CURRICULUM VITAE

Paula Andrea Faria Waziry, M.A., Ph.D.

Assistant Professor
Nova Southeastern University
Kiran C. Patel College of Osteopathic Medicine

Education:

December 2005 — **Ph.D. Pharmacology**
University of Miami
Miller School of Medicine
Rosenstiel Medical Sciences Building
1600 NW 10th Avenue, Miami, Florida 33136

Ph.D. Thesis Dissertation:
mRNA Nuclear Export Pathway Disrupted by the Vesicular Stomatitis Virus.
http://gradworks.umi.com/31/98/3198722.html

February 2002 — **M.A. Biochemistry**
Honors in Chemistry
The City College of New York, CUNY
160 Convent Avenue
New York, NY 10031

M.A. Dissertation:
Surface Enhanced Raman Spectroscopy (SERS) and ab initio Studies of Lumazine Molecules.

June 1997 — **B.S. Biochemistry, *Magna Cum Laude***
Honors in Physical Chemistry
The City College of New York, CUNY
160 Convent Avenue
New York, NY 10031

Personal Statement

I am an enthusiastic educator and researcher with over 20 years of experience in Academia. My areas of expertise and interest comprise of biochemistry, immunology, genetic engineering of viruses, interkingdom communication, mentoring and teaching innovation. My teaching philosophy encompasses three main aspects: First, I like to explain concepts in a simplistic manner. I engage my students by encouraging participation, stimulating their imagination and creative/critical thinking. Second, I have an innate necessity to incorporate joy into the learning/teaching process. Lastly, I incorporate research, personal experiences, case studies and a healthy dosage of humor into my classes in order to connect didactic learning with everyday life. I see myself as an architect of out-of-the-box ideas, which allows me to simultaneously teach effectively and learn with my students. My career is a manifestation of the path I have chosen for mutual growth.

Awards, Honors, Fellowships

June 2020 KPCOM Golden Apple Award for best professor of the year in the CHPP Program
Oct. 2019 NSU recognition for external funding
Sept. 2019 KPCOM Advisor for the American Medical Women's Association (AMWA)
Aug. 2019 Leader for KPCOM Howell Society
Nov. 2018 NSU recognition for external funding
March 2018 Gulf War Illness Common Data Elements (CDE) Field Based participant
Nov. 2017 NSU recognition for external funding
Nov. 2015 NSU recognition for external funding.
Nov. 2013 NSU recognition for external funding.
June, 2013 **S**howcasing of research at the Florida Trend Research Advertorial
June 2013 NSU Health Professions Division Chancellor's Award
July 2011 Poster Recognition by Faculty of 1000 and selection for live/site exposure: http://cdn.f1000.com/posters/docs/1813
May 2010 NSU Health Professions Division Chancellor's Award
April 2008 1st Place - NSU College of Pharmacy/ HPD Research Award.
Feb. 2008 Faculty of One Thousand Honorable Mention of publication selected as one of 10 best papers. (Satterly, N, Faria, PA et al 1853–1858, DOI: 10.1073/pnas.0610977104)
Oct. 2005 Susan G. Komen Breast Cancer Foundation Post Doctoral Research Award.
June 2005 Faculty of One Thousand Honorable Mention of publication selected as one of 10 best papers. (Faria, PA et al, Molecular Cell, Jan. 2005)
Jun 2004 1st Place - Graduate Student/ Post Doctoral category at the Seventh annual Zubrod Memorial Lecture and Poster Session Competition University of Miami Miller School of Medicine/ Sylvester Cancer Center.
June 2000 MBRS Scholarship Award for best conducted research project.
Sept. 1997 Fellowship in Biochemistry, the City College of New York.
June 1997 MBRS Honors for Outstanding Achievement in Research.
Jan. 1997 Golden Key National Honor Society Award.
June 1996 Sigma Xi Scientific Research Society Award.
June 1996 Rebecca Mage Scholarship.
Sept. 1992 Minority Biomedical Research Programs (MBRS) Fellowship.

Academic Committees:

2019 – Present: KPCOM Certificate in Health Professions Program Curriculum Development Committee
2018 – Present: KPCOM Faculty Credentialing and Promotions Committee
2018 – Present: KPCOM Clearwater Campus Medical Curriculum Committee
2016 – 2019: Advisory Committee for President's Faculty Research Development Grant, NSU
2014 – 2019: KPCOM Faculty Research Committee/ Student Research Subcommittee
2014 – 2017: KPCOM Committee for Candidate Interview/Admissions to Medical School
2013 – 2018: KPCOM Functional Nutrition Curriculum Development Committee

Peer Reviewer

June 2021: Deputy Editor for Cureus Journal
July 2019: Journal of Psychiatry and Mental Health
April 2018: NIH Special Emphasis Panel/Scientific Review Group 2018/05
April 2013 – June 2017: Presidential Faculty Research Development Grant, NSU

Academic Societies

May 2018: National Honor Society
June 2011: International Biochemical Society

Feb. 1999: American Chemical Society
June 1996: Sigma Xi Scientific Research Society
Jan. 1990: Golden Key National Honor Society

Professional Experience

Jan. 2019 – Present: Assistant Professor of Foundational Sciences
Kiran C. Patel College of Osteopathic Medicine
Nova Southeastern University
Tampa Bay Regional Campus, Clearwater, FL 33759
(Description under Teaching Experience)

March 2013 – Dec. 2018: Assistant Professor of Research
Kiran C. Patel College of Osteopathic Medicine
Institute of Neuro Immune Medicine
Health Professions Division, Nova Southeastern University
Ft. Lauderdale, FL 33314

Research Theme encompassing VA and NSU:

Chronic Fatigue Syndrome, Gulf War Illness and Autoimmune Diseases
Investigated control and alterations of gene expressions between GWI, CFS/Autoimmune diseases patients and normal populations. Both Gulf War Illness (GWI) and Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (CFS/ME) are debilitating disorders without known causes, that affect over 42/10,000 people in the US. Symptoms include fatigue, memory/cognition difficulties, muscular pain, sore throat and tender lymphadenopathy. Symptoms can be triggered by stressful events like exercising and coincide with symptoms of viral infection reactivation. It is believed that viruses may cause both GWI and CFS/ME. Facts supporting this hypothesis: (1) our preliminary Nanostring results show upregulation of viral miRNAs in GWI (unpublished results) and (2) antiviral drugs, such as Acyclovir ameliorate the symptoms of some CFS/ME patients. At a cellular level, a generalized strategy of many pathogenic viruses is the take-over of host-cell functions by disruption of nucleocytoplasmic transport, which prevents cellular innate immunity antiviral responses. All transport to and from the nucleus occurs via nuclear pore complexes (NPCs), which are composed of nucleoporins (Nups). Antiviral Nups are directly targeted by several pathogenic viruses. I am approaching the studies of GWI and CFS/ME by examining possible viral NPC cytopathic effects that might be characteristic of the disorders, so that I'll be able to identify specific viral particles that will serve as targets for drug intervention. Uncovering alterations of NPC function in GWI and CFS/ME will not only contribute to a possible isolation of viruses, but also help to elucidate complex pathogenic viral mechanisms, revealing key strategies for design and development of therapeutic intervention.

Fall 2011 – Present: Adjunct Professor Appointment
Halmos College of Natural Sciences and Oceanography
Nova Southeastern University
8000 N Ocean Drive, Dania Beach, FL 33004
(Description under Teaching Experience)

August 2017 – July 2018: Research Health Science Specialist
Veteran Affairs Medical Center, Miami
1201 NW 16th St, Miami, FL 33125

Research Theme encompassing VA and NSU:

Chronic Fatigue Syndrome, Gulf War Illness and Autoimmune Diseases
(Please see above description).

January 2010 – Present (non-compensated): Chief Scientist Advisor
Myofrastand Inc.
www.myofrastand.com
22 Paris Avenue, Suite 110F, Rockleigh, NJ 07624

***Current Research Project*: Determination of correlation between chest CT-based quantitative scores of pulmonary involvement and clinical staging of COVID-19.**
The project consists of collecting chest CT images and using an unbiased method of quantitative analysis in order to effectively develop an affordable, reliable and fast diagnostic tool. Our samples are obtained from COVID-19 cases from Brazil. We have established a solid collaboration with Dr. Andre Rinaldi Fukushima at the University of Sao Paulo (USP) and the Faculdade de Sciencias da Saude IGESP (FASIG), Brazil. At the present time we are restricted in further disclosing project details due to confidentiality. The ultimate goal of the project is to make the tool under development available to under-privileged communities.

