

Andrea Ferreira-Gonzalez, PhD



Professor, Pathology
Director, Molecular Diagnostics Lab
Chair, Molecular Diagnostics Division
Department of Pathology
Virginia Commonwealth University 1994 - Present
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Education

Graduate Education

PhD, Microbiology/Immunology
Graduate School of Arts and Science George Washington University
Washington, DC, 1994

MS, Clinical Biochemistry
School of General Chemistry
National University of Cordoba
Cordoba, Argentina, 1985

Virginia Commonwealth University and Medical Center Appointments

Chair, Division Molecular Diagnostics
Professor of Pathology
Director Molecular Diagnostics Lab

Virginia Commonwealth University Service

2018-2019	VCU Genomics and Bioinformatics Task Force
2014-2015	VCU Faculty Senate Committee
2011-2015	VCU Promotion and Tenure Policy Review Committee
2010-2014	VCU School of Medicine, Faculty Grievance Committee, alternate
2009-present	Department of Pathology, Executive Committee
2004-present	Department of Pathology, Pathology Improvement Committee
2000-2015	VCU Internal Review Board

Professional Service

2015-present	Internationa Federation Clinical Chemistry Committee (IFCC) in Molecular Biology Curriculum Education
2015-present	Professional Relations Committee, Chair. Association for Molecular Pathology (AMP)
2015-2020	Economic Affairs Committee Member. Association for Molecular Pathology (AMP)
2019-2024	Virginia Genomics Advisory Committee. Virginia Department of Health (VDH)
2004-present	Molecular and Clinical Genetics Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, FDA
2014- present	Genomic Medicine Program Advisory Committee. US Department of Veterans Administration (VA)
2009-2018	Molecular Biology Education Committee. International Federation of Clinical Chemistry
2015-2017	Board of Directors. Association for Molecular Pathology (AMP)
2015-2017	Executive Committee. Association for Molecular Pathology (AMP)
2015-2017	Secretary Treasurer. Association for Molecular Pathology (AMP)

2001-2015	Professional Relations Committee, Chair. Association for Molecular Pathology (AMP)
2007-2010	Secretary's Advisory Committee on Genetics, Health and Society Genetic Testing Oversight Task Force. Chair, Advisory Committee to Secretary of HHS
2006-2009	Secretary's Advisory Committee on Genetics, Health and Society. Member, advisory committee to Secretary of HHS
2006-2009	Personalized Healthcare Workgroup. Member, advisory committee to Secretary of HHS
2007	President. Association for Molecular Pathology (AMP)
2005-2008	Clinical Laboratory Improvement Advisory Committee (CLIAC). Member advisory committee to Secretary of HHS
2005-2006	Annual Meeting Organizing Committee 2006, American Association for Clinical Chemistry
2004-2005	Molecular Pathology Division, Treasurer. American Association for Clinical Chemistry (AACC)
2002-2005	Molecular and Clinical Genetics Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, FDA. Consultant
2002-2005	Subcommittee in Sequencing Methods (MM-9). National Committee for Clinical Laboratory Standards (NCCLS)

Editorial Advisory Boards

Journal Molecular Diagnostics. Timothy O'Leary Ed in Chief, 2007-2016

Journal Clinical Laboratory Analysis. R. McPherson, Ed in Chief, 1998-present

Recent Invited Presentations

Real World Applications in Solid Tumor, Genetics, Infectious Disease, and Hematopathology disciplines. Association for Molecular Pathology Global Congress, Hong Kong May 2019

The molecular tumor board as an imperative for integrating blood-based cancer testing into clinical decision making. EuroMedLab Barcelona, Spain 2019

Quality Control in the era of Next Generation Sequencing. Annual meeting American Association of Clinical Chemistry. Anaheim, CA, US. August 2019

Precision Medicine: yesterday, today, and tomorrow. Annual meeting Brazilian Association of Laboratory Medicine. September 2019, Rio de Janeiro, Brazil

Non-Invasive Prenatal Testing and its clinical implications. The Best of American Association of Clinical Chemistry in the Middle East. Dubai, United Emirates. October 2019

Precision Medicine in clinical practice. The Best of American Association of Clinical Chemistry in the Middle East. Dubai, United Emirates. October 2019

