



Vishnu Suppiramaniam, D.V.M., M.S., Ph.D.
Director of Research Development & Support
Co-director, Center for Neuroscience Initiative
Gilliland Endowed Professor
Department of Drug Discovery & Development
Harrison School of Pharmacy

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Educational Background

Tuskegee University, Alabama, D.V.M. (Clinical Residency)..... 2000
Auburn University, Auburn, Alabama, Ph.D. (Biomedical Sciences)..... 1993
Auburn University, Auburn, Alabama, M.S. (Pharmacal Sciences)..... 1989
Madras Veterinary College, Chennai, B.V.Sc. 1985

ADMINISTRATIVE RECORD

Key University Administrative Roles

Director of Research Support2020-present

Responsibilities include fostering opportunities for all faculty members in the school to participate in funded research activities and help ensure that every faculty member in the school has the skills, knowledge, tools, and support needed to become a funded researcher.

Instrumental in creating a culture of research excellence by identifying interdisciplinary research opportunities to support both basic and applied research. Played a major role in mentoring faculty researchers and developing mentoring skills in others by conducting and coordinating relevant training. Assisting the Associate Dean for Research in building strong public and private research collaborations and disseminating information about the research mission to internal and external stakeholders.

Responsible for organizing the first Neuroscience Research symposium and Retreat at Auburn University. World renowned neuroscientists from US, Canada, and program officials from NIH delivered lectures. More than 250 participants from 16 different institutions from US, Canada, and Europe attend the symposium.

Initiated the Faculty Research Enhancement Exercise (FREE) at the Harrison School of Pharmacy. Conducted interactive seminars on:

- Crafting successful NIH small grant applications
- Preparing winning NIH- AREA and REAP grant applications
- Navigating the NIH reporter and NIH match maker
- Crafting successful specific aims section for NIH grant proposal
- Preparing a proper NIH-biographical Sketch

Initiated research collaborations with Alabama State University (HBCU) to provide research training in neuroscience for underrepresented minority undergraduate students. This collaboration included 16 faculty members from five different colleges/schools from Auburn University and Alabama State University and resulted in submission of an NIH-R25 grant proposal for \$1.8M.

Coordinated the pre-review of 3 NIH Grant proposals (R01, K99/R00 & K08) by former and current NIH study section members. All these grant proposals were submitted to NIH.

Conducted one-to-one meetings with HSOP and COVM faculty and helped develop NIH-grant proposals.

Promoted research collaboration between faculty from pharmacy practice and drug discovery and development departments. A new NIH-R03 grant was submitted.

Conducted work in Progress (WIP) meetings and provided critiques on potential NIH-R01, K99 and K01 grant proposals.

Participated as an instructor for grant writing course and introduced new ideas in crafting competitive NIH-fellowship grant (F31) proposals.

Acting Associate Dean for Research and Graduate Programs2018-2019
Assistant Dean for Research and Graduate Programs, School of Pharmacy2016-2018

Responsible for leading the school's research program, infrastructure, and graduate student training programs. Promote the engagement of School of Pharmacy faculty in all research endeavors within the school, across campus and external to this university. Responsible for administering all aspects of the graduate degree (M.S. and Ph.D.) programs. Helped frame and accomplish the aggressive vision of School of Pharmacy to grow scholarly programs and extramural research funding. Participated as a member of the senior administrative team,

facilitating and inspiring research across the School of Pharmacy, graduate student and faculty development in grant writing, building and managing core research infrastructure, representing the school to internal and external constituencies interested in research, and positioning the school to capitalize on innovative funding opportunities. Serves as a member of the Associate Deans for Research Council and Auburn University Research Administrative Coordination Team. Serves as the Chair for the School's Graduate Program Committee and Pharm.D.- Ph.D. Dual Degree Committee.

Selected Accomplishments

- During my tenure as department head and assistant dean, the federal research funding the School of Pharmacy increased from \$780,000 to \$3,200,000.
- Assisted the Dean with an \$18 million Pharmaceutical Research Building Project. Interviewed and selected architects involved in the planning of specialized laboratory spaces, research infrastructure facilities, classrooms, conference rooms and vivarium.
- Increased the number of international graduate students supported by fellowships from their home governments by about 100%.
- Organized a visit of NIH senior research administrators to Auburn University in 2018 to conduct workshops on developing successful grant applications.
- Initiated the development of a Center for Neuroscience (CNS) at Auburn University bringing together more than 30 neuroscience researchers from Auburn, the University of Birmingham at Alabama, Emory University and University of Magdeburg, Germany.
- The “Center for Neuroscience Initiative” has resulted in over \$3 million in federal grant funding and over 30 collaborative publications in the first 18 months of its inception (February 2019).
- Organized a successful Center for Neuroscience Initiative Symposium and Retreat (2020) by bringing in many world-renowned neuroscientists to Auburn University. There were 241 participants and 69 poster presentations.
- Established relationships with NIH program directors that have resulted in increased grant funding for Harrison School of Pharmacy. Recently funded National Institutes on Drug Abuse (NIDA) grant was awarded for 5 years without any cuts in the requested budget.
- Established collaborations with 8 universities in the Peoples Republic of China and implemented the 3+2 B.S., M.S. dual degree program at the Harrison School of Pharmacy.
- Developed collaborations with research investigators from various colleges and schools at Auburn University to initiate submission of NIH Fellowship grants.
- Established an Oversees-Talent Workstation between Jiangsu Province Pharmacological Society in China with over 900 researchers and the Harrison School of Pharmacy in 2017.
- Collaboration with the Oversees Talent Workstation in China has resulted in 8 publications and 1 NIH –R01 grant submission in 2019.

- Coordinated a workshop seminar on “Food, Nutrition and Human Health” in 2017 at China Agricultural University, Beijing to initiate research collaborations.
- Helped organize a Nanobiotechnology Conference in 2016 at Auburn University to enhance research collaborations with universities in the Southeastern states including Historically Black Colleges & Universities.

Head (interim) of the Department of Drug Discovery and Development.....2012-2016

Responsible for providing the leadership and vision for the department. As the chief administrator of the department, serving as a fiscal overseer - finding creative ways to extend the departmental budget including successful efforts at generating external fundraising. Supervising faculty, staff and visiting scholars of the department. Serving as an intermediary between the dean and the faculty members, I was responsible for advocacy and education of administrators at various levels about departmental quality and accomplishments. Serve as an external liaison bridging, building and maintaining relationships with alumni and external stakeholders. Helping to lead the faculty in curriculum development and program design. Responsible for recruitment and retention of faculty and staff members. Served as a counselor, coach and mediator for faculty and staff members. Serve as a member in the dean’s executive council and the school’s strategic planning committee. As department head, I was responsible for management of 17 faculty members, 6 staff members, and 40-50 graduate students.

Selected Accomplishments

- As department head, assisted the incorporation of basic science components into the “Practice Ready Curriculum” of the Harrison School of Pharmacy.”
- Constituted and implemented a Junior Faculty Mentoring Plan.
- Constituted a departmental Document Review Committee for review of grants, manuscripts, and other documents.
- Organized visits of several NIH study section members with expertise in neuroscience, cancer, diabetes, and cardiovascular diseases. These experts were then paired with our faculty members to serve as research collaborators or consultants.
- Established research and training collaborations with minority institutions including Alabama State University that resulted in joint training grant submissions to NIH and NSF in 2014. In addition, faculty and graduate student training grants were initiated in collaboration with Tuskegee University.
- As per the strategic plan of the university, affiliate and adjunct faculty appointments were increased in the department to enhance collaborative teaching and research opportunities.
- Served as the Chair of the Faculty Search Committee, identified and recruited female/minority applicants with federal funding.
- Served as Chair of the Promotion and Tenure Committee for 7 faculty members in the Department of Drug Discovery & Development.

- Established industry collaborations with pharmaceutical companies, including KalGene Pharmaceuticals, Ontario, Canada.
- Led the Neurodegenerative Cluster Hire Initiative with the vision of establishing a Center for Neuroscience at Auburn University.
- Strengthened the research collaborations with the Rett Syndrome Foundation and the University of Alabama at Birmingham.
- Initiated an External Research Advisory Board to assist departmental faculty in grant development and submission.
- Organized a retreat for the Department of Drug Discovery & Development for strategic planning including identification of specific goals and objectives for the department that align with strategic initiatives of the School of Pharmacy and Auburn University.

