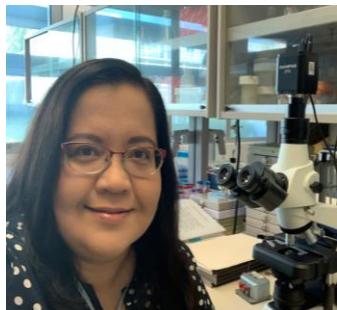


# Faculty



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## Rank/Discipline

Associate Professor  
Biochemistry / Cancer Biology  
Department of Pharmaceutical Sciences

## Education & Specialty Certification

Post Doc, Dept of Urology,  
Vanderbilt University, 2010;  
Post Doc, Dept Pathology,  
Vanderbilt University, 2005;  
PhD, Alabama A&M University,  
2003;  
MS, UPR- Mayaguez Campus,  
2000; BS, UPR-Mayaguez  
Campus, 1997.

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## Magaly Martínez Ferrer, Ph.D.

### Research Areas and Active Projects

We are a cancer biology laboratory interested in understanding: (1) Molecular pathways of HPV positive penile cancer, (2) Chemopreventive properties and mechanisms of action of phytochemicals in prostate cancer, and (3) Molecular mechanisms of inflammation biomarkers that may determine prostate cancer recurrence.

#### 1. Understanding and targeting of convergent immunosuppressive pathways and molecular signaling in HPV-positive and HPV-negative penile cancer

Our overall objective is to identify molecular patterns associated with HPV+ and HPV- PeCa subtypes in the Puerto Rico population and develop promising therapeutic strategies for PeCa based on mechanistic insights gained from clinical samples, and GEM and PDX models.

#### 2. Andrographolide Mediated Regulation of Metabolism, Mitochondrial Activity, Infammation and DNA Methylation in Prostate cancer

Andrographolide, a labdane diterpenoid and the main bioactive component of the medicinal plant *Andrographis paniculata*, have shown a wide range of biological activities, among them, anticancer activity. Previous studies from our laboratory showed that Andrographolide decreased PCa cell migration, decreased invasion, and increased cell apoptosis *in vitro*. We found that one of the mechanisms of Andrographolide is through a DNA damage response. Microarray analysis identified alterations in carbohydrate metabolism, mitochondrial and inflammatory response associated genes in mouse tumors treated with Andrographolide. The overall objectives are: (1) investigate the role of Andrographolide in metabolism and mitochondrial function, and (2) investigate the role of Andrographolide in inflammatory responses and DNA methylation.

#### 3. Molecular mechanisms of inflammation biomarkers that may determine prostate cancer recurrence

Prostate cancer (PCa) is the most commonly diagnosed noncutaneous

cancer, and the second leading cause of death in male patients in the USA. PCa is often treated with radical prostatectomy (RP). Even though it can provide positive results, 15±30% of the patients will suffer from biochemical recurrence (BCR) or elevated blood levels of prostate specific antigen (PSA). BCR often develops asymptotically within 10 years of treatment and can occur due to cells that have metastasized to other areas. Although BCR can be identified with elevated PSA levels, there are currently no reliable predictive biomarkers in the clinic that can be used to assess biochemical recurrence risk. The available biomarkers and (or) clinical information are insufficient to predict recurrence and metastasis. The early detection of potential metastatic or recurrent PCa using novel biomarkers can lead to proactive use of adjuvant therapeutic options and better patient outcomes. We study biomarkers that can predict BCR and their mechanisms of action using *in vitro* and *in vivo* models of prostate cancer.

## Research Support

U54 Full Project NIH/NCI (PI: Martinez-Ferrer)  
09/15/2019 – 09/14/2022

**Understanding and targeting of convergent immunosuppressive pathways and molecular signaling in HPV-positive and HPV-negative penile cancer.** The objectives of this project are: (1) Eradicate mouse penile cancer by combining targeted therapy and immunotherapy, (2) Identify the immunologic profiles associated with HPV infection in human penile cancer to optimize therapy, and (3) Validate and target both Estrogen and Notch signaling in HPV<sup>+</sup> penile cancer.

