ANA MORALES, MS, CGC
658 Center Street, Danville, PA 17822-4400
786-271-3820 * amorales4@geisinger.edu

GENETIC COUNSELING CERTIFICATION AND LICENSING

AMERICAN BOARD OF GENETIC COUNSELING (2007; recertified 2017, 2023)

- Diplomate number: 12528

STATE MEDICAL BOARD OF OHIO (2013-present)

- License type: Genetic Counselor, Credential number 70.000018

EDUCATION

GEORGE WASHINGTON UNIVERSITY
PhD Candidate, Translational Health Sciences (2022-present)
Dissertation Title: Development of a Guideline-Based Innovation to Support the Genetic Evaluation of Cardiomyopathy and Arrhythmia: An Exploratory Mixed Methods Study

BRANDEIS UNIVERSITY
MS, Genetic Counseling (2001)

- Dean's Scholarship, 1999-01

UNIVERSITY OF PUERTO RICO
BS, Biology (1998)

- Magna Cum Laude

WORK EXPERIENCE

GEISINGER HEALTH
Danville, PA

- *Associate Professor* - Department of Genomic Health (June 2024 - present)
    - Research: Principal or Co-Investigator of cardiovascular genetics and implementation science research studies (see grants section)
    - Education: Research Course Director, Geisinger Genetic Counseling Program (starting Fall 2025)

INVITAE (2019-2014)
San Francisco, CA

- *Medical Affairs Director - Partnerships, Rare Disease* (January 2023 - April 2014)

    - Clinical Direction: Provide medical guidance to perform due diligence on potential and existing biopharmaceutical rare disease partnerships
    - Scientific Direction: Provide guidance on the design and execution of rare disease research collaborations
- *Clinical Program Manager, Cardiology, Neurology, Pediatrics* (September 2019-January 2023)
    - Research Portfolio Management and Clinical Expert Stakeholder: Provided clinical and study design input and ensured proper and timely execution of publications and external collaborations
    - Cardiovascular Genetics Expert Stakeholder: Collaborated with the Product and Digital Health Platform teams to develop the algorithm and launch strategy of a chatbot for cardiogenetics clinical support

THE OHIO STATE UNIVERSITY (2012-2019)
Columbus, OH

- *Clinical Associate Professor - Non Tenured Clinician Scholar Track (June 2016-September 2019)*
    - Research: Co-Investigator - Dilated Cardiomyopathy Research Project
    - Clinic Service: Cardiovascular Genetic and Genomic Medicine Clinic
    - Education: Graduate Faculty, Genetic Counseling Graduate Program
- *Clinical Assistant Professor-Non Tenured Clinician Scholar (July 2014-June 2016)*
    - Research: Co-Investigator - Dilated Cardiomyopathy Research Project
    - Clinic Service: Cardiovascular Genetic and Genomic Medicine Clinic
    - Education: Graduate Faculty, Genetic Counseling Graduate Program
- *Research Assistant Professor (July 2012-July 2014)*
    - Research: Co-Investigator - Dilated Cardiomyopathy Research Project

UNIVERSITY OF MIAMI MILLER SCHOOL OF MEDICINE (2006-2010; 2011-2012)
Miami, FL

- *Instructor, Cardiovascular Division (2011-2012)*
    - Research: Key Personnel - Dilated Cardiomyopathy Research Project
- *Genetic Counselor/Research Coordinator, Cardiovascular Division (2007-2010)*
    - Research: Key Personnel - Dilated Cardiomyopathy Research Project
    - Clinic Service: Cardiovascular Genetics Clinic
- *Genetic Counselor, Division of Human Genetics (2006-2007)*
    - Clinic Service: Pediatric and Metabolic Medical Genetics Clinic

GENZYME GENETICS (2010-2011)
Miami, FL

- *Prenatal Genetic Counselor*

HOSPITAL PEDIÁTRICO UNIVERSITARIO (2005)
San Juan, PR

- *Pediatric and Newborn Screening Genetic Counselor/Research Coordinator*

CHILDREN'S HOSPITAL BOSTON/HARVARD MEDICAL SCHOOL (2001-2004)
Boston, MA

- *Neuromuscular Genetics Genetic Counselor/Research Coordinator*

BRANDEIS UNIVERSITY (1998-1999)
Waltham, MA
- *Research Assistant: Molecular Neurogenetics of Courtship*

UNIVERSITY OF PUERTO RICO, Medical Sciences and Río Piedras Campus (1995-1998)
San Juan, PR
- *Research Assistant: Molecular Biology and Neurobiology*

TEACHING EXPERIENCE

GEISINGER COLLEGE OF HEALTH SCIENCES
- *Master's of Genetic Counseling Program (expecting first class in August 2025)*
    - Research Course Director – Five-semester didactic curriculum design, oversight, and delivery of course content through direct instruction or recruitment of guest speakers.
    - Admissions committee – evaluate applicant materials and participate in selection discussions.

THE OHIO STATE UNIVERSITY
Columbus, OH
- *Graduate Faculty, Genetic Counseling Graduate Program* (January 2014-September 2019)
    - Cardiovascular Genetics Course Director and Clinic Supervisor
    - 2019 O-H-I-Omics Genetic Counseling Mentorship Award
- *Ohio State University College of Pharmacy familial hypercholesterolemia guest lecture* (March 2018-September 2019)

UNIVERSITY OF MIAMI MILLER SCHOOL OF MEDICINE
Miami, FL
- *Molecular Basis of Life* (graduate course, first year medical students, 2006-2009): Mendelian Genetics, Pedigree Analysis, Principles of Cytogenetics, Clinical Cytogenetics, Quantitative Genetics, Genetics of Complex Disease, Prenatal Genetics.

PONCE SCHOOL OF MEDICINE
Miami, FL (teleconference)
- *Medical Genetics* (graduate course, first year medical students, 2006): Mendelian Genetics, Atypical Patterns of Inheritance, Pedigree Analysis, Principles of Cytogenetics, Clinical Cytogenetics, Quantitative Genetics, Genetics of Complex Disease, Prenatal Genetics.