Jan. 2008 – March 2013: Research Associate/ Instructor
Working with Dr. L. X. Cubeddu, M.D. Ph.D., Professor
Health Professions Division – College of Pharmacy
Nova Southeastern University
3200 S University Drive, Davie, FL 33328

Research Project: **Effects of Statin Treatment and/or Withdrawal on Pro-Atherogenic Chemokines and Viral Infection**
Cardiovascular disease is the leading cause of death in the U.S. More than half of the cardiovascular deaths are due to atherosclerotic ischemic heart disease. The 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors (Statins) inhibit the synthesis of cholesterol in the liver and vascular cells. Because of these effects, statins are indicated in the primary and secondary prevention of cardiovascular morbidity and mortality due coronary atherosclerosis. Statins are also known to disrupt lipid rafts, possibly affecting basic cellular functions such as signal transduction mechanisms, and exocytosis. Statin treatment is also associated with reduction of viral replication in liver cells. Sudden discontinuation of statin treatment induces a rebound vascular dysfunction associated with adverse cardiovascular events. The mechanism by which statin withdrawal leads to rebound vascular dysfunction is unknown, and no guidelines or treatment strategies are available to manage these patients. Because increase production and release of cytokines play a main role in the development and maintenance of atherosclerosis, we propose that statin treatment withdrawal leads to a rebound inflammatory response. Furthermore, because statins disrupt lipid rafts, we propose that this might be a major mechanism that interferes with viral replication. The long-term objectives of this project are to (1) understand the mechanisms by which statin treatment and withdrawal modifies vascular function, and (2) identify the mechanisms by which Statins produce cellular antiviral state as well as develop novel antiviral therapeutics.

Sept. 2005 – Dec. 2007: Post Doctoral Fellow
Working with G. Barber, Ph.D., Endowed Professor/Chair
UM Sylvester Comprehensive Cancer Center
University of Miami Miller School of Medicine
600 NW 10th Ave #1140, Miami, FL 33136
Research Project: **Retargeting and Characterization of VSV Oncolytic Activity in Breast Cancer Model Systems**.
The vesicular stomatitis virus, VSV, a relatively non-pathogenic virus, can selectively induce the cytolysis of malignant cells, but not normal cells, through the induction of apoptotic cell death. VSV preferentially replicates in the cytoplasm of transformed cells since these hosts exhibit the hallmarks of a flawed IFN system, which is essential for preventing VSV replication. The simple genetic constitution of VSV, lack of any known transforming properties, extensive knowledge relating to its interaction with the immune system and the ability

to genetically manipulate the organism affords an ideal opportunity to exploit the oncolytic potential of this virus. Not much was known about the mechanism of VSV oncolysis. My previous studies have revealed the mechanism by which VSV infection causes blockage of host mRNA export, therefore allowing the virus to overtake the translational machinery of the cell. The proposed studies explored the mentioned VSV mechanism, and focused in a novel approach to redirecting the tropism of recombinant VSVs towards breast cancer cells. Retargeting the tropism of the virus towards transformed cells increase a tumor susceptibility to chemotherapeutic agents and/ or the host immune response.

Aug. 1999 – Sept 2005: Ph.D. Candidate
Mentor: B. Fontoura, PhD, Assistant Professor
Molecular and Cellular Pharmacology
University of Miami Miller School of Medicine
1600 NW 10th Avenue, Miami, Florida 33136

Research project: **Role of Nuclear Transport in Antiviral Response.**

The transport of molecules between the nucleus and the cytoplasm of eukaryotic cells occurs through nuclear pore complexes (NPC). These are highly regulated structures that control nuclear entry and exit of molecules such as transcription factors, RNAs, and viral particles. My research project focused on investigating the mechanisms involved in Nup98-mediated nuclear transport of proteins and mRNA and their role in antiviral response. This project elucidated novel functions of key controllers of nucleocytoplasmic trafficking and their role on antiviral defense, linking the fields of nuclear transport, virology and signal transduction (see Faria, PA, Molecular Cell, vol.17, 93-102, 2005.)

June 1995 – June 1999: **Research Fellow**
Mentors: J. Lombardi, PhD, Professor, and R. Birke, PhD, Professor
Chemistry Department
The City College of the City University of New York
160 Convent Avenue, New York, NY 10031

Research project: **Surface Enhanced Raman Spectroscopy of Lumazine Molecules.**
Lumazines (LUM) are naturally occurring molecules and are found at the core structures of folic acid, a supplement widely used during early pregnancy for the prevention of birth defects. Also the half of LUM structure containing two ring carbonyls represents the structure of the nucleic acid uracil. LUM is an important component of cellular reactions, such as methyl transfers and redox, therefore the study of the physicochemical properties of LUM will bring about a better understanding of characteristic cellular reactions. The research was performed in a Biophysical Chemistry laboratory, by developing conditions for non-denaturing absorption of molecules on electrode surfaces followed by obtaining the Surface Enhanced Raman Spectroscopy (SERS) of the absorbed molecules (see Faria, PA, *Langmoir*, 2000, vol. 16, 3984-3992.)

May 1998 - July 1998: Research Intern
Mentor: A. Guadalupe, PhD, Professor
Chemistry Department, University of Puerto Rico at Rio Piedras
San Juan, Puerto Rico 00931
Research project: **Direct electrochemistry, monolith immobilization and FT-IR in water solutions of redox enzymes** (Horse Radish Peroxidase and Diaphorase). This research is particularly challenging due to the extensive absorption of IR bands by water molecules, nevertheless, this topic is of great interest and broad utility to biosensors and biocatalysts.

Teaching Experience

Fall 2019 – Present: Assistant Course Director of Medical Immunology

NSU Kiran C. Patel College of Osteopathic Medicine
Course Title: **Medical Immunology**, **COM 5850 (2 credits)**
Description: This course is presented in lecture/required readings format. This immunology course covers both innate and adaptive immune responses of humans with a focus on the host's interaction with an environment containing a variety of potential pathogens. In addition, other aspects of immunology such as immunodeficiency disorders, autoimmune disorders, hypersensitivities, and graft rejection, are presented.
Responsibilities: Overview of medical syllabus, overview of lecture distribution among participating faculty, development as well as review of lectures PowerPoints, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests, writing and review of exam questions, hold office hours and review sessions.

Fall 2019 – Present: Course Director of Immunology
NSU Certificate in Health Professions Program, CHPP Kiran C. Patel College of Osteopathic Medicine
Course Title: **Immunology, PBC 9700 (2 credits)**.
Description: This course provides a fundamental understanding of immunology at the medical/graduate level. The course auxiliates the development of critical thinking and a deep understanding of immunological processes including innate, adaptive and cellular immunity. You will learn the difference between adaptive and innate immune systems, the characteristics of various common pathogens and how the immune system protect you from such invading organisms. You'll learn the detailed structures of antibodies and related immunoglobulin receptors, the characteristics and functions of the different antibody classes and the mechanisms for producing such antibodies. Following basic B cell function, you'll learn the structure of both MHC proteins and T cell receptors and respective sources of variation based on recombination. You will learn how immune cells attack pathogens, with emphasis on the mechanism of inducing apoptosis as well as Antibody Directed Cell-mediated Cytotoxicity. For the last part of the course, we will cover inflammatory response and mechanisms of tolerance. You will learn about autoimmune diseases as well as hypersensitivity reactions, which include allergy and anaphylaxis. Students also learn about transplant rejection and the methods for testing compatibility.
Responsibilities: Development of PB Immunology syllabus, development of lectures, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests, writing and reviewing quizzes and exam questions, hold office hours and review sessions. Assignment of final grades.

Fall 2019 – Present: Assistant Course Director of Medical Biochemistry
NSU Kiran C. Patel College of Osteopathic Medicine
Course Title: **Medical Biochemistry**, **COM 5021 (3.5 credits)**
Description: This course covers primarily biochemical reactions and pathways of normal human health. This course Introduces functions of the important carbohydrates, lipids, nucleic acids, proteins and properties of enzymes. It covers the normal pathways of metabolism and their controls. DNA replication, transcription and translation are discussed. Genetics is introduced as well as genomics as it relates to medicine. Other topics such as oxidative damage, adhesion proteins, and extracellular fluids are discussed.
Responsibilities: Overview and development of medical syllabus, overview of lecture distribution among participating faculty, development as well as review of lectures PowerPoints, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests, writing and review of exam questions, hold office hours and review sessions.

Fall 2019 – Present: Course Director of Biochemistry
NSU Certificate in Health Professions Program, CHPP, Kiran C. Patel College of Osteopathic Medicine
Course Title: **Biochemistry, PBC 9400 (2 credits)**.
Description: This is a two-credit hour course that provides a fundamental understanding of biochemistry at the pre-med/graduate level. The course consists of online learning Lecturio modules prior to live meetings twice/week (50 minutes sessions). There are a total of 30 live meetings. The course also integrates a virtual laboratory exercise platform, Labster, which stimulates critical thinking and assimilation of the material. This

course differs from traditional biochemistry courses by focusing on human metabolism, energy flow and related abnormalities. It will lay the foundation for other basic and clinical medical sciences. The goal of this course is to learn the core concepts of biochemistry that apply to human health and disease by focusing on main aspects of molecular interactions in relation to biological and metabolic pathways. The course aids the development of critical thinking and understanding of biological processes including enzyme kinetics, metabolism of nucleotides, carbohydrates and lipids, as well as common diseases associated with dysregulation of such pathways.
Responsibilities: Development of PB Biochemistry syllabus, development of lectures, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests, writing and reviewing quizzes and exam questions, hold office hours and review sessions. Assignment of final grades.

