

CURRICULUM VITAE
Sonia Castro Flores, PhD

1. PERSONAL HISTORY

Name: Sonia Castro Flores, Ph.D.
Title: Professor of Medicine and Microbiology
Birthplace: San Juan, Puerto Rico
Citizenship: USA
Marital Status: Married

2. EDUCATION & TRAINING

Undergraduate

1977-1979	University of Puerto Rico, Mayagüez Campus, P.R.	B.S.	Biology
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Graduate

1982-1984	University of South Alabama SOM, Mobile, AL	M.S.	Basic Medical Sciences
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1984-1988	University of South Alabama SOM Mobile, Alabama Thesis Dissertation project: <i>Characterization of extrachromosomal circular DNA repetitive sequence families in mouse heart, brain and liver tissues as a function of age.</i> (Dr. Jim Gaubatz, mentor)	Ph.D.	Biochemistry
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Post-graduate:

1988-89	University of South Alabama SOM Project: <i>Identification and functional characterization of neuroinvasive genes in Herpes simplex-1 type 17</i> (Dr. John Oakes, mentor)	Post-doctoral fellow Microbiology/ Immunology, Mobile, AL
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1989-90	University of South Alabama SOM, Project: <i>Design and expression of genetic variants of superoxide dismutase with improved pharmacological properties</i> (Dr. Joe M. McCord, mentor)	Fellow, Biochemistry
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1990-91	University of Colorado Health Sciences Center Denver, CO	Fellow/ Webb-Waring Institute, Biochem/Biophys/ Genetics
1993	University of MO Kansas City	Supplemental Instruction supervisor training workshop
1994	University of MO Kansas City	USMLE Step I Leader training
1994	NHLBI Workshop	Tools for probing lung structure and function <i>in vivo</i>
2009 2013	AAAS, SACNAS Summer Leadership Institute, Washington, DC Colorado Translational Sciences Institute LiTES leadership institute Graduate	
2016	SACNAS/HHMI Advanced Leadership Institute, Chevy Chase, MD	

3. ACADEMIC APPOINTMENTS

1991-96	Assistant Professor, Department of Biochemistry, Biophysics and Genetics, UCHSC, Denver, Colorado
1993-94	Director of Support Services, Center for Multicultural Enrichment, UCHSC, Denver, Colorado.
1994-96	Faculty Liaison for Center for Multicultural Enrichment
1996-97	Assistant Professor, Department of Physiology, LSU Medical Center, Shreveport, LA
1997-2000	Assistant Professor, Dept. Medicine, Webb-Waring Antioxidant Research Institute, UCHSC
2000-2004	Associate Professor, Dept. Medicine and Biochemistry, UCHSC
2006-2008	Associate Professor, Dept. of Medicine Pulmonary Division and Microbiology, UCHSC
2008-present	Professor, Dept. of Medicine and Microbiology, UCD Anschutz Medical Campus
2005-present	Program Director for the Graduate Experiences for Multicultural Students (GEMS) program. This NHLBI-funded R25 training program provides intense research experiences during the summer months for minority students interested in biomedical research.
2006-present	co-Director, Cardiovascular Pulmonary Training Grant
2008-2013	Program Director, Initiative for Maximizing Student Diversity. This NIGMS funded R25 was a pipeline training program designed to increase the diversity of students who matriculate at the University of Colorado Health Sciences Center Graduate School.

4. HONORS, SPECIAL RECOGNITIONS & AWARDS

1975	General Excellence Scholarship, Italo-American Society, University of Puerto Rico at Ponce
1975-79	Dean's List of Academic Excellence
1975-79	Honor's Tuition Scholarship, University of P.R.
1977	General Excellence Award; Highest G.P.A., University of Puerto Rico Regional College at Ponce
1979	Honorary Society of Phi Kappa Phi

1979	Honorary Biological Society Beta Beta Beta
1979	Graduated Summa Cum Laude from the College of Arts and Sciences, University of Puerto Rico, Mayaguez
1984	Travel Award, Brookhaven National Laboratory Symposium on "The Molecular Basis of Aging"
1986	Procter and Gamble Graduate Fellowship administered by the American Society of Biological Chemists
1987	Ph.D. Preliminary and Comprehensive Exams with Honors
1993	New Investigator Award from the editors of Free Radical Biology & Medicine Journal based on award winning abstract
1995	Excellence in Education Award, Office of Diversity SEEK program, University of CO Health Sciences Center
2003	University of CO Diversity Award for the GEMS Program
2005	Department of Medicine Ph.D. Excellence in Research and Teaching Award
2006	Excellence in Mentoring Award from Minority Student Organization Oyate
2008	University of Colorado President's Diversity Award
2010-present	Recognized for service to peer review at NIH with the opportunity to submit certain grant applications at any time
2010	Recognition for participation in NHLBI eMentoring Initiative
2016	Appointed as a Faculty Diversity Fellow at University of Colorado

5. MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

1989-present	American Association for the Advancement of Science
1989-2003	The Oxygen Society
2003-2009	Society for Free Radicals in Biology and Medicine, Councilor
2002-present	American Society for Biochemistry and Molecular Biology
2006-2012	American Society of Microbiology
2008-present	American Thoracic Society
2008-present	Pulmonary Vascular Research Institute
2009-2011	American Heart Association

6. MAJOR SCIENTIFIC AND SERVICE COMMITTEES

University

1993	Panel Discussion on respect, Diversity Week
1994	Steering committee for establishment of post-baccalaureate program through the Center for Multicultural Enrichment, UCHSC, Denver
1995	Blue Ribbon Commission for Budget Allocation to CU campuses, UCHSC, Denver
1996	Curriculum Committee, Dept. Physiology, LSUMC-Shreveport, LA
1997	Steering Committee for Improving Efficiency in Administrative Services
2003-2006	Selection Committee for CU President's Diversity Awards
2006-present	Cardiovascular Pulmonary Training Grant Mentoring Committee
2006-present	DOM Small Grants Committee
2004-present	Training faculty for Cardiovascular, Pulmonary, Toxicology, Microbial Pathogenesis, Center for AIDS Research and

	Pulmonary Training Grants
2006-2009	Steering and planning committee for the Undergraduate Pre-Health Program (UPP) from Office of Diversity
2009-present	Center for AIDS Research Developmental Grants Selection Committee
2007-2012	Selection committees for Scholars (junior faculty) for Building interdisciplinary careers in women's health
2010-2012	Department of Medicine Assistant to Associate Promotions Committee
2009-2010	Assistant to Associate Promotions Committee, School of Pharmacy, Anschutz
2010-2014	Graduate Admissions Committee, Department of Microbiology, Anschutz
2009-2014	Director, NIGMS-funded LabCoats Program, University of Colorado-Denver; Anschutz Medical Campus (AMC); trained 44 students, 67% URM
2010-present	K to R transition core review committee-AMC
2011-present	Search Committee for Infectious Diseases Division Head, AMC
2010-present	Co-Director, Cardiovascular Pulmonary Training Grant
2014-present	Co-PI, MBRS-Minority Access to Research Careers (MARC) Program, University of Colorado Denver
2013-present	DOM, Post-tenure review committee
2014-present	Local Steering Committee, Aspen Lung Conference
2005-present	Director, NHLBI-funded Graduate Experiences for Multicultural Students (GEMS) Program; trained 200 students, 75% URM

National

2003	Chair, National Institute of General Medical Sciences Minority Biomedical Research Services (MBRS) Review subcommittee B
2003	Chair, NIGMS MBRS site-visit UT-El Paso, Research Initiative for Scientific Enhancement (RISE) application
2004	Chair, NIGMS MBRS site-visit, UPR-Rio Piedras RISE application
2004	Plenary Session Chair, Redox homeostasis and Immune Function, SFRBM 11 th Annual Meeting, St. Thomas, US Virgin Islands.
2005	Chair, NIGMS MBRS site-visit, UPR-Cayey RISE application
2005	Chair, National Institute of General Medical Sciences Minority Biomedical Research Services (MBRS) Review subcommittee B
2004-2007	Selected to be a member of the Society for Free Radicals in Biology and Medicine Council
2004-present	Society for Free Radicals in Biology and Medicine Women in Science Plenary Session Committee Chair
2005	Plenary Session Chair, Redox Regulation of Gene Expression and Chromatin Remodeling: Impact on Physiology and Disease, SFRBM 12 th Annual Meeting, Austin, TX
2008	Co-chair Pulmonary Arterial Hypertension World Symposium, Dana Point, CA Working Group Session 3, Viral and other Infectious etiologies in PAH: Role of HHV-8, HIV and Hepatitis Virus in pulmonary vascular remodeling
2006-present	Program Steering Committee, Fred Hutchinson Cancer Research Center and New Mexico State University U56/U54 Partnership
2008	NHLBI Strategic Planning Workshop for training grants
2009-present	American Heart Association, 3CPR Leadership Committee
2010	co-chair, HIV Associated Lung Diseases Including Pneumocystis poster