GRANT SUPPORT

Identification Methods, Patient Activation, and Cascade Testing for FH: IMPACT-FH Renewal (August 2024-present)
Project Number: R01HL148246
Role: Principal Investigator

Collaborative Approach to Reach Everyone with Familial Hypercholesterolemia: CARE-FH (August 2024-present)
Project number: R33HL161775
Role: Co-Investigator

Real-Time Genetic Diagnosis at the Point of Care
Project number: 1R01HG011799
Role: Co-Investigator

Making Genomic Medicine Routine in a Rural Healthcare System
Project number: 1 U01HG013796-01
Role: Key Personnel

LEADERSHIP

Dilated Cardiomyopathy (DCM) Foundation (2025 - present)

- Provide strategic oversight to ensure that people with DCM and their family members have access to support, information, and education about genetic testing.

Clinical and Laboratory Standards Institute (2023-present)

- Chair, MM29 Standard - Appointed to lead a group of clinical and laboratory experts to produce a consensus document focused on effective strategies for communication and consultative channels with clinicians to support genetic testing utilization management

Clinical Sequencing Evidence-generating Research (CSER) Advisory Panel (2018-2022)

- Provided expert, high-level input to National Human Genome Research Institute Director, NIH staff, and CSER investigators regarding the progress and direction of the CSER consortium.

American Board of Genetic Counseling (2008-2022)

- Chair, Practice Analysis Committee (2022)
- Secretary/Treasurer; Nominating Committee Liaison (2020)
- President (2019)
- Representative, Accreditation Council for Genetic Counseling Practice Based Competencies Revision Taskforce (2018)
- Elected Board Member (2017-2020)
- Certification Exam Committee (2011-2013; 2017-2018)
- Item Writer (2008-2010)

Heart Failure Society of America Program Committee (2016-2018)

- Evaluated educational session proposals and made recommendations for the selection of topics and speakers at the annual scientific meeting

ClinGen (2014-present)

- *Ancestry and Diversity Working Group (2022-present)*
- *Cardiovascular Domain Working Group (2014-present)*

- Cardiomyopathy Variant Curation Expert Panel - Member of a team of national and international experts developing and finalizing rules to adapt the ACMG variant classification guideline to use in genetic cardiomyopathy
- Cardiomyopathy Gene Curation Clinical Expert - Member of a team of national and international experts ensuring that genomic curators accurately interpret clinical data during the process of assigning validity of hypertrophic cardiomyopathy genes

National Society of Genetic Counselors (2010-present)

- *Expert Media Panel* (2016-present)
  - Cardiovascular and Spanish language expert
  - Collaborate with Public Relations firm by writing or reviewing genetic counseling content and providing media interviews
- *Chair: Cardiogenetic Conditions in Pregnancy, Cardiovascular SIG, NSGC (2013-2017)*
  - Led group of 13 genetic counselors in dissemination of knowledge and expertise in genetics management of women at-risk for the development of a cardiovascular phenotype during pregnancy. Accomplishments:
    - Educational Breakout Session accepted for the NSGC Annual Education Conference (2015)
    - Led development and publication of manuscript
- *Annual Education Conference Subcommittee, NSGC (2014-2017)*
- *Practice Guidelines Committee, NSGC (2014-2017; 2021-present)*
  - Hypertrophic Cardiomyopathy Practice Resource Liaison (2021-present)
  - Telegenetics Practice Guideline Liaison (2016-17): Presented idea, worked with NSGC members to develop a proposal, helped select authors, and provided guidance throughout the implementation process.
  - Practice Resources Workgroup (2016): Helped develop a process for Practice Resource documents.
  - External Guideline Endorsement Subcommittee (2015): Researched organizations endorsing external guidelines and co-authored the External Guideline Endorsement section of the Practice Guideline Manual.
- *Nominating Committee, NSGC (2012)*
- *Public Policy Committee, NSGC (2010-2012)*

ADMINISTRATIVE SERVICE

GEISINGER COLLEGE OF HEALTH SCIENCES RESEARCH APPOINTMENT AND PROMOTION SUBCOMMITTE

- *Review and recommend eligible candidates for promotion to Associate Professor or Professor (2024-present)*

THE OHIO STATE UNIVERSITY

- *Cancer Institutional Review Board, Alternate Member (2014-2015)*
- *Biomedical Institutional Review Board, Consultant (2014-2019)*

PUBLICATIONS

CHAPTERS IN EDITED BOOKS

1. *Heart Failure: A Case-based Approach* (2013) Morales Ana, Hershberger Ray E. Evaluation and Workup of a Patient with Familial Dilated Cardiomyopathy. In: Rahko P, ed.

FIRST AND SENIOR AUTHOR MANUSCRIPTS

1. Morales A, Jamison A, Hegele RA, Hemphill L, Gidding SS. A Personalized Medicine Approach is Best for Patients with Homozygous Familial Hypercholesterolemia. Medical Research Archives, [S.l.], v. 12, n. 12, dec. 2024. ISSN 2375-1924.

2. Morales A, Moretz C, Ren S, Smith E, Callis TE, Hall T, Hatchell KE, Nussbaum RL, Regalado E, Rojahn S, Vatta M, Esplin ED, Murillo J. Real-World Genetic Testing Utilization Among Patients With Cardiomyopathy. Circ Genom Precis Med. 2023 Dec 13:e004028. doi: 10.1161/CIRCGEN.122.004028. Epub ahead of print. PMID: 38088168.

3. Morales A, Goehringer J, Sanoudou D. Evolving Cardiovascular Genetic Counseling Needs in the Era of Precision Medicine. Front Cardiovasc Med. 2023 Jun 23;10:1161029. doi: 10.3389/fcvm.2023.1161029. PMID: 37424912; PMCID: PMC10325680.