Fall 2019 – Present: Assistant Course director of Genetics
NSU Certificate in Health Professions Program, CHPP, Kiran C. Patel College of Osteopathic Medicine
Course Title: **Genetics PBC 9300 (2 credits)**.
Description: The course covers a variety of related fields such as Mendelian genetics, molecular genetics and medical genetics. Study of human genetics can help to find answers to questions regarding the inheritance and development of different phenotypes. The field of medical genetics is quickly evolving and dynamically developing thanks to new technologies, which will be explored throughout the term. Most diseases have a genetic component and some other diseases arise from a complex interplay of many genes, environmental influences and/or chance. The course also incorporates a virtual laboratory that will reinforce classroom learning with practical applications. The understanding of how our genomic variations contribute to disease susceptibility and development offers many perspectives to guide diagnostics and prognostics as well as lay the background for novel therapeutic approaches.
Responsibilities: (2019 – 2020) Development of PB Genetics syllabus, development of lectures, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests, writing and reviewing quizzes and exam questions, hold office hours and review sessions. Assignment of final grades. (2020 – present) Auxiliate Dr. Reardon (present course Director) with lectures and exams material.

Winter 2021 – Present: Nutrition Faculty
Fall 2015 – Fall 2020: Course Director of Nutrition
NSU Master of Public Health Program, College of Osteopathic Medicine, Health Professions Division.
Course Title: **Advanced Herbal Medicine II: Endocrine System, Immune System and Mental Health Issues, NUT 5315** (3 credits).
Description: The immunology section covers an introduction to immune system components, mechanisms, challenges, and techniques for enhancement of function. This includes basic knowledge of innate and acquired, cellular and humoral, and other factors of the immune system. The course also covers factors that can overload or weaken the immune system including nutritional and chemical agents and psychosocial states. We explore various dietary considerations relevant to immune system function, including malnutrition, gut health, processed foods, macronutrient imbalances and immune-damaging foods. It employs critical analysis in evaluating the scientific validity and potential drawbacks of various concepts regarding immune function and therapy. The endocrinology section of the course is an introduction to the hormonal intercommunication system that maintains body homeostasis. The course covers anatomical and physiological aspects of endocrinology as well as discussion of hormonal synthesis, distribution and regulation. The mental health aspect of the course focuses on understanding cytokine balance and the effects of inflammatory cytokines on the brain.
Current Responsibilities: Prepare and deliver lectures online as well as exam questions.
Previous responsibilities: Overview of medical nutrition syllabus, overview of lecture distribution among participating faculty, development as well as review of lectures PowerPoints, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students requests,

writing and review of exam questions, hold office hours and review sessions. This course is offered 100% online.

Fall 2011 – Present: Adjunct Professor for three science courses
NSU Halmos College of Natural Sciences and Oceanography
1. Course Title: **Microbiology and Immunology with Laboratory** (BIOL 3400: 4 credits).
This course highlights basics of morphology, metabolism, growth, genetics, enumeration, control and public health aspects of bacteria and viruses.
2. Course Title: **Introduction to Neuroscience with Laboratory** (NEUR 2500: 4 credits).
This course highlights the biological structures and functions of the brain and nervous system and introduces the fundamental concepts in neuroscience and research methods used by behavioral neuroscientist. Concepts range from cellular to behavioral aspects of neuroscience.
3. Course Title: **Genetics with Laboratory** (BIOL 3600: 4 credits).
This Genetics Core Course review principles of Mendelian and quantitative inheritance considered at a morphological and molecular level, including a survey of population genetics, theories of natural selection, the study of amino acids, and nucleotide substitutions as "evolutionary clocks." The laboratory consists of three major projects: (1) Sequence analysis of the control region of mitochondrial genome; (2) Restriction Fragment Length Polymorphism (RFLP) analysis; and (3) DNA cloning/genetic engineering. Furthermore, I have prepared, edited and published innovative lecture videos that allow students to review each topic presented in class. Please refer to my playlist (paulawaziry's channel on http://www.youtube.com/) entitled "Genetics_Dr. Paula Faria Waziry" by following the link: http://www.youtube.com/playlist?list=PL3CBA6D82E9B35226. Students' feedback indicates that they are benefiting from this technology by optimizing and concentrating their study time on specific areas that are particularly challenging to understand.
Responsibilities: Development of syllabi, development of lectures, timely upload and monitoring of materials into Canvas platform, daily monitoring of class discussion boards, daily response to students' requests, writing and reviewing quizzes and exam questions, hold office hours and review sessions. Assignment of final grades.

Students' comments on my teaching abilities at RateMyProfessor.com:
http://www.ratemyprofessors.com/ShowRatings.jsp?tid=1668663

Supervisor/Mentor of Extramural Scholars:

August 2016 – May 2017: *Chloe Salmon, B.S.*
Plymouth University, United Kingdom
Academic Advisor: Edwin Lasonder (edwin.lasonder@plymouth.ac.uk)
The general aim of Chloe's project is to develop a combination therapy against metastatic breast carcinomas by first protecting normal cells, then performing infections with oncolytic viruses that are specifically engineered to infect and replicate in cancer cells.

Summer 2017 – Summer 2018: Samantha Nahari
Florida Atlantic University, Boca Raton, FL

Summer 2018 – Present: Deborah Edlin, BS
University of Central Florida, Orlando, FL

Supervisor for Undergraduate Laboratory Training of Honors Students

NSU Halmos College of Natural Sciences and Oceanography and Sciences
Course: BIOL 4990 – Independent Study in Cancer Therapeutics (2 credits)
Biology Department, Chair: Emily Schmitt, Ph.D.

Winter 2018 – Varun Raja

Fall 2018 – Christo Manikkuttiyil
Fall 2018 – Amr Eltalla
Fall 2017 – Uzair Mohammed
Fall 2017 – Ali Awad
Fall 2017 – Luz Delgadillo
Fall 2015 – Miguel Cruz
Fall 2015 – Bernardo Jordan
Fall 2014 – Mekha Mathew
Fall 2013 – Dylan Dinesh
Fall 2011 – Shan Desai
Fall 2010 – Stephanie Luff

NSU Graduate Center for Psychological Studies
2010 – Misha Tursich, M.S.
Project tittle: "A longitudinal case study of psychological and immune system function during psychotherapy for childhood abuse sequelae."

NSU University Upper School (High School)
Winter 2018: Adam Waziry
Summer 2015: Elizabeth Feldman

Supervisor of Research for College of Medicine student rotation:
Fall 2016 – Randy Leibowitz, 3st year DO program;

Laboratory Instructor/supervisor for Pharm D. Candidates
NSU College of Pharmacy – Mentored Research Students:
2012 – Danush, Pharm. D. Candidate
Title of Project: "Production of pcDNA-Rae1 plasmid DNA for transfection into Mouse Embryo Fibroblast (MEF) cells that are deficient in STAT1 antiviral pathway"
Omar Ibrahim**,** Pharm. D. Candidate
Title of Project: "Immunoblot Analysis of cells treated with statins and infected with VSV"
2011 – Lina Alaydi, Pharm. D. Candidate
Title of Project: "Cell Survival Assays after Simvastatin Treatment and VSV Infection"
2009 – Grishma Patel, Pharm. D. Candidate
Title of Project: "Statins and Antiviral Effects"
2009 – Ina Zlotcavitch, Pharm. D. Candidate
Title of Project: "Effects of Statins on Gene Expression of Vascular Smooth Muscle Cells"
2009 – Karine Cohen, Pharm. D. Candidate
Title of Project: "Statins Modulate Vesicular Stomatitis Virus Oncolysis of HeLa cells"
2008 - Stefka Savenkova, Pharm. D. Candidate and Erika Galindo-Diaz**,** Pharm. D. Candidate
Title of Project: "Simvastatin Antiviral Activity on Vascular Smooth Muscle Cells"
2008 - Aida Garza, Pharm. D. Candidate and Viviana Sumi Lee, Pharm. D. Candidate
Title of Project: "Simvastatin Affects Vesicular Stomatitis Virus Replication"

Jan. 1999-July 1999: Chemistry Instructor
Supervisor: S. Radel, Ph.D., Professor, Chair of the Chemistry Department
The City College of the City University of New York
160 Convent Avenue, New York, NY 10031
Job responsibilities: Teach introductory chemistry. The course was designated for science majors without previous exposure to chemistry and/or physics. This class was designed to have a small number of students in order to allow individual attention and student participation. The class consisted of 45 min. lecture, and 1:15 hr.

problem solving, with emphasis on skill, strategy and the use of available resources. Grading consisted of 40% test scores, 30% laboratory work, which included quizzes and take-home assignments. The students were encouraged to hand in assignments on a weekly basis in order to follow the progression of the course.