Administration (Non-academic Organizations)

In addition to my academic responsibilities, I have held a variety of positions in private corporations. These experiences have provided me additional managerial and leadership skills that have strengthened my ability to develop and implement strategic plans, specific goals and objectives as well as financial planning.

Secretary, Vishnu Dental, P.C. 2008-Present
 Responsible for financial management of this Professional Corporation.

Member of the Board of Directors, Tamil Academy for Advancement of Science 2005-Present
 This is a non-profit organization based in British Columbia, Canada. Responsible for establishing scientific collaborations, organizing annual meetings at the world-renowned “Sick Children’s Hospital” in Toronto, Canada.

PROFESSIONAL EXPERIENCE

Director of Research Development and Support
 Harrison School of Pharmacy, Auburn University 2020-Present

Acting Associate Dean for Research & Graduate Programs
 Harrison School of Pharmacy, Auburn University 2018-2019

Director, Center for Neuroscience Initiative
 Auburn University 2018-Present

Assistant Dean for Research & Graduate Programs
 Harrison School of Pharmacy, Auburn University 2016-2018

Visiting Professor, Ocean University China, PRC..... 2017-Present

Professor, Department of Drug Discovery & Development
Harrison School of Pharmacy, Auburn University 2015-Present

Associate Professor, Department of Drug Discovery & Development
Harrison School of Pharmacy, Auburn University 2004-2015

Chair, Division of Pharmacology & Toxicology, Harrison School of
Pharmacy, Auburn University 2006-2008

Assistant Professor, Department of Pharmacal Sciences Harrison
School of Pharmacy, Auburn University 2001-2004

Associate Professor, Department of Biology, Tuskegee University,
Tuskegee, Alabama 1998-2000

Director, Neuroscience Laboratories, Tuskegee University 1995-2000

Assistant Professor, Department of Biology, Tuskegee University 1993-1998

Research Fellow, Department of Physiology, Kilpauk Medical
College, Chennai, India 1986-1987

House Surgeon, Madras Veterinary College, Chennai, India 1985-1986

A. Honors & Awards

Fellowships

Jack Clift Fellow in Research – Harrison School of Pharmacy 2020

American Association of Schools of Pharmacy (AACP) – Academic
Research Fellows Program (ARFP) 2015-2016

American Association of Schools of Pharmacy (AACP) – Academic
Leadership Fellows Program (ALFP) 2006-2007

National Institutes for Neurological Disorders and Stroke -
Research Career development Award 1997-2001

National Science Foundation Fellowship, “Teaching Neuroscience
for Undergraduates” Cornell University, Ithaca, New York 1997

Summer Research Fellowship, Marine Biological Laboratory
Woods Hole, Massachusetts 1998

Summer Research Fellowship, Marine Biological Laboratory
Woods Hole, Massachusetts 1995

Kellogg Fellow, Tuskegee University 1993-1995

Honors

American Association of Colleges of Pharmacy (AACCP) – Fall Leadership Institute	2019
Invited press conference on “Prenatal Cannabinoid Exposure and Cognitive Impairment in Offspring” Society for Neuroscience	2018
Faculty Mentor of the Year Award, Auburn University Student Government Association	2017
Outstanding Teacher of the Year Award, Harrison School of Pharmacy	2017
Excellence in Neuroscience – Awarded by Technological Advances in Science, Medicine & Engineering, Sick Children’s Hospital, Toronto, Canada	2016
NIH-SBIR Study section membership	2016-Present
Grant Reviewer, Medical Research Council (MRC), UK.....	2015-Present
Grant Reviewer, Alzheimer’s Association, UK	2014-Present
Grant Reviewer, Organization for Scientific Research, Netherlands.....	2013-Present
NIH Study section membership ZRG1-F03A	2012-Present
Invited grant Reviewer, Department of Defense, Traumatic Brain Injury section	2011
Section Chair, Technological Advances in Science, Medicine & Engineering Conference, Toronto, Ontario, Canada.....	2010
Invited grant reviewer, NIH Challenge Grant.....	2009
Section Chair, Technological Advances in Science, Medicine & Engineering, Conference, Toronto, Ontario, Canada.....	2009
Article entitled “Amyloid beta peptides and glutamatergic synaptic dysregulation” was as Editor’s Pick as newsworthy article in Experimental Neurology.....	2008
Section Chair, Technological Advances in Science, Medicine & Engineering Conference, Toronto, Ontario, Canada.....	2008
Invited grant reviewer – NIEHS/NIH	2007
Biogrant Award, Office of the Vice President for Research,	

Auburn University	2007
Section Chair, Technological Advances in Science, Medicine & Engineering Conference, Guelph, Ontario, Canada.....	2007
Innovative Research Award in Neuroscience Technological Advances in Science, Medicine & Engineering Conference Guelph, Ontario, Canada.....	2006
Article entitled “Neural cell adhesion molecule-associated polysialic acid inhibits NR2B-containing N-methyl-D- aspartate receptors and prevents glutamate-induced cell death in Journal of Biological Chemistry was an Editors pick as newsworthy article, commentary in Nature Glycomics.....	2006
Invited press conference on “A potential new therapy for cognitive deficits in Prenatal alcohol exposure” Society for Neuroscience, Atlanta, Georgia	2006
Invited lecturer & workshop organizer for the International Brain Research Organization (IBRO), February 2005, Colombo, Sri Lanka	2005
Invited press conference on “Prenatal nicotine exposure and cognitive impairment in offspring” Society for Neuroscience, Washington, DC	2005
Invited press conference on “Prenatal alcohol exposure and cognitive deficits in offspring” Society for Neuroscience, Washington, DC	2005
Section Chair, “Technological Advances in Science, Medicine & Engineering Conference, Ontario, Canada.....	2004
Invited grant reviewer for NIH/NIGMS.....	2004
Invited resource personnel for the “International Society for Neurochemistry” Sri Lanka.....	2004
Appointed Chair for the “Technological Advances in Science, Medicine and Engineering Conference”, Ontario, Canada.....	2004
“Late Breaking” abstract entitled “Glutamate receptor dysfunction in the brain of streptozotocin-diabetic rodents” was selected by the American Diabetic Association to be presented in a special session (50 most innovative projects were chosen out of 2800 abstracts)	2003
Appointed Section Chair of the "Technological Advances in Science, Medicine & Engineering Conference, Ontario, Canada	2002
Invited to host a half an hour program on "Asian Television	

Network" on Early Neuropathogenesis of Alzheimer's Disease, Ontario, Canada.....	2002
Received a "Biogrant Award" from the Office of the Vice President for Research, Auburn University.....	2002
Invited guest at the Annual Meeting of the Indian Institute of Science, Bangalore, India.....	2002
Appointed as an executive member of the organization committee for the "Technological Advances in Science, Medicine & Engineering Conference, Ontario, Canada.....	2001
Outstanding Faculty Performance Award for Research, Tuskegee University.....	2001
Invited to co-chair the Bioscience & Technology Conference Ontario, Canada	2000
Invited speaker at the International Society for Neurochemistry Chicago, Illinois	1999
National Institutes for Health Research Award for the "Bridges to the Doctoral Degree Program", Tuskegee University.....	1998
Appointed member of the executive committee for the Bioscience & Technology Conference Ontario, Canada	1999
National Science Foundation Research Award for the Enhanced Discovery and Learning in Biotechnology Program, Tuskegee University.....	1998
Appointed co-chair of the North American Biomedical Conference, Ontario, Canada.....	1998
Summer Research Fellowship in Neurobiology at the Marine Biological Laboratory, Woods Hole, Massachusetts	1998
Career Development Award from the National Institutes for Neurological Disorders and Stroke	1997
Appointed as the executive officer of the North American Biomedical Conference, Ontario, Canada.....	1997
National Science Foundation Scholarship for the workshop on "Teaching Neuroscience for Undergraduates," Cornell University	1997
Research Award from the National Institutes for General Medical Sciences.....	1995

Summer Research Fellowship for Neurochemistry at the Marine Biological Laboratory, Woods Hole, Massachusetts 1995

Outstanding faculty performance award, Tuskegee University 1995

Award for Academic Excellence, School of Veterinary Medicine, Auburn University..... 1993

Award for Academic Excellence, School of Veterinary Medicine, Auburn University..... 1992

Student awards under my supervision:

Year	Name	Award
2021	Miles Wiley	NIH-G-Rise T32 Scholar GEM Scholar
2020	Priyanka Pinky	Pharmaceutical Research & Manufactures of Of America (PhRMA) Foundation - \$50,000
2020	Priyanka Pinky	Best poster presentation (3 rd place) - VCOM Research Day (Among 75 posters)
2020	Warren Smith	American Foundation for Pharmaceutical Scien (AFPE) Fellowship - \$10,000
2019	Warren Smith	Second place in poster presentation. Graduate Research symposium
2019	Jenna Bloemer	First Year Experience Mentor Award – Auburn University Graduate School
2019	Jenna Bloemer	American Foundation for Pharmacy Education Fellowship (AFPE) - \$ 10K
2019	Priyanka Pinky	Media Coverage - Experimental Biology (Among 2000 abstracts)
2019	Priyanka Pinky	American Society for Pharmacology &
2019	Priyanka Pinky	Top 16 abstracts - American Association of Clinical Pharmacology (among 200+ abstracts)
2019	Priyanka Pinky	3 Minute Thesis (MT) Presentation Finalist – Auburn University (among 100+ students)
2019	Priyanka Pinky	PhRMA Foundation pre-doctoral fellowship (2years - \$50K)
2019	Priyanka Pinky	Best poster presentation (2 nd place) - VCOM Research Day (Among 75 posters)
2019	Priyanka Pinky	Invited press conference in ‘Society for Neuroscience’ (Among 13000 abstracts)
2019	Priyanka Pinky	Alzheimer’s Disease Drug Discovery Foundation Award (among 200+ participants)

2019	Manoj Govindarajulu	Alzheimer's Disease Drug Discovery Foundation Award (among 200+ participants)
2018	Jenna Bloemer	Outstanding Graduate Student Award (top 10 selected from Auburn University)
2018	Jenna Bloemer	Auburn University Research Symposium 2 nd place oral presentation
2018	Jenna Bloemer	American Federation for Pharmaceutical Education Pre-doctoral Fellowship in Pharmaceutical Sciences
2018	Manoj Govindarajulu	First place- Poster Presentation, Research Student Symposium, Auburn University
2018	Manoj Govindarajulu	Alzheimer's Drug Discovery Foundation Young Investigator Scholarship Award, 12 th Annual Drug Discovery for Neurodegeneration Conference, Washington DC
2017	Manoj Govindarajulu	Graduate Travel Award
2017	Jenna Bloemer	American Association of College of Pharmacy Walmart Scholarship
2016	Jenna Bloemer	Award of Excellence in Clinical Communication (chosen from 150 students)
2015	Subhrajit Bhattacharya	CMB-NSF Summer Fellowship Graduate school thesis/dissertation award
2015	Jenna Bloemer	School of Pharmacy Research Symposium People's Choice Award
2014	Subhrajit Bhattacharya	3MT (three minutes competition) selected among top 10
2014	Subhrajit Bhattacharya	Graduate school thesis/dissertation award
2014	Jenna Bloemer	Merck Award of Excellence (top 2% of class in terms of academic performance)
2014	Jenna Bloemer	Rho Chi Honor Society
2014	Jenna Bloemer	Pharmacy MTM Competition 1 st place overall
2014	Jenna Bloemer	Merck Award of Excellence (top 2% of class in terms of academic performance)
2014	Jenna Bloemer	Harrison School of Pharmacy Dean's Scholarship
2013	Dwip Bhattacharya	Tillery Award – Auburn University
2013	Jenna Bloemer	HSOP Golf Tournament Scholarship

2012	Manal Buabeid	Outstanding graduate student of Harrison School of Pharmacy 2012 American Foundation Pharmaceutical Education pre-doctoral fellowship
2011	Engy Ali	Outstanding graduate student of School of Pharmacy
2009	KarikiranThiruchelvam	Invited to Chair the “receptor and ion channel” section in the annual meeting of the Society for Toxicology, Baltimore, Maryland, March 2009 Received a travel award to present a talk on “prenatal nicotine exposure and the mechanism of memory loss” at the international Neurotoxicology Association, Jerusalem, Israel, July 2009
2009	S. Shanmugam	Elected to Who’s Who Among Students in American Universities and Colleges
2009	Brian Shonesy	Outstanding graduate student of Harrison School of Pharmacy
2008	S. Uthayathas	Selected as one of top 10 graduate students at Auburn University. March
2008	S. Shanmugam	Selected as an outstanding graduate student of Harrison School of Pharmacy
2008	S. Uthayathas	Elected to Who’s Who Among Students in American Universities and Colleges.
2007	K. Parameshwaran	Selected as one of top 10 graduate students at Auburn University, March 2007 Won 2nd place in poster presentation at the Graduate Student Forum, Auburn University, March 2007
2006	Nayana Wijayawardan	Won 1st place in oral presentation at the Graduate Student Forum, Auburn University, March 2007
2006	Nayana Wijayawadhane	Won 1st place in oral presentation & 3rd place in poster presentation in Auburn University graduate student forum, March 2007
2005	Catrina Sims	Won 1 st place in oral presentation & 3rd place in poster presentation in Auburn University graduate student forum, March 2007
2005	Thiru Vaithianathan	Was selected as one of top 10 graduate students at Auburn University, March 2005

2004	K. Parameshwaran	Received an Invitation from the editor of the Neurobiology of Lipids journal to submit a research article based on his presentation at the International Alzheimer's Disease Symposium, July 19, 2004
2004	Thiru Vaithianathan	Won the 3rd place in Auburn University graduate student forum, March 2004
2003	Catrina Sims	Received Cell & Molecular Biology Summer Research Fellowship, May 2004
2003	Thiru Vaithianathan	Won the 3rd place in Auburn university graduate student forum, March 2003
2002	Thiru Subramaniam	Elected to join the National science honor society "Beta Kappa Chi" as a member of Tuskegee University
2001	Thiru Subramaniam	Won the best presentation award at the annual symposium of the School of Veterinary Medicine, Tuskegee University, March 15, 2001
2000	Thiru Subramaniam	Awarded the certification of achievement for obtaining highest grade point average in the class, April 25, 2000 Awarded certification of achievement for outstanding work in Neuroscience Graduate student
1998	Solomon Yilma	Won the first place for Sigma -Xi poster presentation, Tuskegee University, March 1996
1997	Solomon Yilma	Won the summer research fellowship to Vanderbilt University School of Medicine, June 1997 Won the third place for Sigma-Xi oral presentation, Tuskegee University, March 1996
1996	Xenoria Causey	Won the second place for Sigma-Xi poster presentation, Tuskegee University, March 1996
1996	Lauren McCall	Won the second place for Sigma-Xi oral presentation, Tuskegee University, March 1996
1996	Solomon Yilma	Won the summer research fellowship to University of Washington, June, 1996
1995	Solomon Yilma	Won the first place for oral presentation, Tuskegee University, March 1996 Won the summer research fellowship to Children's Hospital at Harvard University Medical School, June, 1995
1994	David Ware	Won the summer research scholarship to Michigan State University, June - August 1994

B. Teaching

Auburn University

1. Courses taught:

- **Drugs & Diseases II (PYDI 5100)** 2007 spring - present
Adrenergic dysregulation, depression, bipolar disease, migraine
- **Drugs & Diseases III (PYDI 5200)** 2006 summer -present
Anxiety, insomnia, epilepsy & diabetes
- **Drugs & Diseases IV (PYDI 5300)** 2006 Fall -2008 Fall
Hypertension, coronary artery disease, myocardial infarction
- **Principals of Drug Action II (PYPS 5220)** January 2001-2006
Serotonergic & GABAergic systems
- **Human Pathology (PYPP 5260)** August 2002 - 2004
Pathophysiology of cardiovascular systems
- **Pharmacotherapy Modules (PYDI 5360-5530)** January 2000-2002
This is an interdisciplinary course that integrates basic sciences, socio-behavioral sciences & clinical pharmacy practice. This team-taught course is developed and taught by faculty from all three disciplines. Web based presentations, small & large group facilitation, and case-based teaching were utilized.
- **Infectious Disease Module (PYPD 5520)** Fall 2001
- **HORD Module (PYPD 5510)** 2001 Fall
Large group facilitation
- **Cardiology Module (PYPD 5410)** 2004 Fall
Large and small group facilitation
- **Special Problems (PYPS 5900)** 2001 Spring - present
Discussion on neuropathology of Alzheimer's disease.
Utilized interactive computer simulations to demonstrate basic concepts in neurophysiology.
- **Special Problems (PYPS 7900, 8900)** 2001 Spring – present
Discussion of literature related to graduate student research that includes synaptic dysfunction during aging and in conditions like Alzheimer's disease, Parkinson's disease and schizophrenia.
- **Special Problems (PYPS 7900, 8900)** 2001 Spring - present
Group discussion on graduate student research "Read & critique" journal articles
Lectures on "strategies for effective presentation"
- **Pharmacology II (PYPS 6320)** 2001 Spring – present
- **Neuropharmacology (PYPS 7300) & Neuropharmacology of Drug Abuse (PYPS 7360)** 2001 Fall – present
- **Pharmacology Research Methods (PYPS 7330)** 2002 Spring – present
Lectures on receptor physiology and electrophysiology of the neuron provided hands on laboratory sessions on brain slice, slice cultures, neuronal and single receptor electrophysiology and behavioral techniques. Provided comprehensive training on data analysis.
- **Pharmacology I, II, & III (PYPS 6010, 6020 & 6030)** 2002 Spring – present