4. Morales A, Ing A, Antolik C, Austin-Tse C, Baudhuin LM, Bronicki L, Cirino A, Hawley MH, Fietz M, Garcia J, Ho C, Ingles J, Jarinova O, Johnston T, Kelly MA, Kurtz CL, Lebo M, Macaya D, Mahanta L, Maleszewski J, Manrai AK, Murray M, Richard G, Semsarian C, Thomson KL, Winder T, Ware JS, Hershberger RE, Funke BH, Vatta M; ClinGen Cardiovascular Clinical Domain Working Group, Cardiomyopathy Variant Curation Expert Panel. Harmonizing the Collection of Clinical Data on Genetic Testing Requisition Forms to Enhance Variant Interpretation in Hypertrophic Cardiomyopathy (HCM): A Study from the ClinGen Cardiomyopathy Variant Curation Expert Panel. J Mol Diagn. 2021 Feb 22:S1525-1578(21)00042-8. doi: 10.1016/j.jmoldx.2021.01.014. PMID: 33631351.

5. Morales A, Kinnamon DD, Jordan E, Platt J, Vatta M, Dorschner MO, Starkey CA, Mead JO, Ai T, Burke W, Gastier-Foster J, Jarvik GP, Rehm HL, Nickerson DA, Hershberger RE; DCM Precision Medicine study of the DCM Consortium. Variant Interpretation for Dilated Cardiomyopathy: Refinement of the American College of Medical Genetics and Genomics/ClinGen Guidelines for the DCM Precision Medicine Study. Circ Genom Precis Med. 2020 Apr;13(2):e002480. doi: 10.1161/CIRCGEN.119.002480. Epub 2020 Mar 11. PMID: 32160020.

6. Nightingale BM, Hovick SR, Brock P, Callahan E, Jordan E, Roggenbuck J, Sturm AC, Morales A. Hypertrophic cardiomyopathy genetic test reports: A qualitative study of patient understanding of

uninformative genetic test results. J Genet Couns. 2019 Dec;28(6):1087-1097. doi: 10.1002/jgc4.1159. Epub 2019 Aug 13. PMID: 31408576.

7. Morales A, Hershberger RE. Variants of Uncertain Significance: Should We Revisit How They Are Evaluated and Disclosed? Circ Genom Precis Med. 2018 Jun;11(6):e002169. doi: 10.1161/CIRCGEN.118.002169. PMID: 29848615; PMCID: PMC5999032.

8. Morales A, Hershberger R. Clinical Application of Genetic Testing in Heart Failure. Curr Heart Fail Rep. 2017 Dec;14(6):543-553. doi: 10.1007/s11897-017-0366-4. PMID: 29063279; PMCID: PMC5806624.

9. Morales A, Allain DC, Arscott P, James E, MacCarrick G, Murray B, Tichnell C, Shikany AR, Spencer S, Fitzgerald-Butt SM, Kushner JD, Munn C, Smith E, Spoonamore KG, Tandri HS, Kay WA. At the Heart of the Pregnancy: What Prenatal and Cardiovascular Genetic Counselors Need to Know about Maternal Heart Disease. J Genet Couns. 2017 Aug;26(4):669-688. doi: 10.1007/s10897-017-0081-z. Epub 2017 Mar 10. Erratum in: J Genet Couns. 2017 May 4;: PMID: 28283918.

10. Morales A, Hershberger RE. The Rationale and Timing of Molecular Genetic Testing for Dilated Cardiomyopathy. Can J Cardiol. 2015 Nov;31(11):1309-12. doi: 10.1016/j.cjca.2015.06.034. Epub 2015 Jul 9. PMID: 26518443; PMCID: PMC5875986.

11. Morales A, Hershberger RE. Genetic evaluation of dilated cardiomyopathy. Curr Cardiol Rep. 2013 Jul;15(7):375. doi: 10.1007/s11886-013-0375-1. PMID: 23686784.

12. Morales A, Pinto JR, Siegfried JD, Li D, Norton N, Hofmeyer M, Vallin M, Morales AR, Potter JD, Hershberger RE. Late onset sporadic dilated cardiomyopathy caused by a cardiac troponin T mutation. Clin Transl Sci. 2010 Oct;3(5):219-26. doi: 10.1111/j.1752-8062.2010.00228.x. PMID: 20973921; PMCID: PMC2965560.

13. Morales A, Painter T, Li R, Siegfried JD, Li D, Norton N, Hershberger RE. Rare variant mutations in pregnancy-associated or peripartum cardiomyopathy. Circulation. 2010 May 25;121(20):2176-82. doi: 10.1161/CIRCULATIONAHA.109.931220. Epub 2010 May 10. PMID: 20458009; PMCID: PMC2900861.

    - *This manuscript was featured in the accompanying editorial, "Birthing the Genetics of Peripartum Cardiomyopathy," indicating its seminal importance in establishing the genetic basis for peripartum cardiomyopathy.*

14. Morales A, Wierenga A, Cuthbert C, Sacharow S, Jayakar P, Velazquez D, Loring J, Barbouth D. Expanded newborn screening in Puerto Rico and the US Virgin Islands: education and barriers assessment. Genet Med. 2009 Mar;11(3):169-75. doi: 10.1097/GIM.0b013e318193076f. PMID: 19367190.

- *This manuscript was funded by a South Eastern Regional Genetics Group grant, for which I was instrumental, contributing with both conceptualization and writing.*

15. Morales A, Cowan J, Dagua J, Hershberger RE. Family history: an essential tool for cardiovascular genetic medicine. Congest Heart Fail. 2008 Jan-Feb;14(1):37-45. doi: 10.1111/j.1751-7133.2008.08201.x. PMID: 18256568.

OTHER CO-AUTHORED PEER REVIEWED PUBLICATIONS

1. Vatta M, Regalado E, Parfenov M, Swartzlander D, Nagl A, Mannello M, Lewis R, Clemens D, Garcia J, Ellsworth RE, Morales A, Ting YL, Aradhya S. Analysis of *TTN* Truncating Variants in >74 000 Cases Reveals New Clinically Relevant Gene Regions. Circ Genom Precis Med. 2025 Feb 19:e004982. doi: 10.1161/CIRCGEN.124.004982. Epub ahead of print. PMID: 39968638.