2010	session, American Thoracic Society Meeting, New Orleans, LA Co-chair and co-PI, NSF-funded workshop titled "A Comprehensive Assessment of the Barriers, Needs, and Challenges Facing Under-represented Minority Faculty in Biochemistry and Molecular and Cellular Biology"
2012-present	Member, External Advisory Committee, BRIDGES Program, Univ. Hawaii John A. Burns School of Medicine
2011-present	Member, Minority Affairs Committee, American Society of Biochemists and Molecular Biologists (ASBMB)
2011-present	Academic Coach, Northwestern University Academy for Future Science Faculty
2013	Co-Chair, Thomas L. Petty 56 th Annual Aspen Lung Conference, Aspen, CO, "The Lung Microbiome: A New Frontier in Pulmonary Medicine
2014-2015	Member, ASBMB Public Affairs Advisory Committee
2015	Chair and Organizer, Microbiome and Health Disparities thematic sessions, American Society of Biochemistry and Molecular Biology Annual Meeting, Boston, MA
2015	Co-chair, thematic session "Microbiome in Asthma", Aspen Lung Conference
2015	Co-chair, NHLBI Division of Lung Diseases Workshop: Training for a Diverse Biomedical Workforce
2013-present	Committee member and organizer for NSF-funded grant writing workshop offered to URM faculty or faculty at PUI or MSI institutions; this workshop has now been fully funded for the next 5 years.
2016	Co-chair, ASBMB-funded workshop, "Careers Beyond Academia"

7. INVENTIONS, INTELLECTUAL PROPERTY AND PATENTS HELD

1. February 20, 2001

Genetically Modified Manganese Superoxide Dismutase for Treating Oxidative Damage

An isolated mutant manganese superoxide dismutase protein comprising of an enzymatically active portion of manganese superoxide dismutase (MnSOD) and a region which binds to polyanionic polysaccharides or proteoglycans on endothelial cell surfaces.

Patent number: US 6,190,658 B1

2. March 6, 2002

Oxidant Scavengers for Treatment of Diabetes or Use in Transplantation or Induction of Immune Tolerance

The present invention relates to a method of preventing or treating diabetes using low molecular weight antioxidants.

United States Patent Number: 20030032634

8. REVIEW AND REFEREE WORK

1994-2003	Editorial Board for <i>Archives of Biochemistry and Biophysics</i> .
1997	NHLBI T32 Review Special Emphasis Panel

1998	NHLBI Special Emphasis for "Genesis of Cardiomyopathy with HIV-1 infection and alcohol abuse
1999	Ad Hoc member, MBRS Review Subcommittee
2001-2005	Chartered Member, NIH/NIGMS Minority Biomedical Research Support (MBRS) Subcommittee
2005-present	NHLBI SEP K02 and K08 review
2000-present	Ad Hoc reviewer Journal Biological Chemistry, Journal of AIDS, Journal of Clinical Investigation, Nucleic Acids Research and Diabetes
2003-2005	Ad Hoc reviewer, NIH/NIAID AIDS and Related Diseases study section
2003-2006	Selection committee for Abstracts and Oral Presentations for the Society for Free Radicals in Biology and Medicine
2005-2009	Chartered Member, NeuroAIDS and End Organ Diseases (NAED) Study Section
2004-present	Ad Hoc reviewer American Heart Association, Microbiology/Immunology Study Section
2004-present	Ad Hoc reviewer for American Journal of Physiology
2000-present	Ad Hoc Reviewer for Society for Free Radicals in Biology and Medicine
2006-present	Reviewer Special Emphasis Panels for NCI P01 Cluster Groups
2005-present	Member Program Steering Committee for New Mexico State University U54/U56 NCI-funded Program for Building Minority Research Capacity
2005-present	Member Advisory Committee for UPR Cayey MBRS RISE program
2007	National Cancer Institute Special Emphasis Panel Cellular and Tissue Biology Cluster review
2007	NCI SEP Cellular Oncology Review Panel
2007	Ad Hoc reviewer, NIH/CSR Radiation Therapeutics and Biology Study Section
2007	Reviewer, NIAAA Reverse site visit for Program Project Grants
2007	National Human Genome Research Institute, reviewer of minority recruitment plans for Centers of Excellence in Genomic Sciences applications
2009-present	Chartered Member, NIH CSR Radiation and Therapeutic Biology (RTB) Study section
2009-present	Reviewer, NIH Ruth L. Kirschstein National Research Service Award (NRSA) Fellowship Applications
2008-present	Ad hoc reviewer for American Journal of Physiology, Amer.J.Resp.Critical Care Med., Antioxidant and Redox Signaling, Diabetes.
1995-present	NHLBI Special Emphasis Panel Review Group for K-awards
2010	1 st level reviewer NIH <i>Pathfinder</i> Award
2010-present	National Human Genome Research Institute, reviewer of minority recruitment plans for Centers of Excellence in Genomic Sciences applications;
2014-present	Appointed as a member of the parent committee for review of Program Project Grants at NHLBI

9. INVITED EXTRAMURAL LECTURES, PRESENTATIONS AND VISITING PROFESSORSHIPS

International

1. *Winter Research Conferences of CERLIB*; Free radicals and antioxidants in AIDS and HIV infections. Les Des Alpes, France, 1993. Invited speaker