Molecular Diagnostics- Advanced Workshop on Principles and Practices MDx. International Federation of Clinical Chemistry (IFCC), Kuala Lumpur, Malaysia, January 2020

Molecular Point of Care Testing in Developing Countries. 110th Annual meeting USCAP. Los Angeles, CA. February 28-March 4, 2020

Molecular Diagnostics- Workshop on Principles and Practices MDx. International Federation of Clinical Chemistry (IFCC). La Paz, Bolivia, March 2020

The Roadmap to Recognition of Molecular Professionals as Qualified Healthcare Professionals. Annual meeting Association for Molecular Pathology. November 2020

Quality Control in the era of Next Generation Sequencing. Annual meeting American Association of Clinical Chemistry. Online meeting, US. December 2020

Applications of Cell free DNA in clinical practice. Annual meeting American Association of Clinical Chemistry. Atlanta, GA July 2021

Solid Tumor Summit- Comprehensive genomic profiling or targeted NGS panels. Web summit, June 2021

Exome sequencing in Rare Genetic Disease. Qiagen webinar on demand- March 2021.

Quality Control in the era of Next Generation Sequencing. Annual meeting American Association of Clinical Chemistry. August 2022 Chicago IL

Molecular Diagnostics- Workshop on Principles and Practices MDx. International Federation of Clinical Chemistry (IFCC). Nelsevir, Turkey October 2022.

Molecular Diagnostics- Advanced Workshop on Principles and Practices MDx. International Federation of Clinical Chemistry (IFCC), Istanbul, Turkey November 29-December 5, 2022.

Selected Publications

Severe Graft-Versus-Host Disease Following Solid-Organ Transplant Confirmed by Chimerism Studies and Cytogenetic Analyses. Rafferty KA, Barrie ES, Turner SA, **Ferreira-Gonzalez A**, Jackson-Cook C, Paulraj P. *Exp Clin Transplant*. 2022 Nov;20(11):1031-1034. PMID: 35297330

Acute megakaryoblastic leukemia with trisomy 3 and CBFA2T3::GLIS2: A case report. Gillam J, Catic A, Paulraj P, Dalton J, Lai G, Jackson-Cook C, Turner S, **Ferreira-Gonzalez A**, Barrie E. *Genes Chromosomes Cancer*. 2022 Aug;61(8):491-496. PMID: 3529408

Zhou L, Zhang Y, Meads MB, Dai Y, Ning Y, Hu X, Li L, Sharma K, Nkwocha J, Parker R, Bui D, McCarter J, Kramer L, Purcell C, Sudalagunta PR, Canevarolo RR, Coelho Siqueira Silva MD, De Avila G, Alugubelli RR, Silva AS, Kmeiciak M, **Ferreira-Gonzalez A**, Shain KH, Grant S. IAP and HDAC inhibitors interact synergistically in myeloma cells through noncanonical

NF- κ B- and caspase-8- dependent mechanisms. *Blood Adv.* 2021 Oct 12;5(19):3776-3788.

Finlay-Schultz J, Jacobsen BM, Riley D, Paul KV, Turner S, **Ferreira-Gonzalez A**, Harrell JC, Kabos P, Sartorius. New generation breast cancer cell lines developed from patient-derived xenografts. *CA Breast Cancer Res.* 2020 Jun 23;22(1):68. doi: 10.1186/s13058-020-01300-y.PMID: 32576280.

Ferreira-Gonzalez, A. Plasma PIK3CA mutation testing in advanced breast cancer patients for personalized medicine: A value proposition. *J Applied Lab Medicine.* 2020, 5(5): 1076-1089.

Gupta G, Yakubu I, Bhati C, Zhang Y, Kang L, Patterson AJ, **Ferreira-Gonzalez A**, Kumar D, Moinuddin I, Kamal L, King A, Levy M, Sharma A, Cotterell A, Reichman T, Khan A, Kimball P, Stiltner DR, Baldecchi N, Brigle N, Gehr T, Sterling RK. Ultra-short Duration Direct Acting Anti-Viral Prophylaxis to Prevent Virus Transmission from Hepatitis C Viremic Donors to Hepatitis C Negative Kidney Transplant Recipients. *Am J Transplant.* 2020 Mar;20(3):739- 751.

