

CURRICULUM VITAE

Personal Information

Name: Edward Lennon (Lenn) Murrelle

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Business Address: ELM International Research Consultants, LLC
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Midlothian, VA 23112

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Education:

January 1996 – January 1998

Post-doc in Genetic Epidemiology & Psychiatric Genetics
Virginia Institute for Psychiatric and Behavioral Genetics
Medical College of Virginia of VCU
Richmond, VA

September 1992 - December 1995

PhD in Psychiatric Epidemiology
Western Psychiatric Institute & Clinic, School of Medicine and
Department of Epidemiology, Graduate School of Public Health
University of Pittsburgh

May 1989 - August 1992

MSPH in Epidemiology
Department of Epidemiology, School of Public Health
University of North Carolina at Chapel Hill

August 1980 - May 1984

BA in Biology
Department of Biology
Wake Forest University

Employment History:

March 2023 – Present

Senior Advisor & Consulting Principal Epidemiologist
Venebio Group, LLC
Richmond, VA

January 2020 – Present

Founding President & CEO
Venebio Technologies, LLC
Richmond, VA

October 2008 – March 2023

Foundering President & CEO
Venebio Group, LLC
Richmond, VA

November 2011 – 2018

Managing Partner
algorithmRx, LLC
Richmond, VA

September 2005 – February 2009	Principal Scientist & Group Leader Epidemiology, Genetics and Complex Systems Analysis Life Sciences Research/Health Sciences Altria Client Services (Philip Morris USA) Richmond, Virginia
June 2002 – July 2005	Director, Epidemiologist Neurosciences Group/Genetic and Molecular Epidemiology Worldwide Epidemiology GlaxoSmithKline Research Triangle Park, North Carolina
December 2000 – Present	Founder and President ELM International Research Consultants, LLC Richmond, VA
December 1999 – June 2002	Assistant Professor of Human Genetics and Preventive Medicine & Community Health Virginia Commonwealth University School of Medicine
July 1999 – December 1999	Assistant Professor in Human Genetics Virginia Institute for Psychiatric & Behavioral Genetics Virginia Commonwealth University School of Medicine
February 1998 - July 1999	Instructor in Human Genetics Virginia Institute for Psychiatric & Behavioral Genetics Virginia Commonwealth University School of Medicine
July 1995 - January 1998	Research Associate Department of Human Genetics Virginia Institute for Psychiatric & Behavioral Genetics Virginia Commonwealth University School of Medicine
November 1993 - June 1995	Research Principal Center for Education and Drug Abuse Research (CEDAR) Western Psychiatric Institute & Clinic University of Pittsburgh School of Medicine, Pittsburgh, PA
September 1992 - November 1993	Senior Research Associate Center for Education and Drug Abuse Research (CEDAR) Western Psychiatric Institute & Clinic University of Pittsburgh School of Medicine, Pittsburgh, PA
August 1989 - August 1992	Graduate Research Assistant University of North Carolina at Chapel Hill School of Medicine

June 1988 - August 1989	Research Technician Center for Alcohol Studies University of North Carolina at Chapel Hill School of Medicine
January 1988 - July 1988	Clinical Pathology Assistant/Autopsy Diener Pathology Department, Wesley Long Community Hospital
July 1985 - December 1987	Visiting Research Instructor Department of Graduate Studies, National School of Public Health University of Antioquia, Medellín, Colombia
November 1984 - June 1985	Research Technician Center for Alcohol Studies University of North Carolina at Chapel Hill School of Medicine
May 1982 - May 1984	Research Assistant (Work-Study Program) Cellular and Molecular Biology and Plant Sensory Physiology Department of Biology Wake Forest University, Winston-Salem, NC
June 1977 - June 1985, January 1988 - July 1988 [Part-time and full-time]	Clinical Pathology Assistant/Autopsy Diener Pathology Department, Wesley Long Community Hospital Greensboro, NC

Adjunct/Affiliate Academic Appointments:

Feb 2009 – Present	Research Professor (Affiliate) Department of Pharmacotherapy and Outcomes Science Virginia Commonwealth University School of Pharmacy
March 2003 – Mar 2013	Adjunct Professor Department of Epidemiology University of North Carolina at Chapel Hill School of Public Health
Dec 1999 – Dec 2007	Affiliate Assistant Professor Department of Epidemiology & Community Health Virginia Commonwealth University School of Medicine
November 1994 - Present	Adjunct Research Professor School of Medicine Institute for Health Sciences (CES), Medellín, Colombia

Philanthropic and Community Advisory Board Activities:

Dec 2024 – Present	Board Member , Isa Elaine Foundation (understanding the etiology of BPAN, a rare, single-gene neurodegenerative disorder) - 501(c)(3)
Sept 2023 – Present	Founding Board Member , Imagine Pamlico - 501(c)(3)

- 2019 – Present **Board Member**, Foundation for Family and Community Healing - 501(c)(3)
- 2007 – 2015 **Board of Directors**, Abbey Village Foundation, Charter Colony Foundation

Scientific Committees, Academic Advisory Boards and Task Forces

International:

- Scientific Advisory Board, Addiction Strategy, Reckitt Benckiser Pharmaceuticals, 2010
- Advisory Committee, Program in Epidemiology (1995 to present), Instituto de Ciencias de la Salud (CES), Medellín, Colombia

National:

- National Advisory Council (2007-2015), School of Pharmacy, Virginia Commonwealth University
- Co-Chair, Expert Panel, Proposal to National Institute on Environmental Health Sciences on Feasibility of Establishing the First US National Twin Registry (May 2005-Sept 2006)
- Co-Chair, National Steering Committee (1999 to 2002), Mid-Atlantic Twin Registry, VCU
- Advisory Committee, “Public records, social utility, and privacy”, Center for Social & Legal Research, New York (2000)

State:

- Governor’s Science Advisory Panel, Science Museum of Virginia, Richmond, 2011-2013
- Judge, Virginia Junior Academy of Sciences, May 25th, 2011, University of Richmond
- Leadership Council, Virginia Biotechnology Research Park (2008 to 2011), Richmond, VA
- North Carolina Task Force on Genomics and Public Health (June 2002 – May 2003), Chairman, Public Health Assessment (Surveillance and Epidemiology) Subcommittee

Pharmaceutical/Biomedical Industry:

- Biomedical Data Sciences/Pharmacogenetics Task Force, GSK (2003-2004)
- Advisory Board, GENETWORX (Molecular Diagnostics/Pharmacogenetics) (2009-2011)

Virginia Commonwealth University:

- Steering Committee, Mid-Atlantic Twin Registry (2024 – Present)
- External Advisory Board, Professional Science Master of Bioinformatics Degree Program (2010-2015), VCU Center for the Study of Biological Complexity
- Fulbright Scholarship Advisory Board (2008 to present), VCU Honors College
- Scientific Access Committee (1995 to 2002), Mid-Atlantic Twin Registry, School of Medicine
- Translational Research Subgroup (2000 -2001), School of Medicine
- Research Computing Advisory Committee (2000 to present)
- Research Project Subcommittee, American Board of Genetic Counseling Accreditation, Department of Human Genetics, School of Medicine (2000)
- Planning Committee (Chairperson), Forum on *Third Party Rights and Risks: Informed Consent of Persons Affected by the Study of Human Subjects*, Virginia Commonwealth University, March 8-9, 2001.
- Search Committee, Chair of Department of Human Genetics, 2001-2002

Honors, Scholarships and Awards:

J. William Fulbright Scholar Award (July-August 1998), for lecturing on drug abuse, psychiatric epidemiology, and mental health genetics at the Institute for Health Sciences (CES) in Medellín, Colombia.

National Institute on Mental Health Predoctoral Fellow in Psychiatric Epidemiology (1992-1995), for studies toward PhD in Psychiatric Epidemiology at the University of Pittsburgh School of Medicine, Department of Psychiatry, Western Psychiatric Institute & Clinic, and Graduate School of Public Health.

U.S. Public Health Service Traineeship (1990-1991), For graduate study (MSPH/PhD) of epidemiology at the University of North Carolina at Chapel Hill School of Public Health.

Fellowship of the *Special Fund for Drug Abuse Prevention* (1986-1987), Awarded by the Mental Health Section of the Health Department of the State of Antioquia, Colombia, for the continuation of research in screening, treatment and evaluation of interventions in alcoholism, drug abuse, clinical depression and suicidality.

J. William Fulbright Research Scholar (1985-1987), U.S. government fellowship for epidemiologic research in alcoholism, drug abuse, clinical depression and suicide at the National School of Public Health of the University of Antioquia, Medellín, Colombia.