2. Gohlke J, Lindqvist J, Hourani Z, Heintzman S, Tonino P, Elsheikh B, Morales A, Vatta M, Burghes A, Granzier H, Roggenbuck J. Pathomechanisms of Monoallelic variants in TTN causing skeletal muscle disease. Hum Mol Genet. 2024 Sep 15:ddae136. doi: 10.1093/hmg/ddae136. Epub ahead of print. PMID: 39277846.

3. Roggenbuck J, Morales A, Ellis CA, Dratch L, Stetler M, Tan CA, Bucknor B, Hatchell KE, Aradhya S, Esplin ED, Ting YL, Scherer SS. Diagnostic and clinical utility of comprehensive multigene panel testing for patients with neuropathy. J Peripher Nerv Syst. 2024 Aug 14. doi: 10.1111/jns.12651. Epub ahead of print. PMID: 39140136.

4. Harrington CN, Morales A, Bernstein JA, Calderwood L. Implications of Provider Specialty, Test Type, and Demographic Factors on Genetic Testing Outcomes for Patients with Autism Spectrum Disorder. J Autism Dev Disord. 2024 Jun 11. doi: 10.1007/s10803-024-06423-1. Epub ahead of print. PMID: 38858309.

5. Swartwood SM, Morales A, Hatchell KE, Moretz C, McKnight D, Demmer L, Chagnon S, Aradhya S, Esplin ED, Bonkowsky JL. Early Genetic Testing in Pediatric Epilepsy: Diagnostic and Cost Implications. Epilepsia Open. 2023 Dec 10. doi: 10.1002/epi4.12878. Epub ahead of print. PMID: 38071479.

6. McKnight D, Morales A, Hatchell KE, Bristow SL, Bonkowsky JL, Perry MS, Berg AT, Borlot F, Esplin ED, Moretz C, Angione K, Ríos-Pohl L, Nussbaum RL, Aradhya S; ELEVIATE Consortium. Genetic Testing to Inform Epilepsy Treatment Management From an International Study of Clinical Practice. JAMA Neurol. 2022 Oct 31:e223651. doi: 10.1001/jamaneurol.2022.3651. Epub ahead of print. PMID: 36315135; PMCID: PMC9623482.

7. Dellefave-Castillo LM, Cirino AL, Callis TE, Esplin ED, Garcia J, Hatchell KE, Johnson B, Morales A, Regalado E, Rojahn S, Vatta M, Nussbaum RL, McNally EM. Assessment of the Diagnostic Yield of Combined Cardiomyopathy and Arrhythmia Genetic Testing. JAMA Cardiol. 2022 Aug 10. doi: 10.1001/jamacardio.2022.2455. Epub ahead of print. PMID: 35947370.

8. Leal-Pardinas F, Truty R, McKnight DA, Johnson B, Morales A, Bristow SL, Yar Pang T, Cohen-Pfeffer J, Izzo E, Sankar R, Koh S, Wirrell EC, Millichap JJ, Aradhya S. Value of Genetic Testing for Pediatric Epilepsy: Driving Earlier Diagnosis of Ceroid Lipofuscinosis Type 2 Batten Disease. Epilepsia. 2022 Jul;63(7):e68-e73. doi: 10.1111/epi.17269. Epub 2022 May 10. PMID: 35474188.

9. Johnson B, Ouyang K, Frank L, Truty R, Rojahn S, Morales A, Aradhya S, Nykamp K. Systematic Use of Phenotype Evidence in Clinical Genetic Testing Reduces the Frequency of Variants of Uncertain Significance. Am J Med Genet A. 2022 Sep;188(9):2642-2651. doi: 10.1002/ajmg.a.62779. Epub 2022 May 16. PMID: 35570716.

10. Lieberman KV, Chang AR, Block GA, Robinson K, Bristow SL, Morales A, Mitchell A, McCalley S, McKay J, Pollak MR, Aradhya S, and Warady BA. The KIDNEYCODE Program: Diagnostic Yield and Clinical Features of Individuals with CKD. Kidney360. 2022 May;3 (5) 900-909; DOI: https://doi.org/10.34067/KID.0004162021.

11. Gal DB, Morales A, Rojahn S, Callis T, Garcia J, Priest JR, Truty R, Vatta M, Nussbaum RL, Esplin ED, Hollander SA. Comprehensive Genetic Testing for Pediatric Hypertrophic Cardiomyopathy Reveals Clinical Management Opportunities and Syndromic Conditions. Pediatr Cardiol. 2022 Mar;43(3):616-623. doi: 10.1007/s00246-021-02764-1. Epub 2021 Oct 29. PMID: 34714385; PMCID: PMC8554517.

12. Rush ET, Johnson B, Aradhya S, Beltran D, Bristow SL, Eisenbeis S, Guerra NE, Krolczyk S, Miller N, Morales A, Ramesan P, Sarafrazi S, Truty R, Dahir K. Molecular Diagnoses of X-Linked and Other Genetic Hypophosphatemias: Results From a Sponsored Genetic Testing Program. J Bone Miner Res. 2022 Feb;37(2):202-214. doi: 10.1002/jbmr.4454. Epub 2021 Nov 10. PMID: 34633109; PMCID: PMC9298723.

13. McKnight D, Bristow SL, Truty RM, Morales A, Stetler M, Westbrook MJ, Robinson K, Riethmaier D, Borlot F, Kellogg M, Hwang ST, Berg A, Aradhya S. Multigene Panel Testing in a Large Cohort of Adults With Epilepsy: Diagnostic Yield and Clinically Actionable Genetic Findings. Neurol Genet. 2021 Dec 16;8(1):e650. doi: 10.1212/NXG.0000000000000650. Erratum in: Neurol Genet. 2022 Apr 26;8(3):e674. PMID: 34926809; PMCID: PMC8678910.

14. Sturm AC, Truty R, Callis TE, Aguilar S, Esplin ED, Garcia S, Haverfield EV, Morales A, Nussbaum RL, Rojahn S, Vatta M, Rader DJ. Limited-Variant Screening vs Comprehensive Genetic Testing for Familial Hypercholesterolemia Diagnosis. JAMA Cardiol. 2021 May 26. doi: 10.1001/jamacardio.2021.1301. Epub ahead of print. PMID: 34037665.