2. Courses Developed:

- **Integrated Organ System Pharmacology I & Integrated Organ System Pharmacology II.**
Presents, in an integrated manner, pathophysiology and chemical, pharmacological and biotechnology principles action to explain the action of drugs.
- **Cellular & Molecular Pharmacology I Cellular & Molecular Pharmacology I**
Cellular biology course integrated with Pharmaceutical Sciences for the study of pharmacologically related mechanisms at molecular and cellular levels.

Tuskegee University:

1. Courses taught:

- **General Biology (Biology 111 & 112)** 1993 Fall –1995 Fall
- **Organismic Biology (Biology 120)** 1994 Summer –1995 Summer
- **Cell & Genetic Biology (biology 230)** 1994 Fall –1998 Fall
- **Computer Assisted Program for teaching Neuroscience Laboratory**
Used the computer programs "Neurosim" and "Neuron" for understanding the electrophysiology of the nerve cell. This program is used in the laboratory component of the two new neurobiology courses. Neurobiology courses I have introduced are as follows:
 - **Biology 596 (Neuroscience)**
 - **Biology 315 (General Neurobiology)**

2. Courses Developed:

- **Neurobiology (Biology 315)** 1994 Fall – 2000 Fall
Undergraduate lecture laboratory courses that utilizes the Description, Simulation and Application (DSA) technique that I developed
- **Neuroscience (Biology 596)** 1994 Fall – 2000 Fall
Graduate lecture laboratory courses that utilizes the DSA technology. Lectures include neuroanatomy and neurophysiology. Developed a laboratory manual for this course.

C. Invited Chair/ guest presentations

2020 (August).....Hospital for Sick Children, University of Toronto, Canada
2020 (August).....Hospital for Sick Children, University of Toronto, Canada
2017 (June)..... China Pharmaceutical University, Nanjing, PRC
2017 (June)..... Jiangnan University, Wuxi, PRC
2017 (June)..... Hebei Medical University, Hebei, PRC
2017 (June)..... China Agricultural University, Beijing, PRC
2017 (June)..... Ocean University of China, Qingdao, PRC
2017 (June)..... Yangzhou College of Veterinary Medicine, PRC
2016 (July)..... Jining Medical University, Rizhao, China
2016 (October) QuFu Normal University, QuFu, China
2016 (July)..... Hospital for Sick Children, University of Toronto, Canada

2015 (July)..... Hospital for Sick Children, University of Toronto, Canada
2014 (July)..... Hospital for Sick Children, University of Toronto, Canada
2014 (July)..... Hospital for Sick Children, University of Toronto, Canada
2013 (July)..... Hospital for Sick Children, University of Toronto, Canada
2012 (June)..... International Society Alcoholism, Atlanta, GA
2011 (July)..... International Symposium on Biophotonics, Russia (not attended)
2010 (July)..... Hospital for Sick Children, University of Toronto, Canada
2009 (July)..... Hospital for Sick Children, University of Toronto, Canada
2008 (November) Duke University, Durham, North Carolina
2008 (July)..... Western University of Health Sciences, Pomona, California
2008 (July)..... Hospital for Sick Children, University of Toronto, Canada
2008 (June)..... World Cancer Conference (Nuclear Receptors), Shanghai, China (not attended)
2007 (January) University of Melbourne, Australia
2007 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2006 (March)..... University of Connecticut, Health Science Center, Farmington, Connecticut
2006 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2005 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2004 (July)..... Asian Television network, Toronto, Ontario, Canada
2004 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2003 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2003 (December). University of Peradenya, Kandy, Sri Lanka
2002 (July)..... Technological Advances in Science, Medicine & Engineering, Ontario, Canada
2001 (July)..... Health Science Center, University of Western Ontario, Canada
2001 (December). Indian Institutes of Science, Bangalore, India
2000 (July)..... Bioscience & Technology Conference, University of Guelph, Ontario, Canada
2000 (March)..... American Society for Neurochemistry, Chicago
1999 (April)..... School of Veterinary Medicine, Tuskegee University, Alabama
1999 (March)..... Alabama Academy of Science, Athens, Alabama
1999 (March)..... Morehouse School of Medicine, Atlanta, Georgia
1999 (July)..... North American Biomedical Association, University of Guelph, Ontario, Canada
1998 (December). Hospital for Sick Children and University of Toronto, Ontario, Canada
1998 (October) Specialized Neuroscience Research Program. Workshop, National Institute for Neurological Disorders and Stroke at NIH, Bethesda, Maryland
1998 (July)..... North American Biomedical Association, University of Guelph, Ontario, Canada
1998 (February) .. Boys-Town Research Hospital, Omaha, Nebraska
1997 (July)..... North American Biomedical Association, University of Guelph, Ontario, Canada

D. Media Coverage of Research:

- 2019 (April)**News Week** ‘Pregnant women are using marijuana for morning sickness: study on rats suggests this could affect baby’s brain’
- 2019 (April)**Daily Mail - UK** ‘Pregnant women are using marijuana for for morning sickness affect part of the baby’s brain associated with memory’
- 2019 (April)**Metro - UK** ‘Pregnant women are using weed to combat morning sickness and it’s a very bad idea’
- 2019 (April).....**MSN News** ‘Cannabis for morning sickness could affect baby’s brain’
- 2019 (April).....**Business Standard** ‘Marijuana for morning sickness? It's not great for babies brain’
- 2019 (April)**EurekAlert AAAS** ‘Marijuana for morning sickness? It's not great for baby’s brain’
- 2019 (April)**Science Daily** ‘Real risks associated with cannabis exposure during pregnancy
- 2019 (April)**VisEmbryo** ‘Marijuana For Morning Sickness Bad For Baby’
- 2019 (April)**Earth** ‘Marijuana is not a safe treatment for pregnancy morning sickness’
- 2019 (April)**Health News Digest** ‘Marijuana for morning sickness? It’s not great for baby’s brain’
- 2019 (April).....**Life Science News** ‘Study assesses impact of cannabis on developing fetus’
- 2019 (April)**Economics Times India** ‘Use of marijuana during pregnancy can adversely affect offspring’s brain
- 2013 (July).....FM1, Ontario, Canada ‘Diabetes and Alzheimer’s link’
- 2013 (July).....Asian Television Network, Ontario, Canada
- 2006 (November) Press Release Conference, Atlanta, GA
- 2005 (October) Press release Conference, Washington DC
- 2002 (July).....Asian Television Network, Ontario, Canada
- 1999 (June).....North Carolina Public Television

E. Graduate Students Summary:

PhD in Pharmaceutical Sciences (Chair/Co-chair):

Student	Role	Degree	Years	Current Position
Thirumalini Subramaniam	Chair	Ph.D.	2000-2005	Assistant Professor, University of Tennessee Health Science Center
Patrick Kanju	Chair	Ph.D.	2000-2005	Senior Scientist, Duke University
Nayana Wijayawardhane	Chair	Ph.D.	2003-2007	Professor & Clinical Director, University of Sri Lanka
Catrina Sims	Chair	Ph.D.	2003-2007	Assistant Professor, Medical University of South Carolina
Kodeeswaran Parameswaran	Chair	Ph.D.	2004-2008	Assistant Professor, Texas A&M University

