

**EDUCATION**

- 2008                    **Ph.D. Pharmacology,**  
Department of Drug Discovery and Development, Harrison School of Pharmacy,  
Auburn University, United States.
- 2001                    **M.Phil. Animal Science,**  
University of Peradeniya, Sri Lanka.
- 1994                    **B.Sc. (Hons.) Zoology,**  
University of Jaffna, Sri Lanka

**AWARDS AND HONORS**

- 2012                    Award for faculty poster presentation. Auburn University Research Week 2012.
- 2008                    Graduation Marshal representing School of Pharmacy.
- 2007                    Outstanding doctoral student award, Auburn University.
- 2006                    Second Place award for presentation at Auburn University Graduate Student Research Forum.
- 2006                    Outstanding Graduate Student, Department of Pharmacal Sciences, School of Pharmacy, Auburn University.
- 2005                    Outstanding minority graduate student, Office of Diversity of Multicultural affairs, Auburn University.
- 2004                    Travel award: *9th International Conference on Alzheimer's Disease and Related Disorders* held in Philadelphia, Pennsylvania, USA, July 17-22, 2004.
- 1994                    Sir Sangarapillai Pararajasingam award for best academic performance in Zoology major program.
- 1990 - 1994           Mahapola Higher Education Scholarship was awarded from Jaffna University, Sri Lanka for undergraduate studies.

**ACADEMIC POSITIONS**

- 2014 - Present           **Assistant Professor of Biomedical Sciences (tenure-track)**  
Department of Biological and Environmental Science  
Texas A&M University-Commerce, Texas.
- 2013 - 2014            **Assistant Research Professor**  
Department of Pathobiology, College of Veterinary Medicine  
Auburn University, Alabama.
- 2009 - 2013            **Postdoctoral Research Fellow**  
(Mentors: Carl A. Pinkert, Ph.D. and Michael H. Irwin, Ph.D.)  
Department of Pathobiology, College of Veterinary Medicine  
Auburn University, Alabama.

- 2008 - 2009      **Postdoctoral Research Fellow**  
(Mentor: Vishnu Suppiramaniam, Ph.D.)  
Department of Drug Discovery and Development, Harrison School of Pharmacy  
Auburn University, Alabama.
- 2003 - 2008      **Graduate Research and Teaching Assistant,**  
Department of Drug Discovery and Development, Harrison School of Pharmacy  
Auburn University, Alabama.
- 1994 - 2003      **Senior Lecturer/Lecturer**  
Department of Zoology  
University of Jaffna, Jaffna, Sri Lanka.

## TEACHING EXPERIENCE

### Traditional classroom teaching:

- 2014 - Present      Position: Assistant Professor (tenure-track), Texas A&M University-Commerce  
Courses:  
BSC 427 Pharmacology (3 credit hours; every Fall)  
BSC 514 Pharmacology (3 hours, Spring, every even years)  
BSC 497 Pathophysiology (3 credit hours; every Spring)  
BSC 426 Histology (4 credit hours; every Spring)  
BSC 492 Developmental Biology (3 credit hours; every Fall)  
BSC 525 Advanced Neuroscience (3 credit hours; Spring, odd years)  
BSC 526 Developmental Biology (3 credit hours; every Fall)  
BSC 497 Parasitology (3 credit hours; every Fall)
- 1994 - 2003      Position: Senior Lecturer/Lecturer, University of Jaffna, Sri Lanka  
Courses: Human Physiology  
Comparative Anatomy and Physiology  
Cell and Molecular Biology

### Small group teaching:

- 2005 - 2007      Position: Instructor for small group learning sessions (PBL) for 1<sup>st</sup> and 2<sup>nd</sup> year pharmacy students  
Modules: Pulmonary, GI/Hepatic, CNS/Neurology.  
Topics: *pediatric epilepsy, gout, COPD, and psychiatric diseases.*
- 2003 - 2005      Position: Instructor, Auburn University  
Courses: Pharmacology Research Methods  
Pharmacology Research Methods and Special Problems

**Teaching Assistantship:**

- 2004 - 2006 Teaching Assistant for P1 and P2 labs (pharmaceutics), Auburn University.
- 2003 - 2007 Teaching Assistant for undergraduate professional pharmacy courses (Pharmacology series I, 2 and 3)

**Training and certifications:**

- 1997 World Health Organization sponsored workshop on Teaching and Assessment, Faculty of Medicine, University of Jaffna, Sri Lanka.
- 1998 Workshop on Teaching, Assessment and University regulations. Workshop was conducted by Faculty of Science, University of Jaffna as a part of its staff development program.

