

BIOGRAPHICAL SKETCH

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NAME Michelle M. Martínez		POSITION TITLE Assistant Professor	
eRA COMMONS USER NAME (credential, e.g., agency login) MMMARTINEZ			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
University of Puerto Rico, Bayamón, PR	A.D.	1992-1994	Natural Science
University of Puerto Rico, Cayey, PR	B.S.	1995-1997	Biology
University of Puerto Rico, Mayagüez, PR	M.S.	1998-2000	Animal Science
Michigan State University, East Lansing, MI	Ph.D.	2000-2004	Animal Science / Nutritional Genomics
University of Puerto Rico, Río Piedras, PR	Postdoctoral	2005-2006	Molecular and Cellular Cognition

A. PERSONAL STATEMENT

I am a molecular biologist trained in nutritional and functional genomics, and in cellular and cancer biology. While serving as the Associate Director of the Functional Genomics Research core at University of Puerto Rico, I was part of a scientific team that created a center that serves the community in the design and execution of functional genomics studies. Five years ago, I was hired as the genomics specialist in the Cancer and Cell Biology Research group at Universidad Central del Caribe-School of Medicine in Puerto Rico, where I started collaborative and my own research on natural therapeutics and breast cancer. Currently, I am Assistant Professor at the Department of Biochemistry and at the Department of Physiology, and member of the UCC-Cancer Research Unit. I am establishing my research laboratory, which focuses on investigating breast cancer biology, potential natural therapeutics for this intractable disease, and Type 1 and Type 2 Diabetes Mellitus. I have 7 publications and one manuscript in review in Journal of Nutritional Biochemistry. In addition, three manuscripts will be submitted next May and June. My immediate career goal is to establish an independent research program to study gene expression profiles and how they are related to disease. Also to identify molecular targets and develop effective strategies for the prevention and treatment of illnesses like cancer and diabetes, which are diseases that affect, underserved populations. The current research proposes to investigate the frequency of single nucleotide polymorphisms (SNPs) in Type 1 Diabetes Mellitus susceptibility genes in Puerto Rico. Our interdisciplinary team is composed of my Co-PI Dr. Melvin Pagan from University of Puerto Rico, who is molecular geneticist expert in SNP detection and haplotype analysis. In addition, our collaborator, Dr. John Keoni Kauwe from Brigham Young University, has more than 30 publications in SNP association with diseases. Our clinical investigator, Dr. Jose Rivera Velázquez, has 20 plus years experience as a Pediatric Endocrinologist, and is recruiting our patients. Currently, I stimulate the participation of minority students in research both at the undergraduate and graduate level. Therefore, all of these experiences and qualifications make me well suited to serve as the PI in this and future research investigations.

POSITIONS**Positions and Employment**

2005 Biomedical Research Assistant, University of Puerto Rico, Cayey Campus, Cayey, PR
2006-2007 Associate Director, Functional Genomics Research core, University of Puerto Rico, San Juan, PR

2007-2009 Senior Research Associate, Universidad Central del Caribe, Bayamon, PR
2009-present Assistant Professor, Department of Biochemistry, Universidad Central del Caribe, Bayamon, PR
2010-present Dual faculty appointment – Assistant Professor, Department of Physiology, Universidad Central del Caribe, Bayamón, PR

Other Experience and Professional Memberships

2006 – present Active Member, American Association for Cancer Research
2009 – present Member, Sociedad Latinoamericana y del Caribe de Oncología Médica
2010 – present Network of Minority Research Investigators – National Institutes of Diabetes and Digestive and Kidney Diseases

ACADEMIC AND PROFESSIONAL HONORS

2000 to 2004 Competitive Doctoral Enrichment Fellowship, Michigan State University, The Graduate School, East Lansing, MI.
2001 to 2002 Equal Opportunity Fellowship, Michigan State University, The Graduate School, East Lansing, MI.
2004 American Society of Animal Science Midwestern Sectional Meetings Graduate Student Competitive Research Paper Ph.D. division winner, Des Moines, IA.
2004 Distinguished Jacob Hoefer Fellowship, Michigan State University, Department of Animal Science, East Lansing, MI
2005-2006 Introduction to Principles and Practices of Clinical Research, University of Puerto Rico and National Institutes of Health.
2006 Gene Expression and Comparative Genomic Hybridization Microarray Technology Training, National Cancer Institute, National Institutes of Health and Agilent Technologies, Bethesda, MD.
2007 American Association for Cancer Research Minority Scholar in Cancer Research Award for “Frontiers in Cancer Prevention” Conference, Philadelphia, PA.
2008 National Center for Complimentary and Alternative Medicine- National Institutes of Health Grantsmanship Workshop, Rockville, MD.
2008 American Association for Cancer Research “Pathobiology of Cancer Workshop”, Snowmass, CO.
2009 American Association for Cancer Research Minority-Serving Institution Faculty Scholar Award for the Annual Meeting, Denver, CO.
2010 American Association for Cancer Research Minority-Serving Institution Faculty Scholar Award for the Annual Meeting, Washington, DC
2010-2011 Member of the American Association for Cancer Research Minority Scholar in Training Award Selection committee. Member of the committee that selected candidates from minority institutions to receive sponsorship to participate in various meetings of the AACR.
2011 Scientific Research Development Unit Fellowship recipient. Visited Dr. Robert Schneider’s laboratory at NYU Langone Medical Center, New York, NY.

Peer Review: Journals: Reviewer for Liver International, Journal of Nutrition. Part of the Editorial Board of Frontiers in Livestock Genomics.