15. Bowen BM, Truty R, Aradhya S, Bristow SL, Johnson BA, Morales A, Tan CA, Westbrook MJ, Winder TL, Chavez JC. SMA Identified: Clinical and Molecular Findings From a Sponsored Testing Program for Spinal Muscular Atrophy in More Than 2,000 Individuals. Front Neurol. 2021 May 6;12:663911. doi: 10.3389/fneur.2021.663911. PMID: 34025568; PMCID: PMC8134668.

16. Jordan E, Peterson L, Ai T, Asatryan B, Bronicki L, Brown E, Celeghin R, Edwards M, Fan J, Ingles J, James CA, Jarinova O, Johnson R, Judge DP, Lahrouchi N, Lekanne Deprez RH, Lumbers RT, Mazzarotto F, Medeiros Domingo A, Miller RL, Morales A, Murray B, Peters S, Pilichou K, Protonotarios A, Semsarian C, Shah P, Syrris P, Thaxton C, van Tintelen JP, Walsh R, Wang J, Ware J, Hershberger RE. An Evidence-Based Assessment of Genes in Dilated Cardiomyopathy. Circulation. 2021 May 5. doi: 10.1161/CIRCULATIONAHA.120.053033. Epub ahead of print. PMID: 33947203.

17. James CA, Jongbloed JDH, Hershberger RE, Morales A, Judge DP, Syrris P, Pilichou K, Medeiros Domingo A, Murray B, Cadrin-Tourigny J, Lekanne Deprez R, Celeghin R, Protonotarios A, Asatryan B, Brown E, Jordan E, McGlaughon J, Thaxton C, Kurtz CL, van Tintelen JP. An International Evidence Based Reappraisal of Genes Associated with Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC) using the ClinGen Framework. Circ Genom Precis Med. 2021 Apr 8. doi: 10.1161/CIRCGEN.120.003273. Epub ahead of print. PMID: 33831308.

18. Vatta M, Truty R, Garcia J, Callis TE, Hatchell K, Rojahn S, Morales A, Aradhya S, Nussbaum R. Common Variants in KCNE1, KCNH2, and SCN5A May Impact Cardiac Arrhythmia Risk. Circ Genom Precis Med. 2021 Feb;14(1):e003206. doi: 10.1161/CIRCGEN.120.003206. Epub 2021 Feb 1. PMID: 33517668.

19. Campbell-Salome G, Jones LK, Masnick MF, Walton NA, Ahmed CD, Buchanan AH, Brangan A, Esplin ED, Kann DG, Ladd IG, Kelly MA, Kindt I, Kirchner HL, McGowan MP, McMinn MN, Morales A, Myers KD, Oetjens MT, Rahm AK, Schmidlen TJ, Sheldon A, Simmons E, Snir M, Strande NT, Walters NL, Wilemon K, Williams MS, Gidding SS, Sturm AC. Developing and Optimizing Innovative Tools to Address Familial Hypercholesterolemia Underdiagnosis: Identification Methods, Patient Activation, and Cascade Testing for Familial Hypercholesterolemia. Circ Genom Precis Med. 2021 Feb;14(1):e003120. doi: 10.1161/CIRCGEN.120.003120. Epub 2021 Jan 22. PMID: 33480803; PMCID: PMC7892261.

20. VanDyke RE, Hashimoto S, Morales A, Pyatt RE, Sturm AC. Impact of variant reclassification in the clinical setting of cardiovascular genetics. J Genet Couns. 2020 Oct 7. doi: 10.1002/jgc4.1336. Epub ahead of print. PMID: 33029862.

21. Rich KA, Moscarello T, Siskind C, Brock G, Tan CA, Vatta M, Winder TL, Elsheikh B, Vicini L, Tucker B, Palettas M, Hershberger RE, Kissel JT, Morales A, Roggenbuck J. Novel Heterozygous Truncating Titin Variants Affecting the A-band Are Associated with Cardiomyopathy and Myopathy/Muscular Dystrophy. Mol Genet Genomic Med. 2020 Oct;8(10):e1460. doi: 10.1002/mgg3.1460. Epub 2020 Aug 20. PMID: 32815318; PMCID: PMC7549586.

22. Ingles J, Macciocca I, Morales A, Thomson K. Genetic Testing in Inherited Heart Diseases. Heart Lung Circ. 2020 Apr;29(4):505-511. doi: 10.1016/j.hlc.2019.10.014. Epub 2019 Nov 29. PMID: 31813745.

23. Roggenbuck J, Rich K, Morales A, Tan CA, Eck D, King W, Vatta M, Winder T, Elsheikh B, Hershberger RE, Kissel JT. A Novel TTN Deletion in a Family with Skeletal Myopathy, Facial Weakness, and Dilated Cardiomyopathy. Mol Genet Genomic Med. 2019 Nov;7(11):e924. doi: 10.1002/mgg3.924. Epub 2019 Sep 5. PMID: 31489791; PMCID: PMC6825852.

24. Ault R, Morales A, Ault R, Spitale A, Martinez GA. Communication Pitfalls in Interpreted Genetic Counseling Sessions. J Genet Couns. 2019 Aug;28(4):897-907. doi: 10.1002/jgc4.1132. Epub 2019 May 21. PMID: 31112366.

25. Ingles J, Goldstein J, Thaxton C, Caleshu C, Corty EW, Crowley SB, Dougherty K, Harrison SM, McGlaughon J, Milko LV, Morales A, Seifert BA, Strande N, Thomson K, Peter van Tintelen J, Wallace K, Walsh R, Wells Q, Whiffin N, Witkowski L, Semsarian C, Ware JS, Hershberger RE, Funke B. Evaluating the Clinical Validity of Hypertrophic Cardiomyopathy Genes. Circ Genom Precis Med. 2019 Feb;12(2):e002460. doi: 10.1161/CIRCGEN.119.002460. PMID: 30681346; PMCID: PMC6410971.