**SERVICES****Academic/Administrative Services:**

- Texas A&M University-Commerce
- 2014 - Present Chair: Public Relations/Publications/Advertising Committee (Department of Biological and Environmental Science)
- 2014 - Present Member: Institutional Animal Care and Use Committee
- 2015 - Present Member: Nursing Health Science Building Committee, Biology User Group
- University of Jaffna, Sri Lanka
- 2001 – 2003 Curriculum Development and Assessment committee (Science);
- 2001 - 2003 Curriculum Development Committee
- 2001 - 2003 Faculty Selection Committee (Biology)

**Research Services:**

- 2008 - Present Editorial Board Member:
- Neurochemical Research.
- Invited Reviewer:
- Acta Neuropathologica.
  - Naunyn-Schmiedeberg's Archives of Pharmacology.
  - AGE (Official Journal of the American Aging Association).
  - Neurotoxicology.
  - Austin Journal of Clinical Neurology.
  - Journal of Pharmaceutical Sciences and Pharmacology.
  - Neurobiology of Aging.
  - Journal of Cellular Physiology.
  - Mitochondrion.

## RESEARCH

### Research Interests:

Neuroscience and pharmacology; cellular and molecular physiological mechanisms of memory formation; dynamic crosstalk between glutamatergic and cholinergic neurotransmitter systems in the hippocampus and its role in regulating excitatory synaptic function, plasticity and behavior; fear memories and posttraumatic stress disorder; mitochondrial regulation of synaptic physiology and behavior; neurotherapeutics (antioxidants and memory enhancers).

### Grants:

#### Funded:

1. Project period 2013-2015 Parameshwaran, K. (PI).  
Agency: Brain and Behavior Research Foundation/NARSAD.  
Title: Mitochondrial complex I dysfunction in stress and mood disorders.  
Amount: \$60,000 (direct).
2. Project period 2014-2015 Parameshwaran, K. (PI).  
Agency: Auburn University Intramural Grants Program.  
Title: Hyperglycemia induced mechanisms promoting neurodegeneration.  
Amount: \$6,000 (direct).

#### In Preparation:

1. Elucidation of mechanisms in memory deficits associated with developmental nicotine exposure.

## PUBLICATIONS

### Peer reviewed Journal Articles (from most recent):

**(Total cites=843, h-index=14, i10 index=19; source: Google Scholar<sup>®</sup>, search date 05/01/2017)**

(\* corresponding author)

1. Bhakta A, Gavini K, Yang E, Lyman-Henley L, **Parameshwaran K.\*** (2017) Chronic traumatic stress impairs memory in mice: potential roles of acetylcholine, neuroinflammation and corticotropin releasing factor expression in the hippocampus. Behav Brain Res. 335:32-40
2. Ahuja M, Buabeid M, Abdel-Rehman E, Majrashi M, **Parameshwaran K**, Amin R, Ramesh S, Thiruchelvan K, Pondugula S, Suppiramaniam V, Dhanasekaran M. (2017) Immunological alteration & toxic molecular inductions leading to cognitive impairment & neurotoxicity in transgenic mouse model of Alzheimer's disease. Life Sci. 177:49-59.
3. Viswaprakash N, Vaithianathan T, Viswaprakash A, Judd R, **Parameshwaran K**, Suppiramaniam V. (2015) Insulin treatment restores glutamate ( $\alpha$ -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid) receptor function in the hippocampus of diabetic rats. J Neurosci Res. 93:1442-1450.
4. **Parameshwaran K**, Irwin MH, Steliou K, Suppiramaniam V, Pinkert CA. (2015) Antioxidant-mediated reversal of oxidative damage in mouse modeling of complex I inhibition. Drug Dev Res. 76:72-81.

