

Wilfredo F. Garcia-Beltran, M.D., Ph.D.

Clinician-Scientist Fellow at Ragon Institute of MGH, MIT, and Harvard

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EDUCATION & TRAINING

- 2021 – pres.** **Clinician-Scientist Fellow at Ragon Institute of MGH, MIT, and Harvard** • Cambridge, MA
- 2018 – 2022** **Residency in Clinical Pathology, Massachusetts General Hospital (MGH)** • Boston, MA
- 2020 – 2021** **Fellowship in Transfusion Medicine, Harvard Medical School** • Boston, MA
- 2010 – 2018** **M.D., Harvard Medical School (HST curriculum)** • Boston, MA
Magna Cum Laude; Honor's Thesis: "Innate immune reconstitution in the humanized bone marrow-liver-thymus (HuBLT) mouse model is essential for adaptive immune responses to HIV-1 infection and can be enhanced via AAV-mediated human cytokine delivery"
- 2012 – 2016** **Ph.D. in Immunology, Harvard University** • Cambridge, MA
Advisor: Marcus Altfeld, M.D., Ph.D.
Dissertation: "Discovery and characterization of the ligands of NK-cell receptors implicated in human diseases"
- 2006 – 2010** **B.S. in Chemistry, University of Puerto Rico-Río Piedras (UPRRP)** • San Juan, PR
Summa Cum Laude; Honor's Thesis: "The up-regulation of the $\alpha 7$ -nicotinic acetylcholine receptor by HIV-1 gp120: a novel mechanism in the pathogenesis of HIV-associated neurocognitive disorders"

RESEARCH EXPERIENCE

Post-Doctoral

- 2019 – 2020** **Mary Carrington Laboratory, Ragon Institute of MGH, MIT, and Harvard** • Cambridge, MA
- 2019** **Marcela Maus Laboratory, Massachusetts General Hospital Cancer Center** • Boston, MA
- 2016 – 2019** **Alejandro Balazs and Andrew Tager Laboratory, Ragon Institute of MGH, MIT, and Harvard** • Cambridge, MA
- 2018** **Marcus Altfeld Laboratory, Heinrich Pette Institute, Leibniz Institute for Experimental Virology** • Hamburg, Germany

Doctoral

- 2012 – 2016** **Marcus Altfeld Laboratory, Ragon Institute of MGH, MIT, and Harvard** • Cambridge, MA

Pre-Doctoral

- 2011 – 2012** **Marcus Altfeld Laboratory, Ragon Institute of MGH, MIT, and Harvard** • Cambridge, MA
- 2011** **David Page Laboratory, Whitehead Institute (MIT)** • Cambridge, MA
- 2011** **Darrell Irvine Laboratory, Koch Institute for Integrative Cancer Research at MIT** • Cambridge, MA
- 2010** **Hidde Ploegh Laboratory, Whitehead Institute (MIT)** • Cambridge, MA

Undergraduate

- 2007 – 2010** **José A. Lasalde-Dominicci Laboratory, Department of Biology, UPRRP** • San Juan, PR
- 2009** **Amy Keating Laboratory, Department of Biology, MIT** • Cambridge, MA
- 2008** **Jean M. Bidlack Laboratory, Department of Pharmacology and Physiology, University of Rochester School of Medicine and Dentistry** • Rochester, NY

AWARDS & FELLOWSHIPS

- 2021** **Ragon Early Independence Fellows Program – Clinician-Scientist Track** • Ragon Institute of MGH, MIT, and Harvard
- 2018** **Henry Asbury Christian Award** (for exceptional scholarship) • Harvard Medical School
- 2017** **Jeffrey Model Immunology Prize** (for outstanding graduate student & dissertation) • Harvard Immunology Program
- 2014** **NIH Ruth L. Kirschstein Pre-Doctoral Fellowship** (Diversity F31, AIDS-related)
- 2010** **Río Piedras Alumni Association Award** (for highest GPA in Natural Sciences College) • UPRRP
- 2010** **Natural Sciences College Award** (for academic excellence, professional integrity, & community service) • UPRRP
- 2010** **Chemists College Award** (for highest GPA in the Chemistry Department) • UPRRP