Ferreira-Gonzalez, A. Plasma PIK3CA mutation testing in advanced breast cancer patients for personalized medicine: A value proposition. *J Appl Lab Med.* 2020 Sep 1;5(5):1076-1089.

Gupta G, Yakubu I, Bhati C, Zhang Y, Kang L, Patterson AJ, **Ferreira-Gonzalez A**, Kumar D, Moinuddin I, Kamal L, King A, Levy M, Sharma A, Cotterell A, Reichman T, Khan A, Kimball P, Stiltner DR, Baldecchi N, Brigle N, Gehr T, Sterling RK. Ultra- short Duration Direct Acting Anti-Viral Prophylaxis to Prevent Virus Transmission from Hepatitis C Viremic Donors to Hepatitis C Negative Kidney Transplant Recipients. *Am J Transplant.* 2020 Mar;20(3):739-751

Finlay-Schultz J, Jacobsen BM, Riley D, Paul KV, Turner S, **Ferreira-Gonzalez A**, Harrell JC, Kabos P, Sartorius CA. New generation breast cancer cell lines developed from patient-derived xenografts. *Breast Cancer Res.* 2020 Jun 23;22(1):68.

Lynch syndrome-associated ultra-hypermuted pediatric glioblastoma mimicking a constitutional mismatch repair deficiency syndrome. Yang C, Austin F, Richard H, Idowu M, Williamson V, Sabato F, **Ferreira-Gonzalez A**,

Turner SA. Cold Spring Harb Mol Case Stud. 2019 Oct 23;5(5). pii: a003863. doi: 10.1101/mcs.a003863. Print 2019 Oct.

Ferreira-Gonzalez A, Mardis ER. Precision oncogenomics. Cold Spring Harb Mol Case Stud. 2019 Apr 1;5(2). pii: a004150. doi: 10.1101/mcs.a004150.

Yan C, Turner SA, **Ferreira-Gonzalez A**. Lynch syndrome-associated ultra-hypermuted pediatric glioblastoma mimicking a constitutional mismatch repair deficiency syndrome. Cold Spring Harb Mol Case Stud. 2019 Oct 23;5(5). pii: a003863. doi: 10.1101/mcs.a003863. Print 2019 Oct. PMID:31604779.

Ferreira-Gonzalez A, Mardis ER. Precision oncogenomics. Cold Spring Harb Mol Case Stud. 2019 Apr 1;5(2).

Yan C, Turner SA, **Ferreira-Gonzalez A**. Lynch syndrome-associated ultra-hypermuted pediatric glioblastoma mimicking a constitutional mismatch repair deficiency syndrome. Cold Spring Harb Mol Case Stud. 2019 Oct 23;5(5).

Co-targeting BCL-2 and PI3K Induces BAX-Dependent Mitochondrial Apoptosis in AML Cells. Rahmani M, Nkwocha J, Hawkins E, Pei X, Parker RE, Kmiecik M, Levenson JD, Sampath D, **Ferreira-Gonzalez A**, Grant S. Cancer Res. 2018 Jun 1;78(11):3075-3086.

Co-targeting BCL-2 and PI3K Induces BAX-Dependent Mitochondrial Apoptosis in AML Cells. Rahmani M, Nkwocha J, Hawkins E, Pei X, Parker RE, Kmiecik M, Levenson JD, Sampath D, **Ferreira-Gonzalez A**, Grant S. Cancer Res. 2018 Jun 1;78(11):3075-3086.

Development and Validation of Targeted Next-Generation Sequencing Panels for Detection of Germline Variants in Inherited Diseases. Santani A, Murrell J, Funke B, Yu Z, Hegde M, Mao R, **Ferreira-Gonzalez A**, Voelkerding KV, Weck KE. Arch Pathol Lab Med. 2017 Jun;141(6):787-797.

Development and Validation of Clinical Whole-Exome and Whole-Genome Sequencing for Detection of Germline Variants in Inherited Disease. Hegde M, Santani A, Mao R, **Ferreira-Gonzalez A**, Weck KE, Voelkerding KV. Arch Pathol Lab Med. 2017 Jun;141(6):798-805.

Santani A, Murrell J, Funke B, Yu Z, Hegde M, Mao R, **Ferreira-Gonzalez A**, Voelkerding KV, Weck KE. Development and Validation of Targeted Next-Generation Sequencing Panels for Detection of Germline Variants in Inherited Diseases. Arch Pathol Lab Med. 2017 Jun;141(6):787-797.