Role: Principal Investigator

U54 Pilot Project NIH/NCI (PI: Martinez-Ferrer)  
09/01/2016 – 08/31/2019

**Molecular Pathways in Penile Cancer.** The objectives of this project are: (1) To investigate the molecular alterations and efficacy of combination therapy in mouse models, and (2) To identify HPV-specific gene expression pattern and integrate human data with mouse models.

Role: Principal Investigator

RCMI #8G12MD007600 (PI: Martinez-Ferrer)  
08/01/2014 – 07/31/2016

**BCAT2 and BAT1 biomarkers as prognosis tools of prostate cancer.** The objective of this project is to characterize the function of BCAT2 and BAT1 in defined models of prostate cancer. This proposal tests the hypothesis that BCAT2 and BAT1, predictors of prostate cancer biochemical recurrence, regulate metastatic progression of the cancer.

Role: Principal Investigator

K01 CA140711-01 (PI: Martinez-Ferrer)

09/01/2009 – 08/30/2015

**Inflammatory Mediators of Prostate Cancer Metastasis and Responses to Curcumin.** The goal of this project is to understand the biologic functions of CX3CL1, IL-15, and CCL4 as biomarkers for predicting biochemical recurrence in patients. The early determination for potential metastatic prostate cancer progression can enable appropriate treatment and save patients who would eventually die from recurrence of prostate cancer.

Role: Principal Investigator

Institutional Funds (PI: Martinez-Ferrer) 2010-Present

**University of Puerto Rico Comprehensive Cancer Center**

## Publications

Chahoud J, Gleber-Netto FO, McCormick BZ, Rao P, Lu X, Guo M, Morgan MB, Chu RA, **Martinez-Ferrer M**, Eterovic AK, Pickering CR, Pettaway CA. 2021. Whole Exome Sequencing in Penile Squamous Cell Carcinoma Uncovers Novel Prognostic Categorization and Drug Targets Similar to Head and Neck Squamous Cell Carcinoma. Clin Cancer Res. Jan 13: clincanres.4004.2020. doi: 10.1158/1078-0432.CCR-20-4004. PMID: 33441293.

Huang T, Cheng X, Chahoud J, Sarhan A, Tamboli P, Rao P, Guo M, Manyam, Zhang L, Xiang Y, Han L, Shang X, Deng P, Luo Y, Lu X, Feng S, **Martinez-Ferrer M**, Wang YA, DePinho RA, Pettaway CA, Lu X. 2020. Effective Combinatorial Immunotherapy for Penile Squamous Cell Carcinoma. Nature Communications. **11**, 2124. <https://doi.org/10.1038/s41467-020-15980-9>

Ocasio-Malavé C, Donate MJ, Sánchez MM, Sosa-Rivera JM, Mooney JW, Pereles-De León TA, Carballeira NM, Zayas B, Vélez-Gerena CE, **Martinez-Ferrer M**, Sanabria-Ríos DJ. 2019. Synthesis Of Novel 4Boc-Piperidone Chalcones And Evaluation Of Their Cytotoxic Activity Against Highly Metastatic Cancer Cells. Bioorganic & Medicinal Chemistry Letters, 126760, ISSN 0960-894X, <https://doi.org/10.1016/j.bmcl.2019.126760>.

Forestier-Roman I, Lopez-Rivas A, Sanchez-Vazquez M, Rohena-Rivera K, Nieves-Burgos G, Ortiz-Zuazaga H, Torres-Ramos C, **Martinez-Ferrer M**. 2019. Andrographolide induces DNA damage in prostate cancer cells. Oncotarget. Oncotarget. 10: 1085-1101. <https://doi.org/10.18632/oncotarget.26628>.

Godoy-Vitorino F, Ortiz-Morales G, Romaguera J, Sanchez MM, **Martinez-Ferrer M**, Chorna N. 2018. Discriminating high-risk cervical Human Papilloma Virus infections with urinary biomarkers via non-

targeted GC-MS-based metabolomics. PLoS ONE. 13(12): e0209936. <https://doi.org/10.1371/journal.pone.0209936>.

