

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Margarita Irizarry-Ramírez		POSITION TITLE Professor	
eRA COMMONS USER NAME (credential, e.g., agency login) MARGARITAI			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Puerto Rico, Río Piedras Campus	BS	1970	Biology
Jackson State University, Mississippi, USA	MS	1985	Molecular and Radiation Biology
University of Puerto Rico, Intercampus Program: Río Piedras and Medical Sciences Campus	Ph.D.	1999	Biochemistry and Cell and Molecular Biology
University of Puerto Rico, Medical Sciences Campus	Post Doctoral	2000-2001	Molecular Biology of Neural Regeneration
Rutgers University		2000	Certificate of Completion of Workshop on Spinal Cord Injury
NIH Tele course		2001	Course: Introduction to the Principles and Practice of Clinical Research
Public Responsibility in Medicine and Research (PRIM&R)		2002	Ethics of Human Subject Research.
NIH Foundation for Advanced Education in the Sciences		2005	Clinical Proteomics and Biomarker Discovery

**A. Personal Statement**

The objective of the proposed research is to prepare a model that , incorporates , Ancestry markers, SNPs related to aggressiveness of disease, biomarkers, and socioeconomic and behavioral data to predict the prognosis upon diagnosis of prostate cancer in a Puerto Rican and African American cohorts. During our current pilot project we aimed to ascertain the influence that African ancestry may have in explaining the mortality disparity from Prostate Cancer, between Puerto Rican males and Whites and other Hispanic groups in the US. African ancestry markers have been associated to an aggressive phenotype. Puerto Rico's heterogeneous genetic ancestry is composed mainly from European , West African and native Amerindian genes. Our hypothesis is that in the Puerto Rican population there may be correlation between prostate cancer aggressiveness and West African ancestry informative markers (AIMs). Our very preliminary results indicate that there could be an influence of WAA in the aggressiveness of disease in the Puerto Rican cohort. I am highly motivated to pursue this alternative avenue of research into the possible causes of the mortality disparity in Puerto Rican males. This research will complement the proteomic studies which my laboratory has been pursuing during the last three years. We have been able to determine the presence of eight differentially expressed proteins in the prostate cancer patients. In addition we have also published data that correlate the BMI status of the patients with the progression of disease and the lack of sensitivity of the Prostate Specific Antigen (PSA) as a diagnostic tool in the overweight /obese population in our cohort. The current application brings in the third element on a triumvirate that has been shown to influence other cancers: protein expression, environmental factors and genomic predisposition. Our previous experience in my laboratory and while pursuing the Pilot project has made me very aware of the need for collaborations and constant communication to achieve a realistic research goal. We have been able to form an excellent research team made up two pathologists , Dr. Patricia Troncoso, MDACC and Dr. Mario Quintero PRCCC; an expert in

African Ancestry markers , Dr. Rick Kittles, University of Illinois, two experts in Prostate Cancer and urologists, Dr. Curtis Pettaway and Dr. Ricardo Sánchez , and additional Urologist Clinician Dr. Lourdes Guerrios and I. In addition for this full project we have made additional partnerships to insure prompt and accurate analysis of novel biomarkers . My role in this proposed research is to be a leader in the Puerto Rico's team. Most important I will have the opportunity to enhance my knowledge in the intricacies of genomic analysis. I have a record as a conscientious researcher and in collaboration with this fantastic research team I am certain that this will be a successful research project.

**B Positions and Employment.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

1984-1992	Instructor, Universidad Metropolitana (UMET), Puerto Rico
1985-1987	Chair, Science Department, UMET
1987	Associate Dean of Science, UMET
1986	Visiting Scientist, Ernest Lawrence Berkeley National laboratory (LBNL)
1992-1998	Assistant Professor, UMET
1994/1995	Visiting Scientist, LBNL ( Dr.Mina Bissel)
2000-2001	Post Doctoral Researcher, UPR Medical Sciences Campus, Dept.Physiology
2001-2004	Assistant Professor, University of Puerto Rico, Medical Sciences Campus
1995/2000/2001	Grant's Reviewer for the Department of Education, Title V
2001-2012	IRB Member Medical Sciences Campus, University of Puerto Rico
2004-2012	Associate Professor, University of Puerto Rico, Medical Sciences Campus
2004-2012	Chair, IRB Panel, Medical Sciences Campus
2011	Study Section for the CDMRP Dept of Defense, USA / Prostate Cancer
2012	Professor