26. Cowan JR, Kinnamon DD, Morales A, Salyer L, Nickerson DA, Hershberger RE. Multigenic Disease and Bilineal Inheritance in Dilated Cardiomyopathy Is Illustrated in Nonsegregating LMNA Pedigrees. Circ Genom Precis Med. 2018 Jul;11(7):e002038. doi: 10.1161/CIRCGEN.117.002038. PMID: 30012837; PMCID: PMC6294440.

27. Hershberger RE, Givertz MM, Ho CY, Judge DP, Kantor PF, McBride KL, Morales A, Taylor MRG, Vatta M, Ware SM. Genetic Evaluation of Cardiomyopathy-A Heart Failure Society of America Practice Guideline. J Card Fail. 2018 May;24(5):281-302. doi: 10.1016/j.cardfail.2018.03.004. Epub 2018 Mar 19. PMID: 29567486.

28. Kelly MA, Caleshu C, Morales A, Buchan J, Wolf Z, Harrison SM, Cook S, Dillon MW, Garcia J, Haverfield E, Jongbloed JDH, Macaya D, Manrai A, Orland K, Richard G, Spoonamore K, Thomas M, Thomson K, Vincent LM, Walsh R, Watkins H, Whiffin N, Ingles J, van Tintelen JP, Semsarian C, Ware JS, Hershberger R, Funke B. Adaptation and Validation of the ACMG/AMP Variant Classification Framework for MYH7-Associated Inherited Cardiomyopathies: Recommendations by ClinGen's Inherited Cardiomyopathy Expert Panel. Genet Med. 2018 Mar;20(3):351-359. doi: 10.1038/gim.2017.218. Epub 2018 Jan 4. PMID: 29300372; PMCID: PMC5876064.

29. Kinnamon DD, Morales A, Bowen DJ, Burke W, Hershberger RE; DCM Consortium*. Toward Genetics-Driven Early Intervention in Dilated Cardiomyopathy: Design and Implementation of the DCM Precision Medicine Study. Circ Cardiovasc Genet. 2017 Dec;10(6):e001826. doi: 10.1161/CIRCGENETICS.117.001826. PMID: 29237686; PMCID: PMC5842914.

30. Hershberger RE, Morales A, Cowan J. Is Left Ventricular Noncompaction a Trait, Phenotype, or Disease? The Evidence Points to Phenotype. Circ Cardiovasc Genet. 2017 Dec;10(6):e001968. doi: 10.1161/CIRCGENETICS.117.001968. PMID: 29212902.

31. Liu GS, Morales A, Vafiadaki E, Lam CK, Cai WF, Haghighi K, Adly G, Hershberger RE, Kranias EG. A Novel Human R25C-phospholamban Mutation is Associated with Super-inhibition of Calcium Cycling and Ventricular Arrhythmia. Cardiovasc Res. 2015 Jul 1;107(1):164-74. doi: 10.1093/cvr/cvv127. Epub 2015 Apr 7. PMID: 25852082; PMCID: PMC4490203.

32. Huang W, Liang J, Yuan CC, Kazmierczak K, Zhou Z, Morales A, McBride KL, Fitzgerald-Butt SM, Hershberger RE, Szczesna-Cordary D. Novel Familial Dilated Cardiomyopathy Mutation in MYL2 Affects the Structure and Function of Myosin Regulatory Light Chain. FEBS J. 2015 Jun;282(12):2379-93. doi: 10.1111/febs.13286. Epub 2015 Apr 16. PMID: 25825243; PMCID: PMC4472530.

33. Hershberger RE, Morales A. LMNA-Related Dilated Cardiomyopathy. 2008 Jun 12 [Updated 2016 Jul 7]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK1674/

34. Hershberger RE, Hedges DJ, Morales A. Dilated Cardiomyopathy: The Complexity of a Diverse Genetic Architecture. Nat Rev Cardiol. 2013 Sep;10(9):531-47. doi: 10.1038/nrcardio.2013.105. Epub 2013 Jul 30. PMID: 23900355.

35. Hershberger RE, Morales A. Dilated Cardiomyopathy Overview. 2007 Jul 27 [Updated 2018 Aug 23]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK1309/

36. Brodt C, Siegfried JD, Hofmeyer M, Martel J, Rampersaud E, Li D, Morales A, Hershberger RE. Temporal Relationship of Conduction System Disease and Ventricular Dysfunction in LMNA Cardiomyopathy. J Card Fail. 2013 Apr;19(4):233-9. doi: 10.1016/j.cardfail.2013.03.001. PMID: 23582089; PMCID: PMC3699310.

37. Hudson L, Morales A, Mauro AC, Whellan D, Adams KF, O'Connor CM, Hershberger RE. Family History of Dilated Cardiomyopathy among Patients with Heart Failure from the HF-ACTION Genetic Ancillary Study. Clin Transl Sci. 2013 Jun;6(3):179-83. doi: 10.1111/cts.12041. Epub 2013 Apr 24. PMID: 23751021; PMCID: PMC5350848.

38. Norton N, Li D, Rampersaud E, Morales A, Martin ER, Zuchner S, Guo S, Gonzalez M, Hedges DJ, Robertson PD, Krumm N, Nickerson DA, Hershberger RE; National Heart, Lung, and Blood Institute GO Exome Sequencing Project and the Exome Sequencing Project Family Studies Project Team. Exome sequencing and genome-wide linkage analysis in 17 families illustrate the complex contribution of TTN truncating variants to dilated cardiomyopathy. Circ Cardiovasc Genet. 2013 Apr;6(2):144-53. doi: 10.1161/CIRCGENETICS.111.000062. Epub 2013 Feb 15. PMID: 23418287; PMCID: PMC3815606.

39. Siegfried JD, Morales A, Kushner JD, Burkett E, Cowan J, Mauro AC, Huggins GS, Li D, Norton N, Hershberger RE. Return of Genetic Results in the Familial Dilated Cardiomyopathy Research Project. J Genet Couns. 2013 Apr;22(2):164-74. doi: 10.1007/s10897-012-9532-8. Epub 2012 Aug 11. PMID: 22886719; PMCID: PMC3815604.