PATENTS

- 2019** **New therapy for treating graft-versus-host disease (EP3575320A1)**

TEACHING & MENTORING

Course Lecturer

- 2022** **Clinical Immunology, Harvard Immunology Program**
- 2021** **Immunology, University of Puerto Rico-Mayagüez**

Teaching Assistantships

- 2012 – 2017** **Mechanism of Microbial Pathogenesis, Harvard Medical School**
- 2013 – 2015** **Cellular and Molecular Immunology, Harvard Medical School**
- 2013** **Clinical Immunology, Harvard Immunology Program**
- 2013** **Molecular Cellular Biology, Harvard University**
- 2008 – 2010** **Organic Chemistry, UPRRP**
- 2009** **Analytical Chemistry, UPRRP**

Underrepresented Minority Mentorship Programs

- 2019** **Harvard Medical School Summer Honors Undergraduate Research Program (SHURP)**
- 2014 – 2015** **MIT Summer Research Program (MSRP)**
- 2012** **Pre-Matriculation Summer Program (PMSP)**
- 2012** **Harvard Minority Medical Alliance (HMMA)**
- 2011** **Harvard Medical School Health Professions Recruitment & Exposure Program (HPREP)**

ACTIVITIES

- 2019 – 2020** **Chief Resident in Clinical Pathology** • Massachusetts General Hospital • Boston, MA
- 2014 – 2019** **Crimson Care Collaborative** (student-faculty primary care clinic) • Cambridge Health Alliance, Cambridge, MA & MGH Chelsea, Chelsea, MA
- 2011 – 2012** **Latino Medical Student Association (LMSA)** • Harvard Medical School • Boston, MA
- 2011 – 2012** **HIV Counseling and Testing** • East Boston Neighborhood Health Clinic • East Boston, MA
- 2007 – 2010** **Research Initiative for Scientific Enhancement (RISE) program** • UPRRP • San Juan, PR
- 2007 – 2010** **Honors Studies Program** • UPRRP • San Juan, PR

LANGUAGES

Highly proficient in English (native speaker), Spanish (native speaker), and Brazilian Portuguese (highly fluent)

PRESENTATIONS

Invited Speaker Presentations

- 2021 **Coalición Científica de Puerto Rico (Scientific Coalition of Puerto Rico)** • Puerto Rico
2021 **Conferencia Magistral (Keynote Lecture) 2021** • Puerto Rico
2020 **Endocrine Grand Rounds, Massachusetts General Hospital** • Boston, MA
2020 **Medicine Grand Rounds, Harvard Medical School** • Boston, MA
2020 **Massachusetts Consortium for Pathogen Readiness (MassCPR)** • Boston, MA
2018 **xMAP Connect 2018** • Boston, MA
2018 **14th Bacteriology and Clinical Laboratory Internationalization Workshop, Universidad Colegio Mayor de Cundinamarca** • Bogotá, Colombia
2017 **Center for Autoimmune Disease Research (CREA), Universidad del Rosario** • Bogotá, Colombia
2015 **Nuffield Department of Medicine (NDM), University of Oxford** • Oxford, UK

Research Conferences

- 2018 **17th Meeting of the Society for Natural Immunity (NK2018)** (Poster) • San Antonio, TX
2016 **5th International Workshop on Humanized Mice (IWHM5)** (Poster) • Zurich, Switzerland
2015 **KIR Polymorphism Workshop** (Oral) • Winchester, UK
2015 **15th Meeting of the Society for Natural Immunity (NK2015)** (Poster) • Montebello, Québec, Canada
2014 **Keystone Symposia Conference – HIV Vaccines: Adaptive Immunity and Beyond (X3)** (Poster) • Banff, Alberta, Canada
2013 **Society of Hospitalist Medicine Conference (HM13)** (Poster) • National Harbor, MD
2009 **18th Annual Puerto Rico Neuroscience Conference** (Poster) • Ponce, PR
2009 **Annual Biomedical Research Conference for Minority Students (ABRCMS)** (Oral) • Phoenix, AZ
2009 **61st Southeastern Regional Meeting of the American Chemical Society (SERMACS)** (Poster) • San Juan, PR
2008 **17th Annual Puerto Rico Neuroscience Conference** (Poster) • San Juan, PR
2008 **Annual Biomedical Research Conference for Minority Students (ABRCMS)** (Poster) • Orlando, FL