B. PUBLICATIONS

Peer-reviewed publications

1. de la Parra C., Otero-Franqui E., **Martinez-Montemayor M.**, and Dharmawardhane S. The soy isoflavone equol may increase cancer malignancy via upregulation of eukaryotic protein synthesis initiation factor eIF4G. Submitted to J. Nutritional Biochemistry - February 2012.
2. ***Martínez-Montemayor, M.M.**, Rosario-Acevedo R., Otero-Franqui, E., Cubano, L., and Dharmawardhane, S. *Ganoderma lucidum* (Reishi) inhibits cancer cell growth and expression of key molecules in inflammatory breast cancer. Nutr Cancer. 2011 Oct;63(7):1085-94. Epub 2011 Sep 2. ***Corresponding author.**

3. **Martínez-Montemayor M.M.**, Otero-Franqui E., Martinez J., De La Mota-Peynado A., Cubano L.A., Dharmawardhane S. Individual and combined soy isoflavones exert differential effects on metastatic cancer progression. *Clin Exp Metastasis*. 2010 Oct;27(7):465-80.
4. Castillo-Pichardo L., **Martínez-Montemayor M.M.**, Martinez J., Wall K.M., Cubano L.A. and Dharmawardhane S.F (2009). Combined red wine polyphenols resveratrol, quercetin and catechin inhibit breast cancer metastasis in vivo. *Clin. Exper. Met.* 26: 505-16.
5. **Martínez-Montemayor, M.M.**, Hill G.M., Raney N.E., Rilington V.D., Tempelman R.J., Link J.E., Wilkinson C.P., Ramos A.M., and Ernst C.W. (2008) Gene Expression Profiling in Hepatic Tissue of Newly Weaned Pigs Fed Pharmacological Zinc and Phytase Supplemented Diets. *BMC Genomics*, 9: 421.
6. Colón-Cesario, W.I., **M. M. Martínez-Montemayor**, L. Pereira, S. Morales, J. Félix, J. Cruz, M. Adorno, N. Colón, C. S. Maldonado-Vlaar, and Peña de Ortiz, S. (2006) Knockdown of Nurr1 in the Rat Hippocampus: Implications to Spatial Discrimination. *Learning & Memory* 13: 734-744.
7. **Martínez, M.M.**, J.E. Link, and G.M. Hill. (2005) Dietary Pharmacological or Excess Zinc and Phytase Effects on Tissue Mineral Concentrations, Metallothionein, and Apparent Mineral Retention in the Newly Weaned Pig. *Biol. Trace Elem. Res.* 105:97-116.
8. **Martínez, M.M.**, G.M. Hill, J.E. Link, N.E. Raney, R.J. Tempelman, and C.W. Ernst (2004) Pharmacological Zinc and Phytase Supplementation Enhances Metallothionein mRNA Abundance and Protein Concentration in Newly Weaned Pigs. *J. Nutr.* 134(3) 538-544.

Non-refereed Research Publications

1. Hill, G.M., D.W. Rozeboom, J.E. Link, M.W. Orth, M.J. Rincker, J.E. Rowntree, **M.M. Martínez**, and A.M.Meyer (2003) The Essentiality of Trace Minerals in Tissue Integrity of Feet, Legs and Claws in Growing and Finishing Swine. A report for Zinpro Corporation.
2. Suárez, W., **M.M. Martínez**, G. Sepúlveda, and E. Rivera. 1998 – 2000. Veterinary physiology laboratory instructor's manual.

C. RESEARCH SUPPORT:

Active:

NIH-RCMI Program- Pilot Project (Martinez, M.)

Title of Project: Investigation of Reishi as a Natural Therapeutic for Inflammatory Breast Cancer.

Dates of Project: 11/01/09 – 10/31/14.

Overall goals: To determine the effect of Reishi mushroom on inflammatory breast cancer establishment and progression in vivo.

NIH-PRCTRC-Pilot Project (Martinez, M.)

Title of Project: Detection of the daidzein metabolite equol in Puerto Rican women as a potential risk factor for metastatic breast cancer

Dates of Project: 08/01/11 – 07/31/12.

Overall goals: to undertake a cross-sectional characterization of a clinic-based sample of Puerto Rican women to determine their equol production efficiency based on their bean consumption.

NIH-INBRE-Pilot Project (Martinez, M.)

Title of Project: Identification of cell surface markers and signaling regulation by Reishi in IBC

Dates of Project: 07/01/12 – 06/30/14

Overall goals: to determine the effects of Reishi on tumor spheroid disintegration by characterizing cell surface markers and E-cadherin intracellular signaling in inflammatory breast cancer cells.

Pending

Avon foundation Breast Cancer Research Program (Martinez, M.)

Title of Project: Intra-individual variation in processing soy foods and cancer risk.

Dates of Project: 10/01/12 – 09/30/14.

Overall goals: to undertake a cross-sectional characterization of a clinic-based sample of Caucasian, African American and Hispanic breast cancer patients, breast cancer survivors and women with no history of breast cancer to determine their equol production efficiency based on their bean consumption.

NIH-F31 Ruth L. Kirschstein National Research Service Award (Suarez, I.) Martinez, M (sponsor)

Title of Project: Role of Reishi on cell surface proteins and intracellular signaling in IBC

Dates of Project: 12/01/12 – 05/31/15

Overall goals: to determine the effects of Reishi on tumor spheroid disintegration by characterizing cell surface markers and EGFR intracellular signaling in inflammatory breast cancer cells.

Completed:

American Institute for Cancer Research, PI (Martinez, M.)

Title of Project: Mechanism(s) of anti-Inflammatory Breast Cancer action of Reishi.

Dates of Project: 01/01/09 – 12/31/10.

Overall goals: To determine the effect of Reishi mushroom on inflammatory breast cancer metastasis progression inhibition.