Godoy-Vitorino F, Romaguera J, Zhao C, Vargas-Robles D, Ortiz-Morales G, Vazquez Sanchez F, Sanchez-Vazquez MM, De la Garza-Casillas M, **Martinez-Ferrer M**, Robert White J, Bittinger K, Dominguez-Bello MG, Blaser MJ. 2018. Cervicovaginal fungi and bacteria associated with cervical intraepithelial neoplasia and high-risk Human Papillomavirus infections in a Hispanic population. Frontiers in Microbiology, section Systems Microbiology. 9:2533. doi:10.3389/fmicb.2018.02533.

Goldsmith Z, Coppess W, Irvine A, Yuan K, Barsh Y, Ritter M, McEwen M, Flores-Otero J, Garcia-Vargas A, **Martinez-Ferrer M**, Brennan R, Morales-Tirado V, Wilson M. 2018. Targeting the Platelet-Derived Growth Factor-beta Stimulatory Circuitry to Control Retinoblastoma Seeds. Investigative Ophthalmology & Visual Science (IOVS). 59(11):4486-4495. doi: 10.1167/iovs.18-24359.

Calderon-Ortiz ER, Bailon-Ruiz S, **Martinez-Ferrer M**, Rodriguez-Orengo JF, Perales-Perez O. 2018. Evaluation of ZnSe(S) Quantum Dots on the Cell Viability of Prostate Cancer Cells (PC3). Journal of Electronic Materials. 47:4361. doi.org/10.1007/s11664-0186309-3.

Juan-Rivera M, **Martinez-Ferrer M**. 2018. Integrin Inhibitors in Prostate Cancer. Cancers. 10, 44. doi:10.3390/cancers10020044.

González-Villegas J, Kan Y, Bakhmutov VI, García-Vargas A, **Martínez M**, Clearfield A, Colón JL. 2017. Poly(ethylene glycol)-modified zirconium phosphate nanoplatelets for improved doxorubicin delivery in prostate cancer. Inorganica Chimica Acta. 468, 270-279. doi.org/10.1016/j.ica.2017.05.057.

Ballista-Hernández J, **Martínez-Ferrer M**, Velez R, Climent C, Sanchez -Vazquez M, Torres C, Rodríguez-Muñoz A, Ayala-Peña S, Torres-Ramos C. 2017. Apurinic/aprimidinic Endonuclease 1-Dependent Repair of Azoxymethaneinduced Mitochondrial DNA Damage in Mouse Colonic Crypts. Molecular Cancer Research. 15(7), 831-841. doi: 10.1158/1541-7786.MCR-16-0218.

Rohena-Rivera K, Sánchez-Vázquez MM, Aponte-Colón DA, Forestier-Román IS, Quintero-Aguiló ME, **Martínez-Ferrer M**. 2017. IL-15 regulates migration, invasion, angiogenesis, and genes associated with lipid metabolism and inflammation in prostate cancer. Plos One. 12(4). doi: 10.1371/journal.pone.0172786.

Rohena-Rivera K, Sánchez-Vázquez MM, Aponte-Colón DA, Forestier-Román IS, Quintero-Aguiló ME, **Martínez-Ferrer M**. 2016. CCL-4 Enhances Prostate Cancer Migration and Invasion by

Modulating Integrin Expression. International Journal of Clinical and Experimental Medicine. 9(3):5426-5438.

Castillo-Pichardo L, Humphries-Bickley T, De La Parra C, Forestier I, **Martinez-Ferrer M**, Hernandez E, Vlaar C, Ferrer Y, Washington AV, Cubano LA, Rodriguez-Orengo J, Dharmawardhane S. 2014. The Rac Inhibitor EHOp-016 Inhibits Mammary Tumor Growth and Metastasis in a Nude Mouse Model. *Translational Oncology*. 24;7(5):546-55. doi: 10.1016/j.tranon.2014.07.004.