Sept. 1997 – July 1999: Supervisor of Chemistry laboratories

Supervisor: S. Radel, Ph.D., Professor, Chair of the Chemistry Department
The City College of the City University of New York
160 Convent Avenue, New York, NY 10031
Job responsibilities: Supervise the quality of teaching related to inorganic chemistry laboratories; Monitor the safety of chemical usage; Correct techniques of trainee instructors; Substitute the instructors when necessary; Suggest experiments and report the progression of the courses to the Department Chair.

Jan. 1998 - July 1999: Biochemistry Laboratory Instructor
Supervisor: Dr. G. Simmons, Professor, Associate Dean
Biology Department
The City College of the City University of New York.
160 Convent Avenue, New York, NY 10031
Job responsibilities: The class consisted laboratory and tutoring.
1. Teach biology laboratory techniques; Elaborate and suggest experiments; Teach basic molecular biology procedures, such as PCR; DNA extraction and gel analysis; Cloning using bacterial vectors; Antibiotic selection; DNA sequencing; Protein fractionation and characterization including differential centrifugation, column procedures including gel exclusion, ion exchange, affinity, and HPCL, electrophoresis, sedimentation and diffusion; Coomassie staining; Subcellular fractionation; Use of subcellular marker enzymes; and Western Blots.
2. Tutor on subjects learned in the main lecture course, which accompanied the laboratory. The main topics for tutoring were: Molecular structure; Molecular genetics, including control of gene expression and recombinant DNA technology; Intracellular structures and protein sorting; cell signaling; Cell-division cycle; the Immune system and antibody functions.
3. Construct a web site for the course and encourage use of technology.

Sept. 1997 – June 1998: Chemistry Laboratory Instructor
Supervisor: M. Weiner, Ph.D., Professor, Chemistry Department
The City College of the City University of New York.
160 Convent Avenue, New York, NY 10031
Job responsibilities: Teach inorganic chemistry laboratory techniques such as safe handling of chemicals and waste; volumetric analysis; pH, reaction of acids and bases; buffers; titrations; solubilities; chelation and EDTA titration; and capillary electrophoresis. The class consisted of a brief introduction and hands-on procedures.

Invited Lectures

June 12, 2018 – "Inter-kingdom communication: Listening to a gut feeling."
Health Studies Seminar, Department of Biology
Halmos College of Natural Sciences & Oceanography
Nova Southeastern University, Ft. Lauderdale, FL

November 11, 2017 – "Nature vs. Nurture: Do pathogens care about the dilemma?"
Embassadors Breakfast
Nova Southeastern University, Ft. Lauderdale, FL

April 19, 2017 – "Zika virus and potential health risks associated with pesticides"

Department of Biological Sciences, Halmos College of Natural Sciences and Oceanography
Nova Southeastern University, Ft. Lauderdale, FL

April 7, 2017 – "Mechanism of Partial Viral Reactivation Might Trigger ME/CFS"
The Institute for Neuro-Immune Medicine (INIM) Research Seminar Series
Nova Southeastern University, Ft. Lauderdale, FL
https://sharkmedia.nova.edu/media/INIM+April+7/1_64k8plbs

April 4, 2017 – "Mechanisms of Reactivation: Research Pathways"
Keynote speaker at Tribeta Society Induction Ceremony**.**
Nova Southeastern University, Ft. Lauderdale, FL

March 2017 – "Methionine γ-Lyase 2-AminoButyrate Deaminase (MEGL-2ABD) anti-cancer properties"

Department of Biochemistry, College of Medical Sciences, Health Profession Division
Nova Southeastern University, Ft. Lauderdale, FL

December 2014 – "The Role of Latent Viral Infection in Chronic Illness"
The Institute for Neuro-Immune Medicine (INIM) Research Seminar Series
Nova Southeastern University, Ft. Lauderdale, FL

November 2007 - November 2008
University of Miami Miller School of Medicine
Graduate School Core Course Integrated Biomedical Sciences (IBS601), Miami FL
Course lectures on Nucleocytoplasmic Transport: Structure and Function
Invited by Robert H. Warren, Ph.D., Professor/Interim Chair
Department of Cell Biology and Anatomy

May 2008 – "Role of Nucleocytoplasmic Transport in Health, Infection and Disease"
College of Pharmacy, Nova Southeastern University, Ft. Lauderdale, FL

January 2005 – "Disruption of mRNA Nuclear Export by Viruses"
New York University Medical Center, New York, NY
Invited by Victor Nussenzweig, M.D., Ph.D., Professor of Preventive Medicine
Department of Pathology

October 2004 – "Mechanisms of mRNA Nuclear Export"
UM Sylvester Comprehensive Cancer Center
University of Miami Miller School of Medicine, Miami, FL
Invited by Glen Barber, Ph.D., Endowed Professor/Chair
Department of Microbiology and Immunology

United States Patent:

Patent No.: US 9,289,456 B2 **Date of Patent: Mar.22, 2016**

Title: ***MODULATING ONCOLYTIC VESICULAR STOMATITIS VIRUS (VSV) WITH STATINS FOR CANCER TREATMENT.***

Faria-Waziry et al. Pub. No.: US 2013/0302284 A1 Pub. Date: NOV. 14, 2013
file:///C:/Users/waziry/Desktop/US20130302284.pdf

Inventors: Paula A. Faria-Waziry, Fort Lauderdale, FL (US); Luigi X. Cubeddu, Fort Lauderdale, FL (US); Ana Maria Castejon, Fort Lauderdale, FL (US).

Abstract: In the instant invention, simvastatin (Sim) is used to modulate Vesicular Stomatitis Virus (VSV) infection at the level of viral replication for treatment of cancer. Both lipid-lowering and pleiotropic cellular effects of simvastatin are exploited in this modulation. Simvastatin upregulates the expression of Rael and Nup98, therefore altering normal cellular mRNA distri-bution and reverting VSV's mRNA export block. Further-more, simvastatin causes redistribution of Flotillin-1, which affects VSV replication/budding. Simvastatin is further used as a neoadjuvant for the selective modulatory control of live VSV oncolytic therapy.

Publications

1. **Development and validation of qualitative and quantitative analytical method for identification and analysis of amphetamines by gas chromatography**.
   Esther Ricci Adari Camargo, Rodrigo Martins P.O. da Trindade, André Augusto R. Felgueiras, Marcella Zaim, Mônica Novaes Ferreira, Juliana Weckx Peña Muñoz, Helenice de Souza Spinosa, Lorena de Paula Pantaleon, ***Paula A. Faria Waziry*** and André Rinaldi Fukushima
   International Archives of Addiction Research and Medicine, Volume 6, Issue 1, Open Access
   DOI: 10.23937/2474-3631/1510032
   Accepted: May 20, 2021: Published: ***May 22, 2021***

2. **Impact of pyriproxyfen on virus behavior: implications for pesticide-induced virulence and mechanism of transmission.**
   Paula A. Faria Waziry, Aarti Raja, Chloe Salmon, Nathalia Aldana, Sruthi Damodar, Andre Rinaldi Fukushima, and Bindu S Mayi.
   Journal of Virology, Volume 17, article number 93, ***July 2020***
   Impact Factor 4.663

3. **Exposure of dams to Fluoxetine during lactation disturbs maternal behavior but had no effect on the offspring behavior.**
   Julia Zaccarelli Magalhães, Maysa Amato Santoro, Gabriel Ramos de Abreu, Esther Lopes Ricci, André Rinaldi Fukushima, Thiago Berti Kirsten, ***Paula A. Faria Waziry***, Helenice de Souza Spinosa.
   Behavioral Brain Research, Volume 377, 13. ***January 2020***
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4. **Preclinical Toxicological Study of Prolonged Exposure to Ketamine as an Antidepressant.**
   Julia Zaccarelli Magalhães, André Rinaldi Fukushima, Natalia Moreira, Marianna Manes, Gabriel Ramos de Abreu, Esther Lopes Ricci, ***Paula A. Faria Waziry***, Helenice de Souza Spinosa.
   https://doi.org/10.1007/s43440-019-00014-z
   Pharmacological Reports, ***December 20, 2019***
   Impact Factor 2.84

5. **Actual Trends in the use of the Kastle-Meyer Test: Applications in Different Species and Verification of the Limit of Detection of Sensitivity and Vestigiality.**
   Renata Inzinna Bernardo Fonseca, Esther Lopes Ricci, Helenice de Souza Spinosa, Maria Marta Bernardi, Gabriel Ramos de Abreu, ***Paula A. Faria-Waziry***, Maria Aparecida Nicoletti, Simone Rodrigues Ambrosio, Iago Portolani de Araujo, Juliana Weckx Pena Munos, André Rinaldi Fukushima.
   DOI:10.15406/jdvar.2019.08.00261
   Journal of Dairy, Veterinary and Animal Research, 8(4):166, ***July 2019***