Wake Forest University Study Abroad Scholarship (1982), Scholarship for study at the University of the Andes, Bogotá, Colombia.

George Foster Hankins Scholarship (1980-1983), undergraduate study at Wake Forest University.

Teaching and Mentoring

<i>Student</i>	<i>Degree</i>	<i>Date of Completion</i>
Elvia Amesty	MS Clinical Psychology	June 1995
Karen Russell	MS Genetic Counseling	May 1998
Roberto Mejía	Specialization in Mental Health Epidemiology	July 1998
Maria de los Angeles Rodríguez	Specialization in Mental Health Epidemiology	July 1998
Josefina López	Specialization in Mental Health Epidemiology	July 1998
Karen Valdez	MS Genetic Counseling	May 1999
Sandy Stern	MS Genetic Counseling	May 2000
Janice Ng	MS Genetic Counseling	May 2000
Jennifer English	MS Genetic Counseling	May 2000
Gretchen Oswald	MS Genetic Counseling	May 2001
Jennifer Goldstein	MS Genetic Counseling	May 2001
Elizabeth Couchon	MS Genetic Counseling	May 2001
Juan Lu	MPH Preventive Medicine and Community Health	May 2001
Roberto Mejía	MS Developmental Psychology	May 2002
Shelby Duffer	MS Genetic Counseling	May 2002
Hannah Kim	MS Genetic Counseling	May 2002
Roberto Mejía	PhD Developmental Psychology	May 2003
Mary Wojczynski	PhD in Epidemiology	May 2005
Madhukar Dasika	Post Doc Mathematical Modeling	Aug 2008

Hailong Meng	Post Doc in Bioinformatics	Sept 2008
Andrew Joyce	Post Doc in Bioinformatics/Epigenomics	Mar 2009
Priyanka Kakad	MS/PhD Pharmacotherapy and Outcomes Science	2011, 2015
Nima Jarvandi	MBA, Summer Business Intern, Venebio	2009
Michael D'Alessandro	BS, Summer Business Intern, Venebio	2009
Marisa Roczen	MS, Summer Business Intern, Venebio	2010
David Burns	MBA, Summer Business Intern, Venebio	2010
Batul Electricwala	PhD Pharmacotherapy and Outcomes Science	2016
Mai Elhazami	PhD Pharmacotherapy and Outcomes Science	2018

Scientific Consultant/Temporary Advisor:

January 2010	ReckittBenckiser Pharmaceuticals, Scientific Advisory Board Richmond, VA
Oct 2005 – Dec 06	National Institute for Environmental Health Sciences (NIEHS), Office of the Director of Clinical Research
March 2002, August 2004	US Embassy, Narcotics Affairs Section (NAS), Guatemala City
October 2001	US Embassy, Narcotics Affairs Section (NAS) Guatemala City, Guatemala
September 2001	Office for Human Research Protections (OHRP) [Expert Government Consultant] Department of Health and Human Services, Bethesda, Maryland
August-September 2001	US Embassy, Public Affairs Section (PAS) Panama City, Panama
August 2001	US Embassy, Narcotics Affairs Section (NAS) Panama City, Panama
August 2001	US Embassy, Narcotics Affairs Section (NAS) San José, Costa Rica
August 2001	US Embassy, Public Affairs Section (PAS) Tegucigalpa, Honduras
August 2001	US Embassy, Narcotics Affairs Section (NAS) Guatemala City, Guatemala
August 2001	US Embassy, Public Affairs Section (PAS) San Salvador, El Salvador
April 2001	US Embassy, Narcotics Affairs Section (NAS), CONAPRED, Cruz Blanca Panameña, Panama City, Panama

June 2000	US Embassy, Narcotics Affairs Section (NAS), CONAPRED, Cruz Blanca Panameña, Panama City, Panama
September 1995	Division of Epidemiology and Prevention Research National Institute on Drug Abuse (NIDA), Rockville, MD
June 1994, July 1994	International Office/INVEST Program National Institute on Drug Abuse (NIDA), Rockville, MD
December 1993, February 1994, June 1994, March 1996	Inter-American Drug Abuse Control Commission (CICAD)/ Organization of American States (OAS) Washington, DC
Jan 1986, Oct & Dec 1988, January - February 1989 March 1992, October 1993, April 1994	Panamerican Health Organization/World Health Organization Office of the Regional Adviser for Alcohol and Drug Abuse Washington, DC
March 1987 - December 1987	United States Agency for International Development (USAID) United States Embassy, Bogotá, Colombia

Grants and Contracts:

- NIH/NIDA, Predictive tool to prevent overdose in patients treated with prescription opioids – SBIR Direct-to-Phase II, Role: Co-Investigator (Funded Sept 2016)
- NIH/NHLBI, Computer assisted clinical decision support tool for management of statins – SBIR Phase II, Role: Co-Investigator (Score: 14/90, funded April 2014)
- NIH/NHLBI, Computer assisted clinical decision support tool for management of statins – SBIR Phase I, Role: Co-Investigator (Score: 10/90, funded August 2013)
- LineaGen Diagnostics, Strategic Consulting on Discovery and Commercialization of Biomarkers for COPD, Role: PI on behalf of Venebio Group, LLC
- NIH/NIDA, Gene-Environment Interaction in Development of Drug Use, Role: PI
- GlaxoSmithKline Pharmaceuticals, Genetic Epidemiology Screening for Common Complex Diseases among Adult Twins in the Mid-Atlantic Twin Registry, Role: PI
- NSF, Child Temperament and Personality Across Contexts, Role: Collaborator
- NIH/NIDA, A Twin-Family Study of Drug Use, Abuse, and Dependence, Role: Co-Investigator
- NIH/NIMH, Duke Center for Developmental Psychiatric Epidemiology, Role: Co-Investigator on Genetic Epidemiology of Juvenile Psychopathology
- NIH/NIMH, Detecting Genetic Susceptibility Loci for Recurrent Depression, Role: Co-Investigator
- NIH/NINDS, Genetic Epidemiology of Seizures- A Twin Study, Role: Co-Investigator
- WM Keck Foundation, Consolidation and Extension of the Mid-Atlantic Twin Registry, Role: Co-PI
- NIH/NIMH, Psychiatric Genetic Epidemiology, Role: Co-PI of subcontract
- NIH/NIMH, Adolescent Behavioral Development: Twin Study, Role: Co-Investigator
- Templeton Foundation, Scientific Research on the Subject of Forgiveness, Role: Co-Investigator
- Templeton Foundation, Impact of Personal and Family Religiosity on the Health Development of Adolescents: Analysis of Data from the Mid-Atlantic School Age Twin Study, Role: Co-Investigator
- Templeton Foundation, Family Transition Research, Role: Co-Investigator
- Robert Wood Johnson Foundation, The North Carolina Twin Registry: The interaction of genes and family environment, Role: Co-Principal Investigator

Scientific Referee (Journals):

Addiction
Journal of Substance Abuse
Alcoholism: Clinical & Experimental Research
Behavior Genetics
Psychological Medicine
Human Genetics
Pain Medicine

Scientific Publications – Refereed Journals

Published:

1. Metcalfe L, **Murrelle EL**, Vu L, Joyce AR, Averhart Preston V, Maryon T, McDanald C, Yoo P. Independent Validation in a Large Privately Insured Population of the Risk Index for Serious Prescription Opioid-Induced Respiratory Depression or Overdose. *Pain Medicine*, 2020 Mar 19. pii: pnaa026. doi: 10.1093/pm/pnaa026. [Epub ahead of print]
2. Zedler BK, Saunders W, Joyce A, Vick C, **Murrelle L**. Validation of a screening risk index for serious prescription opioid-induced respiratory depression or overdose in a U.S. commercial health plan claims database. *Pain Medicine*, 19:68-78, 2018.
3. Nadpara P, Joyce A, **Murrelle L**, Carroll NC, Carroll NV, Barnard M, Zedler B. Risk factors for serious prescription opioid-induced respiratory depression or overdose: comparison of commercially insured and Veterans Health Affairs populations. *Pain Medicine*, 19:79-96, 2018.
4. Maes HH, Prom-Wormley E, Rhee SH, Hewitt JK, Young S, Corley R, McGue M, Iacono WG, Legrand L, Samek D, **Murrelle EL**, Eaves LJ, Silberg JL, Miles D, Schieken RM, Beunen GP, Thomis M, Kaprio J, Rose RJ, Dick DM, Boomsma DI, Bartels M, Vink JM, Lichtenstein P, White V, Neale MC: A Genetic Epidemiologic Mega Analysis of Smoking Initiation in Adolescents. *Nicotine and Tobacco Research* 19(4):401-409. doi: 10.1093/ntr/ntw294, 2017.
5. Zedler BK, Mann AL, Kim, MM, Amick HR, **Murrelle EL**, Jones HE: Buprenorphine compared with methadone to treat pregnant women with opioid use disorder: a systematic review and meta-analysis of safety in the mother, fetus and child. *Addiction* 111:2115-2128, 2016.
6. Wurst KE, Zedler BK, Joyce AR, Sasinowski M, **Murrelle EL**: A Swedish population-based study of adverse birth outcomes among pregnant women treated with buprenorphine or methadone: Preliminary findings. *Substance Abuse: Research and Treatment*, Sep 15;10:89-97. doi: 10.4137/SART.S38887. eCollection, 2016.
7. Zedler B, Xie L, Wang L, Joyce A, Vick C, Brigham J, Kariburyo F, Baser O, **Murrelle L**: Development of a Risk Index for Serious Prescription Opioid-induced Respiratory Depression or Overdose in Veterans' Health Administration Patients. *Pain Medicine* 16(8):1566-79, 2015.
8. Bergen AW, Krasnow R, Javitz HS, Swan GE, Li MD, Baurley JW, Chen X, **Murrelle L**, Zedler B. Total Exposure Study Analysis Consortium: A cross-sectional study of tobacco exposures. *BMC Public Health* 15:866, 2015.