Colon-López V, Quiñones-Avila V, Del Toro-Mejías LM, Reyes K, Rivera ME, Nieves K, Sánchez-Vazquez MM, **Martínez-Ferrer M**, Ortiz AP. 2014. Oral HPV infection in a clinic-based sample of Hispanic men. *BMC Oral Health*, 14(7): doi: 10.1186/1472-6831-14-7. doi: 10.1186/1472-6831-14-7.

Colón-López, V, Ortiz, AP, Soto-Salgado, M, Torres-Cintron M, Pettaway CA, Puras-Baez A, **Martínez-Ferrer M**, Suárez, E 2012. Penile cancer disparities in Puerto Rican men as compared to the United States population. *International Brazilian Journal of Urology*, 38(6): 728-38.

Stabler S, Koyama T, Zhao Z, **Martinez-Ferrer M**, Allen RH, Luka Z, Loukachevitch LV, Clark PE, Wagner C, Bhowmick NA. 2011. Serum methionine metabolites are risk factors for metastatic prostate cancer progression. *PLoS ONE*. 6(8). doi:10.1371/journal.pone.0022486.

Li X, **Martinez-Ferrer M**, Botta V, Uwamariya C, Banerjee J, Bhowmick NA. 2011. Epithelial Hic-5/ARA55 expression contributes to prostate tumorigenesis and castrate responsiveness. *Oncogene*, 30(2): 167-77. doi: 10.1038/onc.2010.400.

**Martínez-Ferrer M**, Afshar-Sherif AR, Uwamariya C, de Crombrugghe B, Davidson JM, Bhowmick NA. 2010. Dermal transforming growth factor- $\beta$  signaling mediates closure and contraction of skin wounds though a Wnt-dependent manner. *American Journal of Pathology*. 176(1):98-107. doi: 10.2353/ajpath.2010.090283.

Tanaka ST, **Martinez-Ferrer M**, Makari JH, Wills ML, Thomas JC, Adams MC, Brock JW, Pope JC, Bhowmick NA. 2009. Recruitment of Bone Marrow Derived Cells to the Bladder After Bladder Outlet Obstruction. *The Journal of Urology*. 182(4):1769-74. doi: 10.1016/j.juro.2009.02.081.

Blum DL, M'Koma A, Koyama T, Iturregui JM, **Martínez-Ferrer M**, Uwamariya C, Smith JA, Clark PE, Bhowmick NA. 2008. Cytokine markers predict biochemical recurrence of prostate cancer following prostatectomy. *Clinical Cancer Research*. 14(23): 7790-7797. doi: 10.1158/1078-0432.CCR-08-1716.

Starkman JS\*, **Martinez-Ferrer M\***, Iturregui JM, Uwamariya C, Dmochowski RR, Bhowmick NA. 2008. Nicotinic signaling ameliorates bladder inflammation induced by protamine sulfate or cyclophosphamide. *Journal of Urology*, 179(6): 2440-2446. doi.org/10.1016/j.juro.2008.01.082.

\*The first 2 authors contributed equally in the preparation of this manuscript.

**Martinez-Ferrer M**, Iturregui JM, Uwamariya C, Starkman J, Sharif-Afshar AR, Suzuki K, Visedsindh W, Matusik R, Dmochowski RR, Bhowmick NA. 2008. Role of nicotinic and estrogen signaling during experimental acute and chronic bladder inflammation. *American Journal of Pathology*. 172(1): 59-67. doi:10.2353/ajpath.2008.070529.

**Martínez-Ferrer M**, Verghese M., Walker L.T., Chawan C.B., Shakelford L. 2006. Lycopene reduces azoxymethane induced colon tumors in Fisher 344 rats. *Nutrition Research*. 26(2): 84-91. doi.org/10.1016/j.nutres.2006.01.002.

**Martínez-Ferrer M**, Harper C. 2004. Reduction of Microbial Growth and Improvement of Storage Quality in Fresh-Cut Pineapple After Methyl Jasmonate Treatment. *Journal of Food Quality*. 28 (2005) 3-12. doi.10.1111/j.1745-4557.2005.00007.x.