40. Piran S, Liu P, Morales A, Hershberger RE. Where Genome Meets Phenome: Rationale for Integrating Genetic and Protein Biomarkers in the Diagnosis and Management of Dilated Cardiomyopathy and Heart Failure. J Am Coll Cardiol. 2012 Jul 24;60(4):283-9. doi: 10.1016/j.jacc.2012.05.005. PMID: 22813604.

41. Cheng J, Morales A, Siegfried JD, Li D, Norton N, Song J, Gonzalez-Quintana J, Makielski JC, Hershberger RE. SCN5A Rare Variants in Familial Dilated Cardiomyopathy Decrease Peak Sodium Current Depending on the Common Polymorphism H558R and Common Splice Variant Q1077del. Clin Transl Sci. 2010 Dec;3(6):287-94. doi: 10.1111/j.1752-8062.2010.00249.x. PMID: 21167004; PMCID: PMC3026282.

42. Hershberger RE, Morales A, Siegfried JD. Clinical and Genetic Issues in Dilated Cardiomyopathy: A Review for Genetics Professionals. Genet Med. 2010 Nov;12(11):655-67. doi: 10.1097/GIM.0b013e3181f2481f. PMID: 20864896; PMCID: PMC3118426.

43. Li D, Morales A, Gonzalez-Quintana J, Norton N, Siegfried JD, Hofmeyer M, Hershberger RE. Identification of Novel Mutations in RBM20 in Patients with Dilated Cardiomyopathy. Clin Transl Sci. 2010 Jun;3(3):90-7. doi: 10.1111/j.1752-8062.2010.00198.x. PMID: 20590677; PMCID: PMC2898174.

44. Cowan J, Li D, Gonzalez-Quintana J, Morales A, Hershberger RE. Morphological analysis of 13 LMNA Variants Identified in a Cohort of 324 Unrelated Patients with Idiopathic or Familial Dilated Cardiomyopathy. Circ Cardiovasc Genet. 2010 Feb;3(1):6-14. doi: 10.1161/CIRCGENETICS.109.905422. Epub 2009 Nov 17. PMID: 20160190; PMCID: PMC2908895.

45. Hershberger RE, Norton N, Morales A, Li D, Siegfried JD, Gonzalez-Quintana J. Coding Sequence Rare Variants Identified in MYBPC3, MYH6, TPM1, TNNC1, and TNNI3 from 312 Patients with Familial or Idiopathic Dilated Cardiomyopathy. Circ Cardiovasc Genet. 2010 Apr;3(2):155-61. doi: 10.1161/CIRCGENETICS.109.912345. Epub 2010 Mar 9. PMID: 20215591; PMCID: PMC2908892.

46. Hershberger RE, Pinto JR, Parks SB, Kushner JD, Li D, Ludwigsen S, Cowan J, Morales A, Parvatiyar MS, Potter JD. Clinical and Functional Characterization of TNNT2 Mutations Identified in Patients with Dilated Cardiomyopathy. Circ Cardiovasc Genet. 2009 Aug;2(4):306-13. doi: 10.1161/CIRCGENETICS.108.846733. Epub 2009 May 15. PMID: 20031601; PMCID: PMC2900844.

47. Hershberger RE, Cowan J, Morales A, Siegfried JD. Progress with Genetic Cardiomyopathies: Screening, Counseling, and Testing in Dilated, Hypertrophic, and Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy. Circ Heart Fail. 2009 May;2(3):253-61. doi: 10.1161/CIRCHEARTFAILURE.108.817346. PMID: 19808347; PMCID: PMC2927103.

48. Barbouth D, Morales A, Villalba R. Expanded Newborn Screening: An Update for Pediatricians. Pediatr Ann. 2009 Aug;38(8):431-8. doi: 10.3928/00904481-20090723-06. PMID: 19711881.

49. Xu S, Han JC, Morales A, Menzie CM, Williams K, Fan YS. Characterization of 11p14-p12 Deletion in WAGR Syndrome by Array CGH for Identifying Genes Contributing to Mental Retardation and Autism. Cytogenet Genome Res. 2008;122(2):181-7. doi: 10.1159/000172086. Epub 2008 Dec 18. Erratum in: Cytogenet Genome Res. 2009;124(1):112. PMID: 19096215.

50. Nauman D, Morales A, Cowan J, Dagua J, Hershberger RE. The Family History as a Tool to Identify Patients at Risk for Dilated Cardiomyopathy. Prog Cardiovasc Nurs. 2008 Winter;23(1):41-4. doi: 10.1111/j.1751-7117.2008.08223.x. PMID: 18326985.

51. Cowan J, Morales A, Dagua J, Hershberger RE. Genetic Testing and Genetic Counseling in Cardiovascular Genetic Medicine: Overview and Preliminary Recommendations. Congest Heart Fail. 2008 Mar-Apr;14(2):97-105. doi: 10.1111/j.1751-7133.2008.08217.x. PMID: 18401220.

52. Fan YS, Jayakar P, Zhu H, Barbouth D, Sacharow S, Morales A, Carver V, Benke P, Mundy P, Elsas LJ. Detection of Pathogenic Gene Copy Number Variations in Patients with Mental Retardation by

Genomewide Oligonucleotide Array Comparative Genomic Hybridization. Hum Mutat. 2007 Nov;28(11):1124-32. doi: 10.1002/humu.20581. PMID: 17621639.

53. Agrawal PB, Strickland CD, Midgett C, Morales A, Newburger DE, Poulos MA, Tomczak KK, Ryan MM, Iannaccone ST, Crawford TO, Laing NG, Beggs AH. Heterogeneity of Nemaline Myopathy Cases with Skeletal Muscle Alpha-actin Gene Mutations. Ann Neurol. 2004 Jul;56(1):86-96. doi: 10.1002/ana.20157. PMID: 15236405.