PUBLICATIONS

- 1) **Garcia-Beltran WF**, St. Denis KJ, Hoelzemer A, Lam EC, Nitido AD, Sheehan ML, Berrios C, Onosereme O, Chang C, Hauser, BM, Feldman J, Gregory DJ, Poznansky MC, Schmidt AG, lafrate AJ, Naranbhai V, Balazs AB. mRNA-based COVID-19 vaccine boosters induce neutralizing immunity against SARS-CoV-2 Omicron variant. *Cell*. Jan 2022 (PMID: 34995482)
- 2) Klein K, Hölzemer Angelique, Wang T, Kim TE, Dugan HL, Jost S, Alfteld M*, **Garcia-Beltran WF***. A genome-wide CRISPR/Cas9-based screen identifies heparan sulfate proteoglycans as ligands of killer-cell immunoglobulin-like receptors. *Front Immunol*. Nov 2021; 12:798235 (PMID: 34917099)
- 3) Naranbhai V, **Garcia-Beltran WF**, Chang CC, Berrios Mairena C, Thierauf JC, Kirkpatrick G, Onozato ML, Cheng J, St. Denis KJ, Lam EC, Kaseke C, Tano-Menka R, Yang D, Pavlovic M, Yang W, Kui A, Miller TE, Astudillo MG, Cahill JE, Dighe AS, Gregory DJ, Poznansky MC, Gaiha GD, Balazs AB, lafrate AJ. Comparative immunogenicity and effectiveness of mRNA-1273, BNT162b, and Ad26.COVS2.S COVID-19 vaccines. *J Infect Dis*. Dec 2021 (PMID: 34888672)
- 4) **Garcia-Beltran WF***, Claiborne DT*, Maldini CR, Phelps MB, Vrbanac V, Karpel ME, Krupp KL, Power KA, Boutwell CL, Balazs AB, Tager AM, Alfteld M, Allen TM. Innate immune reconstitution in humanized bone

marrow-liver-thymus (HuBLT) mice governs adaptive cellular immune function and responses to HIV-1 infection. *Front Immunol.* May 2021; 12: 667393 (PMID: 34122425)

