontracted from University of Oman.
   The aim of this grant was to identify in clinical samples, changes in Glutathione-based redox status as well as changes in epigenetic status in autistic patients in Sultanate of Oman.

➢ Title: Alternative Splicing of Methionine synthase under Redox sensitivity in Post Mortem brain samples.
   The project focused on identifying the alternative splicing of methionine synthase enzymes in response to changes in redox status.

➢ Title: Epigenetic Changes under the influence of food derived opioid peptides.
   The project is in collaboration with A2 corporation in New Zealand for measuring redox and epigenetic changes after food derived opioid peptides.

➢ Title: Mitochondrial Epigenetic Changes and Mitochondrial reprogramming therapy.
   PI: Dr. Malav Trivedi / Dr. Mansoor Amiji       Period: July 2014 – Jan 2015
   The project is in collaboration with Dr. Mansoor Amiji for measuring epigenetic changes on the mitochondrial genome encoded in mitochondrial DNA and nuclear based mitochondrial genome.

RESEARCH PROJECTS AT NOVA SOUTHEASTERN UNIVERSITY (Jan 2015-present)

➢ Title: Antioxidant changes in the Chinese Han population under the influence of diet containing A2 beta-casein or A1/A2 beta-casein
   Agency: A2 Corp       PI: Dr. Richard Deth       Period: Jan 2016
   The project is in collaboration with Curtin University for measuring redox changes in blood samples of patients as a part of a clinical trial for a proprietary nutritional intervention.
Title: Effect of peptides on epigenetic status in Neuronal Stem cells  
**Agency:** Florida Atlantic university  
**PI:** Dr. Trivedi /Dr. Deth  
**Period:** Jan 2015 - present  
The project is in collaboration with A2 corporation and Florida Atlantic university for measuring redox and epigenetic changes in the differentiation of neuronal stem cells under the influence of opioids and food derived opioid peptides.

Title: Redox-Methylation changes during Neuronal Stem Cell differentiation  
**Agency:** NSU Presidential Grant  
**PI:** Dr. Malav Trivedi  
**Period:** July 2017 – July 2018  
The project is focussed on characterizing the redox and epigenetic changes during neuronal stem cell differentiation.

Title: Redox-Methylation changes and Novel neuronal cell death in Autism  
**Agency:** NSU Presidential Grant  
**PI:** Dr. Ana Castejon  
**Period:** July 2016 – July 2017  
The project is focussed on characterizing the redox and epigenetic changes during neuronal stem cell differentiation.

Title: Epigenetic Changes in Women with Gulf War Illness.  
**Agency:** Department of Defense  
**PI:** Dr. Lubov Nathanson  
**Period:** Aug 2017 – Jul 2020  
The project is focussed on characterizing genome-wide and site-specific epigenetic and gene expression changes in the veterans who suffer from gulf war illness especially women as compared to health veterans and identify a specific mechanism.

Title: Redox-Epigenetic Reprogramming in neuronal stem cell from Parkinson’s patients  
**Agency:** Arizona State University  
**PI:** Dr. Lalitha Madhavan  
**Period:** Oct 2017 – present  
The project is focussed on characterizing redox and mitochondrial functions along with site-specific epigenetic and gene expression changes in reprogramming PBMCs to iPSC to dopaminergic neurons from Parkinson’s disease patients.

Title: Intranasal Insulin and Glutathione in Parkinson’s disease: A Phase IIb clinical study.  
**Agency:** Gateway Brain foundation  
**PI:** Dr. Nancy Klimas  
**Period:** Oct 2018 – Apr 2019  
The project is focussed on characterizing genome-wide and site-specific epigenetic and gene expression changes in the veterans who suffer from gulf war illness especially women as compared to health veterans and identify a specific mechanism.

Title: Chronic Fatigue Syndrome in a Petri-Dish  
**Agency:** Solve MC/CFS Foundation  
**PI:** Dr. Malav Trivedi  
**Period:** Jan 2019 – Dec 2019  
The project is focussed on characterizing structural and functional changes in neurons that are generated by reprogramming of peripheral mononuclear cells using induced pluripotent stem cells (iPSC) technology.
PEER REVIEWED PUBLICATIONS:

1) Qi Ye, Malav Trivedi, Yiting Zhang, Mark Bölchte, Helal Alsulimani, JuOae Chang, Timothy Maher, Richard Deth, and Jonghan Kim. Brain iron loading impairs DNA methylation and alters GABAergic function in mice; The FASEB Journal; published online. PMID: 30277817