9. Zedler BK, Xie L, Wang L, Joyce A, Vick C, Kariburyo F, Rajan P, Baser O, **Murrelle L**: Risk factors for serious prescription opioid-related toxicity or overdose among Veterans Health Administration patients. *Pain Medicine*, 15:1911-29; 2014.
10. Lavonas EJ, Severtson SG, Martinez EM, Bucher-Bartelson B, Le Lait MC, Green JL, **Murrelle EL**, Cicero T, Kurtz SP, Rosenblum A, Surratt HL, Dart RC: Abuse and diversion of buprenorphine sublingual tablets and film. *Journal of Substance Abuse Treatment*, 2014, doi:10.1016/j.jsat.2014.02.003.
11. Lavonas EJ, Banner W, Bradt P, Bucher-Bartelson B, Brown KR, Rajan P, **Murrelle L**, Dart RC, Green JL: Root causes, clinical effects, and outcomes of unintentional exposures to buprenorphine by young children. *Journal of Pediatrics* 2013 163(5):1377-83. e1-3. doi: 10.1016/j.jpeds.2013.06.058.
12. Zedler BK, Joyce A, **Murrelle EL**, Kakad P, Shah N, Harpe S: A pharmacoepidemiologic analysis of the impact of calendar packaging on adherence to self-administered medications for long-term use, *Clinical Therapeutics*, 33: 581-597, 2011.
13. Maher BS, Vladimirov VI, Latendresse SJ, Thiselton DL, McNamee R, Kang M, Bigdeli TB, Chen X, Riley BP, Hettema JM, Chilcoat H, Heidbreder C, Muglia P, **EL Murrelle**, et al.: The AVPR1A gene and Substance Use Disorders: Association, replication and functional evidence, *Biological Psychiatry*, Apr 22, 2011, PMID (Epub ahead of print): 21514569.
14. Zedler BK, Kakad P, Harpe S, **Murrelle EL**, Shah N: Does packaging with a calendar feature improve adherence to self-administered medication for chronic use? A systematic review, *Clinical Therapeutics*, 33:62-73, 2011.
15. Jeffery S. Edmiston, Kellie J. Archer, Mariano J. Scian, Andrew Joyce, Barbara K. Zedler, **EL Murrelle**. Gene expression profiling of peripheral blood leukocytes identifies potential novel biomarkers of chronic obstructive pulmonary disease in current and former smokers. *Biomarkers* 15:715-30, 2010.
16. Rana GSJB, York TP, Edmiston JS, Zedler BK, Pounds JG, Adkins JN, Smith RD, Flora JW, Li G, McKinney WJ, **Murrelle EL**: Proteomic biomarkers in plasma that differentiate rapid and slow decline in lung function in adult cigarette smokers with chronic obstructive pulmonary disease (COPD). *Analytical and Bioanalytical Chemistry* 397:1809-1815, 2010.
17. York TP, van den Oord EJCG, Langston TB, McKinney WJ, Webb BT, **Murrelle EL**, Zedler BK, Edmiston JS, Flora JW: High-resolution mass spectrometry proteomics for the identification of candidate plasma protein biomarkers for chronic obstructive pulmonary disease. *Biomarkers* 15:367-77, 2010.
18. Meng H, Joyce AR, Adkins DE, Basu P, Jia Y, Li G, Sengupta TK, Zedler BK, **Murrelle EL**, van den Oord EJCG: A statistical method for excluding non-variable CpG sites in high-throughput DNA methylation profiling. *BMC Bioinformatics* 11:227, 2010.
19. McClay JL, Adkins DE, Isern NG, Connell T, Wooten JB, Zedler BK, Dasika MS, Webb BT,

- Webb-Robertson BJ, Pounds JG, **Murrelle EL**, Leppert M, van den Oord EJCG: 1H Nuclear Magnetic Resonance Metabolomics Analysis Identifies Novel Urinary Biomarkers for Lung Function, *Journal of Proteome Research* 9:3083-90, 2010.
20. **Murrelle L**, Coggins CR, Gennings C, Carchman RA, Carter WH Jr, Davies BD, Krauss MR, Lee PN, Schleef RR, Zedler BK, Heidbreder C: Hypotheses and fundamental study design characteristics for evaluating potential reduced-risk tobacco products. Part I: Heuristic. *Regulatory Toxicology & Pharmacology* 57:1-10, 2010.
 21. **Murrelle L**, Gennings C, Carchman RA, Carter WH, Lee PN, Zedler BK, Coggins CRE, Heidbreder C: Further considerations on the evaluation of potential reduced-risk tobacco products. Part II: Re-assessment of a heuristic using the CPS-II database. *Regulatory Toxicology & Pharmacology* 57:11-17, 2010.
 22. Mejia R, Heidbreder C, Torres de Galvis Y, **Murrelle L**: The Construct of Impulsivity within the Context of Gender-Specific Adversity and Resilience during Adolescence: Recommendations for Future Work. *Impulsivity: Causes, Control and Disorders*, GH Lassitor (Editor), Nova Science, 2009.
 23. Coggins CRE, **Murrelle EL**, Carchman RA, Heidbreder C: Light and intermittent cigarette smokers: A review (1989-2009), *Psychopharmacology* 207: 343-363, 2009.
 24. Meng H, **Murrelle EL**, Li G. Identification of a small optimal subset of CpG sites as bio-markers from high-throughput DNA methylation profiles. *BMC Bioinformatics*, 9:457-67, 2008.
 25. Eaves LJ, Prom EC, Hatemi PK, **Murrelle EL**: Family matters: Social influences exceed genetic effects on adolescent religious attitudes and practices. *Social Forces*, 86(4): 1621-1646, 2008.
 26. Kliewer W, **Murrelle L**: Risk and protective factors for adolescent substance use: Findings from a study of Central American youth. *Journal of Adolescent Health* 40:448-455, 2007.
 27. Van den Oord EJC, McClay J, York T, **Murrelle, L**, Robles JR: Genetics and diagnostic refinement. *Behavior Genetics* 37:535-545, 2007.
 28. Kliewer W, **Murrelle L**, Prom E, Ramirez M, Obando P, Sandi L, Warner E, Karenkaris M del C: Violence Exposure and Drug Use in Central American Youth: Family Cohesion and Parental Monitoring as Protective Factors. *Journal of Research on Adolescence* 16: 455-478, 2006.
 29. van den Oord EJCG, Rujescu D, Robles JR, Birrell C, Bukszár J, Murrelle L, Giegling I, Möller H-H-J, Middleton L, Muglia P: Factor structure and external validity of the PANSS revisited. *Schizophrenia Research* 82:213-223, 2006.
 30. Silberg JL, Febo San Miguel V, **Murrelle EL**, Prom E, Bates J, Canino G, Egger H, Eaves LJ: Genetic and environmental influences on temperament in the first year of life: The Puerto Rico Infant Twin Study ("PRINTS"). *Twin Research* 8:328-336, 2005.
 31. Obando P, Kliewer W, **Murrelle L**, Svikis DS: The comorbidity of substance abuse and depressive symptoms in Costan Rican adolescents. *Drug and Alcohol Dependence* 76:37-44, 2004.