5. Kariharan T, Nanayakkara G, **Parameshwaran K**, Bagasrawala I, Ahuja M, Abdel-Rahman E, Amin AT, Dhanasekaran M, Suppiramianam V, Amin RH. (2015) Central activation of PPAR-gamma ameliorates diabetes induced cognitive dysfunction and improves BDNF expression. Neurobiol Aging. 36:1451-1461.
6. **Parameshwaran K**, Buabeid MA, Bhattacharya S, Uthayathas S, Kariharan T, Dhanasekaran M, Suppiramianam V. (2013) Long term alterations in synaptic physiology, expression of  $\beta$ 2 nicotinic receptors and ERK1/2 signaling in the hippocampus of rats with prenatal nicotine exposure. Neurobiol Learn Mem. 106:102-111.
7. Uthayathas S, **Parameshwaran K**, Karuppagounder SS, Suppiramianam V, Dhanasekaran M. (2013) Selective inhibition of phosphodiesterase 5 enhances glutamatergic synaptic plasticity and memory in mice. Synapse. 67:741-747.
8. Irwin MH, **Parameshwaran K**, Pinkert CA. (2013) Mouse models of mitochondrial complex I dysfunction. Int J Biochem Cell Biol. 45:34-40.
9. **Parameshwaran K**, Irwin MH, Steliou K, Pinkert CA. (2012) Antioxidant protection of rotenone-induced neuromotor decline, ROS generation and cellular stress in mouse brain, Pharmacol Biochem Behav. 101:487-492.
10. **Parameshwaran K**, Buabeid MA, Karuppagounder SS, Uthayathas S, Thiruchelvam K, Shonesy B, Dityatev A, Dhanasekaran M, Suppiramianam V. (2012) Developmental nicotine exposure induced alterations in behavior and glutamate receptor function in hippocampus. Cell Mol Life Sci. 69: 829-841.
11. Kanju PM<sup>#</sup>, **Parameshwaran K**<sup>#</sup>, Sims-Robinson C, Uthayathas, Josephson EM, Rajakumar R, Dhanasekaran M, Suppiramianam V. (2012) Selective cholinergic depletion in medial septum leads to impaired long term potentiation and glutamatergic synaptic currents in the hippocampus. PLOS One. 7(2): e31073. **#co-first author**
12. Karuppagounder SS, Ahuja M, Buabeid M, **Parameshwaran K**, Abdel-Rehman E, Suppiramianam V, Dhanasekaran M. (2012) Investigate the chronic neurotoxic effects of Diquat. Neurochem Res. 37:1102-1111.
13. Shonesy BC, Thiruchelvam K, **Parameshwaran K**, Rahman EA, Karuppagounder SS, Huggins KW, Pinkert CA, Amin R, Dhanasekaran M, Suppiramianam V. (2011) Central insulin resistance and synaptic dysfunction in intracerebroventricular-streptozotocin injected rodents. Neurobiol Aging. 33:430.e5-e18.
14. **Parameshwaran K**, Irwin MH, Steliou K, Pinkert CA. (2010) Murine D-galactose-induced aging model for testing therapeutic antioxidants. Rejuvenation Res. 13:729-735.
15. Gonzalez J, Du M, **Parameshwaran K**, Suppiramianam V, Jayaraman V (2010) Role of dimer interface in activation and desensitization in AMPA receptors. Proc Natl Acad Sci U S A. 107:9891-9896.