Subramaniam Uthayathas	Co-chair	Ph.D.	2005-2009	Research Associate, Emory University Medical School
Sibel Ilbasemis-Tamer	Co-chair	Ph.D.	2008	Assistant Professor, University of Ankara, Turkey
Brian Shonesy	Chair	Ph.D.	2006-2010	Research Assistant Professor, Vanderbilt University
Senthilkumar Shanmugam	Co-chair	Ph.D.	2004-2009	Research Assistant Professor, John Hopkins University
Bessy Thrash	Co-chair	Ph.D.	2003-2009	Research Associate, University of Alabama
Karikaran Thiruchelvam	Co-chair	Ph.D.	2007-2011	Research Fellow, Michigan University
Engy A. Abdel-Rahman	Chair	Ph.D.	2008-2012	Associate Professor, University of Cairo, Egypt
Manal Buabeid	Chair	Ph.D.	2008-2013	Assistant Professor, Ajman University, UAE
Subhrajit Bhattacharya	Chair	Ph.D.	2011-2015	Assistant Professor (Research), School of Pharmacy, Auburn University
Ahmad Alhowail	Chair	Ph.D.	2012-2017	Assistant Dean, Qassim University, Saudi Arabia
Fatima Aldajani	Chair	M.S.	2012-2015	Doctoral Student, Qassim University, Saudi Arabia
Dwipayana Bhattacharya	Co-chair	Ph.D.	2013-2015	Assistant Professor, Lake Erie College of Osteopathic Medicine
Jenna Bloemer	Chair	Pharm.D. Ph.D.	2014-2020	Assistant Professor, Touro University, New York
Manoj Govidarajulu	Co-chair	Ph.D.	2016-2020	Post-Doctoral Fellow - Walter Reed Army Institute of Research, Maryland
Priyanka Das	Chair	Ph.D.	2016-2020	Post-Doctoral Fellow, University of California, Irvine
Warren Smith	Chair	Pharm.D. Ph.D.	2016 -	
Adrienne Courville	Chair	Pharm.D. Ph.D.	2020 -	
Kawsar Chaudry	Chair	Ph.D.	2020 -	
Miles Wiley	Chair	Ph.D.	2021 -	

Ph.D. in Pharmaceutical Sciences (Committee Member):

Student	Years
Yi Shi	2018 - present
Shenqi Qian	2018 - present
Jared Senfeld	2017 - present

Shanese Jasper	2015 - present
Sharay Setti	2015 - present
Thamer Alqurashi	2014 - 2019
Mohammed Nasrullah	2014 - 2019
Chan Wang	2014 - 2018
Abdullah Alasmari	2013 - 2017
Lingxin Zhang	2013 - 2017
Yiwei Liu	2012 - 2016
Shravanthi Mouli	2012 - 2016
Jiansheng Huang	2011 - 2014
Isha Dhande	2011 – 2012
Sourashish Nag	2011 – 2012
Manuj Ahuja	2009 – 2013
Gayani Nanayakara	2010 – 2014
Wansu Ma	2010 – 2013
Hui Min Chan	2003 – 2008
Sanjay Birru	2000 – 2005

PhD in Other Programs (Committee Member):

Student	Years	Degree
Amul Thottae	2000 – 2005	Chemical Engineering
Kelly Banna	2002 – 2007	Psychology
Jianjong Jang,	2004 – 2008	Biological Sciences
Hui Gao	2004 – 2008	Biomedical Science
Prithviraj Das	2007 – 2013	Entomology
Xiulei Mo	2011– 2014	Biomedical Science
Lauren Woodie	2015 – 2020	Nutrition

MS in Pharmaceutical Sciences (Committee Member):

Student	Years
Jeremiah Pfitzer	2018 - present
Saud Alqahtani	2017 - present
Mingliu Zhao	2017 - 2020
Mohammed Majrashi	2015 - 2017
Mohammed Almaghrabi	2016 - 2018
Ryan Heslin	2016 - 2018
Darshini Desai	2017 - 2018

MS in Biological Sciences (Committee Member):

Student	Years
Amy Muncaster	2005 – 2007
Michael Carra	2005 – 2007
Kelly Banna	2003 – 2007

Professional (Doctor of Pharmacy) Student Trainees:

Student	Years
Susan Duggins	2001 – 2002
Michael Smith	2002 – 2003
Tara Smith	2002 – 2003
Victor Hunt	2004 – 2005
Lance Eiland	2005 – 2006
Virginia Robertson	2004 – 2005
Meredith Tate	2014 – current
Jamie Key	2014 – current

Post-Doctoral Trainees/Research Faculty:

Student	Years
Dr. Kollappa Prem Kumar	1997 –1998
Dr. K. Parameshwaran	2008 – 2009
Dr. Xiong Wu	2009 – 2010
Dr. Manal Buabeid	2013 – 2014
Dr. Yifeng Du	2017 – 2019
Dr. Subhrajit Bhattacharya	2020 – present

Tuskegee University, Department of Biology:

MS in Biology (Chair):

Student	Years
Thiru Subramaniam	1999 – 2002
Patrick Kanju	1999 – 2002
Elgin Green	1999 – 2002
Lynnee January	1998 – 2001
Vinson Barnes	1998 – 2001
Verneshia Robinson	1998 – 2001
Antonio Bowens	1998 – 2001
Solomon Yilma	1997 – 2000
Zenoria Causey	1994 – 1997
Lorraine McCall	1994 – 1997
David Ware	1994 – 1997

MS in Biology (Committee Member):

Student	Years
Quinee Brown	1999
Dorothy Wallaby	1996
Annie Gamil	1996
Erman Munir	1995

Sheryl Thompson	1994
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- a. Primary Doctoral Advisor (Chair/Co-chair) 24
- b. Primary Masters Advisor (Chair/Co-chair) 11
- c. Dissertation (Ph.D.) Committee Member 20
- e. Dissertation (M.S.) Committee Member 15

F. Research/Creative Work

Grants and Contracts

Extramural Grants:

“Alabama State University-Auburn University Partnership to Promote Diversity in Aging Research”

Principal Investigators (MPI): Manoj Mishra/**Vishnu Suppiramaniam**

Agency: NIH 1 R25 AG070244-01A1

Period: 12/2021-11/2026..... **Amount: \$ 1,866,800**

Score: 20 (~5%) (Pending)

“Elucidation of Molecular Mechanisms of Prenatal Cannabinoid Exposure: Identification of Targets and Therapies”

Principal Investigators (MPI): **Vishnu Suppiramaniam**/Miranda Reed

Agency: NIH 1 R01 DA046723-01

Period: 04/2020 - 03/2025..... **Amount: \$ 1,723,450**

Score: 14 (3%)

“Elucidation of Molecular Mechanisms of Prenatal Cannabinoid Exposure: Identification of Targets and Therapies” – *Administrative supplement*

Principal Investigators (MPI): **Vishnu Suppiramaniam**/Miranda Reed

Agency: NIH 3 R01 DA046723-02S1

Period: 08/2021 - 07/2024..... **Amount: \$ 143, 637**

“Identifying therapeutic target to rescue learning and memory deficits following prenatal cannabinoid exposure”

Agency: Pharmaceutical Research and Manufacturers of America (PhRMA) Foundation

Principal Investigators: Priyanka Pinky and **Vishnu Suppiramaniam**

Period: 1/1/2020 – 12/1/2020..... **Amount: \$ 25,000**

“Novel PPAR agonist for mitigating Alzheimer’s disease”

Co-investigators: **Vishnu Suppiramaniam** & Robert Arnold

Principal Investigator: Rajesh Amin

Agency: NIH - SBIR

Period: 10/01/2019 - 12/30/2021..... **Amount: \$ 440, 000**

“Dissection of Metabolic and Cognitive Outcomes of Amylin based Therapies in a Transgenic Mouse Model of Alzheimer’s Disease”

Agency: American Foundation for Pharmaceutical Education

Principal investigators: Warren Smith & **Vishnu Suppiramaniam**
Period: 8/31/19 – 8/30/20 **Amount: \$10, 000**

ASPET Young Scientist Travel Award
Recipient: Priyanka Pinky; **Primary Mentor; Suppiramaniam**
Agency: American Society for Pharmacology
Period: January 2019 **Amount: \$ 800**

AACP Top 16 abstracts
Recipient: Priyanka Pinky; **Primary Mentor; Suppiramaniam**
Agency: American Association of Clinical Pharmacology
Period: May 2019..... **Amount: \$ 800**