32. Davanzo P, Kerwin L, Nikore V, Esparza C, Forness S, **Murrelle L**: Spanish Translation and Reliability Testing of the Child Depression Inventory. *Child Psychiatry and Human Development* 35:75-92. 2004.
33. Anderson LS, Beverly WT, Corey LA, **Murrelle L**: The Mid-Atlantic Twin Registry. *Twin Research* 5:499-501, 2002.
34. Strassberg M, Peters K, Marazita M, Ganger J, Watt-Morse M, **Murrelle L**, Tarter R, Vanyukov M: Pittsburgh Registry of Infant Multiplets (PRIM). *Twin Research* 5:499-501, 2002.
35. Stern SJ, Arnos L, **Murrelle L**, Oelrich K, Nance W, Pandya A: Attitudes of Deaf and Hard of Hearing Individuals toward Genetic Testing and Prenatal Diagnosis of Hearing Loss. *Journal of Medical Genetics*, 2002.
36. **Murrelle L**, McCarthy C: What's so important about conducting research involving third parties. *Journal of Continuing Education in the Health Professions* 21(4): 198-202, 2001.
37. Kliewer W, **Murrelle L**, Mejia R, Torres de Y, Angold A.: Exposure to violence against a family member and internalizing symptoms in Colombian adolescents: the protective effects of family support. *Journal of Consulting and Clinical Psychology* 69(6):971-82, 2001.
38. Pineda DA, Henao GC, Puerta IC, Mejia SE, Gomez LF, Miranda ML, Rosselli M, Ardila A, Restrepo MA, **Murrelle L**: The use of brief questionnaire in the diagnosis of attention deficit. *Rev Neurol.* 28(4):365-72, 1999.
39. D'Onofrio B, Eaves L, **Murrelle L**, Maes H, Spilka B: Understanding biological and social influences on religious attitudes and behaviors: A behavior-genetic perspective. *Journal of Personality* 67:953-984, 1999.
40. D'Onofrio BM, **Murrelle L**, Eaves LJ, McCullough ME, Landis JL, Maes HH: Adolescent religiousness and its influence on alcohol and drug use: Preliminary findings from the Mid-Atlantic Twin Study. *Twin Research* 60:293-305, 1999.
41. Maes HH, Woodard CE, **Murrelle L**, Meyer JM, Silberg JL, Hewitt JK, Rutter M, Simonoff E, Pickles A, Neale MC, Eaves LJ: Tobacco, alcohol and drug use in 8-16 year old twins: The Virginia Twin Study of Adolescent Behavioral Development (VTSABD). *Journal of Studies on Alcohol* 60:293-305, 1999.
42. Silberg JL, Pickles A, Rutter ML, Simonoff E, Hewitt JK, Maes HK, Carbonneau R, **Murrelle L**, Foley D, Eaves L: The influence of genetic factors and life stress on depression among adolescent girls. *Archives of General Psychiatry* 56:225-232, 1999.
43. Breembroek GRM; van Straalen A; Witkamp GJ; van Rosmalen GM; Moss HB, Bonicatto S, Kirisci L, Giradelli AM, **Murrelle L**: Substance abuse and associated psychosocial problems among argentine adolescents in Buenos Aires Province: Sex heterogeneity and familial transmission. *Alcohol and Drug Dependence* 52:221-230, 1998.

44. Majumder PP, Moss HB, **Murrelle L**: Familial and non-familial factors in the prediction of disruptive behaviors in boys at risk for substance abuse. *Journal of Child Psychology and Psychiatry* 39:203-213, 1998.
45. Brigham J, Moss HB, **Murrelle L**, Herning RI, Tarter RE: Event-related potential negative shift in sons of polysubstance- and alcohol-use disorder fathers. *Psychiatry Research* 73:133-146, 1997.
46. Overstreet DH, Kampov-Polevoy A, Rezvani AH, **Murrelle L**, Halikas JA, Janowsky DS: Saccharin intake predicts ethanol intake in genetically heterogeneous rats as well as different rat strains. *Alcoholism: Clinical & Experimental Research* 17:1-4, 1993.
47. **Murrelle L**, Ainsworth BE, Doody JM, Holliman SC, Bulger D: Computerized mental health screening for college students: Correlation with standard pencil and paper questionnaires. *American Journal of Health Promotion* 7:90-92, 1992.

Non-Refereed Journals/Chapters

1. Maya J, Torres de G. Y, **Murrelle L**, Mejía R, Calderón G, et al.: Consumption of psychoactive substances and other factors associated with juvenile delinquency. Monograph of the Institute for Health Sciences (CES), Medellín, Colombia, 2000.
2. Montoya ID, **Murrelle L**: Prevalence of clinical depression as measured by the Zung Self-Rating Depression Scale (SDS) in physicians during post-graduate medical training in Medellín, Colombia. *Medicina Universidad Pontificia Bolivariana* 8(1):59-72, 1989 (Spanish).
3. **Murrelle L**: Alcoholism: Genetic and biochemical aspects. *Revista del Hospital Mental de Antioquia*, 12(3): 13-18, 1986 (Spanish).
4. **Murrelle L**, Escalona R, Florenzano R: Epidemiologic report on psychoactive substance use in 16 countries of Latin American and the Caribbean. *Bulletin of the Panamerican Health Organization*, 107(6):595-644, 1989.
5. Torres de Galvis Y, **Murrelle L**: The consumption of dependence-producing substances in Colombia. *Bulletin of the Panamerican Health Organization*, 107(6):485-494, 1989.
6. **Murrelle L**: Alcoholism research: A new approach to an old problem. *Source* 2(1):23-26, 1989.
7. Torres de Galvis Y, **Murrelle L**: National household survey on alcoholism and the consumption of dependence-producing substances, Colombia - 1987. University of Antioquia Press, Medellín, Colombia, 1988.
8. **Murrelle L**, Torres de Galvis Y, Orejuela E: Diagnostic tests as a clinical aid and for use in mental health screening. In: *Application, Scoring and Interpretation Manual for the Second National Workshop on the Use of Clinical-Research Instruments in Addiction*, Mental Hospital of Antioquia, Medellín, Colombia, pp 110-115, 1988.
9. **Murrelle L**: PC Statistician: A "friendly" biostatistics package for the microcomputer. In: *Application, Scoring and Interpretation Manual for the Second National Workshop on the Use of Clinical-Research Instruments in Addiction*, Mental Hospital of Antioquia, Medellín, Colombia, pp

127-131, 1988.

Technical Reports/Working Documents

1. **Murrelle L**, Magruder-Habib K, Saunders WB, Florenzano R, Torres de Galvis Y: Consequences of smoking a potent cocaine product: A clinical profile of 424 basuca abusers presenting for treatment in Medellín, Colombia. Panamerican Health Organization/World Health Organization, Washington, DC, 1991.
2. **Murrelle L**, Escalona R, Florenzano R: Epidemiologic report on psychoactive substance use in 16 countries of Latin American and the Caribbean. Panamerican Health Organization/World Health Organization, 1989.

Published Abstracts

1. Obando P, Kliewer W, **Murrelle L**, Svikis D: The comorbidity of substance abuse and depressive symptoms in Costa Rican adolescents. *Drug and Alcohol Dependence* 57:37-44, 2004.
2. Huang WY, Maier W, **Murrelle L**, Corey LA, Eaves LJ, and Shepherd NS: Concordance among twins from a population-based sample for self-reported atopic triad, syndrome x, and psychiatric conditions. *Genetics in Medicine* 2: 79, 2000.
3. Brigham J, Moss HB, Tarter RE, Herning RI, Mazzarella D, **Murrelle L**: Event-related differentiation of prepubertal sons of alcoholics and substances abusers. *Psychophysiology* 30:S19, 1993.
4. Janowsky DS, **Murrelle L**, Perkins D: Development of a resource for alcoholism researchers: The North Carolina Alcoholism Research Authority Collaborative Project in the Genetics of Alcoholism. *Alcohol & Alcoholism* 25:586, 1990.

Scientific Presentations:

Papers

1. Lavonas EJ, Severtson G, **Murrelle EL**, Ruby J, Bucher-Bartelson B, Dart RC. Unintentional exposures to buprenorphine/naloxone tablets and oral film among children less than 6 years old: initial experience from the RADARS® System Poison Center Program. Association for Medical Education and Research in Substance Abuse Annual Meeting. Bethesda, MD. November 2012.
2. Lavonas EJ, Severtson G, **Murrelle EL**, Ruby J, Bucher-Bartelson B, Dart RC. Unintentional exposures to buprenorphine/naloxone tablets and oral film among children less than 6 years old. International Society for Pharmacoeconomics and Outcomes Research European Congress. Berlin, Germany. November 2012.
3. Lavonas EJ, Severtson G, **Murrelle EL**, Ruby J, Bucher-Bartelson B, Dart RC. Unintentional exposures to buprenorphine/naloxone tablets and oral film among children less than 6 years old. American Academy of Addiction Psychiatry Annual Meeting. Aventura, FL. December 2012.