16. Jiang J, **Parameshwaran K**, Seibenhener ML, Kang MG, Suppiramaniam V, Huganir RL, Diaz-Meco MT, Wooten MW (2009) AMPA receptor trafficking and synaptic plasticity require SQSTM1/p62. Hippocampus. 19:392-406.
17. Kanju PM, **Parameshwaran K**, Sims C, Bahr BA, Shonesy BC, Suppiramaniam V (2008) Ampakine CX516 ameliorates functional deficits in AMPA receptors in a hippocampal slice model of protein accumulation. Exp Neurol. 214:55-61.
18. Vaglenova J, **Parameshwaran K**, Suppiramaniam V, Breese CR, Pandiella N, Birru S (2008) Long-lasting teratogenic effects of nicotine on cognition: Gender specificity and role of AMPA receptor function. Neurobiol Learn Mem. 90:527-536.
19. Dhanasekaran M, Karuppagounder SS, Uthayathas S, Wold LE, **Parameshwaran K**, Babu RJ, Suppiramaniam V, Brown-Borg H (2008) Effect of dopaminergic neurotoxin MPTP/MPP+ on coenzyme Q content. Life Sci. 83:92-95.
20. **Parameshwaran K**, Dhanasekaran M, Suppiramaniam V (2008) Amyloid beta peptides and glutamatergic synaptic dysregulation. Exp Neurol. 210:7-13.  
[1] *Editor's pick as a newsworthy article.*  
[2] *Comment: Gasparini L and Dityatev A (2008) Beta-amyloid and glutamate receptors. Exp Neurol. 212:1-4.*
21. Uthayathas S, Karuppagounder SS, Tamer SB, **Parameshwaran K**, Degim T, Suppiramaniam V, Dhanasekaran M (2007) Evaluation of neuroprotective and anti-fatigue effects of sildenafil. Life Sci. 81:988-992.
22. Kanju PM, **Parameshwaran K**, Vaithianathan T, Sims CM, Huggins K, Bendiske J, Ryzhikov S, Bahr BA, Suppiramaniam V (2007) Lysosomal dysfunction produces distinct alterations in synaptic alpha-amino-3-hydroxy-5-methylisoxazolepropionic acid and n-methyl-d-aspartate receptor currents in hippocampus. J Neuropathol Exp Neurol. 66:779-788.
23. Uthayathas S, Karuppagounder SS, Thrash BM, **Parameshwaran K**, Suppiramaniam V, Dhanasekaran M (2007) Versatile effects of sildenafil: recent pharmacological applications. Pharmacol Rep. 59:150-163.
24. **Parameshwaran K**, Sims C, Kanju P, Vaithianathan T, Shonesy BC, Dhanasekaran M, Bahr BA, Suppiramaniam V (2007) Amyloid beta-peptide A beta(1-42) but not A beta(1-40) attenuates synaptic AMPA receptor function. Synapse. 61:367-374.
25. Hammond MSL, Sims C, **Parameshwaran K**, Suppiramaniam V, Schachner M, Dityatev A (2006) Neural cell adhesion molecule-associated polysialic acid inhibits NR2B-containing N-methyl-D-aspartate receptors and prevents glutamate-induced cell death. J Biol Chem. 281:34859-34869.  
[1] *Comment: Elstermann VE (2006) Neuronal activity: Polysialic acid as a modulator of neurotransmission. Nature Functional Glycomics. doi:10.1038/fg.2006.4*

26. Dhanasekaran M, Uthayathas S, Karuppagounder SS, **Parameshwaran K**, Suppiramaniam V, Ebadi M, Brown-Borg HM (2006) Ebselen effects on MPTP-induced neurotoxicity. Brain Res. 1118:251-254.
27. Suppiramaniam V, Vaithianathan T, Manivannan K, Dhanasekaran M, **Parameshwaran K**, Bahr BA (2006) Modulatory effects of dextran sulfate and fucoidan on binding and channel properties of AMPA receptors isolated from rat brain. Synapse. 60:456-464.

#### Manuscripts in preparation:

1. Bhakta A, Yang E, Gavini K, **Parameshwaran K**. Predator stress impairs working memory without inducing anxiety or depression in mice.
2. Gavini K, Bhakta A, Yang E, **Parameshwaran K**. Memory deficits in developmentally nicotine exposed mice: potential role of acetylcholine synthesis and clearance.

#### Book Chapters:

1. **Parameshwaran K**, Irwin MH, Steliou K, Pinkert CA. (2013) D-Galactose, dietary sugars and modeling neurological aging. In: Preedy VR. (Ed.) Food and Nutritional Components in Focus 3. pp. 668-685. Royal Society of Chemistry/Springer.
2. Suppiramaniam V, Abdel-Rahman EA, Buabeid MA, **Parameshwaran K**. (2010) Ion Channels. In: Charlene A. McQueen, Comprehensive Toxicology, volume 13, pp. 129-171 Oxford: Academic Press.
3. Suppiramaniam V, Abdel-Rahman EA, **Parameshwaran K**. (2010) Neurotransmitter Receptors. In: Charlene A. McQueen, Comprehensive Toxicology, volume 13, pp. 101-128 Oxford: Academic Press.
4. Suppiramaniam V, Vaithianathan T, **Parameshwaran K** (2006) Electrophysiological analysis of interactions between carbohydrates and transmitter receptors reconstituted in lipid bilayers. Methods Enzymol. 417:80-90.

#### Posters and Presentations:

(\* abstracts published in peer reviewed journals; selected out of 51)

1. **Parameshwaran K**, Irwin MH, Steliou K, Pinkert CA (2012) PMX-500F, a lipocarnitine derivative protects against rotenone induced neurotoxicity. Auburn University Research Week Presentations. [Award (3<sup>rd</sup> place) for faculty Presentation].
2. **Parameshwaran K**, Irwin MH, Steliou K, Pinkert C. (2010) Evaluation of a D-galactose model of aging in mice for testing of therapeutic antioxidant compounds. Third annual research day of Boshell Diabetes and Metabolic Diseases Research Program:52.
3. Pinkert CA, Irwin MH, Cannon MV, Dunn DA, **Parameshwaran K**, Bartol FF, Steliou K, Takeda K, Trounce IA. (2010) From transmittochondrial animal models to *in vivo* modeling of human mitochondrial disease pathogenesis. 7<sup>th</sup> Conference of Asian Society of Mitochondrial Res. And Med. (ASMRM) and 10<sup>th</sup> Conf. of the Japanese Society of Mitochondrial Res. and Med. (J-mit) December 15-18, 2010, Fukuoka Japan. No. S-22:73.