Impact Factor 1.68

6. **Prolonged Exposure of Rats to Varenicline Increases Anxiety and Alters Serotoninergic System, but has no Effect on Memory.** Julia Zaccarelli-Magalhães, Thaisa Meira Sandini, Gabriel Ramos de Abreu, Bianca Maria Petrocelli, Natalia Moreira, Thiago Moirinho Reis-Silva, Ivo Lebrun, Jorge Camilo Flório, Esther Lopes Ricci, André Rinaldi Fukushima, ***Paula A. Faria Waziry***, Helenice de Souza Spinosa.
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Impact Factor 2.781

7. **Systematic review of Kabuki Syndrome's phenotype with KMT2D gene mutation**
Leonardo Bonini Fischetti, Julia Zaccarelli-Magalhães, André Rinaldi Fukushima, ***Paula A. Faria Waziry***, Esther Lopes Ricci.
DOI: http://dx.doi.org/10.22280/revintervol12ed1.426
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Volume 12, n. 01, p. 60-75**, *February 2019.***

8. **The Antioxidant Effect of Beta-Alanine or Carnosine Supplementation on Exercise-Induced Oxidative stress: A Systematic Review and Meta-Analysis.**
Elias de França, Fábio Santos Lira, Marcio Flávio Ruaro, Vinicius Barroso Hirota, ***Paula A. Faria Waziry***, André Rinaldi Fukushima, Maria Luiza de Jesus Miranda, Erico Chagas Caperuto.
DOI: 2018110189
*Journal of Nutritional Biochemistry, Preprints, **December 2018***
Impact Factor 4.518

9. **Determination of Paraquat in Several Commercially Available Types of Rice.**
Thais Lopes Lima, Maria Aparecida Nicoletti, Camila Munhoz, Gabriel Ramos De Abreu, Julia Zaccarelli Magalhães, Esther Lopes Ricci, ***Paula A. Faria Waziry***, Júlia Nathalia Alves da Costa, Ana Carolina Nascimento Antônio, André Rinaldi Fukushima.
DOI:10.4236/fns.2018.912098
*Food and Nutrition Sciences, 09(12):1368-1375, **December 2018***
Impact Factor 1.2

10. **Review on requirements for methodological validations and forensic applications.**
André Rinaldi Fukushima, Julia Zaccarelli-Magalhães, Camila Munhoz, Gabriel Ramos de Abreu, Esther Ricci Adari Camargo, ***Paula A. Faria-Waziry***, Helenice de Souza Spinosa.
*Brazilian Journal of Forensic Sciences, Medical Law and Bioethics, Vol 7(4):265-282, **September 2018***

11. **Simvastatin and Oncolytic Vesicular Stomatitis Virus actions on HeLa cells.**
Paula A. Faria-Waziry, Francisco Puerta, Giulio Rotaro, Ana M. Castejon, Luigi X. Cubeddu
*Current Topics in Pharmacology, Vol 21, **April 2017***

12. **Methionine γ-Lyase/L-2-Aminobutyrate Deaminase (MEGL/2ABD) as a Gene Therapeutic Agent for Cancers.**
Paula A. Faria, Harold Laubach, K.V. Venkatachalam
*Journal of Genetic Syndromes and Gene Therapy, **February 2013***
American Society for Pharmacology and Experimental Therapeutics

13. **NFAR-1 and -2 modulate translation and are required for efficient host defense.**
Pfeifer I, Elsby R, Fernandez M, ***Faria PA***, Nussenzveig DR, Lossos IS, Fontoura BM, Martin D, Barber GN.

*Proc Natl Acad Sci (PNAS),*105(11):4173-8. ***Mar 2008***
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14. **Influenza Virus Targets the mRNA Export Machinery and the Nuclear Pore Complex**.
Satterly, N., Tsai, P-L., van Deursen, J., Nussenzveig, D.R., Wang, Y., ***Faria, P.A***., Levay, A., Levy, D.E., and Beatriz M. A. Fontoura.
Proc. Natl. Acad. Sci. (PNAS), 104(6):1853-8. ***February 2007***
Impact Factor 9.432

15. Viral Interactions with the Nuclear Transport Machinery: Discovering and Disrupting Pathways
Beatriz M. A. Fontoura, ***Paula A. Faria*** and Daniel R. Nussenzveig
IUBMB Life, vol. 57(2), pp.65-72, ***February 2005***
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16. VSV Disrupts the Rae1/mrnp41 mRNA Nuclear Export Pathway
Paula A. Faria, Papia Chakraborty, Agata Levay, Glen N. Barber, Heather J. Ezelle, Jost Enninga, Carlos Arana, Jan van Deursen, and Beatriz M.A. Fontoura
DOI: 10.1016/j.molcel.2004.11.023
Molecular Cell, vol.17, 93-102, ***January, 2005***
Impact Factor 13.929

17. **A Surface-Enhanced Raman and ab Initio Study of Spectra of Lumazine Molecules**
Paula A Faria, Xingxing Chen, John Lombardi, and Ronald L. Birke
DOI: 10.1021/la991351y
Langmoir, American Chemical Society, Vol. 16, 3984-3992, ***March 2000***
Impact Factor 4.009

<u>Abstracts and Conference Presentations</u>

May 13, 2021 – **Universidade de São Paulo: Primeira Semana Academica de Farmacia - FAM**
(First Pharmacy Academic Week)
Centro Universitário das Américas - São Paulo, SP, Brazil (online symposium)
Oral Presentation in Portuguese: "Sindrome da Guerra do Golfo Persico: Estudos celulares e extracelulares apos estimulo estressante" ("Gulf War Illness: Cellular and Extracellular Effects post-in vitro stress")

April, 2019 – NSU Undergraduate Student Research Symposium
Poster: "The atypical decrease in Holo-transcobalamin (active vitamin B12) levels after exercise in patients of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) and Gulf War Illness (GWI)."
Raja, V., Mohammad, U., Manikkutty, C., *Faria Waziry, P. A.*

2018 - Life Sciences South Florida STEM Undergraduate Research Symposium
Poster: "A mechanism for endosomal differentiation between lysosomes and melanosomes."
Raja, V., *Faria Waziry, P. A.*

2017 - Military Health System Research Symposium
Abstract: "Potential role of pesticides on novel mechanism of cell-to-cell viral transmission that evades immune detection."
Faria Waziry, P. A.

2016 – 12th International IACFS/ME Biennial Conference, Ft. Lauderdale, FL.
Oral Presentation: "ME/CFS miRNA analysis, mRNA in-situ hybridization and STAT1 localization upon

stress trigger."
Faria Waziry, P. A.

2016 - INIM - CTI Collaborative Perspectives Symposium, Davie, FL
Oral Presentation: "Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: host-pathogen interactions."
Faria Waziry, P. A.

2014 - 11th International IACFS/ME Biennial Conference Translating Science into Clinical Care, San Francisco, CA.
Immunology Primer for Practitioners Workshop.
Oral Presentation: "Myalgic Encephalomyelitis/Chronic Fatigue Syndrome/ (ME/CFS) Integrated Genomics and Cell Biology Approach: New avenues for targeted therapy."
Poster: "CFS/ME NanoString analysis of differential micro-RNA expression: New avenues for targeted therapy."
Faria Waziry, P. A., Nathanson, L., Klimas, N.

2012 – 7th International Conference on Stereology, Spatial Statistics and Stochastic Geometry, Prague, Czech Republic.
Poster: "Optimizing outcomes of the Combinatorial Effect of Viral Chemotherapy in an in-vitro model by using the fractionator"
Monica G. Pessanha, *Faria Waziry, P. A.*, Ana M. Castejon, Luigi X. Cubeddu

2012 – HPD Research Day Nova Southeastern University, Davie, Ft. Lauderdale, FL
Oral Presentation: "Simvastatin Induces Nucleoporins Rae1/ mrnp41 and Nup98 via a STAT-1 pathway and Modulates Vesicular Stomatitis Virus Replication."
Poster: "Isolation and Characterizations of Neurons and Astrocytes from Rat Brains"
Larisa Odessky, Jenny Estrin, *Paula A. Faria Waziry* and Michelle A. Clark

2011– Biochemical Society: Nuclear envelope disease and chromatin organization
Robinson College, Cambridge, UK
Poster: "Known drug Induces Nucleoporin Nup98 and mRNA Export Factor Rae1/ mrnp41: A Paradigm Shift in VSV Oncolytic Virus Modulation."
Faria Waziry, P.A., Castejon, A.M., Cubeddu, L.X.

2011 – NSU Research Symposium
Nova Southeastern University, Davie, FL
Poster: "Cancer Therapeutic Uses of Methionine Gamma Lyase-2-aminobutyrate Deaminase (MEGL-2ABD)"
Venkatachalam, K.V., Faria Waziry, P.A.