**Martínez-Ferrer M**, Harper C., Pérez-Muñoz F., Chaparro M. 2002. Modified atmosphere packaging of minimally processed mango and pineapple fruits. *Journal of Food Science*. 67(8): 3365-3371. doi.org/10.1111/j.1365-2621.2002.tb09592.x.

## Selected Recent Presentations

Sánchez-Vázquez, M.; Reyes-Melendez A.C.; Marcos-Martínez M.J.; Ortiz-Zuazaga H. Perez-Santiago J.; Puras-Baez A.; Lu X.; Pettaway C.; **Martínez-Ferrer M**. Identification of transcriptomic profiles in HPV-positive and HPV-negative penile cancer of Puerto Rican men. International Papilloma Virus Conference (IPVC) 2020, Barcelona Spain, March 24, 2020 (Postpone to July 2020).

Garcia-Vargas AM, Viquez O, Roque-Reyes Y, Sánchez-Vázquez M, **Martínez-Ferrer M**. Aileen. BAT1 Alters Migration, Invasion and Pro-Inflammatory Cytokines in Prostate Cancer. Experimental Biology 2020, April 4-7, 2020, San Diego, California. (The meeting was cancelled due to COVID-19 pandemic).

Sosa-Rivera J, López-Rivas A, Arroyo D, Roque-Reyes Y, Sánchez-Vázquez MM, Torres-Ramos CA, **Martínez-Ferrer M**. Andrographolide induces metabolic changes and suppresses mitochondrial activity in prostate cancer, AACR 2020, April 24-29, 2020. (The meeting was postpone due to COVID-19 pandemic, we will participate in the poster virtual meeting on Monday Jun 22, 2020).

Reyes-Melendez A.C.; Sánchez-Vázquez, M.; Reyes-Melendez A.C.; Marcos-Martínez M.J.; Ortiz-Zuazaga H. Perez-Santiago J.; Puras-Baez A.; Lu X.; Pettaway C.; **Martínez-Ferrer M.** Identification of transcriptomic profiles in HPV-positive and HPV-negative penile cancer of Puerto Rican men. Annual Research and Education Forum, at University of Puerto Rico-MSC, San Juan, PR, April 2020.

Garcia-Vargas AM, Viquez O, Roque-Reyes Y, Sánchez-Vázquez M, **Martínez-Ferrer M.** Aileen. BAT1 Alters Migration, Invasion and Pro-Inflammatory Cytokines in Prostate Cancer. Annual Research and Education Forum, at University of Puerto Rico-MSC, San Juan, PR, April 2020.

Sosa-Rivera J, López-Rivas A, Arroyo D, Roque-Reyes Y, Sánchez-Vázquez MM, Torres-Ramos CA, **Martínez-Ferrer M.** Andrographolide induces metabolic changes and suppresses mitochondrial activity in prostate cancer, AACR 2020, Annual Research and Education Forum, at University of Puerto Rico-MSC, San Juan, PR, April 2020.

Lopez-Rivas A, Forestier-Roman I, Sánchez-Vázquez MM, Zuazaga-Colón H, Torres- Ramos C, **Martínez-Ferrer M.** Andrographolide Induces a DNA Damage Response in Prostate Cancer via DNA Double Strand Breaks. 2018 SBUR Annual Meeting, Rancho Mirage, CA.

Garcia-Vargas AM, Rohena-Rivera K, Sánchez-Vázquez MM, **Martínez-Ferrer M.** 2018. Studying the Role of BAT-1 in Prostate Cancer. 2018 AACR Annual Meeting, Chicago, IL.

Maylein C. Juan-Rivera, Maria M. Sánchez-Vázquez, Gamalier Maldonado, Geovanny Ruíz, Noralejandra Vázquez, Christian Vélez, Beatriz Zayas, Carlos Cabrera, **Magaly Martínez-Ferrer**, David Sanabria-Ríos. Preparation of curcumin analog nanoparticles and determination of their anticancer activity in prostate cancer. 38th Annual Research and Education Forum, at University of Puerto Rico-MSC, San Juan, PR, April 2018.