“Novel Partial PPAR-Gamma Agonist Improve Pathology and Memory Deficits in a 3xTg-AD Mouse Mode”
Principal Investigators: Rajesh Amin/**Vishnu Suppiramaniam**
Agency: NIH/R15
Period: 9/1/2015 – 8/31/2019 (no cost extension) **Amount: \$ 361, 955**

“Antioxidant-mediated Protection from Mitochondrial Dysfunction-induced Neuropathology”
Co-investigator: **Vishnu Suppiramaniam**
Principal Investigator: Carl Pinkert
Agency: Foundation for Cure from Mitochondrial Diseases
Period: 10/1/2013-09/31/2015..... **Amount: \$ 469,680**

“Nerve Growth Factor Signaling in P62 Knock Out Mouse”
Co-investigator: **Vishnu Suppiramaniam**
Principal Investigator: Marie Wooten
Agency: NIH/NINDS
Period: 3/1/2005-2/28/2008..... **Amount: \$ 1,100,000**

"Assessment of the Developmental Teratogenicity of Nicotine: Pharmacological Intervention by Nootropic Drugs”
Principal Investigator: **Vishnu Suppiramaniam**
Program Director: Charles Breese
Agency: Philip Morris
Period: 5/1/2003-4/30/2006..... **Amount: \$ 795,771**

“Modulation of Glutamate AMPA Receptor by Polysialic Acid”
Principal Investigator: **Vishnu Suppiramaniam**
Number: GM008091-310041
Agency: NIH/NIGMS
Period: 06/1/2002-05/30/2006..... **Amount: \$ 820,000**

“In Vitro Modeling of Olfactory Neurons”
Principal Investigator: **Vishnu Suppiramaniam**
Number: RR003059-110009
Agency: NIH/NIGMS

Period: 06/1/1998-5/31/2002..... **Amount: \$ 400,000**

“Modulation and Characterization of Glutamate (AMPA) Receptors”

Principal Investigator: **Vishnu Suppiramaniam**

Number: NS 02018

Agency: NIH

Period: 10/1/97-9/30/02..... **Amount: \$ 391,000**

“Functional Reconstitution of AMPA Receptors in Bilayers”

Principal Investigator: **Vishnu Suppiramaniam**

Number: GM-080906

Agency: NIH

Period: 04/1/1995 - 05/1/1998..... **Amount: \$209,000**

“Initiative for Minority Students: Bridges to the Doctoral Degree”.

Co-Investigator: **Vishnu Suppiramaniam**

Agency: NIH, NIGMS

Period: 01/13/99 **Amount: \$320,000**

“Instrumentation for Enhanced Discovery and Learning in Biotechnology”.

Co-Investigator: **Vishnu Suppiramaniam**

Number: DAAG55-97-R-BAA5

Agency: Army Research Office

Period: 02/1/1998 **Amount: \$400,000**

“Research Apprentice Program” (REAP)

Principal Investigator: **Vishnu Suppiramaniam**

Agency: Army Research Office

Period: 06/01/1998 **Amount: \$ 5000**

“Research Apprentice Program” (REAP)

Principal Investigator: **Vishnu Suppiramaniam**

Agency: Army Research Office

Period: 06/01/1997 **Amount: \$ 5000**

“Research Apprentice Program” (REAP)

Principal Investigator: **Vishnu Suppiramaniam**

Agency: Army Research Office

Period: 06/01/1996 **Amount: \$ 5000**

“Research Apprentice Program” (REAP)

Principal Investigator: **Vishnu Suppiramaniam**

Agency: Army Research Office

Period: 06/01/1995 **Amount: \$ 5000**

Intramural Grants:

“Elucidation of molecular mechanisms of prenatal cannabinoid exposure: Identification of targets and therapies”

Agency: Auburn University Internal Grants Program (AU IGP)

Principal investigators: Reed MN
 Co-principal investigator: **Vishnu Suppiramaniam**
 Period: 3/1/2019-4/30/2021..... **Amount: \$44,747**

“Nerve Growth Factor Administration for Treating Type2 Diabetes Linked Alzheimer’s Disease”
 Agency: Alabama Agricultural Experimental Station
 Principal Investigator: Ramesh Jeganathan
 Co-investigator: **Vishnu Suppiramaniam**
 Period: 10/1/18- 9/30/20..... **Amount: \$ 140, 500**

“Establishment of a Center for Neuroscience”
 Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Presidential Award for Innovative Research (PAIR)
 Period: 7/1/18- 6/30/21..... **Amount: \$ 637, 500**

“Molecular Mechanisms of Chemotherapy Induced Memory Loss”
 Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University Research Initiative in Cancer
 Period: 8/1/15- 7/31/17..... **Amount: \$ 200, 000**

“Molecular Mechanisms of Chemotherapy Induced Memory Loss”
 Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University Research Initiative in Cancer
 Period: 7/1/14- 7/31/15..... **Amount: \$ 20, 000**

“Microelectrode Array System: Electrical Measurements from Brain, Heart, Muscle & More”
 Co-Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University
 Period: 2/1/12- 1/31/13..... **Amount: \$ 60, 000**

“Integrin Linked Kinase, Synaptic Plasticity and Memory: The Diabetes, Alzheimer’s Link”
 Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University
 Period: 2/1/11- 1/31/13..... **Amount: \$ 93, 352**

“Thiazolidinediones Rescue Impaired AMPA Receptor-Mediated Transmission in STZ-diabetes”
 Principal Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University
 Period: 5/1/2007-4/30/2009..... **Amount: \$ 29, 252**

“Sildenafil (Viagra) in Alzheimer’s Disease”
 Co-Investigator: **Vishnu Suppiramaniam**
 Agency: Auburn University
 Period: 5/1/2007-4/30/2009..... **Amount: \$ 10, 000**

“Neuroprotection Against Environmental Neurotoxins”

Co-Investigator: **Vishnu Suppiramaniam**

Agency: Auburn University

Period: 2006 **Amount: \$ 3, 000**

“Role of Glutamatergic Function on Nicotinic Receptor Regulation”

Co- Investigator: **Vishnu Suppiramaniam**

Agency: Auburn University

Period: 5/1/2002-4/30/2004..... **Amount: \$ 47,468**

“Induction of Lysosomal Dysfunction in Hippocampal Neurons: A Model to Investigate Alzheimer’s Disease”

Principal Investigator: **Vishnu Suppiramaniam**

Agency: Auburn University

Period: 5/1/2002-4/30/2004..... **Amount: \$ 40,126**

Statement of Research

I joined Auburn University in 2001, at a time when it could best be characterized as a teaching institution. There were no more than 4 NIH-RO1 grants at any given time. I started a research laboratory with limited startup funds (\$50,000) and developed it into a neurophysiology laboratory capable of performing single ion channel, intracellular, extracellular, and in vivo electrophysiological recordings along with molecular, biochemical, and behavioral methodologies.

One of the unique techniques that we developed in our laboratory was to directly record single ion channel currents of synaptic neurotransmitter receptors. There are currently no other techniques available to directly measure the functionality of synaptic receptors, which is a critical measure of synaptic transmission. We use an upstream approach to investigate how modifications in the electrical properties (Channel open probability, conductance, dwell time distribution and burst activity) of single synaptic glutamate (AMPA & NMDA) receptor will alter the electrical properties of the neurons in; animal and tissue models of neurodegeneration (J. Neuropathol. Exp. Neurol. 2007, 66:779-788; Exp. Neurol. 2008, 214:55-61), and animal models of diabetes and prenatal alcohol/nicotine exposure. When electrical properties of a group of neurons are altered, this may lead to dysfunction of specific regions of the brain and in turn can cause behavioral deficits. Currently, we have the technology available to investigate how modifications in electrical properties of single synaptic glutamate receptors (synaptosomal recording) can lead to altered synaptic currents (whole cell patch clamp technique), which in turn may modify plasticity mechanisms (slice and in vivo electrophysiology) resulting in behavioral deficits (Morris Water Maze, Y-Maze, & fear conditioning) in animal models of Alzheimer’s disease and diabetes. Collaborating with faculty members in our department with expertise in cutting-edge molecular biology techniques, we have already begun to probe the intracellular signaling pathways that contribute to altered expression and modified electrical properties of synaptic glutamate receptors in animal models of diabetes and Alzheimer’s disease. The recent projects in the laboratory include **i)** elucidating the mechanism of memory loss in “**chemobrain**” and rescue by a novel selenide compound, **ii)** time-dependent receptor trafficking and synaptic plasticity during memory reconsolidation and **iii)** illustrating the role of Integrin-linked kinase (ILK) in synaptic plasticity and memory.