- 5) **Garcia-Beltran WF***, Lam EC*, St. Denis K*, Nitido AD, Garcia ZH, Hauser BM, Feldman J, Pavlovic MN, Gregory DJ, Poznansky MC, Sigal A, Schmidt AG, lafrate AJ, Naranbhai V, Balazs AB. Multiple SARS-CoV-2 variants escape neutralization by vaccine-induced humoral immunity. *Cell.* Apr 2021; 184(9): 2372-2383 (PMID: 33743213)
- 6) **Garcia-Beltran WF***, Lam EC*, Astudillo MG*, Yang D*, Miller TE, Feldman J, Hauser BM, Caradonna TM, Clayton KL, Nitido AD, Murali MR, Alter G, Charles RC, Dighe A, Branda JA, Lennerz JK, Lingwood D, Schmidt AG, lafrate AJ, Balazs AB. COVID-19 neutralizing antibodies predict disease severity and survival. *Cell.* Jan 2021; 184(2): 476-488 (PMID: 33412089)
- 7) Naranbhai V, Pernat C, Gavralidis A, St Denis KJ, Lam EC, Spring LM, Isakoff SJ, Farmer JR, Zubiri L, Hobbs GS, How J, Brunner AM, Fathi AT, Peterson JL, Sakhi M, Hambelton G, Denault EN, Mortensen LJ, Perriello LA, Bruno MN, Bertaux BY, Lawless AR, Jackson MA, Niehoff E, Barabell C, Nambu CN, Nakajima E, Reinicke T, Bowes C, Berrios-Mairena CJ, Ofoman O, Kirkpatrick GE, Thierauf JC, Reynolds K, Willers H, **Garcia-Beltran WF**, Dighe AS, Saff R, Blumenthal K, Sullivan RJ, Chen Y, Kim A, Bardia A, Balazs AB, lafrate AJ, Gainor JF. Immunogenicity and reactogenicity of SARS-CoV-2 vaccines in patient with cancer: the CANVAX cohort study. *J Clin Oncol.* Nov 2021 (PMID: 34752147)
- 8) Black MA, Shen G, Feng X, **Garcia-Beltran WF**, Feng Y, Vasudevaraja V, Allison D, Lin LH, Gindin T, Astudillo M, Yang D, Murali M, lafrate AJ, Jour G, Cotzia P, Snuderl M. Analytical performance of lateral flow immunoassay for SARS-CoV-2 exposure screening on venous and capillary blood samples. *J Immunol Methods.* Feb 2021; 489: 112909 (PMID: 33166549)
- 9) **Garcia-Beltran WF***, Miller TE*, Kirkpatrick G, Nixon A, Astudillo MG, Yang D, Mahanta LM, Murali M, Dighe A, Lennerz J, Thierauf J, Naranbhai V, lafrate AJ. Remote fingerstick blood collection for SARS-CoV-2 antibody testing. *Arch Pathol Lab Med.* Apr 2021; 145(4): 415-418 (PMID: 33264390)
- 10) Naranbhai V, Chang CC, **Garcia-Beltran WF**, Miller TE, Astudillo MG, Villalba JA, Yang D, Gelfand J, Bernstein BE, Feldman J, Hauser BM, Caradonna TM, Alter G, Murali MR, Jasarasia R, Quinlan J, Xerras DC, Betancourt JR, Louis DN, Schmidt AG, Lennerz J, Poznansky MC, lafrate AJ. High seroprevalence of anti-SARS-CoV-2 antibodies in Chelsea, Massachusetts. *J Infect Dis.* Dec 2020, 222(12): 1955-1959 (PMID: 32906151)
- 11) Iyer AS, Jones FK, Nodoushani A, Kelly M, Becker M, Slater D, Mills R, Teng E, Kamruzzaman M, **Garcia-Beltran WF**, Astudillo M, Yang D, Miller TE, Oliver E, Fischinger S, Atyeo C, lafrate AJ, Calderwood SB, Lauer SA, Yu J, Li Z, Feldman J, Hauser BM, Caradonna TM, Branda JA, Turbett SE, LaRocque RC, Mellon G, Barouch DH, Schmidt AG, Azman AS, Alter G, Ryan ET, Harris JB, Charles RC. Persistence and decay of human antibody responses to the receptor binding domain of SARS-CoV-2 spike protein in COVID-19 patients. *Science Immunology.* Oct 2020; 5(52): eabe0367 (PMID: 33033172)
- 12) Roy V, Fischinger S, Atyeo C, Slein M, Loos C, Balazs A, Luedemann C, Astudillo MG, Yang D, Wesemann DR, Charles R, lafrate AJ, Feldman J, Hauser B, Caradonna T, Miller TE, Murali MR, Baden L, Nilles E, Ryan E, Lauffenburger D, **Garcia Beltran W***, Alter G*. SARS-CoV-2-specific ELISA development. *J Immunol Methods.* Sep 2020; 484-485: 112832 (PMID: 32780998)
- 13) Turbett SE, Anahtar M, Dighe AS, **Garcia Beltran W**, Miller T, Scott H, Durbin SM, Bharadwaj M, Thomas J, Gogakos TS, Astudillo M, Lennerz J, Rosenberg ES, Branda JA. Evaluation of Three Commercial SARS-CoV-2 Serologic Assays and their Performance in Two-Test Algorithms. *J Clin Microbiol.* Dec 2020; 59(1): e01892-20 (PMID: 33020186)
- 14) Miller TE*, **Garcia Beltran WF***, Bard AZ*, Gogakos T*, Anahtar MN, Astudillo MG, Yang D, Thierauf J, Fisch AS, Mahowald GK, Fitzpatrick MJ, Nardi V, Feldman J, Hauser BM, Caradonna TM, Marble HD, Ritterhouse LL, Turbett SE, Batten J, Georgantas NZ, Alter G, Schmidt AG, Harris JB, Gelfand JA, Poznansky MC, Bernstein BE,