4. **Murrelle EL**: Personalized Medicine: Applying Pharmacogenomics in Community Pharmacy, *2010 NACDS Pharmacy & Technology Conference*, San Diego, August 31, 2010.
5. **Murrelle EL**: Managing conflicts of interest in academic/pharma vs academic/tobacco interactions: some personal and general observations. Workshop: Academics and Regulated Industries: Perspectives on 21st century interactions with pharmaceutical and tobacco companies, *2010 CPDD Annual Meeting*, Scottsdale, AZ, June 15th, 2010.
6. Prescott CA, Luczak SE, **Murrelle EL**, Kendler KS: Genetic overlap of attention deficit hyperactivity and oppositional defiant symptoms with tobacco use and dependence in male twins. Submitted to the *2008 Behavior Genetics Association Meeting*, Louisville, Kentucky, June 25-28, 2008.
7. Vanyukov MM, Maher BS, Devlin B, Ferrell RE, Kirillova GP, Chilcoat H, **Murrelle L**, Tarter RE: Candidate system genes, SLC1A3, and the risk for substance use disorder. *American Society of Human Genetics Annual Meeting*, Psychiatric Genetics Platform Session, October 26, 2007.
8. Maher BS, Devlin B, Ferrell RE, Kirillova GP, Chilcoat H, **Murrelle EL**, Tarter RE, Vanyukov MM: A comprehensive association study of 106 candidate genes for Attention Deficit Hyperactivity Disorder. *American Society of Human Genetics Annual Meeting*, Psychiatric Genetics Platform Session, October 26, 2007.
9. Maher B, Devlin B, Ferrell R, Kirillova G, Chilcoat H, **Murrelle L**, Tarter R, Vanyukov M. Systematic scan of 106 candidate system genes for substance use disorder. *World Congress on Psychiatric Genetics XV*, October 2007.
10. BT Webb, EJ van den Oord, TP York, Y Jia, MF Leppert, MB Scholand, **EL Murrelle**, WJ McKinney: Genome-wide genetic association (GWAS) and proteomic analysis of chronic obstructive pulmonary disease (COPD) show convergent evidence for genetic risk factors of cigarette smoke-induced spirometric phenotypes. *American College of Toxicology Annual Meeting*, Charlotte, NC, November 2007.
11. Prescott CA, McArdle JJ, **Murrelle EL**, Kendler KS: Dynamic analysis of bio metric sources of individual differences in alcohol and tobacco use during adolescence and young adulthood among male twins. *Behavioral Genetics Association 35th Annual Meeting*, Hollywood, California, June 29-July 2, 2005.
12. Wojczynski MK, North KE, **Murrelle EL**, Cook SF, Sullivan PF: *Prevalence of Rome II-based Irritable Bowel Syndrome (IBS) and Co-Morbidity with Major Depression*. Digestive Disease Week 2004. New Orleans, LA, May 15-20, 2004.
13. Kampov-Polevoy AB, Garbutt JC, **Murrelle L**, Eaves L: Hedonic response to sweets and alcohol-related problems: A pilot twin study. *Research Society on Alcoholism Annual Scientific Meeting*, 2002.
14. **Murrelle L**, Prom E, Warner E, Sandí L, Ramirez M, Obando P, Mezzich A: Psychological dysregulation and risk of drug involvement: Test of the relationship among 10,429 Central American adolescents. *College on Problems of Drug Dependence Annual Scientific Meeting*,

Montreal, Canada, June 2002.

15. Prom EC, **Murrelle L**, Ramirez M, Obando P, Warner E, Sandí L, Sullivan T: Extent of Peer Gang Involvement as a Risk Factor for Individual Drug Use Among Central American School Children. *College on Problems of Drug Dependence Annual Scientific Meeting*, Montreal, Canada, June 2002.
16. D'Onofrio B, Eaves L, **Murrelle L**: Personal and family religion as protective factors for youth conduct problems and substance involvement in the Mid-Atlantic School Age Twin Study. Presented at *Religion, Values, and Health: Unraveling the Role of Genes and Environment*, Center for Theology and the Natural Sciences, Berkeley, California, November 12-15, 1998.
17. **Murrelle L**, Eaves LJ: Family, Peer, and Genetic Influences on Adolescent Substance Involvement: Pilot Results from the *North Carolina School Age Twin Study*. Presented at *Advancing Substance Abuse Treatment: Applying Current Research*, North Carolina Governor's Institute on Alcohol and Substance Abuse, Greensboro, NC, February 26-27, 1997.
18. Eaves LJ, **Murrelle L**: Religion and health: Integrating the roles of genes and culture. Presented at the *Meeting on Scientific Progress in Spiritual Research*, National Institute for Health Care Research, Turnberry Isle Resort, Fort Lauderdale, Florida, January 17-18, 1997.
19. Eaves LJ, **Murrelle L**: Family spiritual values and risk of delinquent behaviors in adolescent offspring: A pilot study. Humility Theology Advisor's Meeting, John M. Templeton Foundation, Radnor, PA, October 16-17, 1996.
20. **Murrelle L**: The *Drug Use Screening Inventory (DUSI)*: General characteristics, utility, and limitations. Presented at the *International Seminar on National Drug Information Systems*, Santiago, Chile, October 25-27, 1995.
21. **Murrelle L**: Comparison of results from the *DUSI*: The InterAmerican Study of Adolescent Drug Use. Paper presented at the *International Seminar on National Drug Information Systems*, Santiago, Chile, October 25-27, 1995.
22. **Murrelle L**: Factors associated with depressive symptoms and suicide attempts in adolescents: Case of the Colombian National Household Mental Health Survey of 1992. Presented at the *Fifth Colombian Congress on Child and Adolescent Mental Health*, Cali, Colombia, April 20-22, 1995.
23. **Murrelle L**: Factors associated with substance use and abuse in adolescents: Preliminary findings from an interamerican study. Presented at the *Fifth Colombian Congress on Child and Adolescent Mental Health*, Cali, Colombia, April 20-22, 1995.
24. Brigham J, Moss HB, Kirisci L, **Murrelle L**: Salivary cortisol and ERPs: Test-setting stress effects? Presented at the *Annual Conference of the American Meeting on Cognitive Event-Related Potential Research*, Halifax, Nova Scotia, July 1994.
25. **Murrelle L**: Factors associated with drug involvement and problems in adolescent school students in Costa Rica. Presented at the *Second Annual Meeting of the Society for Prevention Research*,

West Palm Beach, Florida, June 23-24, 1994.

26. **Murrelle L:** Etiologic models and major risk factors for substance use in youth: An inter-American perspective. Presented at the *Second International Congress on Higher Education on Drug Matters*, Maracaibo, Venezuela, June 13-17, 1994.
27. **Murrelle L:** Efficacy of selected models of preventive intervention for substance abuse in youth: What appears to work and what appears to have failed? Presented at the *Second International Congress on Higher Education on Drug Matters*, Maracaibo, Venezuela, June 13-17, 1994.
28. **Murrelle L**, Sandí L, Kirisci L, Torres Y, Amesty E, Alfaro J, Diaz A: The Interamerican Validation Study of the *DUSI*: A multidimensional questionnaire for quantifying risk of drug problems in youth. Paper presented at the *Second International Congress on Higher Education on Drug Matters*, Maracaibo, Venezuela, June 13-17, 1994.
29. **Murrelle L:** Etiologic models, risk factors, and models of preventive intervention for substance abuse in youth. Presented at the *International Congress on Prevention in Health*, National School of Public Health of the University of Antioquia/Colombian Ministry of Health, Medellín, Colombia, June 1-3, 1994.
30. **Murrelle L**, Sandí L, Kirisci L, *et al*: The *DUSI*, a questionnaire for quantifying problems associated with drug use in adolescents: Preliminary data from an inter-American study. Presented at the *Third Central American Planning and Evaluation Workshop on Drug Abuse Prevention and Education*, Guatemala City, Guatemala, December 6-17, 1993.
31. **Murrelle L.:** Prevention of use and abuse of psychoactive substances by adolescents: A review of the Northamerican scientific literature. Presented at the *Third Central American Planning and Evaluation Workshop on Drug Abuse Prevention and Education*, Guatemala City, Guatemala, December 6-17, 1993.
32. Moss HB, Martin CS, Brigham J, Vanyukov MM, **Murrelle L**, Tarter RE: Biological correlates of behavioral dysregulation in boys at risk for substance abuse. Presented at the *Annual Meeting of the American College of Neuropsychopharmacology*, Honolulu, Hawaii, December 13-17, 1993.
33. Brigham J., Moss HB, Tarter RE, Herning, RI, Mazzarella D, **Murrelle L:** Event-related potential differentiation of prepubertal sons of alcoholics and substance abusers. Presented at the *Annual Conference of the Society for Psychophysiological Research*, Rottach-Egern, Germany, October 28, 1993.
34. **Murrelle L:** Current priorities in drug abuse prevention, 1993. Presented at the *First Andean Seminar-Workshop on Epidemiologic Surveillance of Consumption of Psychoactive Substances*, PAHO/WHO, Quito, Ecuador, October 4-7, 1993.
35. Brigham J., Moss H B, Tarter RE, Herning, RI, Mazzarella D, **Murrelle L:** Auditory ERPs in sons of alcoholics and substance abusers. Paper presented at the *First Annual Meeting of the American Society on Cognitive ERP Research*, Columbia University, New York, July 31, 1993.
36. **Murrelle L**, Sdao-Jarvie K, Gaddy GD, Torres de Galvis Y: Utility of the *CAGE Questionnaire* to

measure risk of alcohol problems in the general population: Case of the Colombian National Household Drug Survey. Presented at the *18th Alcohol Epidemiology Symposium*, Toronto, Canada, May 30-June 5, 1992.