Metsiel Donate, Maria Sanchez, Joseph Mooney, **Magaly Martinez Ferrer**, David Sanabria. 2017. Anti-cancer Activity Of Novel Chalcones Against Highly- Metastatic Prostate Cancer Cells. Society for Basic Urologic Research Meeting, Tampa, FL.

Velez-Rodriguez V, Sanchez-Vazquez M, Fenollal G, Hernandez E, Vlaar C, **Martinez-Ferrer M.** Novel Ehop016 derivatives inhibit proliferation and migration in prostate cancer. Annual Convention of the College of Pharmacists of Puerto Rico, El Conquistador Waldorf Astoria Resort, Fajardo, PR, August 2017.

Maylein C. Juan-Rivera, Geovanny Ruíz, Maria M. Sánchez-Vázquez, Gamalier Maldonado, Noralejandra Vázquez, Christian

Vélez, Beatriz Zayas, Carlos Cabrera, **Magaly Martínez-Ferrer**, David Sanabria-Ríos. 2017. Preparation of curcumin analog nanoparticles and determination of their anticancer activity in prostate cancer. PR-INBRE & COBRE Symposium, San Juan, PR.

Forestier-Roman I, Sánchez-Vázquez MM, Rohena-Rivera K, Zuazaga-Colón H, Torres- Ramos C, **Martínez-Ferrer M**. 2017. Microarray and Pathway Analysis of Prostate Cancer Tumors Treated with Andrographolide. 37th Annual Research and Education Forum, University of Puerto Rico-MSC, San Juan, PR.

Maylein C. Juan-Rivera, Geovanny Ruíz, Maria M. Sánchez-Vázquez, Gamalier Maldonado, Noralejandra Vázquez, Christian Vélez, Beatriz Zayas, Carlos Cabrera, **Magaly Martínez-Ferrer**, David Sanabria-Ríos. 2017. Preparation of curcumin analog nanoparticles and determination of their anticancer activity in prostate cancer. AACR Anual Meeting, Washington, DC. (**Juan-Rivera won INBRE travel award**).

Forestier-Roman I, Sánchez-Vázquez MM, Rohena-Rivera K, Ortiz-Zuazaga H, Torres- Ramos C, **Martínez-Ferrer M**. 2017. Microarray and Pathway Analysis of Prostate Cancer Tumors Treated with Andrographolide. Experimental Biology, McCormick Place, Chicago, IL. (**Forestier-Roman won EB travel award**).

Rodriguez-Hilario A, Romaguera J, EgléePérez M, Ortiz G, Vargas-Robles G, de la Garza M, Lugo A, **Martínez-Ferrer M**, Ortiz-Martínez AP, Guerrero-Preston R, Chorna N, Dominguez-Bello N, Forney LJ, Blaser MJ, Godoy-Vitorino F. The cervico-vaginal microbiome diversity of Puerto Ricans correlates with Human Papillomavirus infections. 2017. Keystone Symposia - Viral Immunity: Mechanisms and Consequences, Santa Fe, New Mexico.

Sánchez-Vázquez M, Rohena K, Pérez-Ruiz CM, Puras-Baez A, Cadilla C, **Martínez-Ferrer M**. Gene expression analysis of HPV negative and HPV positive penile cancer. 2016. American Association for Cancer Research (AACR) Annual Meeting, New Orleans, LA.

Rohena-Rivera K, Aponte-Colón D, Sánchez-Vázquez M; Cadilla C, **Martínez-Ferrer M**. Macrophage inflammatory protein-1 $\beta$  and Interleukin 15 Modulate Gene Expression Patterns Associated with Prostate Cancer Progression. 2016. American Association for Cancer Research (AACR) Annual Meeting, New Orleans, LA.