- Title: Does the HIV Tat protein regulate host redox status?
2. *Oxidative stress and redox regulation: cellular signaling, AIDS, cancer and other diseases*. Institute Pasteur, Paris, May 1996 Invited Speaker
Title: Alterations in redox status by the HIV-1 Tat protein affect cellular gene expression and function.
 3. *Winter Res. Conf., Oxidative stress and apoptosis*, CERLIB, Les Arcs, France 1997. Invited Speaker
Title: Tat-mediated oxidative stress sensitizes cells to apoptosis.
 4. *International Conference on HIV and Iron*, Liegge University, Brugge, Belgium, 1997 Invited Speaker
Title: Tat-mediated oxidative stress sensitizes cells to apoptosis.
 5. “*Oxidative stress in disease symposium*” Ponce School of Medicine, Ponce, Puerto Rico, 1998, Invited Speaker
Title: Tat-mediated oxidative stress activates endothelial cells.
 6. *Third Annual Biomedical Workshop on Free Radicals in Disease Process*, Ponce School of Medicine, Ponce, Puerto Rico, 1999 Invited Speaker
Title: The HIV-1 Tat protein alters cellular redox status, affects transcriptional factor DNA binding and activates human vascular endothelial cells
 7. *Annual Symposium on Superoxide Dismutases in Disease*, Institute Pasteur, Paris, 1999, Invited Speaker
Title: Tat affects Mn-superoxide dismutase expression by altering the Sp1/Sp3 balance
 8. University of Puerto Rico, Rio Piedras, invited lecture, 2005
Title: Endothelial dysfunction precedes hyperglycemia in NOD mice
 9. Ponce School of Medicine Graduate Student Association Annual Banquet, Keynote Speaker, 2006
Title: The road to science: from high school in Ponce to being a Professor in Medicine...or how I learned to be a scientist.
 10. University of Puerto Rico-Rio Piedras School of Medicine, Dept. Microbiology invited lecture, 2007
 11. Reunion Neumologica Internacional, La Toja, Spain, invited speaker, 2009
Title: Plexiform lesion formation in macaques infected with chimeric SHIV-*nef*

National

1994

1. Keynote address delivered at the University of Southern Colorado Beta Beta Beta Honorary Biological Society Annual Banquet, Pueblo, CO
Title: Pathogenesis of viral infections. 1994.
2. Symposium on *Effects of redox status on signal transduction and transcription*, University of Kansas Medical Center, KS Invited Speaker
Title: Tat-mediated redox status changes affect transcriptional factor activity.

1995

1. *NHLBI Minority Research Supplement Awardee Workshop*, Washington, D.C.,
Title: The Minority Experience in Research, Invited Speaker
2. Annual Meeting Oxygen Society, Pasadena, CA, invited speaker
Title: HIV-1 Tat alters oxidant/antioxidant balance by suppressing SOD2 expression
3. *NHLBI Pathways to Research Careers: Planning your Next Move*, invited speaker

1996

1. Vanderbilt University, Nashville, TN, 1996 Invited seminar speaker

Title: The HIV-1 Tat protein affects cellular redox status and alters transcriptional factor activity

1997

1. University of Alabama, Birmingham, Invited seminar speaker
Title: Alterations of redox status by HIV-1 Tat protein
2. Oxis International, Portland, OR, invited seminar speaker
Title: HIV-1 Tat protein suppresses Mn-superoxide dismutase expression
3. LSU-Shreveport School of Medicine, invited seminar speaker
Title: Inhibition of human Mn-superoxide dismutase by HIV-1 Tat protein

1998

1. Fort Lewis College, Durango, CO, Invited lecture
Title: Activation of human umbilical vein endothelial cells by the HIV-1 Tat protein.
2. Fort Lewis College *Initiative for Women In Medicine* Keynote Address
Title: A Woman's Path to Science,
3. *Minority Undergraduate Math and Science Initiative*, CU-Denver, Invited lecture
Title: HIV-1 Tat protein: redox status changes and transcriptional factor activity.
4. LSU-Shreveport College of Medicine, Dept. of Molecular and Cellular Physiology, Invited seminar speaker
Title: The HIV-1 Tat protein activates endothelial cells
5. NHLBI Awardee Meeting on Etiology of Cardiovascular Complications in HIV Infection, speaker
Title: HIV-1 Tat protein activates endothelial cells

1999

1. Invited Keynote Speaker, *NHLBI 7th Annual Cardiovascular Minority Research Supplement Awardee Session* in conjunction with the American Heart Association annual meeting, Atlanta, GA,
Title: HIV-1 Tat protein: a new class of pro-inflammatory mediator?
2. NHLBI Meeting "What works in funding",
3. HIV RFA Grantees Meeting on "Etiology of Cardiovascular Complications in HIV infection" invited speaker
Title: Mechanisms of HIV-1 Tat-mediated myocarditis

2000

1. NHLBI/NIDA-Sponsored workshop on Cardiovascular Complications of HIV/AIDS and Substance Abuse Awardees meeting, Oral Presentation
Title: Mechanisms of HIV-1 Tat-mediated myocarditis
2. Graduate Center for Toxicology, University of Kentucky, Invited Seminar Speaker
Title: The HIV-1 Tat protein activates endothelial cell E-selectin expression by activating NF-kB

2001

1. LSU-Shreveport College of Medicine Annual Meeting of Pathogenesis of Intestinal Ischemia-reperfusion injury, Session Chair
2. NHLBI Workshop on Recruitment and Retention of African Americans, Hispanic Americans, and Native Americans in Scientific Research Careers Relevant to Heart, Lung, Blood and Sleep Disorders, What works, what doesn't and what should we do? Invited to participate and in a roundtable discussion.