37. Janowsky DS, **Murrelle L**, Perkins D: Development of a resource for alcoholism researchers: The North Carolina Alcoholism Research Authority Collaborative Project in the Genetics of Alcoholism. Presented at the *North Carolina Alcoholism Research Authority Fourteenth Annual Symposium*, Chapel Hill, NC, March 22, 1990.
38. **Murrelle L**: The effect of US drug demand on Colombia: Are the homicide and basuca epidemics in Medellín associated? Presented at the *Symposium on Battling Drugs: Is the War Working?*, University of North Carolina at Chapel Hill, March 19-23, 1990.
39. **Murrelle L**, Escalona R, Florenzano R: National epidemiologic profiles of alcohol and other drug consumption in Latin America. Working report presented at the *Second Meeting of the Advisory Group for Latin American Drug Abuse Epidemiology*, Panamerican Health Organization/World Health Organization, Miami, January 29-February 3, pp 100, 1989.
40. **Murrelle L**, Magruder-Habib K, Saunders WB, Florenzano R, Torres de Galvis Y: Comparative description of alcohol, polydrug and basuca addicts at treatment intake. Presented at the *American Public Health Association 117th Annual Meeting*, Chicago, October 22-26, 1989.
41. Rebaje de Alvarez L, Velásquez V, García A, Torres de Galvis Y, **Murrelle L**: A descriptive study of depression in consumers of psychoactive substances. Paper presented at the *First Statewide Meeting on Research in Alcoholism and Drug Abuse*, Mental Hospital of Antioquia, Medellín, Colombia, November 2-4, 1988.

Scientific Posters/Conference Presentations:

1. Sasinowski M, Joyce AR, **Murrelle EL**, Thompson SM, Zedler BK: Utilizing automated clinical decision support systems to reduce morbidity, mortality, and costs due to prescription opioid overdose – a retrospective study. ISPOR 22nd Annual International Meeting, Boston, MA, May 2017.
2. Thompson SM, Joyce AR, Sasinowska HD, Sasinowski M, Zedler BK, **Murrelle EL**. Utilizing clinical decision support systems to align clinical and value-based reimbursement initiatives. ISPOR 22nd Annual International Meeting, Boston, MA, May 2017.
3. Zedler BK, Saunders W, Joyce A, Vick C, **Murrelle L**. Validation of a Screening Risk Index for Overdose or Serious Prescription Opioid-Induced Respiratory Depression. The American Academy of Pain Medicine 31st Annual Meeting, National Harbor, MD, March 19-22, 2015.
4. Zedler BK, Xie L, Wang L, Joyce A, Vick C, Brigham J, Kariburyo F, Edwards E, Baser O, **Murrelle L**. Development of a Predictive Questionnaire for Prescription Opioid-Related Overdose or Respiratory/CNS Depression. The International Conference on Opioids, Boston, MA, June 8-10, 2014.

5. Zedler BK, Joyce A, Harpe SE, Kakad P, **Murrelle L**. A pharmacoepidemiologic analysis of the

impact of calendar packaging on adherence to self-administered medications for long-term use. The European Society for Patient Adherence, Compliance, and Persistence (ESPACOMP) Annual Meeting, Utrecht, Netherlands, November 18-19, 2011.

6. Webb BT, van den Oord EJ, York TP, Jia Y, Murrelle EL: Genome-wide genetic association study of Chronic Obstructive Pulmonary Disorder. American Society of Human Genetics Annual Meeting, Complex Traits and Polygenic Disorders Platform Session, Philadelphia, November 11-15, 2008.
7. Prescott CA, Luczak SE, **Murrelle EL**, Kendler KS: Genetic overlap of attention deficit hyperactivity and oppositional defiant symptoms with tobacco use and dependence in male twins. *2007 Behavior Genetics Association Meeting*, Louisville, Kentucky, June 25-28, 2007.
8. Vanyukov MM, Maher BS, Devlin B, Ferrell RE, Kirillova GP, Chilcoat H, **Murrelle L**, Tarter RE: Candidate system genes, SLC1A3, and the risk for substance use disorder. *American Society of Human Genetics Annual Meeting*, Psychiatric Genetics Platform Session, October 26, 2007.
9. Meng H, Li G, **Murrelle L**: A novel algorithm to identify signature CpG sites from high-throughput DNA methylation profiles to classify normal and lung cancer tissue samples. *Sixth Annual International Conference on Computational Systems Bioinformatics*, San Diego, August 2007.
10. Funch DP, Danielson J, **Murrelle EL**, Arbuckle J, Farello C, Zavras T: Testing the Feasibility of Using an Administrative Medical Claims Database to Study the Pharmacogenetics of a Rare Adverse Event., *12th International Conference on Pharmacoepidemiology & Therapeutic Risk Management*, August, 2005.
11. Strassberg MB, **Murrelle L**, Corey L, Marazita ML, Maher BS, Vanyukov MM: A twin study of ADHD. *Annual Meeting of the American Society for Human Genetics*, 2002.
12. Kliwer W, **Murrelle L**, Warner E, Sieire M, Ramírez M: The influence of spirituality on substance abuse in Panamanian adolescents. Presented at the *2001 Annual Meeting of the College on Problems of Drug Dependence*, Scottsdale, AZ, June 17-June 22, 2001.
13. **Murrelle L**, Prom E, Aggen S, Warner E, Sieire M, Ramírez M, Mezzich A: Psychological dysregulation and drug involvement among Panamanian youths. Presented at the NIDA INVEST *Building International Research on Drug Abuse: Children and Youth at Risk*, June 14–16, 2001
14. **Murrelle L**, Prom E, Svikis D, Kliwer W, Mejía R, Yolanda T, Maya J: Drug abuse, violence and antisocial behaviors among Colombian adolescents. Presented at the NIDA INVEST *Building International Research on Drug Abuse: Children and Youth at Risk*, June 14–16, 2001.
15. Kliwer, W., **Murrelle, L.**, Mejia, R., & Torres, Y: Exposure to violence and internalizing symptoms in Colombian adolescents: The protective effects of family support. Poster presented at the biennial meeting of the *Society for Research in Child Development*, Minneapolis, MN, April 19-22, 2001.
16. Kliwer, W., **Murrelle, L.** & Mejia, R: Exposure to Violence against a family member and

internalizing symptoms on Colombian Adolescents: The protective effects of family support. Poster presented at the annual Hampton University Research Forum, Hampton VA, February 2001.