2010 – Annual Meeting of the International Society for Traumatic Stress Studies.
Montreal, Quebec, Canada. – Poster.
"A Longitudinal Case Study of Psychological and Immune System Function During Psychotherapy for Childhood Abuse Sequelae."
Tursich, Misha, Kibler, J. L., Gold, S. N., *Faria Waziry, P. A.*, & Hammelman, J. D.

2010 – Miami Winter Symposium: Targeting Cancer Invasion and Metastasis
Deauville Beach Resort, Miami Beach, FL
Poster: "Molecular Cloning, Expression and Characterization by a Novel Assay of L-Methionine γ -Lyase/L-2-Aminobutyrate Deaminase (MEGL/2ABD) from Oral Pathogenic Organism *Porphyromonas gingivalis* and Its Effects on Various Cancer Cell Metabolism."

K.V. Venkatachalam**,** *Paula A. Faria* Waziry, David Morcos, Brad Schmier, Pavanapuresan P. Vaidyanathan, Arun Malhotra, Harold E. Laubach.

2010 – **HPD Research Day Nova Southeastern University**
Davie, Ft. Lauderdale, FL
Oral Presentation and Poster: "Statins Attenuate the Activity of Oncolytic Vesicular Stomatitis Virus"
Faria Waziry, P.A., Castejon, A.M., Cubeddu, L.X.

2010 – **HPD Research Day Nova Southeastern University**
Davie, Ft. Lauderdale, FL
Poster: "Rebound Upregulation of Inflammatory Cytokines After Statin Withdrawal"
Faria Waziry, P.A., Castejon, A.M., Cubeddu, L.X.

2009 – Gordon Research Conference: Atherosclerosis The Artery Wall And Beyond
Tilton, NH
Poster: "Rebound Upregulation of Inflammatory Cytokines After Statin Withdrawal"
Faria Waziry, P.A., Castejon, A.M., Cubeddu, L.X.

2008 – Inaugural HPD Research Day Nova Southeastern University
Davie, Ft. Lauderdale, FL
Oral Presentation: "The Vesicular Stomatitis Virus and Nuclear Messenger RNA Export"
Faria Waziry, P.A.

2007 – UM Sylvester Cancer Center Scientific Retreat
Marco Island, FL
Poster: "NFAR-1 and -2 modulate translation and are required for efficient host defense"
Faria Waziry, P.A., Barber, G. N.

2004 - The American Society for Cell Biology 44th Annual Meeting
Washington, DC
Poster: "VSV Disrupts the Rae1/mrnp41 mRNA Nuclear Export Pathway"
Faria Waziry, P.A., Barber, G. N., Enninga, J., Chakraborty, P., Fontoura, B.M.A.

2004 - Dynamic Organization of Nuclear Function
Cold Spring Harbor Laboratories, Long Island, NY
Poster: "VSV Disrupts the Rae1/mrnp41 mRNA Nuclear Export Pathway"
Faria Waziry, P.A., Barber, G. N., Enninga, J., Chakraborty, P., Fontoura, B.M.A.

2003 - Seventh annual Zubrod Memorial Lecture and Poster Session Competition
University of Miami/ Sylvester Cancer Center. Miami, FL
Poster: "Role of Nuclear Transport in Antiviral Response"
Faria Waziry, P.A., Barber, Fontoura, B.M.A.

1998 - 1st Annual Research Symposium and Colloquium on Ethics
University of Puerto Rico, Rio Piedras, Puerto Rico
Poster: "Activity and Conformational Studies of Enzymes in Aqueous solvents, Organic Solvents and Monoliths Using Techniques of Electrochemistry and FT-IR Spectroscopy,"
Faria Waziry, P.A

1997 - National Symposium (MARC, MBRS, CRS)

Marriot Hotel, New Orleans, Louisiana.
Poster: "Surface Enhanced and ab Initio Raman Spectroscopy of Lumazine Molecules"
Faria Waziry, P.A, Lombardi, J., Burke, L.

1996 - National Symposium (MARC, MBRS, CRS)
World Trade Center Tower I, New York, NY
Poster: "Surface Enhanced Raman and Infrared Spectroscopies and Ab Initio calculations of Isoflavones and Pyrimidines"
Faria Waziry, P.A, Lombardi, J., Burke, L.

1995 – **National Symposium (MARC, MBRS, CRS)**
Crowne Plaza, Miami, FL
Poster: "Surface Enhanced Raman Spectroscopy of Pyrimidines"
Faria Waziry, P.A, Lombardi, J., Burke, L.

Funding

Private Funding_ Linda Clark (Waziry) 07/01/2016 - 12/31/2018 $50,000.00
Title: *ME/CF Cellular Mechanisms.*
Participating Faculty: Paula Waziry (P.I.), Lubov Nathanson (Co-P.I.)
We are investigating: (1) changes in intracellular transportation systems due to possible presence of viral particles and (2) mitochondrial function and localization as well as the presence and interaction with viral particles before and after stress trigger. Our studies will contribute to the elucidation of differential mechanistic pathways that occur in ME/CFS and their correlation cellular activity in order to elucidate possible causes, but most importantly possible therapeutic targets for effective intervention.

PFRDG FY17 (Waziry) 07/01/2017 - 06/30/2018 $15,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Controlled in vivo Oncolytic Virotherapy of Metastatic Breast Carcinomas***.
Participating Faculty: Paula Waziry (P.I.), Thomas Temple (Co-P.I.).
The goal of this study is to use viruses that specifically kill cancer cells (oncolytic virotherapy). The vesicular stomatitis virus (VSV) in particular is an attractive candidate for clinical trials as a cancer-selective, replication-competent therapeutic vector. However oncolytic virotherapy has to overcome two major obstacles in order to evolve as main-stream cancer treatment: (1) it needs to evade rapid elimination of the virus by the patients' immune system and (2) it needs to be safe and not pose risks of uncontrollable systemic infections. Here we propose to circumvent the above-mentioned obstacles by first generating viruses that are "camouflaged" and can evade the immune system. Second, by targeting virus infections specifically to metastatic breast carcinoma cells and simultaneously protecting normal cells with strategic use of repurposed drugs. Ultimately, the combination of retargeted drugs, strategic molecular design, genetic engineering of oncolytic VSV and powerful imaging tolls will allow us to significantly contribute towards the development of novel and more effective anti-cancer therapy.

GW140077 (Waziry) 08/01/2015 – 12/31/2018 (no-cost extension) $805,822.00
GWIRP2014
DoD Gulf War Illness Research Program of the Office of the Congressionally Directed Medical Research Programs
Title: ***An integrated genomics and cell biology approach to correlate novel GWI indicators of infections and neuroinflammatory mechanisms with targeted drug therapy*.**
Participating Faculty: Paula Waziry (P.I), Lubov Nathanson (Co-I.), Nancy G. Klimas (Co-I), Gordon Broderick (Co-I), Mariana Morris (Co-I).

The goal of this study is to investigate changes in the transcriptome, possible regulation mechanisms of these changes and possible viral influence on the cellular distribution of the transcripts. This study will reveal novel biomarkers for development of better diagnostics and provide clear targets for therapeutic intervention in Gulf War Illness.

GRANT11437300 (Nathanson) 06/2015 – 06/2016 $318,000.00
NIH PA12-006 (Parent R15)
Academic Research Enhancement Award
Title: ***Genomic approach to find novel biomarkers and mechanisms of CFS/ME***.
Participating Faculty: Lubov Nathanson (P.I), Paula Waziry (Co-P.I.), Nancy Klimas (Co-PI), Mary Ann Fletcher (Co-PI).
The main objective of this research proposal is to identify novel biomarkers and therapeutic targets of CFS/ME and provide insight into disease onset and progression, using genomics technologies such as RNA-seq, copy number variations and methylation assays.

PFRDG FY15 (Nathanson) 07/01/2015-06/30/2016 $15,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Gene Expression in Oligodendroglial Model of Parkinson's Disease***.
Participating Faculty: Lubov Nathanson (P.I.), Paula Waziry (Co-P.I.)
Our main objective is to use the oligodendroglial cellular model of Parkinson disease in order to identify mechanistic pathways implicated on control of intercellular response to the accumulation of α-synuclein and neuronal processes of the development of the disease. We intend to use genomic technology to investigate neuronal response to accumulating of α-synuclein and to evaluate dose-dependent effect of α-synuclein on the regulation of oligodendroglial cellular metabolism.

PFRDG FY15 (Waziry) 07/01/2015-06/30/2016 $15,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Genome-wide discovery of transcriptome differences in Parkinson's neuronal model***
Participating Faculty: Paula Waziry (P.I.), Lubov Nathanson (Co-P.I.), Tiffany Cabrera (student)
Our main objective is to use the cellular neuronal model of Parkinson disease in order to identify mechanistic pathways implicated on control of intercellular response to the accumulation of α-synuclein and neuronal processes of the development of Parkinson's disease. We intend to use genomic technology to investigate neuronal response to accumulating of α-synuclein and to evaluate dose-dependent effect of α-synuclein on the regulation of neuronal metabolism.