2002

1. UT-San Antonio Health Sciences Center, Visiting Professorship
Title: Of viruses, antioxidants and the lung
2. Emory University VA Hospital, Atlanta, Invited seminar speaker
Title: How can an HIV-1 transcriptional factor also be a pro-inflammatory mediator?
3. Colorado College Department of Biology, Invited seminar speaker
Title: The many faces of the HIV Tat protein
4. CU-Colorado Springs, Department of Biology, Visiting Professorship
Title: AIDS Pathogenesis
5. Alton Oschner Foundation, LA, invited seminar speaker
Title: Activation of endothelial cells by HIV-1 Tat
6. NHLBI/NIDA-Sponsored workshop on Cardiovascular Complications of HIV/AIDS and Substance Abuse Awardees meeting, Oral Presentation

2003

1. University of South Alabama, Mobile, AL invited seminar speaker
Title: HIV-1 Tat protein resets the threshold for inflammation in the lung

2004

1. Medical College of Wisconsin, Milwaukee, WI Invited seminar speaker
Title: Role of oxidant stress in endothelial dysfunction of euglycemic, pre-diabetic NOD

2005

1. Department of Biology, Queens College and Graduate Center of CUNY, invited seminar speaker
Title: Paradoxical vasoconstriction in euglycemic NOD mice
2. Sloan Kettering Cancer Institute, Cell Death Society, invited seminar speaker
Title: The HIV-1 Tat protein alters redox status and induces apoptosis in human lymphocytes
3. University of Puerto Rico, Cayey, visiting professorship
Title: Type 1 diabetes and its vascular complications

2007

1. Virginia Commonwealth University, Medical College of Virginia, invited seminar
Title: Association between HIV-1 Nef and complex vascular lesions in pulmonary hypertension
2. Virginia Commonwealth University, Medical College of Virginia, invited seminar
Title: Intersection between autoimmunity and vascular complications in type 1 diabetes.
3. University Missouri-Kansas City School of Pharmacy, invited seminar speaker
Title: HIV-1 Nef is associated with complex pulmonary vascular lesions in humans and macaques

2008

1. University of South Alabama, Mobile, AL, Dept. Cell Biology and Neuroscience, Invited to the Distinguished Scientists Seminar Series
2. Visiting Scientist Seminar, University of Puerto Rico, Cayey and Ponce School of Medicine
3. Seminar speaker, plenary session, Lung Complications of HIV Infection, ATS Meeting, Toronto
4. Speaker, International Pulmonary Arterial Hypertension Meeting, Dana Pointe, CA

2009

1. Invited speaker, HIV and Therapeutic Interventions, ASBMB Meeting, New Orleans, LA
2. Invited Speaker, Pulmonary Hypertension and Inflammation Session, American Heart Association meeting, New Orleans, LA
3. Distinguished Visiting Scientist Seminar Speaker, Mobile, AL
4. Master of Ceremonies, Awards Banquet and Reception, SACNAS National meeting, Dallas, TX

2010

1. Pulmonary Hypertension Association, Invited Speaker, Anaheim, CA
2. Invited Plenary Session Speaker, ABRCMS Meeting, Charlotte, NC
3. Visiting Scientist Speaker, RISE Student Symposium, UPR-Cayey, PR
4. Invited Speaker, Chest Meeting, Vancouver
5. Invited Speaker, Congreso Internacional de Investigacion, Mexico City, Mexico
6. Invited speaker, University of Kansas, Kansas City

2012

1. Invited speaker Experimental Biology/American Society of Biochemists and Molecular Biologists Annual meeting, San Diego, CA
2. Invited keynote speaker, Thomas L. Petty Annual Aspen Lung Conference

2013

1. Co-Chair, Thomas L. Petty Annual Aspen Lung Conference

2014

Invited Speaker, Univ. of Arizona, Tucson, AZ

2015

Invited Speaker and co-chair, NHLBI DLD Workshop: Training for a Diverse Biomedical Workforce, June 2015

2016

Invited participant, NIH Office of Extramural Research-sponsored workshop on "Pilot Approaches to Enhance the Physician Scientist Workforce." February 2016

Invited speaker, University of Texas Southwestern, March 2016

Keynote Speaker, Diversity Forum, American Thoracic Society Annual Meeting, San Francisco

Local presentations;