4. Shonesy BC, **Parameshwaran K**, Wang Z, McMahon LL, Clark R, Suppiramaniam V. (2008) Preclinical investigation of AMB, a novel AMPA receptor antagonist with potent antiepileptic properties. Program No./Poster No.: 451.4/AA7. Washington, DC. Society for Neuroscience.
5. **Parameshwaran K**, Uthayathas S, Karuppagounder SS, Thiruchelvam K, Shonesy BC, Huggins KW, Dhanasekaran M, Suppiramaniam V. (2008) Prenatal nicotine exposure impairs AMPA receptor mediated synaptic transmission and memory. Program No./Poster No.: 130.13/C61. Washington, DC. Society for Neuroscience.
6. Dhanasekaran M, Uthayathas S, **Parameshwaran K**, Karuppagounder SS, Suppiramaniam V. (2007) Effect of Viagra® on neurodegenerative diseases. Annual Meeting of the American College of Clinical Pharmacy, Oct 14-17, 2007, Denver, CO.
7. Uthayathas S, **Parameshwaran K**, Karuppagounder SS, Ilbasmis Tamer S, Degim T, Suppiramaniam V, Dhanasekaran M. (2007) Phosphodiesterase-5 inhibition enhances hippocampal long term potentiation in the mice. Program No. 936.14/AAA2 San Diego, CA. Society for Neuroscience, 2007.
8. **Parameshwaran K**, Uthayathas S, Sims CM, Suppiramaniam V. (2006) An Ampakine CX-717 potentially modulate the single channel properties of synaptosomal AMPA receptors. Program No. 424.11. Atlanta, GA: Society for Neuroscience.
9. **Parameshwaran K**, Vaithianathan T, Kanju PM, Pandiella NM, Vaglenova J, Breese CR, Suppiramaniam V. (2005) Memory deficits related to prenatal nicotine exposure: role of hippocampal synaptic glutamatergic (AMPA) neurotransmission Program No. 157.1. Washington, DC: Society for Neuroscience.
10. **Parameshwaran K**, Vaithianathan T, Kanju PM, Pandiella NM, Vaglenova J, Breese CR, Suppiramaniam V. (2005) Prenatal nicotine exposure alters hippocampal synaptic glutamatergic (AMPA) neurotransmission. Annual meeting of the Southeastern Pharmacology Society and Southeastern Society of Toxicology held in Nashville, TN.
11. **Parameshwaran K**, Uthayathas S, Sims CM, Rogers G, Dhanasekaran M, Suppiramaniam V. (2005) Synaptosomal glutamate (AMPA) receptor single channel activity is potentially modulated by a new Ampakine drug CX-717. *The Pharmacologist*, 48(4):154.
12. **Parameshwaran K**, Sims C, Vaithianathan T, Suppiramaniam V. (2005) Single channel recordings from synaptic GABA(A) receptors. ***Biophysical Journal*88: 477A-477A, Part 2 Suppl.\***
13. **Parameshwaran K**, Vaithianathan T, Kanju P, Suppiramaniam V. (2004) Amyloid  $\beta$  1-42 peptide potentially modulates synaptic AMPA receptor channel properties. 9th International Conference on Alzheimer's Disease and Related Disorders, Philadelphia.
14. **Parameshwaran K**, Vaithianathan T, Kanju PM, Bahr BA, Suppiramaniam V. (2004) Amyloid beta(1-42) peptide potentially modulates synaptic AMPA receptor channel properties. ***Neurobiology of Aging*25: S441-S441.\***
15. **Parameshwaran K**, Vaithianathan T, Kanju P, Suppiramaniam V. (2003) Evidence for direct modulation of glutamate (AMPA) receptors by amyloid  $\beta$  1-42 peptide. 24<sup>th</sup> Annual Meeting of the Southeastern Pharmacology Society, Mercer University, GA, October, 2003.



## REFERENCES

1. Carl A. Pinkert, PhD.  
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2. Vishnu Suppiramaniam, DVM, PhD.  
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