Research highlights of the laboratory:

Our laboratory was the first to *i*) develop a novel technique to directly measure the single ion channel properties of synaptic AMPA and NMDA receptors and demonstrate the interactive (cooperative) channel gating of synaptic AMPA receptors (*Methods Enzymol* 2006, 417:80-90). *ii*) illustrate the direct modulation of synaptic AMPA receptors by the Alzheimer peptide Ab1-42, *iii*) demonstrate the direct modulation of AMPA receptors by PSA and thereby establishing the neuroprotective role for PSA (*J Biol Chem* 2004 279:47975-47984), *iv*) identify subunit and region specific modulation of NMDA receptors by NCAM-PSA (*J Biol Chem* 2006 281:34859-34869; *J Neurosci* 2010 17:30 (11):4171-83), *v*) elucidate the molecular mechanism of memory loss in prenatal alcohol (*Neurobiol Dis* 2007, 26:696-706) and nicotine exposure (*Cell Mol Life Sci.* 2012 69 (5):829-41) as well as identifying a possible therapeutic option (*Neurobiol Dis* 2008, 29:81-91) and *vi*) illustrate the role of dimmer interface AMPA receptor channel kinetics (*Proc Natl Acad Sci U S A.* 2010 25; 107 (21):9891-6).

Peer Reviewed Publications

1. Ahmad, A., Priyanka, P., Matthew, E., Bloemer, J., Woodie, L., Buabeid, M., Bhattacharya, S., Shanese, J., Bhattacharya, D., Dhanasekaran, M., Escobar, M., Arnold, R., Suppiramaniam, V. Doxorubicin induces dysregulation of AMPA receptor and impairs hippocampal synaptic plasticity leading to learning and memory deficits (Heliyon – Cell press). 2021 in press
2. Pinky, PD., Majrashi, M., Fujihashi, A., Bloemer, J., Govindarajulu, M., Ramesh, S., Reed, MN., Moore, T., Suppiramaniam, V., Dhanasekaran M. Effects of prenatal synthetic cannabinoid exposure on the cerebellum of adolescent rat offspring. Heliyon. (Cell Press) 2021 Apr 13;7(4):e06730. doi: 10.1016/j.heliyon.2021.e06730. eCollection 2021 Apr.
3. Majrashi, M., Altukri, M., Ramesh, S., Govindarajulu, M., Schwartz, J., Almaghrabi, M., Smith, F., Thomas, T., Suppiramaniam, V., Moore, T., Reed, M., Dhanasekaran M. β -hydroxybutyric acid attenuates oxidative stress and improves markers of mitochondrial function in the HT-22 hippocampal cell line. J Integr Neurosci. 2021 Jun 30;20(2):321-329. doi: 10.31083/j.jin2002031.
4. Chen, F., Fang, S., Du, Y., Ghosh, A., Reed, MN., Long, Y., Suppiramaniam, V., Tang, S., Hong H. CRISPR/Cas9-mediated CysLT1R deletion reverses synaptic failure, amyloidosis and cognitive impairment in APP/PS1 mice. Aging (Albany NY). 2021 Feb 11;13(5):6634-6661. doi: 10.18632/aging.202501. Epub 2021 Feb 11.
5. Alatawi, Y., Hansen, RA., Chou, C., Qian, J., Suppiramaniam, V., Cao, G. The impact of cognitive impairment on survival and medication adherence among older women with breast cancer. Breast Cancer. 2021 Mar;28(2):277-288. doi: 10.1007/s12282-020-01155-3.
6. *Petrisko, *TJ., Bloemer, J., Pinky, PD., Srinivas, S., Heslin, RT., Du, Y., Setti, SE., Hong, H., Suppiramaniam, V., Konat, GW., & Reed, MN. (2020) Neuronal CXCL10/CXCR3 Axis Mediates the Induction of Cerebral Hyperexcitability by Peripheral Viral Challenge. Front Neurosci. 2020 Mar 24;14:220. doi:

10.3389/fnins.2020.00220. eCollection 2020. (Impact factor 3.6) (*equal contribution)

7. Alhowail, A., Zhang, LX., Buabeid, M., Shen, JZ., & **Suppiramaniam, V.** (2020). Role of the purinergic P2Y2 receptor in hippocampal function in mice. *Eur Rev Med Pharmacol Sci.* 2020 Nov;24(22):11858-11864. doi:10.26355/eurrev_202011_23843.
8. Govindarajulu, M., Pinky, PD., Steinke, I., Bloemer, J., Ramesh, S., Kariharan, T., Rella, RT., Bhattacharya, S., Dhanasekaran, M., **Suppiramaniam, V.**, & Amin, RH. Gut Metabolite TMAO Induces Synaptic Plasticity Deficits by Promoting Endoplasmic Reticulum Stress. *Front Mol Neurosci.* 2020 Aug 12;13:138. doi: 10.3389/fnmol.2020.00138. eCollection 2020.
9. Chen, F., Fang, S., Du, Y., Ghosh, A., Reed, MN., Long, Y., **Suppiramaniam, V.**, Tang, S., & Hong, H. CRISPR/Cas9-mediated CysLT1R deletion reverses synaptic failure, amyloidosis and cognitive impairment in APP/PS1 mice. *Aging (Albany NY).* 2021 Feb 11;13. doi: 10.18632/aging.202501.
10. Woodie, LN., Johnson, RM., Ahmed, B., Fowler, S., Haynes, W., Carmona, B., Reed, M., **Suppiramaniam, V.**, Greene, MW. Western diet-induced obesity disrupts the diurnal rhythmicity of hippocampal core clock gene expression in a mouse model. *Brain Behav Immun.* 2020 Aug;88:815-825. doi: 10.1016/j.bbi.2020.05.053. Epub 2020 May 23.
11. Alatawi, Y., Hansen, RA., Chou, C., Qian, J., **Suppiramaniam, V.**, & Cao, G . The association between antidepressants use and development of cognitive impairment among older women diagnosed with breast cancer. *Eur Geriatr Med.* 2020 Dec;11(6):1017-1026. doi: 10.1007/s41999-020-00349-4. Epub 2020 Jun 22.
12. Bhattacharya, D., Fujihashi, A., Majrashi, M., Bloemer, J., Bhattacharya, S., Buabeid, M., Escobar, M., Moore, T., **Suppiramaniam, V.**, & Dhanasekaran, M. (2020). Concurrent nicotine exposure to prenatal alcohol consumption alters the hippocampal and cortical neurotoxicity. *Heliyon (Cell Press).* 2020 Jan 8;6(1):e03045. http://doi: 10.1016/j.heliyon.2019.e03045. eCollection 2020 Jan.
13. Hunsberger, HC., Pinky, PD., Smith, W., Suppiramaniam, V., & Reed, MN. (2019). The role of APOE4 in Alzheimer's disease: strategies for future therapeutic interventions. *Health Psychol Behav Med.* 2019 Jun;3(2):NS20180203. doi: 10.1042/NS20180203. Epub 2019 Apr 18.
14. Bloemer, J., Pinky, P. D., Smith, W., Bhattacharya, D., Chauhan, A., Govindarajulu, M., Hong, H., Dhanasekaran, M., Judd, R., Amin, R. H., Reed, M. N., & **Suppiramaniam, V.** (2019). Adiponectin knockout mice display cognitive and synaptic deficits. *Frontiers in Endocrinology – in press* https://doi.org/10.3389/fendo.2019.00819 (Impact Factor 3.6)
15. Abdel-Rahman, E. A., Bhattacharya, S., Buabeid, M., Majrashi, M., Bloemer, J., Tao, Y.-X., Dhanasekaran, M., Escobar, M., Amin, R., & **Suppiramaniam, V.**