17. Huang WY, Maier W, **Murrelle L**, Corey LA, Eaves LJ, and Shepherd NS: Concordance among twins from a population-based sample for self-reported atopic triad, syndrome x, and psychiatric conditions, *Annual Clinical Genetics Meeting*, Palm Springs, CA, March 9-12, 2000.
18. Brigham J, Moss HB, Herning RI, **Murrelle L**, Mazzarella D: ERP differences in sons of alcoholics and substance abusers. Presented at the *Second Annual Meeting of the Society for Prevention Research*, West Palm Beach, Florida, June 23-24, 1994.
19. Moss HB, Pollock B, Mezzich A, **Murrelle L**, Perel JM: Polymorphisms of debrisoquine hydroxylation and marijuana preference among substance abusing adolescents. Presented at the *Annual Conference of the College for Problems of Drug Dependence (CPDD)*, Toronto, Canada, June, 1993.
20. Perkins DO, Janowsky D, Bulger J, **Murrelle L**: *Tridimensional Personality Questionnaire* findings in alcoholic and nonalcoholic first degree relatives of alcoholics. Presented at the annual meeting of the *American Psychopathological Association*, March, 1993.
21. Overstreet DH, Rezvani AH, Kampov-Polevoy A, **Murrelle L**: Behavioral and taste predictors of ethanol intake in genetically heterogeneous rats. Presented at *22nd Annual Meeting of the Behavioral Genetics Association*, Boulder, Colorado, July, 1992.
22. **Murrelle L**, Holliman SC, Ainsworth BE, Doody JM: Computerized mental health screening for college students: Correlation with standard pencil and paper questionnaires. Presented at the *American Public Health Association 119th Annual Meeting*, Atlanta, November 10-14, 1991.
23. Perkins D, Cvejn S, Davidson E, Murphy C, **Murrelle L**, Evans DL: A new DSM-III-R based questionnaire: The BEQ. Presented at the *144th Annual Meeting of the American Psychiatric Association*, New Orleans, May 11-16, 1991.
24. **Murrelle L**, Perkins DO, Doody J, Janowsky DS: The NC Family Study on the Genetics of Alcoholism. Presented at the *144th Annual Meeting of the American Psychiatric Association*, New Orleans, May 11-16, 1991.
25. **Murrelle L**, Perkins DO, Doody J, McClure M, Janowsky DS: Alcoholism phenotype assessment: The North Carolina Family Study. Presented at the *North Carolina Alcoholism Research Authority Fifteenth Annual Symposium*, Raleigh, NC, March 22, 1991.
26. Straw G, **Murrelle L**: Predicting alcohol consumption changes with age: A proposed nonlinear model. Presented at the *North Carolina Alcoholism Research Authority Fourteenth Annual Symposium*, Chapel Hill, NC, March 22, 1990.
27. Saunders WB, **Murrelle L**, Magruder-Habib K: Household survey data from Colombia, South America: Relationships between alcohol use, depression and suicide. Presented at the *American Public Health Association 117th Annual Meeting*, Chicago, October 22-26, 1989.

Journal Club/Seminar Presentations

1. **Murrelle L:** Is Pharmacogenetics the Way of the Future? Philip Morris USA, Richmond, VA, June 7th, 2005.
2. **Murrelle L:** Genetic Epidemiology of Drug Abuse, Research Seminar, Department of Human Genetics, Virginia Commonwealth University, February 2, 1999.
3. **Murrelle L, Eaves LJ:** Family spiritual values and risk of delinquent behaviors in adolescent offspring: A pilot study. Virginia Institute for Psychiatric and Behavioral Genetics, Virginia Commonwealth University, November 7, 1996.
4. **Murrelle L:** Validation of the *Drug Use Screening Inventory* in adolescents in five Latin American countries: Preliminary findings of cross-cultural and cross-gender consistencies. Center for Education and Drug Abuse Research/Pittsburgh Adolescent Alcoholism Research Center Journal Club, University of Pittsburgh School of Medicine, September 28, 1994.
5. **Murrelle L:** Factors affecting the relationship between exposure to loss in the family due to murder and depressive symptomatology. Psychiatric Epidemiology Seminar Series, Western Psychiatric Institute & Clinic, November 5, 1993.
6. **Murrelle L:** Association between familial exposure to homicide and depressive symptomatology: A proposed dissertation analysis of the 1992 Colombian National Household Mental Health Survey. Psychiatric Epidemiology Seminar Series, Western Psychiatric Institute & Clinic, University of Pittsburgh School of Medicine, March 26, 1993.
7. **Murrelle L:** Utility of the *CAGE Questionnaire* to measure risk of alcohol problems in the general population: Case of the Colombian National Household Drug Survey. Center for Education and Drug Abuse Research/Pittsburgh Adolescent Alcoholism Research Center Journal Club, University of Pittsburgh School of Medicine, March 24, 1993.
8. **Murrelle L:** Utility of the *CAGE Questionnaire* to measure risk of alcohol problems in the general population: Case of the Colombian National Household Drug Survey. Center for Alcohol Studies Journal Club, University of North Carolina at Chapel Hill School of Medicine, August 12, 1992.

Membership- Scientific, Honorary, and Professional Societies:

- International Society for Pharmacoeconomics and Outcomes Research (ISPOR)
- American Public Health Association (APHA)
- Behavior Genetics Association (BGA)
- International Society of Pharmacoepidemiology (ISPE)

Lectures Given:

Lecture Title: *Pharmacogenetics: Public Health Implications*, Public Health Seminar Series, Department of Epidemiology and Community Health, Virginia Commonwealth University, September 23rd, 2004.

Lecture Title: *Genetic Epidemiology of Drug Abuse*, Course: Genetic Epidemiology, 3.0 hours, University of North Carolina at Chapel Hill, March 2004.

Lecture Title: *Genetic Epidemiology of Drug Abuse*, Course: Pharmacology of Drug Abuse (PMC 548), 1.5 hours, Virginia Commonwealth University School of Medicine, May 2001, November 2000, April 2000, December 1999, November 1998, April 1998, November 1997

Lecture Title: *Genetic Epidemiology of Behavioral Development*, Course: Developmental Processes (PSY 603), 2 hours, Virginia Commonwealth University Department of Psychology, October 1999

Lecture Title: *Genetic Epidemiology of Drug Abuse*, Course: Introduction to Substance Abuse (RHAB 321), 1.5 hours, Virginia Commonwealth University School of Medicine, October 1998

Lecture Title: *Genetic Epidemiology of Drug Abuse*, Course: Mathematical and Statistical Genetics (GEN 603), 1.5 hours, Virginia Commonwealth University School of Medicine, September 1997

EXPERT WITNESS TESTIMONY (2013 – 2025)

1. Provided Fact Witness testimony in parallel Federal Trade Commission and federal criminal investigations, including grand jury testimony, related to a pharmaceutical “product hopping” matter against client, 2013-2014.
2. In re Suboxone (Buprenorphine Hydrochloride and Naloxone) Antitrust Litigation, MDL No. 2445, US District Court, Eastern District of Pennsylvania Civ. A. No. 16-cv-5073, Case filed 5/29/2019. (Expert Report, Deposition, Fact Witness & Expert Witness).
3. In re Certain Tobacco Heating Articles and Components Thereof, Investigation No. 337-TA-1199, United States Trade Commission, Washington DC, February 2021. (Expert Report, Deposition, Expert Witness Testimony)
4. In re Hoeffling v US Smokeless Tobacco Company, F. Supp. 3d, No. CV 19-3847, 2021 WL 6051382 (E.D. Pa. Dec. 21, 2021). (Expert Report, Deposition, Case Dismissed)
5. In re Certain Vaporizer Devices, Cartridges Used Therewith, and Components Thereof, Investigation No. 337-TA-1368, United States Trade Commission, Washington DC, Trial May 2024. (Expert Report, Deposition, Expert Witness Testimony)
6. In re Certain Disposable Vaporizer Devices and Components and Packaging Thereof, Investigation No. 337-TA-1381, United States Trade Commission, Washington DC, 2024-2025. (Expert Report, Deposition, Expert Witness Testimony)
7. In re Health Care Services Corporation et al. (Plaintiffs) v. Indivior, Inc. and Indivior Solutions, Inc. (Defendants), Case No. CL 20-1474, Lead Case (CL 20-1475, CL 20-1788, CL 20-1789, CL 20-2095, CL 21-1169 consolidated), In the Circuit Court for the County of Roanoke, Virginia (Expert Witness), Settled out of court, July 2024.
8. In re Certain Disposable Vaporizer Devices, Investigation No. 337-TA-1410, United States Trade Commission, Washington DC, 2024-2025. (TEO Phase: Expert Report, Deposition, Expert Witness Testimony; Full Investigation: Expert Report, Deposition, Expert Witness Testimony)

SELECTED GUEST LECTURES, SEMINARS, AND PRESENTATIONS

Title: *Psychological Dysregulation as a Risk Factor for Drug Abuse: Preliminary Data from a Study of 10,000 Central American Adolescents.*

- Casa Presidencial, Panama City, Panama, August 31, 2001
- Universidad Santa Maria la Antigua, Panama City, Panama, August 31, 2001
- 13th Annual Meeting on Chemical Dependency, Panama City, Panama, August 30, 2001
- Hotel Corobicí (sponsored by US Embassy, Narcotics Affairs Section), San José, Costa Rica, August 17, 2001
- Instituto Hondureño para la Prevención del Alcoholismo, Drogadicción, y Farmacodependencia (IHADFA), Tegucigalpa, Honduras, August 16, 2001
- Intercontinental Hotel, (sponsored by US Embassy, Narcotics Affairs Section and SECCATID, Guatemalan National Office of Drug Coordination), Guatemala City, Guatemala, August 15, 2001.
- Salvadoran Foundation for Development (sponsored by US Embassy, Public Affairs Section), San Salvador, El Salvador, August 13, 2001.