Development and Validation of Targeted Next-Generation Sequencing Panels for Detection of Germline Variants in Inherited Diseases. Santani A, Murrell J, Funke B, Yu Z, Hegde M, Mao R, **Ferreira-Gonzalez A**, Voelkerding KV, Weck KE. Arch Pathol Lab Med. 2017 Jun;141(6):787-797.

Zhou L, Chen S, Zhang Y, Kmiecik M, Leng Y, Li L, Lin H, Rizzo KA, Dumur CI, **Ferreira-Gonzalez A**, Rahmani M, Povirk L, Chalasani S, Berger AJ, Dai Y, Grant S. The NAE inhibitor pevonedistat interacts with the HDAC inhibitor belinostat to target AML cells by disrupting the DDR. Blood. 2016 May 5;127(18):2219-30.

Zhou L, Zhang Y, Chen S, Kmiecik M, Leng Y, Lin H, Rizzo KA, Dumur CI, **Ferreira-Gonzalez A**, Dai Y, Grant S. A regimen combining the Wee1 inhibitor AZD1775 with HDAC inhibitors targets human acute myeloid leukemia cells harboring various genetic mutations. Leukemia. 2015 Apr;29(4):807-18.

Lyon E, Schrijver I, Weck KE, **Ferreira-Gonzalez A**, Richards CS, Palomaki GE. Molecular genetic testing for cystic fibrosis: laboratory performance on the College of American Pathologists external proficiency surveys; CAP/ACMG Biochemical and Molecular Genetics Committee. Genet Med. 2015 Mar;17(3):219-25.

Abdul Razzaq B, Scalora A, Koparde VN, Meier J, Mahmood M, Salman S, Jameson-Lee M, Serrano MG, Sheth N, Voelkner M, Kobulnicky DJ, Roberts CH, **Ferreira-Gonzalez A**, Manjili MH, Buck G, Neale MC, Toor AA. Dynamical System Modeling to Simulate Donor T Cell Response to Whole Exome Sequencing-Derived Recipient Peptides Demonstrates Different Alloreactivity Potential in HLA-Matched and-Mismatched Donor-Recipient Pairs. Biol Blood Marrow Transplant. 2015 Dec 11.

Ferreira-Gonzalez A, Emmadi R, Day SP, Klees RF, Leib JR, Lyon E, Nowak JA, Pratt VM, Williams MS, Klein RD. Revisiting oversight and regulation of molecular-based laboratory-developed tests: a position statement of the association for molecular pathology. J Mol Diagn. 2014 Jan;16(1):3-6.

Lianidou E, Ahmad-Nejad P, **Ferreira-Gonzalez A**, Izuhara K, Cremonesi L,

Schroeder ME, Richter K, Ferrari M, Neumaier M Advancing the education in molecular diagnostics: the IFCC-Initiative "Clinical Molecular Biology Curriculum" (C-CMBC); a ten-year experience. Clin Chim Acta. 2014 Sep 25;436:5-8.

Sampson JK, Sheth NU, Koparde VN, Scalora AF, Serrano MG, Lee V, Roberts CH, Jameson-Lee M, **Ferreira-Gonzalez A**, Manjili MH, Buck GA, Neale MC, Toor AA. Whole exome sequencing to estimate alleloreactivity potential between donors and recipients in stem cell transplantation. Br J Haematol. 2014 Aug;166(4):566-70.

Rahmani M, Aust MM, Hawkins E, Parker RE, Ross M, Kmiecik M, Reshko LB, Rizzo KA, Dumur CI, **Ferreira-Gonzalez A**, Grant S. Co-administration of the mTORC1/TORC2 inhibitor INK128 and the Bcl-2/Bcl-xL antagonist ABT-737 kills human myeloid leukemia cells through Mcl-1 down-regulation and AKT inactivation. Haematologica. 2015 Dec; 100(12):1553-63.

Dumur CI, Almenara JA, Powers CN, **Ferreira-Gonzalez A**. Quality control material for the detection of somatic mutations in fixed clinical specimens by next-generation sequencing. Diagn Pathol. 2015 Sep 17; 10:169.