PFRDG FY15 (Venkatachalam) 07/01/2015-06/30/2016 $15,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Cancer Cell Therapy: Methionine Metabolism Targeted Gene Delivery***
Participating Faculty: K. V. Venkatachalam (P.I.), P. Waziry (Co-P.I.), L. Nathanson (Co-P.I.)
Cancer cells are metabolically different compared to normal cells. Epigenetic changes due to environmental insults or metabolic changes are alterations that happen above and beyond DNA sequences mutations, therefore capable of generating many forms of cancers, therefore one unique strategy for therapeutics is not feasible to cure many types of cancers. Nonetheless, targeting a metabolism that is universal to all cancer cells proliferation is a more effective therapeutic strategy. Here we aim to explore the endogenous cancer cell nuclear methionine/activated methionine (SAMe) pool using bacterial methionine degrading enzyme MGLD by adenovirus gene delivery system. Low levels of methionine/ SAMe in the nucleus would alter the global methylation of DNA, RNA and chromatin, therefore leading towards cell death.

R01 NS090200-01 (Fletcher) 9/01/2014 – 4/30/2018 $1,800,000.00
NIH/ PAR12-032
Title: ***Gender Differences in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome***.

Role: Co-PI. We aim to understand the mediators of persistence and relapse in men with ME/CFS, as we have in women. We will approach this by: (i) integration across several of the body's regulatory systems of data and knowledge collected from disparate sources, and (ii) mapping of the coordinated interactions between these physiologic systems and the potential for dysfunctional signaling networks. This project will extend this modeling of immune regulatory pathways and pathways that regulate latent viral expression in a way that will enable us to compare gender differences in illness mechanisms and explore gender-specific therapeutic targets.

PFRDG (Waziry) 06/01/2014 – 06/01/2015 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Epigenetic modulation of viral infection: role of DNA methylation in recovery***.
*Participating Faculty***:** Paula Waziry (P.I), Lubov Nathanson (Co-P.I.), Carmen de Jesus.
To determine whether statin modifies cellular pattern of genomic DNA methylation in the presence or absence of VSV infection. We will look at the correlation between abundance of the transcripts and change in the genomic DNA methylation patterns.

PFRDG 335338 (Waziry) 06/01/2014 – 06/01/2015 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Explorative gene expression and pathway analysis for innovative cancer treatment***.
*Participating Faculty***:** Paula Waziry (P.I.), Lubov Nathanson (co-PI)
We will use RNA-seq to compare gene expression between infected and non-infected cells; bioinformatics to analyze the vast amount of transcriptional data; investigate pleiotropic effects of statins on cellular antiviral response and on modulation of oncolytic viral action. Ultimately, we aim to identify specific pathways that can be further targeted for the safe development of oncolytic virotherapy.

R01AR057853-01 (Klimas) 9/01/2010 – 4/30/2014 (ext. 4/30/2015)
NIH/ PA08-246 No Cost Extension $2,000,000.00
Title: ***Study of Chronic Fatigue Syndrome using comprehensive molecular profiling with network and control theory.***
Role: Co-PI. To improve our understanding of CFS pathogenesis by: (i) integrating data and knowledge collected from disparate sources across several of the body's regulatory systems, (ii) mapping the interactions that emerge at multiple scales of biology and identifying potentially altered "wiring" in these signaling networks specific rapid response to exercise in CFS.

PFRDG 335301 (Waziry) 06/01/2013 – 06/01/2014 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Chronic Fatigue Syndrome and Nups: Understanding what is Bugging Patients***.
Participating Faculty: Paula Waziry (P.I.), Nancy Klimas (Co-PI), Mary Ann Fletcher (Co-PI), and Dylan Dinesh.
Main goal is to investigate whether peripheral blood mononucleotyde cells (PBMC) from CFS/ME patients present viral reactivation cytopathic effects at a cellular level. We will compare PBMCs from healthy controls and CFS/ME patients before, during and after exercise challenge. Our innovative approach examines whether the supposed virus that might cause CFS/ME is taking over cellular functions by altering nucleocytoplasmic transport. Uncovering alterations of NPC function in PBMCs will not only contribute to a possible isolation of the virus, but also help to elucidate complex pathogenic viral mechanisms, revealing key strategies for design and development of therapeutic intervention.

PFRDG FY12 (Waziry) 06/01/2012 – 06/01/2013 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Interaction Between Simvastatin and Oncolytic VSV: Role of Lipid Rafts***.

*Participating Faculty***:** Paula Waziry (P.I.), Luigi X. Cubeddu, (Co-P.I.), Ana Maria Castejon (Co-PI), and Dylan Dinesh (student).
Main goal is to investigate a mechanism of Simvastatin's antiviral effects by treating cells with either simvastatin or MβCD and analyzing protein levels as well as co-localization of VSV and lipid rafts. These studies include innovative findings on the anti-VSV effects of simvastatin, which will contribute to the advancement of antiviral research and anti-cancer drug development.

PFRDG 335508 (Waziry) 07/01/2011-06/30/2012 $10,000.00
Nova Southeastern University
President's Faculty Research and Development Grant
Title: ***Statin Modulation of VSV Oncolysis: A Stereological Approach***
*Participating Faculty***:** Paula Waziry (P.I.), Luigi X. Cubeddu, (Co-P.I.), Ana Maria Castejon (Co-PI).
Aims focused on the investigating mechanisms of Simvastatin's antiviral effects by treating cells with either simvastatin or MβCD and analyzing protein levels as well as co-localization of VSV and Flotillin-1 (lipid raft marker) using Western Blots and immunostaining, respectively. Characterized VSV virulence after treatment with either drug by characterizing infectivity and viral plaque size using fluorescent microscopy and statistical analysis. Our studies included innovative findings on the anti-VSV effects of simvastatin, which will contribute to the advancement of antiviral research and anti-cancer drug development.

PFRDG FY10 (Waziry) 06/01/2010 – 06/01/2012 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title: ***Statin Modulation of Oncolytic Vesicular Stomatitis Virus.***
*Participating Faculty***:** Paula Waziry (P.I.), Luigi X. Cubeddu, (Co-P.I.), Ana Maria Castejon (Co-PI), and Karine Cohen (student).
Main goal is to determine optimal conditions to observe viral modulatory effects of simvastatin and to comparative Stereological studies of cell death due to statins pretreatment and VSV infection.

PFRDG FY8 (Cubeddu) 06/01/2008 – 06/01/2009 $10,000.00
Nova Southeastern University President's Faculty Research and Development Grant
Title*: Effects of Statin Withdrawal on Pro-Atherogenic Chemokines in Vascular Smooth Muscle Cells*.
Participating Faculty: Luigi X. Cubeddu (P.I.), Ana Maria Castejon (Co-PI), Paula A. Faria Waziry (Co-PI), and Jenet George (student).
Specific Aims: (1) To optimize the experimental conditions to observe increased expression and protein levels of leukocyte attractant cytokines induced by oxidized LDL-C; (2) To determine the effects of statin (simvastatin, lovastatin and atorvastatin) treatment and withdrawal on oxidized LDL-C–induced increase in chemokine expression and levels. (3) To determine if changes in mRNA levels correlate with changes in protein levels.

NSU HPD (Cubeddu) 04/01/2008- 04/30/2009 $5,000.00
Nova Southeastern University Health Professions Division Award
Title: ***Rebound Upregulation of Inflammatory Cytokines After Statin Withdrawal.***
Participating Faculty: Luigi X. Cubeddu, MD, Ph.D (P.I.) and Paula A. Faria Waziry, Ph.D. (Co-Investigator)
Specific Aims: (1) To determine duration of increased expression of inflammatory and leukotactic cytokines after Simvastatin withdrawal. (2) To determine if effect mentioned above is observed with other statin drugs. (3) To correlate protein expression to mRNA levels of the identified genes.

PDF0503685 (Barber) 05/01/2005-4/30/2008 $150,000.00
Susan G. Komen Breast Cancer Foundation
Title: ***Characterization of VSV oncolytic activity in breast cancer model systems***

Participating Faculty: Glenn Barber (P.I.), Paula Waziry (Co-P.I.)
The main goals of the study are: 1). To uncover molecular mechanisms by which VSV selectively targets and kills breast cancer cells; 2) To generate a new series of genetically-altered viruses that have even greater effectiveness and safety when used to treat breast cancer.