54. Brierley K, Chan G, Ellingwood S, Hoffman C, Houde-Ng K, Jonas J, Morales A, Patel D, Susswein L, Wahl E and Kim KS (2002), Book Review: Psychosocial Genetic Counseling. By Jon Weil. Oxford University Press, New York 10016, 2000, 297 pp. $49.95 (hardcover). J Genet Counsel, 11: 147-148. https://doi.org/10.1023/A:1014597505823

55. Anand A, Villella A, Ryner LC, Carlo T, Goodwin SF, Song HJ, Gailey DA, Morales A, Hall JC, Baker BS, Taylor BJ. Molecular Genetic Dissection of the Sex-specific and Vital Functions of the Drosophila Melanogaster Sex Determination Gene fruitless. Genetics. 2001 Aug;158(4):1569-95. PMID: 11514448; PMCID: PMC1461753.

SELECTED LECTURES AND ORAL PRESENTATIONS

Invited Speaker: Minnesota Genetic Counselors Association Meeting (2025) Oral Presentation: Expanding a Genetic Counseling Career with a Doctoral Research Degree: Integrating Cardiovascular Genetics and Implementation Science

Invited Speaker: Pennsylvania Genetic Counselors Association Meeting (2025) Oral Presentation: Expanding a Genetic Counseling Career with a Doctoral Research Degree: Integrating Cardiovascular Genetics and Implementation Science

Heart Failure Society of America Annual Scientific Meeting (2023) Panelist: Hands-on Workshop: Genetics in Heart Failure

Heart Rhythm Society Annual Conference (2023) Oral Presentation: The Utility of Machine Learning Tools in Reducing VUS in Arrhythmia Genes for Individuals from Underrepresented Populations Compared to Well Studied Populations

University of Puerto Rico Medical Sciences Campus (2022) Oral Presentation: Incorporating Genetics into Healthcare: The Role of Genetic Counselors (Spanish lecture)

ELSIconversations (2022) Oral Presentation: Standardizing Lab Requisition Forms for Hypertrophic Cardiomyopathy (HCM): A ClinGen Cardiovascular Disease Working Group Initiative

American Heart Association Annual Conference (2021) Moderated Digital Poster Presentation: Genetic Testing Underutilization In Patients With Cardiomyopathy: A Real-world Data Analysis

National Society of Genetic Counselors Annual Conference (2021) Platform Presentation: Epilepsy Genetic Testing Guides Clinical Management and Helps Improve Patient Outcomes

Florida Association of Genetic Counselors Annual Conference (2021) Oral Presentation: Variant Interpretation for Cardiovascular Genetic Counseling Practice: Recognizing the Value

SADS Foundation Webinar (2021) Oral Presentation: Genetic Counseling for Pregnancy with a SADS Condition

National Society of Genetic Counselors Annual Conference (2020) Educational Breakout Session, Oral Presentation: Things That Make You Go Hmmm – Peripartum Cardiomyopathy: A New Perspective

National Society of Genetic Counselors Annual Conference (2018) Preconference Symposium, Oral Presentation: A Collaborative View of Genomic Variant Interpretation: Clinical Genetic Counselors, Laboratories, and Patients. Session Title: Variant Interpretation in Cardiovascular Genetics Clinical Practice

Grand Rounds, Chillicothe VA Medical Center (2018) Oral Presentation: The Genetic Evaluation as a Tool to Identify Patients with Familial Hypercholesterolemia

Ohio State University College of Pharmacy Professional Students (2018) Lecture: Familial Hypercholesterolemia

National Society of Genetic Counselors Annual Conference (2017) Oral Presentation: Navigating Variant Interpretation in Cardiovascular genetics: Current Challenges, Gene-Specific Considerations, and Efforts toward Standardization. Title: ClinGen's Cardiovascular Domain Working Group

Heart Failure Society of America Annual Conference (2016) Oral Presentation: Genetics and Cardiomyopathies, Title: Genetic Counseling: When, Why, and How?

National Society of Genetic Counselors Annual Education Conference (2015) Educational Breakout Session, Oral Presentation: At the Heart of the Pregnancy: What Prenatal and Cardiovascular Genetic Counselors Need to Know about Maternal Heart Disease

National Society of Genetic Counselors Cardiovascular SIG Webinar (2015) Oral Presentation: Progress in Peripartum Cardiomyopathy

Cardiovascular Medicine Grand Rounds, Ohio State University, Columbus, OH (2015) Oral Presentation: Cardiovascular Genetic Evaluation 2015: Surprising Findings and Personal Perspectives from Two Patients

Road to Collaboration for the Human Genetics and Genomics Community: Big Data and Big Ideas in Genomic Medicine, Columbus, OH (2015) Oral Presentation: Harmonizing Molecular Genetic Data: ClinGen and Beyond

Guest Lecture for Core Didactic Series for Genetics Fellows, Nationwide Children's Hospital (2014) Lecture: Non-Syndromic Cardiomyopathies. Nationwide Children's Hospital

Indiana Genetic Counselors Conference (2013) Oral Presentation: Peripartum Cardiomyopathy: What Do We Know?

National Society of Genetic Counselors Pre-Conference Symposium, Boston, MA (2012) Oral Presentation: Family History Approach to Heart Attack

Heart Failure Society of America, 13th Annual Scientific Meeting, Boston, MA (2009) Oral Presentation: How to Session: Genetic Screening and Counseling for Patients with Heart Failure

Cardiology Grand Rounds, Miller School of Medicine, Miami, FL (2009) Oral Presentation: Genetics of Marfan Syndrome

Miami Institute of Human Genomics, Miami, FL (2008) Oral Presentation: The Genetic Family History

Southeastern Regional Genetics Group Annual Conference, New Orleans, LA (2007) Oral Presentation: Newborn Screening in Puerto Rico and Virgin Islands: Education and Barriers Assessment

Puerto Rico Expanded Newborn Screening Conference, San Juan, PR (2007) Oral Presentation: Newborn Screening in Puerto Rico: Meeting Challenges, Creating Solutions.

LANGUAGES

English - Proficient, written and oral

Spanish - Native, proficient, written and oral