- Louis DN, Dighe A, Charles RC, Ryan ET, Branda JA, Pierce VM, Murali MR, Iafrate AJ, Rosenberg ES, Lennerz JK. Clinical sensitivity and interpretation of PCR and serological COVID-19 diagnostics for patients presenting to the hospital. *FASEB J.* Oct 2020; 34(10):13877-13884 (PMID: 32856766)
- 15) Whitman JD, Hiatt J, Mowery CT, Shy BR, Yu R, Yamamoto TN, Rathore U, Goldgof GM, Whitty C, Woo JM, Gallman AE, Miller TE, Levine AG, Nguyen DN, Bapat SP, Balcerek J, Bylsma SA, Lyons AM, Li S, Wong AW, Gillis-Buck EM, Steinhart ZB, Lee Y, Apathy R, Lipke MJ, Smith JA, Zheng T, Boothby IC, Isaza E, Chan J, Acenas DD, Lee J, Macrae TA, Kyaw TS, Wu D, Ng DL, Gu W, York VA, Eskandarian HA, Callaway PC, Warriar L, Moreno ME, Levan J, Torres L, Farrington LA, Loudermilk RP, Koshal K, Zorn KC, **Garcia-Beltran WF**, Yang D, Astudillo MG, Bernstein BE, Gelfand JA, Ryan ET, Charles RC, Iafrate AJ, Lennerz JK, Miller S, Chiu CY, Stramer SL, Wilson MR, Manglik A, Ye CJ, Krogan NJ, Anderson MS, Cyster JG, Ernst JD, Wu AHB, Lynch KL, Bern C, Hsu PD, Marson A. Evaluation of SARS-CoV-2 serology assays reveals a range of test performance. *Nature Biotechnol.* Oct 2020, 38(10): 1174-1183 (PMID: 32855547)
- 16) Bashirova AA, Viard M, Naranbhai V, Grifoni A, **Garcia-Beltran W**, Akdag M, Yuki Y, Gao X, O'hUigin C, Raghavan M, Wolinsky S, Brea, JH, Duggal P, Martinson J, Michael NL, Kirk GD, Buchbinder SP, Haas D, Goedert JJ, Deeks SG, Fellay J, Walker B, Goulder P, Cresswell P, Elliott T, Sette A, Carlson J, Carrington M. HLA tapasin independence: broader peptide repertoire and HIV control. *PNAS.* Nov 2020; 117(45): 28232-28238 (PMID: 33097667)
- 17) Niehrs A, **Garcia-Beltran WF**, Norman PJ, Watson GM, Hölzemer A, Chapel A, Richert L, Pommerening-Röser A, Körner C, Ozawa M, Martrus G, Rossjohn J, Lee J-H, Berry R, Carrington M, Altfeld M. A subset of HLA-DP molecules serve as ligands for the natural cytotoxicity receptor NKp44. *Nature Immunol.* Sep 2019; 20(9): 1129-1137 (PMID: 31358998)
- 18) van Stigt Thans T, Akko JI, Niehrs A., **Garcia-Beltran WF**, Richert L, Stürzel CM, Ford CT, Li H, Ochsenbauer C, Kappes JC, Hahn BH, Kirchhoff F, Martrus G, Sauter D, Altfeld M, Hölzemer A. Primary HIV-1 strains use Nef to downregulate HLA-E surface expression. *J Virol.* Sep 2019; 93(20): e00719-19 (PMID: 31375574)