Submitted Grant Applications:

NIH R21 2/16/2017 $341,072.00 (Revision and re-submission suggested by NIH)
Title: ***Zika virus infection, intrauterine transmission and potential health risks associated with pesticides exposure.***
Participating Faculty: Paula Waziry (PI), Nancy Klimas (Co-I), Marianna Morris (Co-I), Malav Trivedi (Co-I), Jacqueline Machi (Co-I), James O'Callaghan (Co-I, CDC).
Synopsis: Vertical transmission, central nervous system tropism and infant susceptibility to Zika virus as well as other viral infections could occur due to many different factors and there is an urgent need to understand whether toxic chemicals currently used to control mosquito population, (i.e. naled and PPF) might actually exacerbate the onset of disease. We propose to use in vitro and in vivo models to evaluate the effects of long-term exposure to such toxic chemicals on vertical transmission (via exosomes, extracellular vesicles, or nuclear pore protein complexes), immune suppression as well as cardiovascular and autonomic nervous system function. Such effects when correlated with human symptoms severity could provide potential mechanistic understanding of pathways involved in vertical transmission of zika virus and it's etiopathological changes, ultimately contributing towards treatment of affected individuals and prevention of new cases.

NIH-FAPESP R01 06/05/2017 $3,631,719.00 (Revision and re-submission suggested by NIH)
Title: ***Environmental, Chemical and Particulate Toxicity-Novel Modes for Treatment***

Participating Faculty: NSU site: Mariana Morris (PI), Vladimir Beljanski (Co-I), Paula Waziry (Co-I), Lubov Nathanson (C0-I), Ricard Jove (Co-I), Malav Trivedi (Co-I), Karl-Henrik Grinnemo (Co-I). University of São Paulo site: Maria Claudia Irigoyen (PI), Paulo I. N. Saldiva (Co-I), Mariana Veras (Co-I), Katia Angelis (Co-I), Fernanda Consolim-Colombo (Co-I), Jose Silva (Co-I), Bruno Rodrigues (Co-I), Edilamar de Oliveira (Co-I),

Synopsis: Studies have shown that exposure to toxins such as particulate matter (PM) (<PM2.5) or pesticides (organophosphates, OPs) increases the risk for development of cardiovascular diseases and immunologic dysfunction. The negative health implications of exposure to these toxins may be more evident on individuals with pre-existing cardiovascular diseases as well as the very young or the elderly. Previous studies have shown that exposure to PM during pregnancy has adverse effects in the mother. Changes in fetal or offspring development have not been explored. Based on the concept of neuro-immune modulation as a key regulatory mechanism in chronic inflammatory diseases, we hypothesize that toxin exposure affects similar mechanisms, triggering events that culminate in cardiovascular damage. Furthermore, lack of mechanistic rationale for targeting prevention, repair or reversal of toxin-induced damage impedes the development of effective therapy. Given the significant impact of the environment on population health, our collaborative consortium that includes expert scientists in the U.S. and Brazil aims to further elucidate mechanisms of cardiovascular damage caused by exposure to environmental toxins and to determine how such acquired phenotypes can be transmitted to F1 offspring. Over the long-term, we aim to develop effective therapy for translational applications and to contribute scientifically-based evidence towards world awareness of avoidable risk factors. **Specific Aim 1**: Analysis of toxin-induced mechanisms of neuro-immune and cardiovascular dysfunction as well as provide information on phenotype transmission. *In vitro* studies will be performed in IPS (induced pluripotent stroma) cardiomyocytes**,** focusing on changes of miRNA expression of cardiac related signal transduction pathways using Real-time PCR. *In vivo* studies will use animal models consisting of pregnant, dams exposed to PM or OP and adult F1 offspring indirectly exposed to toxins during gestation. **Specific Aim 2**: Determine whether preexistent cardiovascular conditions exacerbate the dysfunction caused by toxin exposure. **Specific Aim 3**: Evaluation of innovative therapies for prevention, amelioration and/or reversal of cardiovascular and neuro-immune dysfunction induced by toxin exposure. Currently, there are no effective therapies for targeting

prevention, repair or reversal of toxin-induced damage. Thus, we will test three potential therapies for these dysfunctions, based on pharmacological and non-pharmacological approaches: (a) cholinergic stimulation; (b) mesenchymal stroma cells for immune cell-induced repair; and (c) exercise training that target miRNA146 to ameliorate arterial repair and regeneration. The significance of our aims is to develop effective therapies for translational applications and to contribute scientifically-based evidence towards world awareness of avoidable toxin risk factors.

NSU Idea - Internal Submission 04/01/2018 (Not funded)

Title: ***Phytocannabinoids role in orchestrating homeostatic/symbiotic reset in a mouse model of Gulf War Illness*.**

Participating faculty: NSU site: Paula Waziry (P.I.). University of Miami site: Jacqueline Freire Machi.
University of São Paulo site: André Rinaldi Fukushima, Julia Zaccarelli Magalhães, Helenice de Souza Spinosa. Recent evidence is emerging on the importance of the microbiome's roles in health and disease. The microbiome's constituents - mainly bacteria - communicate with each other (both inter- and intra-species) via the production of Quorum Sensing (QS) molecules that have hormone-like functions. *Innovation:* We hypothesize that inter-kingdom communication between microbiome and mammalian cells play a crucial role in onset of dysbiosis related to GWI symptoms and that cannabinoids are capable of reversing/ameliorating these symptoms via interference with QS-mediated inflammatory cascade. *Significance:* The study of cannabinoids in relation to inter-kingdom communication, dysbiosis, biofilm formation and CNS function will be beneficial not only for development of new treatment strategy for GWI, but also for treatment of recurring chronic infections, pain management, inflammation and maintenance/recovery of CNS functions. The potential benefits of such studies can precipitate a paradigm shift for disease prevention and clinical care of chronic infections as well as of neurodegenerative diseases.

Continuing Education Certificates:
January 2018: Basics of Extracellular Vesicles, University of California, Irvine_ Coursera online.

February 2018: Bacteria and Chronic Infections, University of Copenhagen_ Coursera online.

Service and Lifestyle:

June 2019: Pilgrimage of the **Camino de Santiago Frances** (The Way of St. James).

My 25-day personal journey started at St. jean Pied de Port in France and ended at Finisterre ("End of the World") in Spain. I hiked for 12 days (~ 230 km) and cycled for 13 days (~ 600 km). A mini-documentary of my Camino can be found on my Facebook page: https://www.facebook.com/paula.waziry

December 2016: Served as Faculty Preceptor for the **India Medical Outreach Program**, which is geared towards the healthcare needs of thousands of underprivileged tribal people of Dang district and surrounding areas of *Gujarat, India*, including about 50,000 school children. The clinic and public hospital are located in the city of *Ahwa*. Students, faculty, staff, physicians, dentists and volunteers from the community all give of their time and talent to provide medical care that would otherwise not be available because of the significant shortage of healthcare professionals available. The goal of our team was to provide quality care and build sustainable relationships with the opportunity to practice, teach and perform research.

Running: After overcoming life-long struggle with morbid obesity, I consistently promote **healthy lifestyle and exercise initiatives in the classroom and at the workplace** by participating on organized 5K and 10K run/walk events:

- NSU Annual Shark Shuffle 5K

- Walk Now for Autism Speaks – 5K
- Sallarulo's Race for Champions (Special Olympics) 5k
- Team NSU at the Mercedes Bens Corporate Run 5K
- Team TRED 5K run 10th Anniversary I Care, I Cure, I Run
- Veterans Affairs 5K run Suicide Prevention and Awareness

Mindful Meditation: With a mindset of preserving mind/body connection, in 2015 I've joined the "Sand Tribe," directed by Shelly Tygielski. The group meets most weekends at the Hollywood beach to practice MBSR (Mindfulness-Based Stress Reduction) techniques. Since restrictions due to COVID-19 were implemented, the group maintains weekly meetings online. The group also organizes donations by matching families via the "Pandemic of Love" movement at https://www.pandemicoflove.com/.

Competitive Figure Skating: I explore the capacity of adult brains to undergo neuroplasticity by starting to learn figure skating at the age of 39. I have become a competitive athlete and member of the ***US Figure Skating Association,*** participating in Regional and State competitions. I've earned 11 gold medals for Compulsory Techniques and Short Programs, ranking 1st place for my subdivision. I have passed the national Adult Pre-Bronze test on March 2, 2019 and currently I'm training for the next category of Bronze.

Classical Music: Classically trained as a ***Mezzo Soprano***, I'm an ***opera*** enthusiast. Together with professional musicians *Carlos Jaquez (First Violinist at Miami Symphony Orchestra, MISO)* and freelance *guitarist Fabian Michique*, we formed ***SciVibes*** band in 2017. Taking on stage challenges, we auditioned in November 2017 the TV show "America's Got Talent" and on January, 2019 for "The Voice."

Oil Paintings: As a self-taught painter three of my oil-on-canvas paintings were featured in an open access publication by KPCOM: ***Waziry, Paula****:* Oil on canvas *"The Bather"*(18"x24"), *"The Birth of Venus"* (56"x48") *and "Sibyl"* (24"x36").

Be Still, 2016: Vol. 1, Article 34. http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1033&context=bestill

Languages:

Fluent in English and Portuguese.
Intermediate level of Italian and Spanish.
Introductory level of French.

Life Accomplishments:

Married to Ben Waziry in September 1998.
We are proud parents of two sons: Adam Waziry (8/2000) and Omar Alexander Waziry (3/2005).

References provided upon request.