1. Colorado Oxygen Radical Society seminar (invited)
2. Department of Human Nutrition seminar (invited)
3. School of Pharmacy Toxicology Program (yearly)
4. Department of Cardiology Research in Progress (invited)
5. Cardiovascular Pulmonary Laboratory Research in Progress (yearly)
6. Colorado Center for AIDS Research seminar (yearly)
7. Department of Microbiology Research in Progress Seminar (yearly)
8. Pulmonary Research in Progress (yearly)
9. Department of Medicine Research Day speaker (invited)

10. TEACHING AND FACULTY DEVELOPMENT RECORD

Undergraduate/Medical and graduate students/Junior faculty

- 1989 Medical Biochemistry, University of South Alabama College of Medicine, Mobile, Alabama;
- 1991-96 Biochemistry, School of Dentistry, UCHSC, Denver, Colorado; taught purine/pyrimidine, DNA replication and transcription;
- 1993-96 Course Director and lecturer in Biochemistry for Student Enhancement and Enrichment Kaleidoscope program for the Center for Multicultural Enrichment (Office of Diversity)
- 1993-94 Director of Student Support Services of the SEEK program; coordinated the entire summer curriculum, including Biochemistry, Physiology and Neurobiology. Implemented supplemental instruction at University of Colorado School of Medicine; certified as a facilitator for USMLE Step I Board Preparation Course; taught Biochemistry board review sessions and coordinated the reviews for the rest of the subjects.
- 1998-00 Invited Faculty, St. Louis University Medical School, USMLE Step I Board Preparation Course
- 1998- Medical Biochemistry, Carbohydrate metabolism, including glycolysis, citric acid cycle, gluconeogenesis, glycogenesis, glycogenolysis, pentose phosphate pathway, hormonal regulation of carbohydrate metabolism; glucose disposition in the fed/fasting state;
- 2002- Member of training faculty of "Respiration and Circulation During Hypoxia" of the Cardiovascular Pulmonary Laboratory, Microbial Pathogenesis Pre and Post-doctoral Training Grants in the Department of Microbiology, HIV Training Grant in the Division of Infectious Diseases and Toxicology Training grant at the School of Pharmacy.
- 2005-present The GEMS (Graduate Experiences for Multicultural Students) program NHLBI-funded in 2000 as a T35 with Dr. Steve Anderson as director. I took over as director in 2005 and successfully competed for a renewal. In 2010, the funding mechanism changed to an R25 and I submitted an application that was well received and subsequently funded. GEMS has been instrumental in providing summer research experiences for over 200 under-represented students over the past 15 years. Approximately 70% of these students are in PhD, MD or MD/PhD programs and ~100 publications in peer-reviewed journals have resulted from this group.
- 2008-2012 Director of the LabCoats program (NIGMS-funded R25 Initiative for Maximizing Student Diversity), developed a year-round curriculum that included workshops on genomics, bioinformatics, scientific writing as well as an introductory course in molecular biology techniques for undergraduate students.
- 2014-present Faculty Mentor, NSF grant writing workshop and career development of junior faculty at minority serving or primarily undergraduate institutions
- 2014 Workshop, "Rhetorical patterns in effective NIH grant writing", Postdoctoral students Association, AMC

Key administrative positions

- 1993-94 Director of Support Services, Center for Multicultural Enrichment, UCHSC, Denver, Colorado. This activity involved helping minority students who had

an interest in medical school and using supplemental instruction approaches, helped them strengthen their academic credentials and ability to successfully complete “gatekeeper” courses.

2004-2006	Faculty advisor for the Minority Student Organization called Oyate
2005-2010	Program Director, NIH T35 Biomedical Research Internship Program for Underrepresented minority undergraduate students (GEMS-Graduate Experiences for Multicultural Students program)
2010-2015	Program Director, NIH R25 Biomedical Research Internship Program for Underrepresented minority undergraduate students (GEMS-Graduate Experiences for Multicultural Students program).
2010-present	Minority Affairs Committee, American Society of Biochemists and Molecular Biologists (ASBMB)

Course Development

1993-94	Implemented the Supplemental Instruction Model and supervised the student facilitators for gatekeeper Medical School courses Physiology, Biochemistry and Neurobiology
2002	Used the supplemental instruction model to help 2 nd year medical students prepare for Step I USMLE test.
2003	Developed an online course for the Virtual Free Radical School for the Society for Free Radicals in Biology and Medicine
2007	Developed an R25 Initiative for Maximizing Student Diversity that was funded in 2008 that has significantly enhanced the science and research expertise of students at the CU Downtown Denver campus with the ultimate objective of creating a pipeline of diverse students who will apply to Graduate School.
2010	Co-chaired a workshop, sponsored by NSF and ASBMB on “Identifying Real or Perceived Barriers for Obtaining NSF funds” targeted to diverse faculty. I also worked with a colleague to write a grant application to the NSF that subsequently funded this endeavor.
2010	Helped draft a survey used to query NSF-funded faculty as to the barriers perceived for funding success. Faculty who completed the survey were then invited to participate in a workshop that would be facilitated by a professional surveyor who would then compile the responses. These results will be shared with the general ASBMB membership and will be published in a suitable journal.
2014-2015	Participated as a faculty mentor in a grant-writing workshop, funded by NSF and organized by the ASBMB Minority Affairs Committee