4) Ferris C., Morrison T., Iriah S., Kouranova I., Trivedi M. Evidence of neurobiological changes in the presymptomatic PINK1--/-- KO rat. Journal of Parkinson’s Disease. 2018;8(2):281-301. PMID: 29710734

5) MS Trivedi, M Abreu., Nucleic Acid Profiling in Tumor Exosomes; Diagnostic and Therapeutic Applications of Exosomes in Cancer, 93-117


9) Schrier MS, Trivedi M, Deth RC. Redox-Related Epigenetic Mechanisms in Glioblastoma: Nuclear Factor (Erythroid-Derived 2)-Like 2, Cobalamin, and Dopamine Receptor Subtype 4. Frontiers in Oncology. 2017;7:46. PMID: 28424758

10) Renin–angiotensin system gene expression and neurodegenerative diseases; Goldstein B, Speth RC, Trivedi M. J Renin Angiotensin Aldosterone Syst. 2016 Sep 9;17(3), PMID: 27613758


Other Publications / Conference Proceedings:


34) Research and Scholarship Expo Northeastern University 2010; Trivedi M, A novel mechanism for opioid drug action: Implications of Redox/Methylation signaling. Program# 1040.

35) Annual meeting of Society for Neuroscience 2011; Trivedi M, Casein and gluten-derived peptides modulate cysteine uptake and cellular thiol levels via activation of opiate receptors. Program# 151.06/V4.


37) Annual meeting of Society for Neuroscience 2012; Trivedi M, Soluble oligomers of amyloid β cause oxidative stress and alter redox and methylation-linked gene transcription by disrupting EAAT3-mediated cysteine uptake. Program# 650.21/G14.
38) Annual meeting of Society for Neuroscience 2012; Trivedi M, A focused redox/methylation qrt-pcr array for the diagnosis of autism and other oxidative stress-related disorders. Program# 56.04/I5.


40) Research, Innovation, Scholarship and Entrepreneur Northeastern University Research; Trivedi M, A qRTPCR based diagnostic tool for autism spectrum disorders (ASD). Program#: 319.

41) International meeting for Autism Research (IMFAR 2012); Trivedi M, qRT-PCR-Based Assessment of Redox and Methylation Cycle Gene Expression in Autism. Program#: 108.116.

42) Pharmaceutical Sciences Research Showcase Northeastern University (2012); Trivedi M, Redox-methylation signaling as a potential mechanism of drug addiction.

43) Annual meeting of Society for Neuroscience 2013; Trivedi M, Novel mechanism for opioid drug action: Implications of Redox/Methylation signaling. Program#: 257.05/KK4.

44) Annual meeting of Society for Neuroscience 2013; Trivedi M, Gluten and casein derived opiate peptides alter redox status and produce global changes in DNA methylation associated with epigenetic-based differences in gene expression. Program#: 719.10/M14.


49) Food and Behavior Special Guest Speaker 2014; Trivedi M, Farmacology of peptides derived from gluten and casein: Royal College of Surgeons. Oral Presentation.

50) Annual meeting of Society for Neuroscience 2014; Trivedi M, Redox-based epigenetic changes via the cysteine transporter EAAT3: A novel unifying mechanism for the actions of drugs of abuse. Program#: 57.07/X22


53) Annual meeting of Society for Neuroscience 2015; Trivedi M, Evidence of early cerebellar dysfunction in presymptomatic Parkinson’s disease: Data from quantitative anisotropy using magnetic resonance imaging, mitochondrial biochemistry and genetics, and eye-blink in PINK1 knock-out rats. Program#: 398.14/E37.

54) Annual meeting of Society for Neuroscience 2015; Trivedi M, Neuregulin-1 promotes redox-dependent neuronal cobalamin metabolism by stimulating cysteine-dependent glutathione synthesis. Program#: 584.15/E18.

55) Annual meeting of Society for Neuroscience 2015; Trivedi M, Selective stimulation of AT2 angiotensin II receptor subtype increases neural stem cell proliferation. Program#: 665.08/B34

56) Annual meeting of Society for Neuroscience 2015; Trivedi M, Effect of food-derived opioid peptides on neuronal stem cell differentiation: Implications of redox-based epigenetic changes. Program#: 380.08/A19

57) Food and Behavior Special Guest Speaker 2015; Trivedi M, Oxford University Effects of Diet derived Opioid Peptides from Gluten and Casein

58) TEDx 2016; Trivedi M, Journey or the Milestones: Epigenetic Changes as Timestamp Along the Way of Human Evolution.