Rohena-Rivera K, Sánchez-Vázquez MM, Aponte-Colón DA, Forestier-Román IS, Quintero-Aguiló M, **Martínez-Ferrer M**. IL-15 decreases migration, invasion, angiogenesis and MMP expression in a model of prostate cancer. 2015. Society for Basic Urological Research

(SBUR) Fall Symposium, Fort Lauderdale, FL. **(Rohena-Rivera K won SBUR travel award).**

## Selected Invited Presentations

Martinez-Ferrer, M. Invited Speaker. Understanding and targeting of convergent immunosuppressive pathways and molecular signaling in HPV-positive and HPV-negative penile cancer. Puerto Rico Outreach Program. Facebook Live. December 14, 2020.

Martinez-Ferrer, M. Invited Speaker. Molecular Mechanisms of Penile Cancer, University of New Hampshire. Department of Molecular, Cellular and Biomedical Sciences, University of New Hampshire, Durham, NH. September 2018.

Martinez-Ferrer, M. Invited Speaker. CCL4 Modulates Prostate Cancer Progression. Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN. June 2016.

Martinez-Ferrer, M. Invited Speaker. Differential Expression of Macrophage Inflammatory Protein 1 $\beta$  (CCL4) Modulates Prostate Cancer Progression. Frontiers in Stem Cells in Cancer Advanced Training Course at Ponce Health Sciences University, Ponce, PR.

Martinez-Ferrer, M. Invited Speaker. Predictors of Prostate Cancer Recurrence. University of Puerto Rico at Rio Piedras, RISE & MARC Programs Seminars. April 2015.

Martinez-Ferrer, M. Invited Speaker. HPV and penile cancer in Puerto Rico. Department of Urologic Surgery, Vanderbilt University Medical Center. June 2014.

Martinez-Ferrer, M. Invited Speaker. Predictors of Prostate Cancer Recurrence. University of Puerto Rico at Humacao. January 2014.

Martinez-Ferrer, M. Invited speaker. Urological Cancer in Men: Prostate and Penile Cancer. University of Puerto Rico at Cayey. April 2013.

Martinez-Ferrer, M. Invited Speaker. Inflammatory Mediators of Prostate Cancer Metastasis. Puerto Rico Urological Association Annual Meeting, San Juan, PR, October 2, 2010.

## Media

El cáncer en los genitales masculinos en Puerto Rico. El Nuevo Dia. Sept 15, 2018.

Investigan por primera vez el cancer genital en los varones boricuas. Medicina y Salud Publica, Abril 2016.

Interview, Lab Research, TV Show “Jay y sus amigos”, November 2015.

Los estudios clinicos de hoy, la medicina del mañana – En la busqueda de nuevas soluciones a los problemas de cancer. El Nuevo Dia. Oct 14, 2010, Supplement Page 2.

Lo que usted debe saber sobre el Cáncer de Próstata en Puerto Rico. Boletin Centro Comprensivo de Cancer. September 2010 #2.

A detectar a tiempo el Cancer de Prostata. El Vocero. Sept 6, 2010. Page 27.

Alerta contra el cancer de prostata. Mi Revista. Sep 2010, Page 31.

Prostate Cancer Awareness. Channel 6 – Contigo. September 2010.

Prostate Cancer Detection. Channel 13 – Entre ellas. September 2010.

Prostate Cancer Detection, Treatment and Research . WRTU-FM 89.7 &WRUO-FM 88.3 – Radio show Piedra Papel y Tijera. September 2010.

Prostate Cancer Research and Detection. Channel 4 – Noticentro 4, Noticias de Salud. September 2010.

Examen de vida para hombres. El Nuevo Dia. Aug 29, 2010, Section Vivir a Plenitud, Page 60.

Prometedora Investigacion – Investigadora puertorriqueña realiza un estudio sobre tres marcadores de cancer de prostata. El Nuevo Dia. June 8, 2010, Section Por Dentro, Page 4-5.

Prometedora Vacuna. El Nuevo Dia. May 30, 2010. Section Ciencia Salud, Page 6.