Title: *What Every Smart High School Student Should Know About the Genetics of Drug Abuse*

- Virginia Governor's School for Math and Sciences, Richmond, Virginia, May, 2001, November, 2001, February 2002
- Clover Hill High School, Midlothian, Virginia, May 2001
- Powhatan High School, Powhatan, Virginia, April, 2001

Title: *Vulnerability to Drug Use and Abuse: Contribution of Social and Genetic Factors*

- 13th Annual Meeting on Chemical Dependency, Panama City, Panama, September 1, 2001
- Casa Alianza (sponsored by US Embassy, Public Affairs Section), Tegucigalpa, Honduras, August 16, 2001.
- Intercontinental Hotel, (sponsored by US Embassy, Narcotics Affairs Section and SECCATID, Guatemalan National Office of Drug Coordination), Guatemala City, Guatemala, August 15, 2001.
- Salvadoran Foundation for Development (sponsored by US Embassy, Public Affairs Section), San Salvador, El Salvador, August 13, 2001.

Title: *The Genetic Epidemiology of Drug Abuse*

- Y3 Psychiatry Residents, Department of Psychiatry, Virginia Commonwealth University School of Medicine, June 27, 2001
- Universidad Pontificia Bolivariana, School of Medicine, Medellín, Colombia, August 4, 1998
- Institute for Health Sciences (CES), Medellín, Colombia, August 10, 1998
- Nueva Granada Military University, School of Medicine, Bogotá, Colombia, August 21, 1998

Title: *Gene-Environment Interactions in the Etiology of Psychoactive Substance Use*

- National School of Public Health, University of Antioquia, Medellín, Colombia, August 27, 1998

Title: *Risk and Protective Factors in Youth Substance Involvement*

- Universidad Pontificia Bolivariana, Medellín, Colombia, August 25, 1998

Title: *A Review of Etiologic Models and Prevention Programs for Youth Substance Involvement*

- Municipal Substance Abuse Prevention Plan, Medellín, Colombia, August 18, 1998

Title: *Overview of Epidemiologic Research in Drug Abuse in Latin America- 1994*

- First meeting of the Venezuelan Working Group on Drug Abuse Research, Caracas, Venezuela, July 29-August 2, 1994.

Title: *An Introduction to Epidemiology*

- Pennsylvania State Governor's School, University of Pittsburgh, July 1994, July 1995

Title: *Methods of Estimating the Validity and Reliability of Questionnaires for Use in General Population Drug Abuse Research*

- Annual Meeting of Advisors to the Epidemiologic Surveillance Network for the Central, American Region, Managua, Nicaragua, February 21-23, 1994
- Uruguayan Association for the Prevention of Alcoholism and Drug Abuse, Montevideo, Uruguay, April 19, 1994
- National School of Public Health, University of Antioquia, Medellín, Colombia, Masters Program in Mental Health Epidemiology, April 22, 1994

Title: *The Evolution of an Epidemiologic Research Model in Drug Abuse in Colombia*

- The Mexican Institute of Psychiatry, Mexico City, Mexico
- The National Institute of Alcoholism and Drug Abuse, San José, Costa Rica

Title: *Coca-Paste Abuse in Colombia: An Understudied Problem*

- The Institute of Latin American Studies, University of North Carolina at Chapel Hill, Chapel Hill, NC

Title: *Validation of the Drug Use Screening Inventory (DUSI) for Use in Drug Abuse Research in Adolescents in Costa Rica*

- National Institute of Alcoholism and Drug Addiction, San José, Costa Rica
- Uruguayan Association for the Prevention of Alcoholism and Drug Abuse, Montevideo, Uruguay, April 19, 1994
- National School of Public Health, University of Antioquia, Medellín, Colombia, Masters Program in Mental Health Epidemiology, April 22, 1994

Title: *Selection, Translation, Validation and Application of Diagnostic/Screening Instruments for Alcoholism and Clinical Depression: A Colombian Experience with the MAST, CAGE and SDS*

- Second National Workshop on the Application of Clinical-Research Instruments in Addiction, Mental Hospital of Antioquia, Medellín, Colombia
- The National Institute of Alcoholism and Drug Abuse, San José, Costa Rica
- Department of Epidemiology, National School of Public Health, University of Antioquia, Medellín, Colombia

Title: *Utility of the Addiction Severity Index (ASI) at Treatment Intake for Substance Abuse Patients in Colombia, South America: A Comparative Description of Polydrug, Coca-Paste and Alcohol Addicts*

- Second National Workshop on the Application of Clinical-Research Instruments in Addiction, Mental Hospital of Antioquia, Medellín, Colombia
- The National Institute of Alcoholism and Drug Abuse, San José, Costa Rica

Title: *The Use of Microcomputers in Clinical Epidemiologic Research*

- Mental Hospital of Antioquia, Medellín, Colombia
- Federico Lleras Acosta Regional Hospital, Mental Health Unit, Ibagué, Colombia

Title: *Treatment Evaluation in Drug Abuse and Clinical Depression: The Addiction Severity Index (ASI) and the Self-Rating Depression Scale (SDS)*

- Mental Hospital of Antioquia, Medellín, Colombia

Title: *Biochemical and Genetic Aspects of Alcoholism*

- National School of Public Health, University of Antioquia, Medellín, Colombia
- School of Medicine, University of Antioquia, Medellín, Colombia
- Department of Toxicology, University of Antioquia, Medellín, Colombia
- School of Medicine (Course in Psychiatry, Section on Alcoholism), Bolivariana University, Medellín, Colombia
- Academy of Psychiatry of Antioquia, Medellín, Colombia
- Colombian Fulbright Commission, Bogotá, Colombia

- Department of Psychology, Central University of Colombia, Bogotá, Colombia
- Chamber of Commerce, Cali, Colombia (Lecture for the general public)
- Mental Hospital of Antioquia, Medellín, Colombia
- Regional Hospital of Zipaquirá, Cundinamarca, Colombia
- Cenit Drug Addiction Clinic, Medellín, Colombia
- Regional Hospital of Rio Negro, Antioquia, Colombia
- Guilford Technical Community College, Greensboro, North Carolina
- Leon XIII Social Security Clinic, Medellín, Colombia
- Colombian Institute of Family Welfare, Bogotá, Colombia
- National Institute of Alcoholism and Drug Addiction, San José, Costa Rica
- The Crawford Center, Greensboro, North Carolina

Title: *New Epidemiological Findings in Drug Abuse Research: The First National Household Survey on Alcoholism and Consumption of Dependence-Producing Substances in Colombia - 1987.*

- First Annual Meeting of the Coastal Drug Abuse Council, Cartagena, Colombia
- Federico Lleras Acosta Regional Hospital, Mental Health Unit, Ibagué, Colombia

Title: *The North Carolina Family Study of the Genetic Determination of Alcohol Use*

- Fellowship Hall, Greensboro, North Carolina
- Charlotte Treatment Center, Charlotte, North Carolina
- Bruce Hall, Florence, South Carolina
- NIAAA Alcohol Fellows, Dept. of Psychiatry, University of North Carolina at Chapel Hill School of Medicine

Title: *Current Priorities in Drug Abuse Prevention, 1993-1994*

- National Institute of Alcoholism and Drug Addiction, San José, Costa Rica
- Fundación Universitaria Luís Amigo, Medellín, Colombia
- National School of Public Health, University of Antioquia, Medellín, Colombia
- Interamerican Institute of the Child (IIN) , Montevideo, Uruguay, April 20, 1994

Title: *PC Statistician: A Simple Program for Clinical-Epidemiologic Research*

- Department of Epidemiology, National School of Public Health, University of Antioquia, Medellín, Colombia
- Department of Biostatistics, National School of Public Health, University of Antioquia, Medellín, Colombia
- Department of Occupational Health, National School of Public Health, University of Antioquia, Medellín, Colombia
- Departments of Social Work and Social Research, Bolivariana University, Medellín, Colombia

Title: *Physiological Effects of Alcohol Consumption and Abuse*

- Wake Forest University (Alcoholism Awareness Task Force Lecturer), Winston-Salem, NC
- Department of Nursing, University of North Carolina at Greensboro, Greensboro, NC
- Department of Education, University of North Carolina at Greensboro, Greensboro, NC
- Department of Nutrition, University of North Carolina at Greensboro, Greensboro, NC
- Wesley Long Community Hospital (Medical Explorers Group Lecturer), Greensboro, NC