Teaching awards

1995	Excellence in Education Award, Office of Diversity SEEK program, UCHSC
2005	Department of Medicine Ph.D. Excellence in Research and Teaching Award
2006	Excellence in Mentoring Award from Minority Student Organization Oyate

Trainees:

I have trained high school, undergraduate, graduate students as well as post-doctoral fellows, physician scientists and mentored junior faculty. Of note, every one of my post-doctoral or junior faculty trainees (Drs. Adela Cota-Gomez, Sharilyn Almodovar, and Mike Zimmerman) has successfully competed for and obtained an NIH career development award. I will provide a record of my previous trainees upon request.

11. GRANT SUPPORT

My research has been supported extramurally from the beginning of my research career as a graduate student. In addition, I was recently recognized for service to peer review at NIH with the opportunity to submit certain grant applications at any time during the fiscal year.

ACTIVE

1 U01 HL121819-01 (Flores, SC, contact PI) 9/01/2013-8-31/2018 3.6
calendar
NIH/NHLBI
Genotypic and functional properties of HIV-1 Nef clinical isolates in PAH-HIV

In this application, we hypothesize that allelic variants of nef will have an impact on T cell and pulmonary endothelial cell function. We propose to 1) infect T cells with molecularly cloned virions containing primary nef alleles and measure T cell receptor density; 2) human pulmonary artery endothelial cells will be co-cultured with infected T cells or transfected with nef molecular clones and endothelial cell gene expression, apoptosis and proliferation measured and 3) determine whether the lung is a protected compartment for evolution of nef sequences.

1R25HL103286-01 Flores (PI) 07/01/2010 – 06/30/2020
NIH/NHLBI

Short-Term Internship Program for Undergraduates and Health Professional Students.
This research education and training grant funds short term summer biomedical internship experiences for under-represented or disadvantaged students.

1T34GM096958-01A1 (Allen, R., contact PI) 06/01/2013 – 05/31/2018
NIH/NIGMS

UC Denver MARC U*STAR Scholars Program
This is a research training program to support tuition and trainee related expenses, including a summer research experience to increase diversity of student in STEM disciplines. Dr. Flores is a PI in this multiple PI grant.

COMPLETED

U01HL098996 Fontenot (contact PI) 09/23/09-07/31/15
NIH/NHLBI

Alterations of Lung Microbiome in Acute and Chronic HIV Infection
This is a multiple PI mechanism, and I am one of the Principal Investigators. I was instrumental in providing the preliminary data, helping write the application and collaborate with physician scientists in this application.
Role: multi-PI

R01HL083491 Flores (PI) 09/29/05-06/30/14
NIH/NHLBI

Pathobiology of HIV(SIV)-induced Angioproliferative Pulmonary Hypertension
This project seeks to investigate the natural history of severe angioproliferative PH in SHIV-nef infected Rhesus macaques. We are also testing the direct and indirect effects of several nef

alleles on endothelial cell biology.

Role: PI

R01HL090480

Flores (PI)

10/01/07-06/30/14

NIH/NHLBI

Longitudinal Studies of HIV-1 nef in Pulmonary Arterial Hypertension

This project seeks to investigate whether Nef signature sequences found in macaques with pulmonary lesions are also found in HIV-infected patients with pulmonary hypertension.

R01HL090480S1

Flores (PI)

06/01/09-08/31/10

NIH/NHLBI-ARRA supplement

Longitudinal Studies of HIV-1 nef in Pulmonary Hypertension

The major goal of this supplemental award was to clone the specific nef alleles identified in the parent grant into both *Drosophila* and mammalian vectors to study the functional consequences of these mutations on endothelial cell biology in vitro. The effects of these signature sequences will be compared to the effects of wild-type nef alleles.

Role: PI

R01 HL090480-03S1 (Flores, PI)

06/01/09-8/31/12

NIH/NHLBI

Longitudinal studies of HIV-1 Nef in pulmonary hypertension

This is a minority supplement to support Dr. Sharilyn Almodovar as a post-doctoral fellow in my lab. Dr. Almodovar successfully competed for a K01 in 2010 and therefore, the supplement was returned.

R01HL091526

Hsue (PI)

09/16/07-06/30/12

NIH/NIAID

Epidemiology and Pathogenesis of Pulmonary Hypertension in HIV Patients

The goal of this study was to research the natural history, etiology, and pathogenesis of elevated pulmonary arterial pressures in HIV patients followed longitudinally and undergo hemodynamic evaluation including right heart catheterization, echocardiography, and 6 minute walk test. The role of nef alleles and HHV-8 infection will be evaluated and endothelial function will be compared in HIV patient with and without PH.