- 19) Klein K, Wang T, Lander ES, Altfeld M, **Garcia-Beltran WF**. Applying CRISPR-based genetic screens to identify drivers of tumor-cell sensitivity. *bioRxiv.* Jan 2019 (doi: <https://doi.org/10.1101/531962>)
- 20) Ziegler MC, Grañana FB, **Garcia-Beltran WF**, Schulze Zur Wiesch J, Hoffmann C, Rechten A, Lunemann S, Altfeld M. Stable Frequencies of HLA-C*03:04/Peptide-Binding KIR2DL2/3+ Natural Killer Cells Following Vaccination. *Front Immunol.* Oct 2018; 9: 2361 (PMID: 30386333)
- 21) Lunemann S, Schöbel A, Kah J, Fittje P, Hölzemer A, Langeneckert AE, Hess LU, Poch T, Martrus G, **Garcia-Beltran WF**, Körner C, Ziegler AE, Richert L, Oldhafer KJ, Schulze Zur Wiesch J, Schramm C, Dandri M, Herker E, Altfeld M. Interactions Between KIR3DS1 and HLA-F Activate Natural Killer Cells to Control HCV Replication in Cell Culture. *Gastroenterology.* Nov 2018; 155(5): 1366-1371 (PMID: 30031767)
- 22) Hölzemer A, **Garcia-Beltran WF**, Altfeld M. Natural killer cell interactions with classical and non-classical human leukocyte antigen class I in HIV-1 infection. *Front Immunol.* Nov 2017; 14(8): 1496 (PMID: 29184550)
- 23) Dulberger CL, McMurtrey CP, Hölzemer A, Neu KE, Liu V, Steinbach, AM, **Garcia-Beltran WF**, Sulak M, Jabri B, Lynch VJ, Altfeld M, Hildebrand WH, Adams EJ. Human leukocyte antigen F presents peptides and regulates immunity through interactions with NK cell receptors. *Immunity.* June 2017; 46(6): 1018-1029 (PMID: 28636952)
- 24) Chapel A, **Garcia-Beltran WF**, Hölzemer A, Ziegler M, Lunemann S, Martrus G, Altfeld M. Peptide-specific engagement of the activating NK cell receptor KIR2DS1. *Sci Rep.* May 2017; 7(1): 2414 (PMID: 28546555)
- 25) Park RJ, Wang T, Koundakjian D, Hultquist JF, Lamothe-Molina P, Monel B, Schumann K, Yu H, Krupczak KM, **Garcia-Beltran W**, Piechocka-Trocha A, Krogan NJ, Marson A, Sabatini DM, Lander ES, Hacohen N, Walker BD. A genome-wide CRISPR screen identifies a restricted set of HIV host dependency factors. *Nat Genet.* Feb 2017; 49(2): 193-203 (PMID: 27992415)