60) HealthCare Research Professional Day 2016; Trivedi M, Evidence of early cerebellar dysfunction in presymptomatic Parkinson’s disease: Data from MRI and biochemical analysis. Program#:0734.


63) Annual summer Meeting of The Nutrition Society 2015; Trivedi M, Implications of different types of beta-casein in human health and homeostasis. Oral presentation


65) Annual meeting for the American Society for Integrative Physiology April 2017, “Epigenetic changes in autism and Schizophrenia: Role of D4 dopamine Receptors”.

66) Annual meeting for the International society for Nutritional Psychiatry July 2017, “Farmacology: Bioactive peptides from milk and wheat mediate Epigenetic changes”.

67) Interaction between the Dopamine D4 Receptor and the Angiotensin II Type 1 Receptor in Rat Astrocytes FASEB JOURNAL 32 (1)
ASSOCIATION WITH SCIENTIFIC ORGANIZATIONS

Past: Society for Neuroscience, Boston Chapter.

**Acting President (2012-2015)**

**Role:** Be a liaison between the central society for Neuroscience chapter and the members from Boston Area with about 40,000 members. Conduct events, invite speaker series, conduct Boston BRAIN BEE and spread Brain awareness.

Past: American Association of Pharmaceutical sciences (AAPS), Northeastern chapter.

**Secretary, (2011- 2012)**

**Role:** Assist in organizing events for increasing chapter outreach, help in securing funds, aid in collaborations, and act as a liaison between graduate students and Pharmaceutical industries.

JOURNAL REVIEWER

<table>
<thead>
<tr>
<th>Journal</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Nutritional Chemistry</td>
<td>2013~</td>
</tr>
<tr>
<td>Epigenomics</td>
<td>2015~</td>
</tr>
<tr>
<td>Nutrition and Metabolism</td>
<td>2016~</td>
</tr>
<tr>
<td>PLoSOne</td>
<td>2017~</td>
</tr>
<tr>
<td>Antioxidant and Redox Signaling</td>
<td>2016~</td>
</tr>
<tr>
<td>Brain and Behavior</td>
<td>2017~</td>
</tr>
<tr>
<td>Cellular Neuroscience</td>
<td>2017~</td>
</tr>
<tr>
<td>Molecular Pharmaceutics</td>
<td>2018~</td>
</tr>
<tr>
<td>Frontiers in Bioscience</td>
<td>Associate Editor 2015~</td>
</tr>
</tbody>
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RECOGNITION AND AWARDS:

**Awards:**

- 2008 Outstanding Student Award, APMC College of Pharmacy.
- 2008-2010 Deans Graduate Scholar, Northeastern University, Boston, MA.
- 2012 Student Poster Award, International Meeting for Autism Research, Toronto. CAN
- 2013 Outstanding Health Sciences Research Award, Boston, MA.
- 2013 Excellence in Research Award, RISE-exhibition Boston, MA.
- 2014 Research Award, Winter-Symposium, Miami, FL.

**Honors:**

- 2011 Rho Chi Honor Society – Beta Tau Chapter.

TEACHING & SUPERVISION EXPERIENCE

- **Course coordinator** for PHRE 5230 Pharmacology of Drugs of Abuse (Fall semester; 2015, 2016, 2017) offered to 2nd and 3rd year Pharm. D Student as well as Advanced standing Accelerated Pharm.D students.

- **Course coordinator Instructor** for PHRP 7204 Research Techniques and Instrumentation (Fall semester 2016, 2017) offered to 2nd year Ph.D students and Masters in Pharmaceutical Sciences Students.

- **Co-Instructor** for PHRE 4550 Introduction to Molecular Biology (Spring 2016, 2017) offered to 2nd and 3rd year Pharm. D Student as well as Advanced standing Accelerated Pharm.D students

- **Course Instructor** for PHSC7010 32273 Pharmaceutical Sciences Lab SEC 01 offered in Fall 2013 and Spring 2014 to Pharmaceutical Sciences MS program at Northeastern University College of Pharmacy.
- **Co-Instructor** for BLOG301.89293: **Cell and Molecular biology** offered in **Spring 2013** at Northeastern University College of Pharmacy.

- Have instructed and supervised over 20 high school, undergraduate, and masters students, for their CAPSTONE / thesis or volunteer projects as well as thesis project.

- Mentored and supervised six graduate level Pharmaceutical Science students for their thesis projects.

- Currently mentoring 2 PhD students (Ms. Sashana Dixon and Mr. Matthew Schrier) as Co-advisor for Thesis Dissertation.