Role: Co-Investigator

R25GM083333

Flores (PI)

03/01/08-02/29/12

NIH/NIGMS

MBRS-IMSD Program at University of Colorado Denver

This project is an educational training program to enhance the research experience of disadvantaged and ethnic minority undergraduate students by providing intense instruction in systems biology, proteomics, bioinformatics, molecular biology and integrated physiology. In addition, students will rotate through labs and gain bench research experience.

R25GM083333S1

Flores (PI)

03/01/08-

02/29/12NIH/NIGMS-supplement

MBRS-IMSD Program at University of Colorado Denver

This is a supplemental award to reinstate salary costs reduced on the parent grant listed above.

T35HL080975 Flores (PI) 06/01/00-05/31/11
NIH/NHLBI

Biomedical Research Internship Program for Undergraduates

This is a summer biomedical internship program for minority students. This program was supplanted by an R25 mechanism. I successfully competed for a new R25 that replaced the T35.

R01HL083491S1 Flores (PI) 06/01/09-08/31/10
NIH/NHLBI-ARRA supplement

Pathobiology of HIV(SIV)-induced Angioproliferative Pulmonary Hypertension

This supplemental award will advance the hypothesis of the parent grant that certain mutations in HIV nef trigger the angioproliferative changes associated with chronic HIV infection.

Role: PI

NIH/NIDDK 1R43 DK075192-01A1 (Diener. PI)
Flores, collaborating investigator

Fullerene antioxidants in treatment of diabetes

This is a Phase 2 SBIR to test the efficacy of fullerene compounds as antioxidants in a mouse model of vascular complications in diabetes

NIH/NHLBI 1 R01 HL59785 (Flores, S.C., PI). 6/30/1997-7/1/2007

Title: Role of redox status in HIV-1 Tat-mediated inflammation

The major goals of this project are to examine the role of the HIV-1 Tat protein in pulmonary inflammation in a transgenic mouse with lung-specific Tat expression. This research area evolved from my original description of the role that the HIV-1 Tat protein plays in suppressing expression of the key human antioxidant enzyme Mn-superoxide dismutase. As reactive oxygen species play a key role in inflammation, we hypothesized that alterations in redox balance by this HIV protein would also reset the threshold for inflammation.

NIH/NHLBI 3 R01 HL59785-09S1 (Flores, S.C., PI)

Title: Role of redox status in HIV-1 Tat-mediated inflammation

This was a minority supplement to Ms. Jenn Honda.

NIH/NHLBI 1 R01 1HL083491-01 (Flores, SC, PI) 2002-2003

Title: Pulmonary hypertension and plexiform lesions in simian AIDS

This was a supplement to investigate whether the SIV-infected macaque showed signs of pulmonary complications related to the infection. During this time, the money was used to obtain samples from various Primate Research Centers and inspected for pulmonary abnormalities. We discovered that macaques infected with chimeric SHIV-nef, but not with the native SIV, showed pulmonary plexiform lesions characteristic of severe angioproliferative pulmonary hypertension. This supplement was successful in the sense that the money was used to generate the preliminary data necessary to apply for and obtain the R01.

NIH/NHLBI 5K14 HL03157 (Flores, SC, PI)

1994-1999.

Title: Oxidative Balance in Models of Acute Lung Injury

This was a mentored Research Development Award for Minority Faculty with Dr. Joe M. McCord as mentor. The objectives of this application were to develop genetic variants of superoxide dismutase that could be subsequently used in animal models of acute lung injury and that could be translated to the clinic and used in treatment of septic shock.

NIH/NHLBI 1R01 HL66554 (Tuder, R., PI)

Title: Endothelial cell death and inflammation in emphysema

Role in grant: co-PI. The objectives were to study whether blockade of the VEGF receptor KDR causes emphysema in rats, to investigate whether lung oxidant stress causes lung endothelial cell death and emphysema, and to determine if antioxidants prevent the development of emphysema caused by KDR blockade or lung oxidant stress.

NIH/National Eye Institute

National Research Service Award (NIH-sponsored post-doctoral fellowship)

Title: Molecular Mechanisms of herpes simplex virus type 1 neuroinvasiveness

This was a post-doctoral fellowship grant application that was funded but declined.

Procter & Gamble Minority Pre-doctoral fellowship awarded by the American Society of Biological Chemists

Title: Characterization of repetitive sequence families in extrachromosomal circular DNAs in aging mouse heart, brain and liver.

This pre-doctoral fellowship supported pre-doctoral student stipend plus fringes during the last 2 years of the dissertation project (1986-88). Only 1 fellowship was awarded that year.

This project sought to establish that the mammalian genome is a highly dynamic structure subject to epigenetic changes and fluctuations throughout the mammal's lifespan. This is now considered an "innovative" area of investigation.

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