- 26) Martrus G, Niehrs A, Cornelis R, Rechten A, **García-Beltran W**, Lütgehetmann M, Hoffmann C, Altfeld M. Kinetics of HIV-1 latency reversal quantified on the single-cell level using a novel flow-based technique. *J Virol.* Sep 2016; 90(20): 9018-9028 (PMID: 27466424)
- 27) **Garcia-Beltran WF**, Hölzemer A, Martrus G, Chung AW, Pacheco Y, Simoneau CR, Rucevic M, Lamothe-Molina PA, Pertel T, Kim TE, Dugan H, Alter G, Dechanet-Merville J, Jost S, Carrington M, Altfeld M. Open conformers of HLA-F are high-affinity ligands of the activating NK-cell receptor KIR3DS1. *Nat Immunol.* Sep 2016; 17(9): 1067-1074 (PMID: 27455421)
- 28) Scully EP, Lockhart A, **Garcia-Beltran W**, Palmer CD, Musante C, Rosenberg E, Allen TM, Chang JJ, Bosch RJ, Altfeld M. Innate immune reconstitution with suppression of HIV-1. *JCI Insight.* Mar 2016; 1(3): e85433 (PMID: 27158667)
- 29) Lunemann S, Martrus G, Hölzemer A, Chapel A, Ziegler M, Körner C, **Garcia-Beltran W**, Carrington M, Wedemeyer H, Altfeld M. Sequence variations in HCV core-derived epitopes alter binding of KIR2DL3 to HLA-C*03:04 and modulate NK cell function. *J Hepatol.* Aug 2016; 65(2): 252-258 (PMID: 27057987)
- 30) **Garcia-Beltran WF***, Salzberger W*, Dugan H, Gubbala S, Simoneau C, Gressens SB, Jost S, Altfeld M. Influence of glycosylation inhibition on the binding of KIR3DL1 to HLA-B*57:01. *PLoS One.* Dec 2015; 10(12): e0145324 (PMID: 26680341)
- 31) Hoelzemer A*, Thobakgale CF*, Jimenez Cruz CA, **Garcia-Beltran WF**, Carlson JM, van Teijlingen N, Mann JK, Jaggernath M, Kang SG, Koerner C, Chung AW, Schafer J, Evans DT, Alter G, Walker BD, Goulder PJ, Carrington M, Hartmann P, Pertel T, Zhou R, Ndung'u T, Altfeld M. Selection of an HLA-C*03:04-restricted HIV-1 p24 Gag sequence variant is associated with viral escape from KIR2DL3+ natural killer cells: data from an observational cohort in South Africa. *PLoS Med.* Nov 2015; 12(11): e1001900 (PMID: 26575988)
- 32) van Teijlingen NH*, Hoelzemer A*, Körner C, **García-Beltrán WF**, Schaefer J, Fadda L, Suscovich T, Brander C, Carrington M, Evans D, van Baarle D, Altfeld M. Sequence variations in HIV-1 p24 Gag-derived epitopes can alter binding of KIR2DL2 to HLA-C*03:04 and modulate primary NK cell function. *AIDS.* June 2014; 28(10): 1399-1408 (PMID: 24785948)
- 33) Jost S, Moreno-Nieves U, **Garcia-Beltran W**, Rands K, Reardon J, Toth I, Piechocka-Trocha A, Altfeld M, Addo M. Dysregulated Tim-3 expression on natural killer cells is associated with increased galectin-9 levels in HIV-1 infection. *Retrovirology.* July 2013; 10(1): 74 (PMID: 23866914)
- 34) DeMuth PC, **García-Beltrán WF**, Lim Ai-Ling M, Hammond PT, Irvine DJ. Composite dissolving microneedles for coordinated control of antigen and adjuvant delivery kinetics in transcutaneous vaccination. *Adv Funct Mater.* Jan 2013; 23(2): 161-172 (PMID: 23503923)
- 35) Grajales-Reyes GE, Báez-Pagán CA, Zhu H, Grajales-Reyes JG, Delgado-Vélez M, **García-Beltrán WF**, Luciano CA, Quesada O, Ramírez R, Gómez CM, Lasalde-Dominicci JA. Transgenic mouse model reveals an unsuspected role of the acetylcholine receptor in statin-induced neuromuscular adverse drug reactions. *Pharmacogenomics J.* Aug 2013; 13(4): 362-368 (PMID: 22688219)
- 36) Cabán-Martínez AJ, **Beltrán WF**. Advancing medicine one research note at a time: the educational value in clinical case reports. *BMC Research Notes.* July 2012; 5: 293 (PMID: 22697904)
- 37) Ballester LY, Capó-Vélez CM, **García-Beltrán WF**, Ramos FM, Vázquez-Rosa E, Ríos R, Mercado JR, Meléndez RI, Lasalde-Dominicci JA. Up-regulation of the neuronal nicotinic receptor $\alpha 7$ by HIV glycoprotein 120: potential implications for HIV-associated neurocognitive disorders. *J Biol Chem.* Jan 2012; 287(5): 3079-3086 (PMID: 22084248)

* authors contributed equally

Updated: February 2022