**Other Professional Certificates, Awards and Honors**

1990-1992	NIH Faculty Pre-doctoral Fellowship
1998	Outstanding Advisor of the Honor Society of Biology, Beta Beta Beta
2005	President elect of the American Association for the Advancement of Science (AAAS), Caribbean Division
2006	Distinguished Professor in the area of Research, School of Health Professions, Medical Sciences Campus
2007 -2009	President of the AAAS Caribbean Division

**C.Selected peer-reviewed publications (in chronological order)**

1. Roots,R., Holley,W., Chatterjee,A.,**Irizarry,M.**,and Kraft,G. "The Formation of Strand Breaks in DNA After High-LET Irradiation: A Comparison of Data From *In Vitro* and Cellular Systems". Int. Rad. Biol. 1990 **58**: 55-70
2. **Concerted gene expressions in elicited fibroin synthesis**.  
G.C.Candelas,G,Arroyo,C.Carrasco,E.Carrasquillo, A.Plazaola and **M.Irizarry** Chap. 12 in Translational Regulation of Gene Expression 2. ed.J.Ilan. Plenum Press 1993
3. **Irizarry-Ramírez,M**, Ríos,W and Rodríguez Medina J.R."Increased expression of *SWE1* mRNA suggests an activation of a morphogenesis checkpoint in type-II myosin deficient *Saccharomyces cerevisiae*". 2000 Nat. Biotech. **11**
4. Willson,C.,**Irizarry-Ramírez,M.**,Cruz-Orengo,L., Figueroa,J., Whittemore,S., Miranda,J.D. Upregulation of EphA Receptor Expression in the Injured Adult Spinal Cord. Cell Transplantation 2002 **11**:229-239
5. Ríos Muñoz, W., **Irizarry-Ramírez,M.**, Rivera Molina, F., González Crespo, S, Rodriguez-Medina, J. Myosin II is important for maintaining regulated secretion and asymmetric localization of Chitinase 1 in the budding yeast *Saccharomyces cerevisiae*.**2003** Arch.Bioch.Biophys 409(2):411-3
6. **Irizarry-Ramírez, M.**, Willson,C., Cruz,L., Figueroa,J., Velázquez,I., Foster, R., Jones,H., Whittemore,S. and Miranda J. **2005** Upregulation of EphA3 after Spinal Cord Injury J Neurotrauma 22(8)929-935

7. Figueroa, B., Vélez, H. and **Irizarry-Ramírez, M. 2008**; Association of Thyroid Stimulating Hormone levels and Body Mass Index in Overweight Hispanics in Puerto Rico. *Ethnicity & Disease* 18: 2151-154
8. **Irizarry- Ramírez, M** and Rodríguez- Orengo J. **2008** Biotechnology in Puerto Rico: Educational and Ethical Implications. *Ethos Gubernamental*; V: 153-168.
9. Albert Villanueva-Reyes, Edythe Strand, Cruz M. Nazario, **Margarita Irizarry-Ramírez. 2008** Cancer of the larynx in Puerto Rico. *PRHSJ.*; 23:196-203
10. Rosa Negrón, MS; Andrea Vásquez, MS; Mariely Nieves, MS; Lourdes Guerrios, MD; **Margarita Irizarry-Ramírez,PhD. 2010** BMI impacts the diagnosis and progression of Prostate Cancer in Hispanics. *Ethnicity & Disease* :20,168-172

#### **D. Research Support.**

##### **Completed**

1. NSF Model Institution for Excellence Cooperative Agreement, Co-PI **1995-98 Goal**: Design new science undergraduate curricula and support systems to enhance the recruitment of minorities into science careers and provide them with pathway toward graduate studies in science.
2. MBRS-SCORE: : S06 GM 008224 Proteomic Analysis of Sera of Hispanic Patients Diagnosed with Prostate Cancer 3 year grant, from **2004-2007**. Major goal: identify protein pattern in the sera of these patients that may serve to explain the disparity in mortality rates. PI Margarita Irizarry
3. EARDA G11HD046326-04 Group B Strep novel Diagnosis in Hispanic Pregnant Women. Major Goal : Develop a PCR based Identification and Antibiotic Sensitivity test. PI: Margarita Irizarry( **2007-2008**)
4. NIGMS SC3GM084769 Identification of Prostate Cancer Stage in Hispanics Using Serum Protein Profile 2008-2012. PI Margarita Irizarry . Goal. Use serum proteins to discriminate between prostate cancer patients and healthy individuals . In addition compare the protein profiles of patients in different stages of the disease

##### **Ongoing**

1. NIH U54 Comparative Study of West African Genetic Ancestry and Prostate Cancer **2010-2013**. The purpose is to study the prevalence of genes that have been associated to severity of this disease in the Hispanic population of Puerto Rico