- (2019). PPAR- δ Activation Ameliorates Diabetes-Induced Cognitive Dysfunction by Modulating Integrin-linked Kinase and AMPA Receptor Function. *Journal of the American College of Nutrition*, 1–10
<https://doi.org/10.1080/07315724.2019.1598307> (Impact Factor 2.4)
16. Alhowail, A. H., Bloemer, J., Majrashi, M., Pinky, P. D., Bhattacharya, S., Yongli, Z., Bhattacharya, D., Eggert, M., Woodie, L., Buabeid, M. A., Johnson, N., Broadwater, A., Smith, B., Dhanasekaran, M., Arnold, R. D., & **Suppiramaniam, V.** (2019). Doxorubicin-induced neurotoxicity is associated with acute alterations in synaptic plasticity, apoptosis, and lipid peroxidation. *Toxicology Mechanisms and Methods*, 29(6), 457–466. <https://doi.org/10.1080/15376516.2019.1600086> (Impact Factor 1.5)
 17. Chen, F., Yu, X., Meng, G., Mei, Z., Du, Y., Sun, H., Reed, M. N., Kong, L., **Suppiramaniam, V.**, Hong, H., & Tang, S. (2019). Hippocampal Genetic Knockdown of PPAR δ Causes Depression-Like Behaviors and Neurogenesis Suppression. *International Journal of Neuropsychopharmacology*, 22(6), 372–382. <https://doi.org/10.1093/ijnp/pyz008> (Impact Factor 4.0)
 18. Pinky, P. D., Bloemer, J., Smith, W. D., Moore, T., Hong, H., **Suppiramaniam, V.**, & Reed, M. N. (2019). Prenatal cannabinoid exposure and altered neurotransmission. *Neuropharmacology*, 149, 181–194. <https://doi.org/10.1016/j.neuropharm.2019.02.018> (Impact Factor 4.4)
 19. Wu, X., Liu, C., Chen, L., Du, Y.-F., Hu, M., Reed, M. N., Long, Y., **Suppiramaniam, V.**, Hong, H., & Tang, S.-S. (2019). Protective effects of tauroursodeoxycholic acid on lipopolysaccharide-induced cognitive impairment and neurotoxicity in mice. *International Immunopharmacology*, 72, 166–175. <https://doi.org/10.1016/j.intimp.2019.03.065> (Impact Factor 3.4)
 20. Wu, X., Lv, Y.-G., Du, Y.-F., Hu, M., Reed, M. N., Long, Y., **Suppiramaniam, V.**, Hong, H., & Tang, S.-S. (2019). Inhibitory effect of INT-777 on lipopolysaccharide-induced cognitive impairment, neuroinflammation, apoptosis, and synaptic dysfunction in mice. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 88, 360–374. <https://doi.org/10.1016/j.pnpbp.2018.08.016> (Impact Factor 4.3)
 21. Bhattacharya, D., Majrashi, M., Ramesh, S., Govindarajulu, M., Bloemer, J., Fujihashi, A., Crump, B.R., Hightower, H., Bhattacharya, S., Moore, T., **Suppiramaniam, V.**, & Dhanasekaran, M. (2018). Assessment of the cerebellar neurotoxic effects of nicotine in prenatal alcohol exposure in rats. *Life Sciences*, 194, 177–184. <https://doi.org/10.1016/j.lfs.2017.12.010> (Impact Factor 3.4)
 22. Bloemer, J., Pinky, P. D., Govindarajulu, M., Hong, H., Judd, R., Amin, R. H., Moore, T., Dhanasekaran, M., Reed, M. N., & **Suppiramaniam, V.** (2018). Role of Adiponectin in Central Nervous System Disorders. *Neural Plasticity*, 2018, 4593530. <https://doi.org/10.1155/2018/4593530> (Impact Factor 3.6)
 23. Govindarajulu, M., Pinky, P. D., Bloemer, J., Ghanei, N., **Suppiramaniam, V.**, & Amin, R. (2018). Signaling Mechanisms of Selective PPAR γ Modulators in

Alzheimer's Disease. *PPAR Research*, 2018, 2010675.
<https://doi.org/10.1155/2018/2010675> (Impact Factor 4.2)

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Book Chapters

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Service and Outreach Activities

Sponsorship of Student Activities:

Auburn University:

2001 – 2003 Advisor to Student National Pharmaceutical Association

Tuskegee University:

1997 – 2000 Student summer research activities - Established collaboration with Vanderbilt University and Cornell University to accept Biology students for research training in Neuroscience

1997 – 2000 Established Collaboration with Boys-Town National Research Hospital, Omaha, Nebraska, to accept Biology majors (Tuskegee University) for pre-doctoral fellowship program in Neuroscience
Supported more than forty undergraduate, graduate students and high school summer trainees in various research projects

in neuroscience

1994 – 1997 Summer Research Training for High School Students at Tuskegee Neuroscience Laboratory under Research Apprenticeship Program (REAP) by Army Research Office

Editorial Duties in peer reviewed journals:

2019 – present International Journal of Molecular Sciences
2018 – present Frontiers in Neuroscience
2015 – 2016 Neuronal Regeneration Research
2011 – present Clinical and Experimental Pharmacology
2011 – present Journal of Clinical Pharmacology & Biopharmaceutics
2007 – present World Journal of Biological Chemistry

Invited Reviewer:

2020 – present Brain Pathology
2020 – present Journal of Comparative Neurology
2020 – present Journal of Metabolic Brain Disease
2019 – present Nutritional Neuroscience
2013 – present Neurobiology of Aging
2012 – present Nature Communications, Nature Publishing Group
2010 – present European Journal of Pharmacology
2009 – present Journal of Neuroscience
2008 – present Neuroscience
2007 – present Phytotherapy Research
2007 – present Life Sciences
2006 – present Neuropharmacology
2001 – present Journal of Neuroscience Research
2000 – present Synapse
2000 – present PLoS1

Grant review services:

2020 – 2012 NIH Continuous submission privilege
2019 – present National Science Center, Poland
2016 – present Grant Reviewer, Study section member, ZRG1-ETTN-P (13)
2016 – present Grant Reviewer, Study section member, ETTN P13 F01B
2015 – present Grant Reviewer, Medical Research Council, United Kingdom
2012 – present Grant Reviewer, Netherlands Scientific Association
2012 – present Grant Reviewer, Alzheimer’s Association, United Kingdom
2011 – present Study section member, ZRG1 F03A (late submission privilege)
2011 – present Grant Reviewer, Department of Defense (DOD)
2010 – present Grant Reviewer, Alzheimer’s Association, USA
2010 Grant Reviewer, NIH Special Emphasis Panel
2009 Grant reviewer, NIH challenge grants
2008 – present Ad-hoc Grant reviewer, National Institutes for Environmental Health Sciences (NIH/NIEHS)

2004 – present Ad-hoc Grant reviewer, National Institutes for General Medical Sciences (NIGMS/NIH)
2003 – 2006 Biogrant Committee Member – Auburn University
2001 – 2002 Morehouse college, faculty research proposal reviewer

Community Services:

2014 – 2017 Alabama Loving Hearts Service Project, Montgomery, Alabama
1999 Judge, Alabama Junior Academy of Science paper reading contest
1996 – 2003 Organizer of “Share a meal” campaign, Auburn and Montgomery, Alabama
1995 – 1997 Judge, St. Joseph's Catholic School Science Fair, Tuskegee, Alabama
1991 – 1992 Member, Auburn Greater Kiwanis Association

Professional Societies:

- Member, American Association for the Advancement of Science
- Member, Society for Neuroscience Member
- New York Academy of Science Member
- Alabama Academy of Science Member
- Sigma XI Scientific Research Society
- Member, National Council for Academic Advisors
- Executive Officer, NAT Bioscience & Technology Conference

International Committees:

2004 – present Chair, program committee, Technological Advances in Science, Medicine & Engineering Symposium
2002 – present Member of the Board of Directors, Tamil Academy for Advancement of Science, Medicine & Engineering
2004 – Present Founding member, Technological Advances in Science, Medicine & Engineering Symposium Series
1997 – 2004 Founding Member, North American Bioscience & Technology Conference, Guelph, Ontario

Consultant services:

2015 – present Consultant and Scientific Advisor, Kalgene Pharmaceuticals, Ontario, Canada
2005 – present Consultant and member of the Board of Directors: Association for Advancement of Science - Non- profit organization based in British Columbia, Canada
1997 – 2001 Research Consultant to Cortex Pharmaceutical, Irvine, California
1997 – 2004 Consultant and Scientific advisor to North American Biomedical Conference, Guelph, Canada
1999 – 2000 Consultant - Boys-Town Research Hospital, Omaha, Nebraska